An account of inventions and improvements in surgical instruments / made by John Weiss ... with a selection of cases wherein they have been ... employed.

Contributors

John Weiss & Son (London, England)
Weiss, John.

Publication/Creation

London : Longman, Rees, Orme, Brown, & Green, 1831.

Persistent URL

https://wellcomecollection.org/works/zu97fqcs

License and attribution

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

52/42

f. 193-200 Appeal

292
48

AN ACCOUNT

OF

INVENTIONS AND IMPROVEMENTS

IN

SURGICAL INSTRUMENTS,

MADE BY

JOHN WEISS, 62, STRAND;

WITH

[illegible]

[illegible]

ILLUSTRATED BY NUMEROUS ENGRAVINGS.

[illegible]

LONDON:

PUBLISHED BY

LONGMAN, REES, ORME, BROWN, & GREEN,

PATERNOSTER ROW.

[illegible]

Respectfully presented

by

the author.

AN ACCOUNT

OF

INVENTIONS AND IMPROVEMENTS

IN

SURGICAL INSTRUMENTS,

MADE BY

JOHN WEISS, 62, STRAND;

WITH

A SELECTION OF CASES

WHEREIN THEY HAVE BEEN SUCCESSFULLY EMPLOYED,

AND

TESTIMONIALS OF THEIR UTILITY FROM EMINENT SURGEONS.

ILLUSTRATED BY NUMEROUS ENGRAVINGS.

SECOND EDITION—MUCH ENLARGED.

LONDON:

PUBLISHED BY

LONGMAN, REES, ORME, BROWN, & GREEN,

PATERNOSTER ROW;

AND SOLD BY

J. WEISS AND SON, SURGICAL INSTRUMENT MAKERS, 62, STRAND;

FANNIN AND CO., 41, GRAFTON STREET, DUBLIN; AND

ADAM BLACK, EDINBURGH.

1831.

Price Fifteen Shillings.

HARJETTE AND SAVILL, PRINTERS,
107, ST. MARTIN'S LANE, CHARING CROSS.

TO THE

HONOURABLE THE COURT OF DIRECTORS

OF THE

EAST INDIA COMPANY.

GENTLEMEN,

HAVING printed a new and enlarged edition of my Inventions and Improvements in Surgical Instruments, I am impelled, by a sense of gratitude for the liberal share of patronage bestowed upon me, to dedicate the work to your Honourable Board.

I may be permitted also to express the additional gratification I derive from the reflection that I am in a great measure indebted for the countenance and support of your Honourable Board, to the acknowledged superiority of my Instruments, and the flattering testimonials of their excellence, received from the medical officers in your Service, as well as from some of the most eminent Surgeons in England, whose letters will be found in this volume.

It has ever been my study to improve the manufacture of Surgical Instruments, and my most strenuous exertions will be constantly directed to

this important object; in the pursuit of which I have a powerful stimulus in the approbation and encouragement of your Honourable Board.

I beg you to accept, Gentlemen, this small mark of my gratitude and respect, the most appropriate I can offer, and,

I have the honour to subscribe myself,
with the utmost deference,
Gentlemen,
Your obliged, and
Obedient humble servant,
JOHN WEISS.

CONTENTS.

PREFACE.

HAVING for many years devoted my time and attention to the improvement of Surgical Instruments, and used my utmost endeavours to carry into effect the suggestions of professional gentlemen in the construction of new instruments, sparing neither labour nor expense in bringing them to perfection, it is highly gratifying to my feelings to be enabled to record the favorable opinions of the success of my exertions, with which I have been honoured by some of the most eminent surgeons in the kingdom.

Not having secured any of my instruments by patent, with the exception of the Syringe and the Fleam, (which, from their simplicity and universal utility, required such a protection,) they are open to imitation by other makers; but the profession, being well aware of the great expense and loss of time attendant on bringing forward new inven-

tions, will not, I am sure, on this account the less appreciate them. Although I seek no other advantage than that which may accrue to me from the sale of them, in a fair and open competition with others, I feel confident of being favoured by the preference of the liberal-minded, as the only reward I can expect for my labour; while that preference will be repaid in the superiority which a complete acquaintance with the construction of my instruments enables me to attain in their manufacture.

I have observed, with regret, that some gentlemen have felt themselves aggrieved at my having given my own name to instruments which I have invented at the suggestion of professional gentlemen; and that some have even gone so far as to say, that I had no title to the merit of inventions to which I lay claim. To these objections I beg to reply, that, while I am at all times ready, and even proud to acknowledge the names of the eminent surgeons at whose instance I contrived different new instruments, I feel bound, in justice to myself, to claim whatever merit may belong to the contrivance itself. Having devoted my time and experience, at considerable expense, to mature and carry into effect the sugges-

tions with which I have been favoured, I must be excused if I gratify an honourable pride by affixing my name to the product of my own ingenuity. It will also be borne in mind, that in so doing, I only lay claim to the merit of the mechanical contrivance of the instrument with which any new or improved operation is performed; an honour so humble, though so just, that it will not be disputed either by the scientific originator of a new operation, or by the successful performer of it. I do not seek to arrogate to myself any other credit than is due to me as a mechanician; and surely I may be allowed to do this, when I have witnessed the success of operations performed with my instruments, and received the encomiums of the operators for their complete adaptation to the purpose intended.

In answer to those few (for few indeed I am confident they are) who accuse me of piracy, I appeal to the whole profession, whether I am not more likely to invent or improve of myself than to copy the inventions or improvements of another; and whether I have not duly acknowledged the suggestions of every gentleman who has favoured me with his idea on the construction of a new instrument?

To the liberal-minded I confidently look for that

encouragement which alone can repay me for the anxiety and trouble I have bestowed on the various instruments which I now offer to their notice, and submit to their approbation. This volume will, I trust, be found worthy a place in all medical libraries, and, by its circulation, in part supersede the necessity for written communications on the subject of my instruments, to those members of the profession resident abroad and in different parts of the kingdom.

AN ACCOUNT,

&c.

BEING engaged in the manufacture of Surgical Instruments, I could not fail to observe many defective points in their construction; and I was also struck with the little pains that had been taken by Instrument makers in general to remedy those defects, or otherwise to improve upon the instruments in use. I continually heard complaints from professional gentlemen of the clumsiness or inefficiency of various instruments; and having been often applied to, to contrive several instruments for particular and individual purposes, I was led to consider how I could improve upon those in general use.

I propose, in the following pages, to give an account of the most prominent of these inventions and improvements, nearly in the order in which I contrived them, illustrated with drawings and descriptions of the principal ones; and to demonstrate their efficiency and utility by the testimonials of eminent operators, and various cases taken from

the medical and surgical journals, and the works of professional gentlemen.

One of the first improvements which I perfected consisted only in a more compact arrangement of the instruments in the cases of surgeons in the army and navy; the utility of which, and the decided approbation it met with, perhaps justifies a mention of it here. After many trials, and more pains than may at first sight appear to have been required to attain such an object, I succeeded not only in reducing the size of the cases more than one half, but also in making them more complete than heretofore, and by an entire re-arrangement of the instruments, rendering them less liable to engender rust, and protecting the edges of the knives from injury.

From the arrangement of the instruments in the cases, my attention was directed to their conveyance. The old mode of carrying the instruments in a bag thrown across a pack-horse was attended with this inconvenience, that to get at any one, the horse required to be unloaded, and the whole to be turned out. I substituted a contrivance consisting of two strong leather cases, containing drawers or slides, in which the instruments, bandages, medicines, &c. were placed; by this arrangement any one article could be taken out without unloading the horse.

ARMY SURGEON'S SADDLE.

This improvement suggested itself to me in consequence of the representations of Colonel Fryers, of the Royal Artillery, and other gentlemen, of the inconvenience and distress too frequently occasioned in the army by the surgeons being separated from their instruments, in consequence of the baggage not coming up with the troops, owing to which the surgeon has been sometimes a whole day without the power of affording surgical aid, or even effectual relief to the wounded.

The surgeons of the army being mounted, the idea immediately suggested itself to me, of providing them with an appendage to the military saddle, by which the instruments should be borne on the horse; and of several plans I made choice of the following compact contrivance:—It consists of a pair of holsters, which can be detached from the saddle at pleasure; each holster is divided into two compartments; the upper, of the usual form and appearance, to contain pistols, those underneath to contain the cases, each thirteen inches long, four wide, and two deep. In one case is contained a complete set of field instruments, in the other the most essential medicines, lint, &c.; both being of exactly the same size, they may be slipped into either holster at pleasure. I also contrived a si-

milar convenience for the use of the engineer corps ; this consisted of a pair of holsters, in one of which were placed the instruments, and in the other a pistol.

Through the recommendation of Sir Everard Home, I had the honour of submitting the surgeons' saddle for the approval of his late Majesty, George IV., who was not only much pleased with the whole arrangement, but took such interest in the matter, that he suggested some improvements in minor points, and, in particular, one of more importance, which affected the comfort of the rider. His Majesty graciously condescended to make a drawing of a saddle of the proper shape required to remove the inconvenience which existed, and kindly explained to me the exact nature of the alteration necessary. These suggestions have been carried into effect, and are happily adapted to render the contrivance complete and commodious in every respect.

On subsequent occasions, when I had the honour of being again introduced to the late King, his Majesty condescended to express his particular desire to see specimens of my other improvements in surgical instruments, and I was honoured by his Majesty's commands to contrive some support for the purpose of relieving that infirmity of the knee-joint with which he was troubled for many years ; and in this, I am happy to say, I succeeded to his Majesty's satisfaction. It consisted of an India

rubber bandage, shaped to the knee, and which, by its peculiar elasticity, accommodated itself to the form and action of the joint more accurately than any other material, at the same time giving the most effectual support. Bandages of this description have been adopted in a great number of cases for sprains and weakness, not only of the knees but of the ankles and wrist, and in most with very great success, particularly in the case of a learned judge, who was so great a sufferer as scarcely to be able to walk without the aid of a stick.

FIELD TOURNIQUET.

Among the instruments contained in the surgical saddle, is an improved field tourniquet, which I have succeeded in rendering exceedingly portable, and, in many instances, equally efficient with the larger instrument generally used in operations by the profession at home; though during the war, various attempts had been made without success to accomplish this desirable object. It has been suggested by an officer of high rank in the service, that every soldier on going into action, should be provided with one of these pocket tourniquets, by which means a great number of lives might be saved; for many men who have lost a limb die from mere loss of blood, before surgical assistance can be obtained; but provided with this instrument

the wounded man or a comrade might instantly prevent fatal consequences arising from this cause.

AMPUTATING SAW.

In addition to the inconveniences incidental to the use of the saw in amputation, I had heard frequent complaints made of the delay occasioned in the performance of this operation, through the teeth of the saw clogging up, insomuch, that I was told, that three different saws had been used in severing one limb. This serious inconvenience (the others depending for their removal entirely on the skill of the operator) I have been able materially to obviate, by making a number of slits terminating in holes at certain distances along the whole edge of the blade, by means of which the teeth of the saw are relieved by its action, and prevented from clogging up during the operation; this allows of the teeth being cut finer than in a saw made without these cleansing holes, and thus further facilitates the action of the saw.

SPLINTS.

In executing the orders with which I had been honoured by the Government for splints for the

use of the Army, my attention was drawn to the very inconvenient bulk of a set of splints, owing partly to the material of which they were formed, but principally to the necessity for their being of every variety of size likely to be required. I therefore contrived a set of splints of thin sheet iron japanned, so portable that they are contained in a bag one-third of the size of other splints, and which, from their peculiar construction, can be readily adapted to limbs of every size, by means of slides, &c.

TRUSSES.

The already great demand for trusses for the use of the army, was materially increased, by the necessity which existed of having trusses separately adapted only to the right or left side; to obviate this useless expense and inconvenience, I constructed a truss with a moveable pad which could be readily adjusted to suit both the right and left side by means of a screw, the pressure being applied either way with equal effect as in those made to fit on one side only. This truss is well calculated for hospitals and other public institutions where a quantity of trusses are kept for use.

IMPROVED SCARIFICATOR.

The common though important operation of cupping, a branch of the practice of medicine, as well as of surgery, and requiring great nicety and dexterity on the part of the operator, was, I had been informed, attended with so many little difficulties, that in the country its performance was comparatively of rare occurrence. In an operation so frequently required, and in the performance of which surgical knowledge was less available, and a sort of sleight-of-hand, the result of constant practice, almost indispensable to secure success, any complexity or incompleteness of the instrument, appeared to me an obstacle calling for removal.

I had been informed that the scarificator in common use, produced, even when used by the most careful and experienced operator, ragged and irregular incisions of unequal length, and that this defective action of the instrument could not be accounted for. I suggested that it was occasioned by the skin being driven up in wrinkles before the lancets; and to remove this evil I constructed a scarificator, in which the lancets were placed in two rows, and acting so as to cut in opposite directions, by which means the skin was tightened, and each incision was cleanly made. Another inconvenience incidental to the old scarificator was, that the lancets could not be taken out

but by a workman, to be cleaned or repaired, which rendered it highly necessary for every professional gentleman to be provided with more than one instrument, which only modified the inconvenience; this I have removed, by making the lancets to take out when necessary, for the purpose of cleaning or repairing; and I have added a second set which may be substituted at pleasure. Besides which, I have added a row of four lancets for cupping on the temples. The improved scarificator is now so generally adopted, that not only is the former old-fashioned instrument almost entirely disused, but the name of the inventor of the new instrument is forgotten, and the merit of it claimed by others, while it really belongs to me.

FLEXIBLE CATHETERS.

At the request of Sir Everard Home, I endeavoured to construct a Flexible Gum Catheter, capable of being introduced into the urethra without having recourse to the stilette, and after devoting upwards of five years to a series of experiments, I succeeded to his great satisfaction, as will be seen by the following account, extracted from "Practical Observations on the Treatment of the Diseases of the Prostate Gland;" by Sir Everard Home, Bart. V.P. R.S. Vol. ii. chap. v. p. 71.

"Before I make any further observations on the

treatment of the disease in the middle lobe of the prostate gland, in addition to those contained in the first volume, I must state the improvements that have since occurred to me, respecting the catheter; and as the mode of practice I have lately been led to adopt, depends more upon the structure of this instrument than it did formerly, it is of the more importance that the catheter should be so constructed as to give us all the advantages such an instrument is capable of affording. In the first volume I complained, that both in England and France, all the flexible gum catheters are made straight, and that it requires a long time before they gain a set in a curved form, by being kept upon a curved iron stilette; that even after a period of ten years, they shall acquire it so imperfectly, that when the stilette is removed, before they can be passed into the bladder, they have become nearly straight, and that the part next the point is that which most reluctantly retains the curve; added to this, in giving these catheters the curve, almost all those that have two openings near the point, have one of them spoiled in the attempt, if not both; and when there is only one, to prevent this accident, it is necessary to keep the aperture upon the curved part of the instrument, the part, of all others, on which it should not be, as it must come in contact with the lower surface of the urethra, and by its edges be grasped at the neck of the bladder, or lacerate the middle lobe of the prostate

gland, even when it does not project beyond the surface, and in a still greater degree in proportion as it rises above it.

"These defects in the flexible gum catheters are great, when the instrument is of a small size; but when the catheter is made large, which it ought always to be when used in this disease, they become so much greater, that it is hardly ever possible to use one without the stilette, the inconvenience and disadvantage of which have been fully illustrated in the former volume.

"It is now twenty years since I applied my mind to the improvement of the form of this instrument, but met with so many difficulties, that I was almost induced to give it up. If the web upon which the varnish is applied, were woven upon a curved stilette, it would ever after retain this shape, but, unfortunately, it adhered so closely to the stilette, that it could not be got off; if wove more loosely, the web was not smooth; and I was told, that the eye could not be well made, unless the catheter was originally straight. These were difficulties; but as it was of very great importance that the instrument should be curved, I thought they might be got the better of; but all the makers that I met with were irregular workmen, whose ingenuity led them to take up this trade as a very lucrative one, but they had not steadiness to go on uniformly with any one pursuit, and were led away by some other delusive speculation, before they

succeeded in making straight catheters so perfect as they might have done. I at last, however, found a more steady, and, at the same time, a more ingenious artisan. Mr. Weiss has, after the labour of five or six years, succeeded in making flexible gum catheters, curved in their original formation, so that they consequently retain that form; their polish is so great as to make them, in that respect, have every advantage of surface, and their size may be made as large as the surgeon shall choose to direct. In his first attempts in making large ones, they were, from the increase of their diameter, so weak in their sides, as to be unable to resist the spasm which occasionally comes upon the urethra, near its middle, and often when an instrument was retained in the bladder, its sides were actually brought together, and the tube closed up, till the spasm subsided; and afterwards, this part of the instrument had suffered so much, that it became necessary to withdraw it: when taken out, it had the appearance of having been broken by some mismanagement of the patient, but upon slitting open the tube, the passage at this part was nearly closed, from having been grasped with more violence than the coats were able to resist. He now, therefore, gives them strength in proportion to their size; and I have thought it necessary to explain the reason of their being made so strong, as it might appear, both to surgeons and patients, unnecessary, unless they

were made acquainted with the circumstances above mentioned. When the curvature of the catheter is no part of its original formation, although it may have been produced by being long kept in a curved state, yet when allowed to remain in the bladder, it gradually returns to its straight form, by being moistened, and when it has acquired that form, the point is no longer kept directed upwards in the cavity of the bladder, but is constantly pressing against the posterior coats, pushing itself out of the urethra, and the irritation it gives the muscular coat of the bladder will often be the means of its being expelled by a spasm with considerable violence; this explains what happens when the patient, in consequence of finding, after he has drawn off his water, that the instrument has been pushed out farther than it ought to be, pushes it back again, so as to replace it, he hears a clap or noise, which at first will alarm him with the notion that it came against a solid substance, and, therefore, that there is a stone in the bladder, while it is nothing more than a spasmodic action of the coats of the bladder upon the instrument.

"When a flexible gum catheter is to remain in the bladder, it is very desirable that it should be as little disturbed as possible, since every time it is moved backwards or forwards, it is rubbing upon an inflamed, swollen, prominent part, and therefore interferes with the subsiding of all these symptoms. I have known a patient suffer considerably from this kind

of friction, without being conscious that he was producing it, nor was it readily detected in what manner he did it, as he was constantly in bed, and every time I saw him, was lying perfectly quiet; but one day, my visit being longer than usual, and his getting into an animated conversation, led me to discover it. I found that the change from the recumbent posture to that of sitting, while talking, was incessant, and, upon inquiry, I was told that this was his usual habit the greater part of the day. Upon explaining to him the disadvantages arising from this kind of exertion, and confining him to a recumbent posture, the symptoms of irritation subsided.

"To keep the catheter in the bladder, with as little motion as possible, various contrivances have been had recourse to: it becomes unnecessary to enter into detail upon those that answer this purpose very imperfectly; but I shall particularly mention that which appears to me to have succeeded better than any other. It is an elastic collar for the body of the penis, about an inch and a half broad, lined with velvet, the grain of which is placed so as to prevent the collar from moving forwards, and this collar, instead of being fastened like that of a squirrel, or any other small animal, is only to have one end lapped over the other, to adjust it accurately to the size of the penis, and then it is to be fixed exactly in that position, by a stud received into small holes in a leathern strap.

On each side of such collar there is a ring, and just below the orifice of the catheter there is a small silver nozzle, in which the catheter is fixed, and from it, on each side, an arm, half an inch long, is extended, at the end of which there is an horizontal ring, similar in size to that on each side of the collar, applied round the body of the penis. With such an apparatus, all that is necessary to keep the catheter in the bladder, and always in the same state of protrusion from the urethra, and consequently having the same length retained in the cavity of the bladder, is to have narrow bands of kid leather passed through the holes in the muzzle of the catheter, and in the collar on the penis, and then to have them fastened together, with the necessary degree of tightness.

"Thus secured, the penis and the catheter become, as it were, parts of the same instrument. When the penis becomes extended, the catheter is carried along with it; when it subsides, the instrument is carried back; but that which is a great advantage is, the compression over so large a portion of the penis, which prevents it from varying its dimensions so much as it would otherwise do, and thereby prevents a deal of inconvenience, whenever a disposition for erection is produced, which not unfrequently takes place.

"Besides the advantages which I have mentioned to belong to Mr. Weiss' flexible gum catheter, I have now an opportunity of stating, that I have

kept them fifteen days in the bladder, and when taken out, they have not in the smallest degree suffered from the urine in the bladder, or the mucus in the urethra. The colour of the surface has been rendered dull, but the smoothness remained the same, and the curvature had been little, if at all, changed. This has never been the case with any of the other catheters I have employed, either English or French: all of them, in a shorter period, have become so rough, as to be unfit for further use."

LETTER

FROM J. HOWSHIP, ESQ., WITH AN EXTRACT FROM HIS TREATISE ON THE URINE AND URINARY ORGANS.

SIR,

THE statement in my work upon the Diseases of the Urine and Urinary Organs, to which you refer, is very much at your service, to insert in the Catalogue of your valuable inventions; and I feel pleasure in adding to what I have there said, that, whenever I have had recourse to instruments, whether elastic gum, silver, or steel, of your manufacture, they have always proved peculiarly satisfactory: and no less so, whenever I have requested any instrument to be made according to a pattern given.

This testimony I feel entirely due to you, for the uncommon care and attention you bestow upon

whatever comes from your hands, and, therefore, think you deserve every encouragement.

Remaining yours, &c.

J. HOWSHIP.

George Street, Hanover Square,
Feb. 23, 1824.

RETENTION FROM ENLARGED PROSTATE GLAND.

" In March, 1818, Mr. Heaviside was requested to visit a gentleman, aged 69, who, while under the care of Dr. Hooper for another complaint, had retention of urine. Mr. Heaviside found there was also an immense scrotal rupture on the right side, reaching down very nearly to the knees ; and examining by the rectum, ascertained a very enlarged prostate gland. The urethra, by the weight and magnitude of the hernia, was so dragged out of its proper course, that an elastic gum catheter, passed with great difficulty beyond two acute angles of the canal, was stopped by a third obstruction, which could not be overcome, apparently in the prostatal part of the urethra. Upon this account, the patient was requested to see another surgeon in consultation ; who, after Mr. Heaviside had again endeavoured, in vain, to introduce a catheter, made several unsuccessful attempts ; but at last, with a large silver catheter, forced his way, and, with extreme distress to the patient, the water was drawn off.

"Much local pain, fever, and tenderness about the lower part of the abdomen, followed the operation, for which symptoms he was, for some time, attended by Dr. Hooper. The retaining an elastic gum catheter in the bladder, and occasionally changing it, constituted nearly the whole of his surgical treatment; for although it might be supposed that his rupture ought to be supported by some sort of bandage, and attempts of this sort were repeatedly made, he could never bear them, for if the hernial tumour was raised only three inches, it invariably produced a pain in the bladder, only relieved by letting it down again.

"Feb. 1822. The general health began to decline, the appetite gave way, while nausea, and sometimes vomiting, came on. The bowels acted regularly, but medicines failed in removing the irritable state of the stomach, which, at length, rejected every thing that was taken; he now sunk more rapidly, and, on April 8, died.

"I was desired to examine the body; which, with the contained viscera, was excessively loaded with fat. The pyloric end of the stomach was drawn downward by the omentum, which descended at once by the spacious opening at the groin into the hernial sac. Into the same cavity, the whole of the colon had passed down, and was closely adherent to the parietes of the bag; the very adhesions having become as much loaded with fat, as the omentum or mesentery. The abdomen contained some,

but the sac most fluid; in the whole about twelve pints of serum. Some few adventitious bands, from effusion of lymph, were found in the lower part of the abdomen. These bands were probably the result of the peritoneal inflammation, that followed the first introduction of the catheter; and one of them, attached to the fundus of the urinary bladder, and to the intestinal canal near the rupture, explained the cause of the uneasiness felt whenever the hernia was supported.

"The urinary bladder, prostate gland, and urethra removed, the inner membrane of the urethra laid open was highly vascular and irritable. The bulbous portion of the urethra, owing to a strong preternatural band of ligamentous fibres attached to the left side of the ossa pubis, and passing thence to spread itself over the bag to assist in its support, was pulled downwards, and drawn entirely out of its natural course. Opposite the part where this band lay against the canal, the inner membrane of the urethra was upon the left side ulcerated to the extent of an inch. The appearance of the ulcer was that of a greyish-coloured, purulent, sloughy, cellular membrane, with a very vascular margin. Between this spot and the external opening, upon the right side of the urethra, was a second ulcer, less extensive, but otherwise similar to the first.

"The prostate gland was exceedingly enlarged. In the posterior part of the prostatal portion of the urethra was a ragged opening, passing through the

substance of the gland, for the extent of an inch; by this opening a large sized bougie freely entered, and as freely passed out, through a second opening, through the projecting part of the gland, into the cavity of the bladder. The mucous membrane near these openings was extremely vascular and irritable. From the great difficulty experienced, and the violence that had been employed in the first introduction of the catheter, it is pretty clear the instrument was then forced through the substance of the enlarged gland; for that operation was attended with such excruciating pain, that he roared and stamped furiously, and bled so freely by the urethra and through the catheter, that although it was presumed a quart of urine was drawn off, it was not easy to determine what proportion of it was blood.

"The ulcers in the urethra appeared to be the result of the irritation and friction incident to the frequent removal of the catheters, an operation that always excited extreme pain; and as this distress was of course regulated by the degree of change the instrument had undergone by lying in the urethra, it became a peculiar care to withdraw the catheter sufficiently early. There was considerable difficulty in determining this point correctly. The progress of this case, however, afforded Mr. Heaviside a favourable opportunity for ascertaining the comparative value of elastic gum catheters, of common, and those of superior

manufacture, applied in the same case, and under the same circumstances. The maker first employed was frequently told that the outside of the catheters became rough, and therefore productive of extreme pain in two or three days, and sometimes in less time, the smooth surface being either raised into innumerable sharp points, or into small blisters. At length, it being determined to try some other catheters, a person was recommended as an excellent Instrument-Maker, (Mr. Weiss, of the Strand,) of whom some elastic catheters were procured, and these, after the first trial, were constantly preferred. Mr. Heaviside observed, that the former catheters he had been sometimes obliged to remove within eight hours after they had been passed new, and they were even then found more rough and spoiled than those of the latter kind, after ten days' residence in the bladder; at which time withdrawn, they were sometimes perfectly unaltered, and being laid aside and allowed to dry, were again passed, and kept in twelve, or even thirteen days more. One exactly under these circumstances I examined; it was smooth and polished as if new, though on slitting it up, its cavity was covered with a coat of mucous and sabulous matter, proving its having been much used."

(Extracted from Howship's Treatise on the Diseases of the Urine and Urinary Organs, from page 322.)

I have also constructed an improved gauge for bougies and catheters, which will be found very useful for other instruments, it being graduated twenty-four degrees of size. It possesses a decided advantage over the old gauge, which only reached to twelve, and will be found particularly convenient for gentlemen resident in the country.

STONE EXTRACTOR.

The invention of the instrument for extracting calculi from the male urinary bladder without cutting, originated in a suggestion of Sir Astley Cooper. It is so constructed that the blades may be opened while in the bladder, so as to grasp and confine the stone without distending the urethra. Its utility has been proved by other gentlemen eminent in the profession, as will be seen by the letters subjoined. Mr. Brodie has likewise suggested an improvement upon this instrument, by altering the curve, and by adding a spout to it, it being his intention to draw off the water through the instrument, and thereby facilitate the entrance of the calculi between the blades of the instrument.—See plate 1.

The annexed CASE, by Sir Astley Cooper, Bart., F.R.S., is extracted from the Medico-Chirurgical Transactions, vol. XI. part ii. p. 349, and affords the most satisfactory proof of the efficiency of the Stone Extractor.

"Although the operation of Lithotomy is now performed with a degree of celerity and safety, which renders it much less appalling to the patient, and less difficult to the surgeon, than prior to the time of Cheselden; yet every candid person must admit, that if means could be suggested, by which the operation could be rendered less frequently necessary, it would be one of the greatest blessings which could be conferred upon mankind; for even when performed under the most favourable circumstances, the operation of extracting a stone is attended with severe pain, and when the calculus is large, with considerable difficulty and danger.

"It was, therefore, with a high degree of pleasure I witnessed the following case, in which numerous calculi were extracted from the bladder, by means which did not expose the patient to any loss of blood, did not produce the slightest danger, or occasion any very considerable degree of suffering.

"I am fully aware of the impossibility of extracting large urinary calculi by the means which are here recommended; yet I cannot but feel a hope that they may be removed in the early stages of

the disease by the following means, before they have acquired a bulk too large to pass by the urethra.

"In the infant also, it will be ever extremely difficult to contrive an instrument of sufficient delicacy to be introduced into the bladder through the urethra, which shall possess such a degree of strength as to enable it to grasp the stone firmly, and to extract it with safety.

"I shall now proceed to detail the circumstances of the case as they have been related by the patient himself, and will then conclude with some observations upon the means which were employed to obtain relief, and explain the particular case in which it is practicable to afford it.

CASE,

AS RELATED BY THE REV. MR. BULLEN.

"The Rev. John Bullen, of Barnwell, near Cambridge, aged 64, of a spare habit of body, and of a sanguine temperament, having enjoyed an uninterrupted state of good health, capable of partaking largely of the amusement of hunting, and living always with great moderation, was attacked, in May 1818, with the symptoms of which he gives the following account:—

"'I was suddenly seized with a frequent inclination to pass my water, and an uneasy sensation along the course of the urethra, which continued

with greater or less violence for about fortnight, when I was surprised by the appearance of a small round white stone at the orifice of the passage. The escape of this small calculus, which was attended with scarcely any pain, failed to produce any beneficial effect on my former symptoms, which continued unabated, both as to the degree of irritation, and the frequency of making water. In this state I remained till June following, during which month several similar calculi passed, to the number of about thirty, producing no other inconvenience than a slight smarting pain along the urethra. At the end of June, without any assignable cause, I was suddenly relieved from this discharge of calculous matter, and from every other symptom, but that of a frequent desire to void my urine, which latter inconvenience occasioned me no feelings of anxiety or apprehension.

" ' In the ensuing winter I was seized with pains across the back and loins, for which Mr. Brewster, of Cambridge, supposing they proceeded from gravel, ordered me medicines which he considered likely to alleviate them, but without producing any permanent good effect.

" ' I was, however, still enabled to pursue my favourite amusement of hunting, though frequently obliged to dismount to make water: at this time making no alteration from my accustomed mode of of living.

" ' Without any material change, I remained until

the December of 1819, when I found the exercise of riding was becoming considerably more painful, and the inclination to pass my water more frequent, attended with some degree of difficulty in its passage, and a change of its usual colour and clearness to a fluid resembling chocolate. For these symptoms several formulæ of medicines having been prescribed, without any material benefit, I was induced to consult Mr. Abbott, a most respectable surgeon at Cambridge, who ordered me medicines highly beneficial in their first effects; the relief, however, they afforded me, was but of short duration, for my symptoms recurred, with all their former violence; and though the prescriptions were repeatedly altered at Mr. Abbott's suggestion, no sensible impression could, by the most judicious treatment, be made on the disease.

" ' My friend Dr. Thackeray of Cambridge was, in the June following, called in consultation with Mr. Abbott; and both agreeing that the symptoms were produced by stone in the bladder, the sound was introduced to ascertain its presence, but failed to discover it. My symptoms continuing unabated, Mr. Abbott, a fortnight afterwards, still impressed with the idea of stone, again sounded me; but the stones, for the reasons hereafter given, escaped detection. To relieve my frequent inclination to make water, and to mitigate the pain I experienced in its discharge, I was recommended the use of an opiate clyster at bed-time, which afforded me con-

siderable relief; but if the injection were omitted but for a single night, the symptoms returned with all their former violence.

" ' In this state of suffering I determined to consult Mr. Astley Cooper, and, on the 17th of August, went to town for that purpose. Mr. Cooper, suspecting from my account that a stone was present in the bladder, sounded me, but after searching for some minutes, was unable to detect one; he then directed me to discharge the water from my bladder, and the sound being again introduced, was distinctly heard to strike upon a stone. He then informed me that there were no hopes of permanent relief, but from the operation of Lithotomy; at the same time remarking, that as I had not been sufficiently reduced by the irritation of the disease, to render me a favourable subject for the operation, it would be better for me to return to Cambridge, and, by pursuing a certain plan of diet and regimen, to reduce the high health which I appeared to possess. He also prescribed alkaline medicines, for the purpose of lessening irritation. With this advice I returned home, where I remained till October, 1820, pursuing the use of the soda and the opiate injection. My sufferings being alleviated only for the moment, and seeing no probability of experiencing further relief from medicine, on the 23rd of October I came to London to submit myself to the operation; and the 30th was the day proposed for its performance.

" 'On the day appointed, Mr. Cooper, his nephew Mr. B. Cooper, and Mr. Merriman, junior, attended at my house. Upon sounding me, the instrument could be heard distinctly by every person present, and even by myself, to strike against a stone. Mr. Cooper, however, was of opinion, that the stone was so small as to admit of extraction without cutting into the bladder, and therefore determined not to perform the operation, but told me that he would try less dangerous means to rid me of this complaint, and happily under these circumstances the operation was deferred.

" 'On the 3rd of November, I called at Mr. Cooper's house, when he passed a full-sized bougie into the bladder, for the purpose, as he said, of dilating the urethra, and thus giving the stone an opportunity of passing with the flow of urine. This operation was repeated on the 6th, 10th, and 13th of November; but on the 14th, an inflammation took place in the prostate gland from the introduction of the bougies, and put a stop to the prosecution of this plan of treatment. The effect of this inflammation was a retention of urine, rendering it necessary for Mr. Cooper to draw off my water every twenty-four hours, at which time the calculus could always be distinctly felt by the catheter. After the inflammation had subsided, the power of making water not having returned, Mr. Cooper passed an elastic catheter into my bladder, and directed me to wear it, teaching me at

the same time how to withdraw it when it became either painful or obstructed; and on several occasions I discovered small white stones in the opening of the instrument, similar to those which I had passed in 1818. Mr. Cooper, upon being acquainted with this circumstance, expressed a wish to remove the instrument himself, when, upon withdrawing it, a stone was seen, large enough to fill the opening in the side of the elastic catheter. The passage of these calculi suggested to Mr. Cooper the possibility of inventing an instrument by which he might remove those which remained in the bladder; and on the 23rd of November, he brought with him some instruments contrived for the purpose, one of which he directly employed, and was so fortunate in the first trial as to remove eight calculi of small size. The operation was productive of a very inconsiderable degree of pain.

" ' On the 28th, eight more were removed by the same means, of a larger size than the former, two being as big as horse-beans. This operation was attended with even less pain than the former.

" ' On the 30th, eleven were extracted, three or four being engaged each time the instrument was withdrawn. The removal of these gave me great relief, for I was immediately enabled to pass a considerable quantity of urine by my natural efforts, and previously to this, ever since the large bougie had been introduced, I had been unable to pass my water without the aid of the catheter.

" ' On the 8th of December, six stones were removed by the same means.

" ' On the 13th, nine more were taken away.

" ' On the 19th, three more were extracted.

" ' On the 23d, twelve were removed; and thus, only allowing the intermission of a day or two for the irritation to go off, the operation was continued until eighty-four calculi had been extracted from my bladder, when Mr. Cooper pronounced, after a most careful examination, they were all removed. My health has been all this time uninterruptedly good, with the exception of the attack of retention of urine from the use of the large bougie; and I am now able to discharge my urine without the use of the catheter, and to walk nearly as well as I ever did.' "

REMARKS.

" When a great number of calculi are found in the bladder, as was the case in the Rev. Mr. Bullen, the circumstance is generally attended with an enlargement of the prostate gland, and it depends upon a sacculus being formed in the bladder directly behind the enlarged gland. In these cases the bladder is rarely completely emptied of its contents, and the calculi crystallize from the urine retained in this sac.

" Such stones do not in general acquire the magnitude of those formed under the usual circum-

stances, and, from their number and collision against each other, their surfaces are generally smooth, and their shape is commonly rounded. Fifty-six such calculi were found in the bladder of Mr. Perkins the brewer, who died from retention of urine; and a hundred and forty-two I extracted from a patient of my friend Mr. Carden, surgeon at Worcester, who had for some time attended him for retention of urine.

"Persons who labour under this form of disease, sometimes pass the smaller of these calculi whilst making water; but the larger still remain, produce retention of urine, and the operation of Lithotomy has been frequently performed for them.

"When calculi are thus placed, they are so concealed in the bag in which they are contained, that, in sounding, the instrument is liable to pass over them without their being discovered, and it is therefore necessary to dip the point of the sound towards the rectum as it enters the bladder, in order to detect them, or to pass the finger into that intestine, to raise them from the bed in which they are concealed; and it is for want of attention to this circumstance that I have known a person pronounced not to have the stone, from whom I afterwards removed thirty-seven by the operation of Lithotomy.

"The instruments which I first had made for the purpose of removing these stones from Mr. Bullen, were merely common forceps, made of the size of a

sound, and similarly curved; but Mr. Weiss, Surgeons' Instrument Maker, in the Strand, shewed me a pair of bullet forceps, which he had invented some years ago for the purpose of extracting shot when deep-seated, and which he thought would, with a little alteration, better answer the purpose I had in view. He removed two of the blades of these forceps, for there were four, and gave them the form of the forceps which I had constructed: the blades of this instrument could be opened whilst in the bladder, by means of a stilette, so as to grasp and confine the stone, and they appeared so well constructed for the purpose, as to induce me to make trial of them. (See Plate VI). On the 23d of November, 1820, I first employed them, and the manner in which they were used was as follows:—Mr. Bullen was placed across his bed, with his feet resting on the floor, and a silver catheter was then introduced, and the bladder emptied of its urine. I then passed the forceps into the bladder, and was so fortunate in my first operation as to extract eight calculi.

"The instrument gave but little pain on its introduction, but when opened to its greatest extent, and the stones admitted between its blades, their removal was painful, more especially at the glands penis, which appears to be the portion of the urethra which furnishes the greatest resistance to the removal of the stones.

"A dose of opium was given after each opera-

tion, which Mr. Bullen has described; it frequently allayed all irritation; and in the intervals between the latter operations, he walked from Brompton into London; nor was he ever, after the symptoms of retention had left him, either confined to his bed or to his room."

CASE II.

BY SIR ASTLEY COOPER, BART., F. R. S. EXTRACTED FROM THE MEDICO-CHIRURGICAL TRANSACTIONS, vol. xii. p. 381.

"In a former volume of these Transactions, I had the honour of stating that an idea had occurred to my mind, that calculi might be extracted from the bladder by forceps introduced by the urethra; and that, by the ingenuity of Mr. Weiss, Surgeons' Instrument Maker, I was provided with an instrument well calculated to carry my idea into effect. From the Rev. Mr. Bullen, of Barnwell, Cambridgeshire, I extracted more than eighty calculi; but I had not flattered myself with the hope that opportunities of using this mode of relief would often occur, and I have, therefore, received great additional gratification from being able so soon to add three cases to my former account, for one of which I am indebted to my excellent and intelligent friend Mr. Brodie."

Saville Row, Nov. 10, 1822.

DEAR SIR,

I HAVE much pleasure in sending you the following history of a case, in which I was led to adopt a method of treatment which was originally proposed, and successfully practised, by yourself.

Your's truly,

B. C. BRODIE.

To Sir Astley Cooper, Bart.

"A gentleman, seventy years of age, came to London in the spring of the present year, complaining of the following symptoms. He had frequent desire to void his urine; the act of voiding it was attended with more or less difficulty, so that he sometimes required the introduction of the catheter; he had a good deal of pain during and after each attempt to make water; and, at different periods, he had passed several small oval calculi. He consulted Dr. Baillie, who referred him to me, for the purpose of having his bladder examined. On introducing a sound, some calculi were distinctly felt, previous to the instrument entering the bladder; and on examination being made from the rectum, a number of calculi were perceived in the situation of the prostate gland, apparently contained in one cyst, and sliding on each other, under the pressure of the finger. In a consultation between Dr. Baillie and myself, it was determined that I should endeavour to extract the calculi, which seemed to be of

a moderate size, in the manner which you have described in the XIth Volume of the Medico-Chirurgical Transactions. On the first introduction of a pair of forceps, made by Mr. Weiss, I removed two very small calculi only ; but, in the second attempt, I was more successful, and as many as six or seven were brought away, of a larger size. The operation was repeated about ten or twelve times, at various intervals between the middle of June and the end of July ; and, in all, about sixty calculi were extracted. These were of various sizes, a few not larger than a pin's head, a great number of the size of ordinary peas, but of an oval shape, and some of them considerably larger. The largest measured half an inch in one diameter, and five-eighths of an inch in the other, and had four sides and angles ; and it was not until after two or three trials that I succeeded in removing it. In each of the unsuccessful trials some small fragments were broken off by the instrument, and it was in consequence of its being thus diminished in size that I was at last enabled to extract it. At the end of July, the symptoms were very much relieved, and no more calculi could be discovered, either with the sound, or with the finger from the rectum. There was, however, still some degree of irritation, which led to the suspicion of some concretions being still left. Unfortunately our patient's private affairs prevented his remaining longer at this time in London, and he set off on his journey homeward.

When he had travelled about thirty miles, he was seized with some difficulty in voiding his urine, which led him to return to London, and apply to me again. I discovered a calculus lodged in the membraneous part of the urethra, which was readily extracted. It was of an oval form, about the size of a small horse-bean. On the following day he resumed his journey.

"On the 11th of August, he wrote to me from his own house, in the northern part of the kingdom, that he was again troubled with much sense of irritation, that he had a good deal of difficulty in making water, and that the urine deposited the same ropy mucus as formerly. In consequence, I recommended him to apply to an eminent surgeon at Liverpool, for the purpose of having it ascertained whether any calculi remained, and that those might be extracted in the same manner as the others. Since then, however, I have received the following communication from him, dated the 11th of October:—'Since I last wrote to you, I have passed three very large round calculi, which, for some time, tormented me much. One of them was squeezed out of the urethra by the finger, the other two were passed in the same night in making water. I have, since that time (which was nearly a month ago), been very much easier, and continue so, although I believe more calculi yet remain, which, in time, I trust, may pass off without my having again recourse to the instrument.'"

CASE III.

The following case is in part detailed from the patient's account of his symptoms, and in part from the statement of Sir Gilbert Blane, who is the patient's physician.

"Sir William B. is in his sixty-seventh year: he suffered much at times from long and severe attacks of gout, from about his thirty-fifth to his sixtieth year; since which period, the attacks have been much less frequent, much mitigated, and of short continuance. He thinks he first perceived red gravel or sand to come from him occasionally, soon after a long fit of the gout, about seven or eight years since, but did not suffer much inconvenience from it. About four years since, he passed pieces of gravel at different times, and has continued occasionally to do so ever since, sometimes larger than a pea, but generally of an oblong shape. When they occasioned any stoppage in the passage, he used a hot bath at 94°, and drank plentifully of some diluting drink, which, after a little time, succeeded. In the summer of the year 1820, having had occasion to use a great deal of walking exercise in London for three or four days, he was much surprised on passing, first, a considerable quantity of very dark stuff, nearly like coffee-grounds, and, afterwards, a considerable quantity of what appeared chiefly blood. He did not expe-

rience any pain of consequence with this, and by the following day, his urine was as clear as before. Upon going into the country, he found that if he rode fast at any time, it brought on the passing of the dark stuff, and afterwards, if persisted in, of blood. By degrees he gave up riding, and finally ceased to ride about Christmas last; and finding the same effects to arise, in a slighter degree, from walking much, he has very much given up that also for the last six months. Sir Astley Cooper and Sir Gilbert Blane attended him for these symptoms in June and July, 1821, when he left London for Ireland. Whilst there, he continued to experience the same inconvenience as before, with but little pain; and the same on his return to London. Early in June last, he called on Sir Astley Cooper, to say he was going again to Ireland, and wished to have some conversation with him, when Sir Astley Cooper advised his being sounded, which he then was, and it was ascertained that there was a stone. As it appeared to Sir Astley Cooper to be a small one, he proposed trying to extract it, and, on the fourth trial, with intervals of a week or so between them, a stone, weighing seventeen grains and a half, was extracted on the 18th of July. About three weeks after, Sir William, having some fears that there still remained some stone behind, again applied to Sir Astley Cooper, who, upon sounding, found that such was the case; and on making, at that time, at his own house, an attempt

to extract, he brought it part of the way, but found it two large to bring forward, and therefore returned it; and as soon after as the parts would permit, he commenced enlarging the passage by bougies, which he continued at intervals for nearly a fortnight, and then extracted a stone, weighing fifty-four grains, on the 28th of August, 1822."

"Sir William B. suffered pain in making water, swelling of the corpus spongiosum at the scrotum, with considerable urethral discharge, until September 23d, when the symptoms subsided under the application of fomentations and poultices.

"When the size of the stone is observed, it will not excite surprise that I had considerable difficulty in extracting the larger, which weighed fifty-four grains, and which I have sent for the Society's inspection. It was in that part of the urethra near the glans that the chief impediment was found; and if I had thought it proper to do so, I could have easily removed it from thence by incision; but I preferred completing the extraction without occasioning a wound; yet I am now disposed to believe, that, in a stone of equal magnitude, it would be better to make a small incision into the urethra anteriorly to the scrotum, than employ force for the extraction of the stone through this narrower part of the urethra. A. C."

"*Sackville Street*, 11*th December*, 1822.

"DEAR SIR,

"In compliance with the wish which you expressed that I would state what I knew concerning the case of Sir William B., the interesting subject from whom Sir Astley Cooper had extracted, by the urethra, the largest calculus which had ever been removed from the bladder in that manner, I have consulted my notes concerning it. I find that I have, at various times, attended that gentleman for more than twenty years. He states himself, from memory, that he had been subject to gravel for seven years, which accords with my notes, the first appearance of the complaint having been in July, 1815. He found speedy and effectual relief from a short course, consisting of two scruples of subcarbonate of potash twice a day, half neutralized with lemon-juice, and combined with hemlock and extract of poppy.* He had returns of it in the three following years, all of which were removed by the like means, except that in one of the attacks, magnesia was substituted for the potash. After this, he remained nearly free from the complaint for two years, but it returned in the month

* See this method of cure fully detailed by Sir Gilbert Blane, in an article in the third volume of Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, 1812. Also in an article in Select Dissertations by the same author, London, 1822.

of May, 1820. The same remedies were had recourse to, but without the same success ; for after several weeks' trial, the symptoms were rather aggravated. I then found that I had not been sufficient vigilant in examining the colour of the sand ; for though it was red at its re-appearance on this occasion, as it had been on all the former occasions, I now found, on inspection, that it consisted of sand of white colour. This accounted for the want of success from the alkaline medicines ; and immediately the muriatic acid was ordered, in the dose of seven minims, combined with seven minims of vinum opii, duly diluted, three times a day. Sensible relief was experienced in the course of nine days, and, in fourteen days, he was free from complaint. In the course of the following year, in place of sand, small *calculi* were passed, after pretty severe pains in the region of the kidneys. These calculi were red internally, and white on their external parts. But having passed great part of his time in Ireland in the course of this year, the history of the treatment is not well ascertained ; but the history of the symptoms is very distinctly related by himself, till the period of the operations detailed by Sir Astley Cooper.

"The history of this case, will, at first sight, suggest doubts unfavourable to the character of the remedies that have been employed in the treatment ; for it cannot be denied that, in spite of

them, concretions had formed, of such formidable magnitude, that had it not been for the new method so happily conceived and so skilfully executed by Sir Astley Cooper, the patient would have been subjected either to the sad sufferings of the stone, or to the pain and danger of lithotomy. But in answer, let it be remarked, first, that the relief from the remedies was so speedy and so frequent that no doubt can be entertained of their efficacy; and if the prosecution and seasonable repetition of them had not been interrupted by his frequent and long residences in Ireland and on the continent, there is good reason to believe that the cure would have been, not temporary, but permanent and radical, as I have observed it to be in similar cases which had been perseveringly treated in this manner. Secondly, much suffering was prevented by the imperfect use of these remedies ; for upon questioning him, he says, that he never had any real pain in the bladder ; but only an uneasiness, and that the only suffering deserving the name of pain was in the kidneys, and, on one occasion, in the urethra, from the passing of a stone, the only one that had a rough surface. It is no small recommendation of these remedies, that by preventing additional accretions, the stone becomes smooth, and gives little or no pain, as was eminently exemplified in the case of Lord Walpole, related by Dr. Whytt, about seventy years ago, when the caustic alkalies,

soap and lime water, were first introduced. In this case the freedom from pain was such for several years before death, that the stone was supposed to have been dissolved; but a pretty large one, with a smooth surface, was found after death.

"Though there may be occasional failures, therefore, in the full effect of these remedies, such as are incident to all remedies, let us not undervalue the new resources which have recently been devised by chemistry and surgical skill, for the relief of one of the most painful, and, hitherto, untractable maladies incident to humanity. Mankind is deeply indebted to Dr. Wollaston, for the clear light in which he has placed the diversity in the composition of urinary concretions, upon which is founded a corresponding diversity and even contrast in the quality of the remedies. Nor does the world owe less to Sir Astley Cooper, for this new method of extracting *calculi* of such size by the urethra, by which, in innumerable instances hereafter, the most severe suffering and dangers may be averted: and this method has this advantage over internal remedies, that it is applicable to *calculi* of every composition, whereas there are certain species of them, such as those composed of oxalite of lime, upon which neither alkaline nor acid medicines produce any effect.

"A question arises on a collateral circumstance in the history of this case; namely, whether or not

the great and long-continued alleviation of the gouty complaints may be attributed to the use of the alkaline remedies ?

I am, dear Sir,
with great regard,
Your most faithful and obedient servant,
GILBERT BLANE.

To Dr Cooke,
President of the Medico-Chirurgical Society."

CASE IV.

" Mr. William King, aged sixty-six, mariner, residing at Rochester, was sent to me by Mr. Newsom, surgeon, of Rochester, on account of his having symptoms of the stone.

" He came to London on the 29th of October, 1822, and on the 30th he visited me. I sounded him, and found that he had, as Mr. Newsom supposed, calculi in the bladder. I passed the urethral forceps into the bladder, and, in a few minutes, extracted four calculi ; and although I could still perceive that some remained in the bladder, I did not choose to risk the production of any considerable degree of irritation, but advised him to come on November 1, to have the operation repeated.

" On the 1st of November, I extracted three calculi ; on the 4th, five more ; on the 7th, twelve calculi ; on the 11th, two ; and on the 13th, three

more. I then examined the bladder with care, but could not perceive any more stones ; and even before the removal of the last, he had experienced considerable diminution of the pain in making water and difficulty in passing it.

"It is delightful to hear the expressions of gratitude which this patient pours forth for the relief which he has experienced from these operations, under which he has suffered but a slight degree of pain, and has never, for a moment, been confined from whatever exercise he was disposed to take.

"Some years ago he passed red sand (uric acid), but for several months before he had symptoms of the stone, he has not perceived any."

"From Mr. Brodie's patient two other calculi have been since extracted by the same means : and I have lately removed from a young person, a patient of Mr. Rutherford in Ratcliffe-highway, of the name of Errington, a calculus of moderate size, and enabled two others to pass by withdrawing the instrument in its dilated state, and thus extended the urethra in such a degree, that the stones passed, in the afternoon of the same day, in a copious discharge of the urine.

"I have heard that it has been stated that there was no novelty either in this idea or in the instru-

ment. To this I have only to observe, that if the idea had previously occurred to any individual, he had so far buried it in his bosom, that I had never heard of it; and as to the instrument, I am quite sure that Mr. Weiss consulted no musty volume for its formation, for so soon as I mentioned my wish that he should construct a pair of forceps by dividing a sound in its middle, and giving it a joint two inches from its end, he, without quitting me, observed, that he should make them to open in the mode which the plate in the former volume represents. Mr. Weiss has a strong and ingenious mind, and does not use petty artifices to obtain employment or character. But let us for a moment suppose (what I do not believe), that the idea had occurred to others, and the instrument had been made centuries ago, what are we to say of the apathy of those bright ornaments of their profession, Cheselden, Pott, Hunter, Cline, Home, Blizard, &c., who, if they had heard of such an instrument, had never employed it? A. C."

CASE V.

7, *Spring Gardens*, 8*th August*, 1823.

DEAR SIR,

I HAVE had occasion, within the last six weeks, to use, with success, your instrument for extracting small calculi from the bladder.

A young man complained to me of slight symptoms of stone, which led me attentively to examine him with a sound; when I discovered what I considered a small calculus, and upon which we could distinctly hear the instrument strike.

I introduced your instrument and extracted a calculus about twelve grains weight, which I have sent to Sir Astley Cooper.—The patient is now quite well, every symptom having disappeared with its extraction.

It is my opinion that, if surgeons were to attend to the early symptoms of calculus more than they do, and have recourse to this instrument before the stone has attained any magnitude, the operation with the gorget or knife would much seldomer be found necessary. I think the profession and the public are deeply indebted to Sir Astley Cooper and you for so valuable an instrument.

I am,

Sir,

Your most obedient Servant,

A. COPLAND HUTCHINSON.

To Mr. Weiss.

CASE VI.

Dr. Vance, the surgeon of Greenwich Hospital, introduced the forceps and extracted part of a broken stone in the first effort. In the next attempt several small pieces were removed.

The patient, a very old man, was suffering under another disease, of which he died; and many small stones were found in the deceased's bladder, that had been long incapable of retaining more than an ounce or two of urine. He thinks, under circumstances of better health, that the instrument might have enabled him to extract all the calculi.

CASE VII.

24, *George Street, Feb.* 15, 1823.

SIR,

I THANK you for having so promptly acted upon my suggestion, and executed an instrument so powerful in the spring, and at the same time expanding the sides so readily by means of the screw, for breaking stones in the bladder. When I have used the instrument I will let you have my opinion of it.

I take this opportunity of informing you, that I have succeeded in removing fourteen stones from the bladder, about the size of horse beans, with your other instrument, and I enclose the stones for your inspection.

I am, Sir,
Your obedient Servant,
THOMAS DAVIS.

To Mr. Weiss, Surgeons' Instrument Maker.

CASE VIII.

28, *Margaret Street, Cavendish Square.*

SIR,

A GENTLEMAN, upwards of sixty years of age, labouring under great pain and difficulty in voiding urine (which, indeed, was constantly dribbling from him), applied to me for advice, informing me at the same time, that he had passed several small stones, which, from his description, were evidently lodged in the prostate gland. I at once had recourse to your instrument, and have much satisfaction in being able to state, that I removed with great facility, at three several applications, at the interval of a day between each, twenty stones, varying in size from a large pea downwards.

My patient experienced complete relief, as he was enabled to retain and void his urine with ease.

THOMAS HARDING, *Surgeon.*

To Mr. Weiss.

CASE IX.

18, *St. Helen's Place, January* 27.

DEAR SIR,

YOUR Forceps have performed excellently. I have extracted a calculus from the bladder, measuring in its narrowest diameter five-eighths of an inch.

There is a screw lost by accident; will you repair it, and return the instrument as soon as you can.

Your's truly,

C. ASTON KEY.

SIR,

I RECEIVED a few days since a catalogue of Chirurgical Instruments from you, of your invention, and with your improvements. I beg to thank you, and to assure you I highly esteem your talents and attainments, and regard your persevering endeavours to thereby lessen the various afflictions to which we are liable, as deserving praise and encouragement from the Profession and the Public. Many instances of your attentions have occurred to my own observation, and benefits to sufferers have followed as the results. May you long continue your laudable exertions on so useful occasions, and may your merit be ultimately properly appreciated!

I am, Sir,

Your obedient Servant,

J. HEAVISIDE.

George Street, Hanover Square,
Tuesday, 24th Feb. 1824.

Greenwich Hospital, 14th March, 1824.

SIR,

It is admitted by all who exercise the profession of surgery, that the possession of proper instruments is a valuable acquisition, and however competent a surgeon may be to give directions for the construction of instruments for particular purposes, a great deal must depend on the genius and ability of the maker. I have had the satisfaction of observing, that you not only evince great facility in executing the designs of others, but that the profession is much indebted to you for many inventions, which are calculated to lessen human affliction.

As the Instrument Maker to Greenwich Hospital, your zeal, attention, and ability, entitle you to high commendation; and as I am preparing to leave the institution, I have much pleasure in offering you this testimonial, with an assurance that I shall endeavour to give my successor a proper impression of your merits.

I am, Sir,
Your most obedient Servant,

GEORGE VANCE,
Surgeon of the Hospital.

Mr. J. Weiss, 62, Strand, London.

FEMALE DILATOR.

The Dilator for the Female Urethra was suggested to me by Sir Astley Cooper, who has published some interesting cases in which it has been successfully employed. I may also be permitted to express the satisfaction I feel in finding that this instrument has proved successful in the hands of many other professional gentlemen.

This instrument has entirely superseded the use of sponge tent and other tedious and often ineffectual methods of dilating the Female Urethra, and renders the operation of lithotomy performed on females of very rare occurrence.

The operation for extracting calculi from the bladder differs in the cases of the male and female: in the former, the extractor is passed into the bladder and the stone withdrawn, with scarcely any previous dilatation of the urethra; in the latter, the urethra is first dilated sufficiently to admit of the introduction of a pair of forceps between the blades, for the purpose of extracting the stone, which is rarely, if ever, so large that it cannot be withdrawn. The most improved instrument for this purpose, that with three blades, was made at the suggestion of Mr. Chandler of the Kent and Canterbury Hospital. The following cases testify the utility and efficacy of this instrument:—

CASE I.

BY SIR ASTLEY COOPER, BART., F.R.S., EXTRACTED FROM THE MEDICO-CHIRURGICAL TRANSACTIONS. VOL. XII. PART 1, PAGE 235.

"The dilatability of the female urethra, or meatus urinarius, is established by papers in the volumes of the Society's Transactions, by Mr. Thomas, Mr. Travers, and by myself; and it only remains that it should be considered, if better means cannot be devised to produce its dilatation than the introduction of sponge tent into the urethra, which is liable to the serious objection of its requiring to be borne for several hours, and during that time exposes the patient to the pain and inconvenience of retention of urine. I therefore resolved, on the first opportunity, to employ an instrument, constructed upon the principle of the speculum ani and speculum oris, to enlarge the passage to the bladder; and which would have the advantage of permitting the escape of the urine, whilst it dilated the urinary canal sufficiently to allow of the admission of forceps into the bladder, to extract a stone of considerable dimensions.

"An opportunity was soon afforded me by the kindness of Dr. Nuttall and Mr. M'Nab, who requested me to visit a patient of theirs, suffering under the symptoms of calculus.

"Mrs. M'C——. I accompanied Dr. Nuttall and Mr. M'Nab, to visit this lady, who had been for six months labouring under extreme irritability of her bladder, and such pain and interruption in passing the urine, as to lead those gentlemen to believe she had a stone in her bladder. Upon passing the sound, I immediately discovered a stone, which Dr. Nuttall and Mr. M'Nab could distinctly hear. I informed the patient of the nature of her disorder, but assured her I could remove the stone without the use of any cutting instrument; and she had no difficulty in submitting to its extraction. In my return home I called upon Mr. Weiss, in the Strand, and requested him to make me a speculum to dilate the meatus, and he, with his accustomed ingenuity, immediately suggested an instrument infinitely better devised than any I could have contrived for the purpose.

"On the 7th of January, 1822, the above medical gentlemen accompanied me to the house of our patient, and at eight o'clock in the morning I introduced the dilator. At four o'clock in the afternoon of the same day I removed the instrument, and readily introduced my finger into the bladder by the meatus, which was sufficiently dilated for that purpose, and directly felt the stone. I then passed a pair of forceps into the bladder, and immediately grasped the stone with them, and extracted it. The stone was soft, and its outer shell separated from its interior; I therefore passed a

pair of flat forceps into the bladder, and removed the larger fragments of calculus; but for several days some small portions passed away with the urine.

"During the removal of the stone she was resting across the bed, unconfined by bandages.

"For a few days after the operation she had a severe attack of irritative fever, which required Dr. Nuttall's attention, and she was obliged to lose blood, and to have the abdomen fomented; but I had the pleasure of seeing her gradually restored to health, having never lost the power of retaining her urine; and young as she was, and but recently married, a constant distillation of urine from the bladder would have been an evil greater than death itself.

"From the facility with which the meatus yielded to the dilator, in the foregoing case, it seemed that no absolute necessity existed for the lapse of several hours before the instrument was withdrawn, and the attempts at extraction made; and I therefore determined, in a future case, to dilate the meatus for a few minutes only, and then to extract any extraneous body which the bladder might contain.

CASE II.

"On Monday, the 24th of March, I was requested by Mr. Ilott, of Bromley, in Kent, to visit a patient

of his, residing in West Square, St. George's Fields, who had been occasionally subject to a retention of urine, for which she had been under the necessity of employing the catheter, the introduction of which she was enabled to accomplish for herself; but the last time she introduced it the catheter broke, and a part of it remained in the bladder. Excessively alarmed at the circumstance, feeling much pain in making water, and great uneasiness at the extremity of the meatus in walking, or in exercise in a carriage, she mentioned the case to Mr. Ilott, who advised her to submit to the extraction of the broken instrument. In the presence of Mr. Ilott, I performed the following operation :—

"The patient was placed across the middle of a bed, with her head raised upon a pillow, her knees were separated and bent back to her chest, in which position they were held by a nurse, without the aid of bandages, or necessity for other means of confinement.

"I then passed the dilator into the meatus urinarius, and turning its screw, I readily dilated the passage to admit my finger. The dilator was retained for two minutes only, when I passed a pair of forceps between its blades into the bladder, whilst Mr. Ilott withdrew the dilator.

"The catheter not being immediately felt with the forceps, I removed it and passed in my finger, when I felt the broken catheter upon the portion of the

bladder above the rectum, and having raised it from thence into the axis of the bladder and meatus, I again passed the forceps, and readily extracted it.

"This lady suffered very little during the operation; it was very quickly accomplished. Her urine passed involuntarily until her next menstrual period, when she recovered the natural power of retention.

REMARKS.

"The advantages derived from this mode of operating, in comparison with that by the knife or gorget, consist,—

"*First*, In the facility with which it is executed. A knowledge of anatomy beyond that which every surgeon possesses who has been educated within the last twenty years, in this metropolis, is not required for it. Indeed, I believe that any surgeon, who practices as an accoucheur, would not hesitate to perform it.

"*Secondly*, It is attended with but little danger, unless the dilatation be violently made, and the instrument be left in the meatus for a length of time; then contusion and irritation might be produced by it, which, in an irritable person, would lead to fever; and, perhaps, inflammation of the bladder.

"*Thirdly*, It may be accomplished with very little pain, and in a short time; but still, further experience will be required to determine if it be best to dilate the meatus in a few minutes, or hours, or in several days, by more gradual dilatation. I feel disposed to believe, that if the stone be small, the dilatation should be accomplished in a few minutes; but if it be large, it will be better to dilate but little, from day to day, until the greatest degree of extention is accomplished; carefully avoiding contusion, which is much to be dreaded.

"*Fourthly*, But its greatest advantage is in the preservation of the powers of retention of urine; since if the operation destroys this power, as that by incision does, I can scarcely acknowledge it to be of value; for although it is the means of removing the pain produced by the stone, it exposes the patient to great suffering from excoriation, and with every attention to cleanliness, the constant distillation of urine renders the patient offensive to all around her.

ASTLEY COOPER."

CASE III.

22, *Lincoln's-Inn Fields, May* 16*th*, 1823.

SIR,

I HAVE great pleasure in offering my testimony to the utility of your instrument for dilating the female urethra, and I shall be happy if the follow-

ing case should contribute to recommend it to the notice of surgeons.

Mary Wallace, thirty-one years of age, of a delicate frame and irritable constitution, was admitted into St. Thomas's Hospital on the 24th of last October, with well marked symptoms of stone in the bladder. The presence of the calculus was ascertained by sounding; but the operation was deferred, in consequence of her being out of health, until the 22d of November. On that day I introduced the dilator, and separated the blades until the patient complained of pain; and then, waiting till the uneasiness had subsided, I again increased the expansion of the instrument by means of the screw, till pain was reproduced. In the course of a few minutes, the painful sense of stretching and distention was relieved, and I proceeded with the dilatation. In this manner, regulated by the feelings of my patient, I continued gradually and cautiously to enlarge the meatus during two hours and a half. I was then enabled to introduce, with ease, my fore finger into the bladder; and finding that the calculus was in a favourable position, I introduced a pair of straight forceps, without waiting for further dilatation, and readily seized the stone in its long axis. I proceeded immediately to the extraction, but, from the size of the calculus, I was unable to bring it readily through the meatus, and during this attempt she complained of much greater pain than at any time during the dilatation. As I held

the stone in the most favourable position, I was however unwilling to quit my hold, and with moderate force (at least with no more than is ordinarily required, and in no longer time than is frequently necessary in extracting a large sized stone in the operation of lithotomy) I succeeded in extricating the calculus. It proved to be of considerable size, as the subjoined admeasurement will fully show.

She seemed much exhausted by the operation; and this was followed during the first few days by considerable constitutional irritation, and by symptoms indicating abdominal inflammation. Under the prompt and active measures, however, which were taken, she was gradually restored to health. It is particularly worthy of notice that she passed her urine freely during the whole time; and that she was able in the course of twelve hours after the operation, to hold her urine more or less perfectly, and to discharge it voluntarily; and that the dilatation of the meatus left ultimately no weakness or loss of power in retaining her urine.

The above case is, I think, a gratifying proof of the facility with which even a large calculus may be extracted by the aid of the dilator. The operation might have been effected with less inconvenience had the dilatation been carried on somewhat longer: and I do not doubt that the enlargement of the meatus might be accomplished in much less time without any difference in the result. The subsequent inflammatory affection, and accompa-

nying constitutional irritation, I should be disposed to attribute much more to a peculiarity in the constitution of the female than to any circumstances necessarily connected with the operation. The result of this case, as that of others, evinces, in the circumstance that the patient was relieved without producing incontinence of urine, a decided superiority to the use of the knife, as it regards this essential point.

I am, Sir,

Your obedient Servant,

JOSEPH HENRY GREEN.

Mr. Weiss, Surgeons' Instrument Maker, Strand.

CASE IV.

16, *Saville Row, May* 21, 1823.

SIR,

I EXTRACTED the calculus which I shewed you lately, from a female patient in St. George's Hospital, by the process of dilating the urethra. I employed for this purpose the instrument which you invented, and which has been used and recommended by Sir Astley Cooper. The dilatation was effected very readily, but gradually, in the space of twenty-four hours. The patient suffered

little inconvenience afterwards, except from incontinence of urine, which, however, ceased to trouble her in less than a fortnight from the time of the operation.

I am, Sir, your obedient Servant,

B. C. BRODIE.

Mr. Weiss, 62, Strand.

CASE V.

Dundee, 16th March, 1824.

SIR,

In November 1823, I succeeded, in presence of Mr. Crichton and Dr. Nemmo, of this town, in extracting a calculus from the bladder of a female, between sixty and seventy years of age, by means of your forceps, after having dilated the urethra to a considerable extent, for twenty minutes prior to the operation, with your dilator; for the invention of which, I think, you deserve great credit.

For some weeks before, I had tried ineffectually the sponge-tents, and afterwards a dilator, used for extracting bullets in gun-shot wounds.

The stone measures 2 inches in length.
Do. do. 1⅛ inches in breadth.
Do. do. 1 inch in thickness.
Weight 9½ drachms troy.

Being, I believe, the largest that has been taken from the bladder without the knife.

The lady had an excellent recovery without any untoward accident, and is, at this moment, in perfect health.

So much for your satisfaction,

ALEX. RAMSAY, M.D.

CASE VI.

Canterbury, Oct. 4, 1824.

SIR,

I HAVE to thank you for the promptitude with which you sent the instruments I requested the other day, to remove a calculus from the bladder of a female. I have to-day succeeded in extracting from an elderly lady a stone of an oval shape, measuring one inch and three-eighths in length, one inch in width, and three-fourths of an inch in depth. From the narrowness of the bones forming the arch of the pubis, I was unable to extract the stone without its breaking into fragments; and the impediment to the removal was of course increased, not only from the width of the stone, but from the additional size given to it by the application of the blades of the common stone forceps. The latitude, however, afforded to the urethra, by the use of your dilator, enabled me to extract separatim the different portions of stone with tolerable facility. I take the liberty to offer one remark that suggested itself during the operation,

which, if it were practicable to accomplish, might in the event of the stone being large, render the removal of it less difficult to the operator, less distressing to the patient to endure, whilst it would diminish the chance of breaking the stone, an occurrence at all times to be avoided if possible. With the present instrument, lateral extension alone can be given to the urethra; and that is a direction, if you consider the anatomical construction of the parts, which affords the least space for the transmission of the stone; the capacity that is thus apparently given to the urethra is rather imposing than a matter of fact, for by this direction you are curtailed by the arch of the pubis, from any considerable distention; the inferior part of the passage is drawn towards the symphysis pubis, for a time altering the natural positon of that canal, without allowing of the extent of dilatation which might be obtained, if the female urethra were stretched downwards towards the vagina and rectum by a third blade being made to your dilator, simultaneously acting with the present lateral movement. Thus you would gain a circular and much greater extent in the enlargement of the passage, affording the conveniences and immunities to which I have alluded, and being of the first importance towards the attainment of complete success in the operation. The size of the stone, of course, precluded the use of your improved forceps; but that must be of infinite service, when it can

be made to embrace the calculus. Mr. Culling, the Secretary, will early have the pleasure to remunerate you for your attention. Wishing you every success and prosperity, permit me to assure you,

I am, your most obedient,
Obliged, faithful Servant,
W. CHANDLER.

Surgeon to the Kent and Canterbury Hospital.

CASE VII.

BY DR. MARSHALL, EXTRACTED FROM THE GLASGOW MEDICAL JOURNAL, VOL. II. P. 396.

Glasgow, 10*th March*, 1828.

"MARY M'DOUGAL, 18 years of age, had laboured under symptoms of stone for five or six years, but never would submit to have herself examined. Her sufferings for the last two years had reduced her to a mere skeleton; she could neither stretch herself in bed, or stand upon her feet, but was obliged to be supported in bed, in a sitting position, with her knees drawn up to her chin; this position she was obliged to keep night and day, at the same time her urine flowing from the bladder as it was secreted. To soothe the constant and severe irritation, she had recourse to laudanum, of which she took frequent and large doses; and by the time she

had made up her mind to submit to the operation, nothing could perhaps equal the miserable situation of this poor girl. The operation was performed by Weiss' Dilating Instrument, and fifteen minutes were required to dilate the urethra, so as to allow the extraction of a stone weighing three ounces and three drachms. She complained a good deal of the operation, as it required considerable force to extract so large a stone by the urethra, and more especially as all the parts were preternaturally small. After the operation she had a draught, and was put to bed. At the end of three weeks she was able to sit up and walk about the house, and could retain her urine for nearly the usual time.

"The extraction of so large a stone from the female bladder, demonstrates very satisfactorily the great superiority of the dilating method of operating, over that of laying open the female urethra by the knife. All the patients who have been operated on by Weiss' Dilating Instrument in this part of the country, have been able to retain their urine in a comparatively short time after the operation; whereas, many of those who have been operated upon by the method of laying open the urethra and neck of the bladder, have been left with incontinence of urine for life."

CASE VIII.

BY MR. JAMES WILSON, EXTRACTED FROM THE GLASGOW MEDICAL JOURNAL, VOL. II. P. 397.

"Mrs. A., æt. 68, had been subject to calculous complaints for 20 years, and had passed many small stones; for several months she had voided none, and her sufferings were become greatly aggravated. On introducing a sound, a large stone was easily felt. I was induced, in this case, to try lithotrity; 1st, on account of the very favourable reports given of that operation; and, 2dly, because the stone in this case appearing to be very large, it was probable that by breaking it down, the fragments might be easily removed by dilatation of the urethra. I was aware that in two cases in which dilatation of the urethra had been tried here, the stones, from their very large size, required a great deal of force for their removal; this, doubtless, was the cause of incontinence of urine, which continued in both cases for a considerable time.

"On the 8th of August, after filling the bladder with warm water, Civiale's instrument, *a trois branches*, made by Weiss, was easily introduced, and placed in contact with the stone. It was found, however, that the bladder could not be kept distended, the injected fluid escaping by the sides, and also through the centre of the instrument, which I have no doubt added both to the difficulty and

danger of the operation. Some of the lithotrity instruments are so constructed, that without their removal, the bladder may be distended by injection. The want of such an apparatus in the instrument which I employed, was found to be a serious defect. Many unsuccessful attempts were made to grasp the stone, and there was good reason to think, that when the bladder became empty on the escape of the fluid, and contracted round the stone, its coats became entangled in the claws of the instrument. Much irritation was occasioned, and a considerable discharge of blood took place. At length, by raising the patient, who till now lay in a horizontal position, to a semi-sitting posture, the stone was partially seized, and drilled to the extent of a quarter of an inch. It then became necessary to change the position of the stone, in order to present a new surface for trituration, but it could not again be laid hold of, and the instrument was withdrawn, after continuing the attempts for at least three-quarters of an hour. The patient was a good deal exhausted. Sixty drops of tinct. opii were given, and strict antiphlogistic treatment enjoined. No feverishness followed, and the pain, though severe, was certainly less than might have been expected from the irritation produced by this operation. Some days afterwards, the paroxysms of pain occasioned by the stone became very frequent, and so severe, that on the 18th, ten days after the attempt at lithotrity, it was deemed necessary to do

something for the removal of the calculus. From the total failure of the former operation, it would have been wrong to have subjected the patient to a repetition of the same risk, without the probability of removing the stone, which there was no reason to calculate upon, in a second trial. The plan, therefore, of dilating the urethra was adopted, and performed with Weiss's Dilator with the most perfect success. The dilatation to the extent of an inch and half was completed without much pain in ten minutes; a pair of strong forceps were introduced, and the stone soon laid hold of. It appeared to be very large, and I found a good deal of resistance was to be offered to the extraction. The forceps was then very firmly grasped, in order that the hold might not be lost, when fortunately the stone gave way, and was reduced to many fragments, which were easily removed by the forceps, scoop, and repeated injections. A dose of tinct. opii was again given. No bad symptom followed, and far less pain was experienced, both during and after this operation, than the former. On the second day, the patient was able to retain her urine, and to void it with ease in ordinary quantity, which she has continued to do ever since.

"It would, perhaps, be unfair to draw any conclusion unfavourable to lithotrity, from a single, probably imperfect, and unsuccessful trial, at least on comparing it with lithotomy, which is always a hazardous operation; but in this instance it is per-

fectly legitimate to compare it with the operation of removing the stone by dilating the female urethra. A better opportunity could not have been found for forming a comparative estimate of the respective value of these different operations, and of shewing the decided superiority of the latter over the former. Both operations were first attempts by the same operator, and therefore may be supposed equally unskilful, and both were performed on the same individual with a very short interval of time between them. If there was any difference, that difference was in favour of lithotrity, for at the commencement of dilatation the bladder was in a much more irritable state, than at the commencement of the former operation.

"Since the above, I have seen the operation of dilating the urethra performed by Dr. M'Farlane, on a girl three years and four months old. The dilatation to the extent of an inch was effected by the same dilator in ten minutes, and a stone, the size of a pigeon's egg, extracted without difficulty. This girl was able to run about next day. Some incontinence of urine continued for a week or two, which has now gone off, and she is quite well.

"*Miller-street, 9th October*, 1829."

DILATORS FOR STRICTURE, &c.

The utility of a Dilator for Stricture in the urethra, suggested itself to me soon after the completion of the Stone Extractor, in consequence of an attempt being made to dilate a stricture by means of a small bladder fixed to a tube which was inflated after its introduction into the urethra. This method being found inefficient to dilate the stricture, I invented this instrument, which has given very general satisfaction, and has been used successfully by Mr. Guthrie and several other gentlemen.

Mr. Fletcher of Gloucester, having suggested to me what kind of instrument would be safe for dilating the obstructed œsophagus, I have, with his assistance and direction, executed one, which is somewhat like the Urethra Dilator and upon the same principle, but Mr. Fletcher's book will explain its use.

The Dilator for Phymosis is upon the same plan as that for the urethra, and is much approved of and recommended by Mr. Brodie.

SPECULUM ANI.

The first idea of this Instrument was suggested to me by Mr. Copland Hutchinson, for whom, and under whose directions, I made the first, which con-

sisted only of a pair of forceps bent at right angles ; but considering the instrument to be susceptible of still further improvement, I made the attempt, in which, after some difficulty, I succeeded in contriving the Instrument described in plate 6.

SPECULUM VAGINÆ.

This is an improvement upon the last-mentioned instrument, by the addition of a blade which causes it to dilate more readily. Mr. Sleigh, who has used it, gives it his most unqualified praise, in a letter which I subjoin, accompanied with a testimonial of its superiority over the old speculum.

London, September 23, 1823,
23, *Chapel Street, Grosvenor Square.*

SIR,

I take the earliest opportunity of stating, that the instrument you have invented for dilating the sphincter ani muscle, perfectly accords with my wishes, and will be found, I am persuaded, to answer the purpose remarkably well. It is to be regretted that I did not see it previous to my work, on the posterior method of performing Lithotomy, having gone to the press ; for in it I have described the speculum ani I devised, which I now most cheerfully acknowledge is far inferior to your's ; however, even with this, I repeatedly succeeded in dilating the anus, so as to admit three fingers,

without producing any peculiar uneasiness to my patient, or any subsequent loss of the tone in muscular fibres. I shall get a plate of your speculum annexed to my publication.

I am, Sir, your most obedient,

W. W. SLEIGH.

To Mr. Weiss, 62, Strand, London.

The new SPECULUM VAGINÆ AUT ANI, possesses a superiority over the old one in many particulars, both as a piece of mechanism, and as conferring practical advantages in its application to surgical purposes.

First.—The size of its blades, when shut, is at least two-thirds smaller than the circumference of the common speculum, and on this account can be introduced with more facility and less pain.

Secondly.—By its power of opening, the blades can be expanded to a great extent; whilst the old speculum always remains of the same calibre from not possessing that power.

Thirdly.—When the blades are opened, they leave a large portion of the circumference of the rectum or vagina exposed to observation, whilst the old speculum, from not opening, covers the whole, and only enables the surgeon to view the parts beyond the extremity of the instrument which the new speculum equally does.

Fourthly.—By turning the blades of the new speculum round, after they are introduced and

opened, the surgeon is enabled to examine the whole circle of the rectum; an advantage the old speculum does not confer, as it does not open and uncover any part of it.

Fifthly.—When the new speculum is introduced and expanded, it supports itself in the situation in which it is fixed, and renders the assistance of a second surgeon to hold it quite unnecessary, which the old speculum requires; and as operations about the rectum, &c. are more frequent in females than males, this instrument enables the surgeon to spare their delicate feelings.

Sixthly.—If the new speculum can be introduced beyond any stricture of the rectum, its power of opening will enable it to act as a very effective dilator of the strictured part, and may supersede the employment of the bougies in ordinary use.—These appear to be the advantages resulting from its superiority over the old speculum as a piece of mechanism.

Its applicability to some surgical purposes, also demonstrates its superiority.

First.—In case of tumours in the rectum, the vagina or the os uteri, the expansion of the new speculum will enable the surgeon to examine the pedicle or base more accurately, and to pass the ligature around it more easily.

Secondly.—In fistula in ano, the surgeon will be able to examine the course of the fistula more correctly, and perhaps to ascertain if the fistula open into the rectum, when this instrument has

fully dilated it: he will also be able to introduce his finger more easily, and with more protection from the bistoury; whilst if he should divide an artery that requires to be secured, he may probably be enabled to see it, and to secure it by a ligature, which he could not do with the old speculum; and in case he finds it impracticable to apply a ligature, he would be enabled to apply the next best remedies, pressure and a styptic, by placing the styptic on the extremity of the bleeding vessel, and expanding the blade of the speculum placed upon it, by means of the screw.

Thirdly.—In cases of internal hæmorrhoids, in which it is necessary to exscind a proportion of the relaxed membrane of the rectum, this instrument enables its state to be examined in situ, previously to operation, and applications to be made to it afterwards, if necessary.

Fourthly.—In cases of that troublesome and painful ulceration about the sphincter ani, called "a crack," which is formed between two of the plicæ ani, this instrument enables applications to be made, by which it will be probably healed without having recourse to the usual operation of excision.

Fifthly.—In cases of tumours situated as above mentioned, this instrument will enable the surgeon to ascertain their nature, and apply appropriate remedies; and in cases of internal abscess in those parts, to open the tumour more conveniently.

Norwich, Oct. 28th, 1824.

SIR,

I HAVE lately had two opportunities of using your "Speculum Ani," in cases in which it was desirable to obtain as fair and full a view as possible of the mucous surface of the intestinum rectum.

In both instances this object was perfectly secured by the agency of your ingenious contrivances; and although I am in principle but little disposed to encourage mechanical refinements in surgery, I do feel a real and unqualified satisfaction in furnishing this testimonial in favour of your instrument, which, though any thing but new in principle, is through your ingenuity rendered admirably simple in its means, and very perfect in its results.

I am, Sir, your obedient Servant,

WILLIAM DALRYMPLE.

SPECULUM AURIS.

THIS is an instrument of the same construction as the former, but proportionately smaller; it is admirably adapted for examining the ear, especially when that organ is diseased, which, until the invention of this instrument, was found to be exceedingly difficult.

INSTRUMENTS FOR BREAKING STONE IN THE BLADDER.

The complete success which rewarded my invention of the Instrument for extracting smaller calculi from the bladder, through the urethra, induced me to devise some method of extracting larger ones also, by breaking them in the bladder, so that the fragments could be withdrawn as readily as small calculi. In accomplishing this desirable and important object, I found, as may be supposed, great difficulty; for the smallness of the parts through which the instrument was to pass, the susceptibility of that in which it was to act, and the nicety required in so difficult an operation, were all obstacles to the adoption of an Instrument of sufficient power to accomplish the desired object. It was necessary to have a fine and delicate Instrument, possessing activity and force in its action, in order to work with ease, expedition, and efficacy.

My first Instrument was contrived with a view to crush the stone by force; it admitted of easy introduction into the bladder, where its blades could be opened without distending the urethra, so as to grasp the stone, upon which the operator could then close the blades with a power sufficient to break it. But some of the largest and harder sort of calculi resisted the force of the Instrument, though it was very great, taking into consideration the disadvan-

tages under which the pressure was applied, and which were increased by the necessity for the Instrument being curved. I conceived that the Instrument could be rendered more powerful if it were of a straight form, but I was deterred from making this alteration in consequence of the general opinion entertained by Professional Gentlemen at that time, that it was very doubtful whether a straight Instrument introduced into the bladder would act; supposing that it would be too much confined by the natural form of the urethra even to be used as a sound. I therefore turned my attention to another mode of reducing the stone, and set about contriving a second curved Instrument, having a small saw between the blades, which was worked by a handle; with this I proposed to cut the stone partially through, and crush it by the pressure of the blades. I had afterwards reason to be satisfied with the efficiency of this Instrument, but the great interest excited in the Profession by the success of the operations for lithotrity performed by Dr. Civiale, at Paris, induced me to look in that direction for some information by means of which to improve upon my attempt; I could not, however, obtain either a set of his instruments, or drawings of them; and all I could learn was, that they were straight: this at once decided me; I abandoned my curved Instruments, and returned to my original idea of a straight one. Having tried sheer compression and the saw, without attaining that complete success

which I anticipated, I next had recourse to the drill, and made a straight Instrument with two branches, and a very efficient drill, (fig. 2. plate X.) which Mr. Guthrie tried in an operation performed at the York Hospital. He suggested the addition of a third blade, which (as I afterwards found) renders it very similar to the French Instrument used by Dr. Civiale, one of which I subsequently obtained, and which is represented in the same plate : on examining this Instrument, I found it, in many respects, better adapted to its purpose, than that of my own contrivance, which I immediately commenced improving, avoiding the defects of the French Instrument, as well as those of my own. The most prominent objection to the use of the French Instrument, consisted in the large size of the heads of the drills, and the great inconvenience arising from the necessity for their being fitted into the Instrument before its introduction ; this caused delay and inconvenience to the operator, by rendering it more difficult to grasp the stone, as well as occasioning the instrument to be drawn out every time the drill required changing ; I therefore contrived such drills, as could be introduced through the Instrument, and which could be withdrawn and changed for others as often as the case required, without inconvenience to the operator or the patient. These drills, though of so small a size, are capable of effecting, by the increased extent of their action, what the French drills accomplish

by their large size ; and this object I attained without enlarging the diameter of the Instrument, by making the drills to work open to an extent much greater than the largest of the French drills. The injecting and emptying the bladder, after the introduction of the Instrument, are also greatly facilitated, as these parts of the operation can be performed by means of the orifice through which the drills are passed.

At the suggestion of Mr. Guthrie, who pointed out the danger of the Instrument becoming entangled in the bladder, and the operator consequently losing all power of closing it, I so contrived it that it might be taken to pieces, and each branch withdrawn separately, as will be seen in plate XI. In this plate, also, is the drawing of a most effective drill, the contrivance of my son, which although so small that it will readily pass through the Instrument, will open at the pleasure of the operator, either at once or gradually, to any extent that may be required. This drill being graduated at the handle end, the operator is enabled to ascertain its projection, and the extent of the circle which it describes ; so that by a knowledge of its power and a little practice in the use of the Instrument, he will be able by its means to hollow out the largest stone, until it becomes a mere shell, easily broken, and its fragments withdrawn, while the powder comes away with the water. By this means the facilities of the instrument are increased

ad libitum, and when once the stone is grasped and secured properly, it may be gradually and completely destroyed by the varied action of the drill.

My son has also contrived, at the request of Mr. Mayo, a similar instrument, but having four branches, each of which can be pushed forward or drawn back, independently of the others, in order to adapt it to the different shapes of the calculi. This idea was taken from an instrument belonging to Baron Heurteloup, which, as far as he would permit it to be examined, appears a more ingenious and complete piece of mechanism than the one last described, though, from its greater complexity, I do not think it possesses any advantages over this simple instrument.

PATENT SYRINGE.

From the very extensive circulation of my patent Poison and Enema Syringe, it would appear almost supererogatory to mention it; but as there may be some gentlemen who are unacquainted with it, I take leave to observe that it has been found to answer every purpose for which it is intended with the most marked success. The simplicity of its construction, its easy adaptation, and the facility with which it may be used under all circumstances, render it a most valuable instru-

ment; and when I say that there is no purpose to which a syringe may be applied to which this is not eligible, I feel assured that I do not overrate its powers. The certainty of its action, by means of a stop-cock connected with the handle, has entirely superseded the use of valves, which have been long complained of as being constantly liable to get out of order, even when not used; they are also not only liable to become clogged when used, but if the instrument is not held in a proper position, their action entirely fails.

This syringe is furnished with tubes, &c., for injecting and emptying the stomach, for giving food in case of a locked jaw, for administering enemas, for injecting the bladder, for transfusion, for moxa, for cupping and drawing the breast; and in cases of hydrophobia, it has besides small pipes for the vagina, the ear, a sinus, &c. It is also fitted up as an enema syringe only; and its portability, and the unlimited quantity which may be injected by it, without the admission of air, (a very common cause of complaint with most syringes,) render it superior to all others, and have gained for it the unqualified approbation, not only of the profession, but of all who have used it.

For cupping, this syringe will be found a most superior and desirable instrument. The valve syringe, formerly in use for exhausting the air from cupping glasses, had been found not only an inefficient instrument, and difficult to manage, but

constantly liable to derangement, and many practitioners had been induced to have recourse to the old method of producing a vacuum by means of fire. For the valve syringe I substituted a copper globe, the air in which having been previously rarefied, by means of a spirit lamp, it acted as an exhauster, and by allowing the air from the glass to rush into it, created a vacuum. My patent syringe has, however, been found much more convenient and efficient, and is invariably substituted for the copper globe: I have annexed it to my improved cupping apparatus, see plate 14, which is now rendered perfectly complete. It is so simple and easy of use, that it is not only adapted for professional gentlemen in the country or abroad, but to all persons subject to apoplexy, palsy, determination of blood to the head, chronic inflammation, or any disease for which frequent cupping is recommended. I take leave to insert an excellent letter upon cupping which I have received from a gentlemen of very extensive practice in the country:—

"As inflammatory diseases constitute the majority of those to which the frame of man is subject, much importance has, in all ages, been attached to local bleeding as a remedy. Two modes of topical blood-letting have been adopted by the profession, one by leeches, the other by cupping; the latter possesses the practical advantage of abstracting the blood more rapidly—of enabling

the surgeon to ascertain the precise quantity drawn —and of being always available where leeches cannot be obtained. Cupping has not, however, acquired that extensive and general use which its benefits entitle it to, from the acknowledged difficulties of the art of employing the ordinary cupping apparatus, unless the cupper be engaged in constant practice, and thus acquire and maintain great dexterity, particularly in the management and application of the glasses. This constant practice is so essentially necessary, that the assistant surgeons of some large institutions at a distance from town, to whose duty cupping devolves, are obliged to practise dry cupping on themselves, to preserve their skill; and many country practitioners are obliged to abandon the remedy altogether."

To obviate this defect, and to render cupping more available, I have, after numerous experiments, succeeded in inventing a Cupping Apparatus so simple in its principle and construction, and so easy and effectual in its application, that any one may manage it, and make it universally useful.

The air in the common cupping glass is rarefied by fire, to the great alarm of the patient; by my apparatus the air in the glass is exhausted, to any extent, by means of a syringe, which, acting without valves, is not liable to derangement, as was the old air-pump apparatus, which has been entirely laid aside, both on that account,

and because in using it not more than one glass could be applied at a time.

The common cupping glasses are applied with so much force, and the flame of the lamp is so closely in contact with the patient's skin, that children are terrified, and many delicate ladies faint, by which the operation is frustrated. In the common mode of cupping in tender parts, with great inflammation, particularly about the bowels, the glasses were knocked on so quickly, that I have seen the patient faint, and no blood would flow; mine can be applied with the utmost gentleness, and with the greatest precision, to a particular spot. The improved instrument excels for dry cupping, as in that operation its full power can be employed.

The professional cuppers have published long treatises on their complicated art and operation of cupping; I shall briefly state those circumstances which are considered necessary and proper to be attended to.—First, set the lancets of the scarificator to a proper depth. On this absolutely depends its success. If the lancets be set too deep, they penetrate through the skin down to the adipose substance that interposes between it and the parts beneath, leaving incisions of such a length as to allow the cellular tissue and fat to protrude as soon as the glass is applied, by which the wounded capillaries are compressed, and their bleeding entirely suppressed. On the other hand,

if the incisions be too superficially made, the outer laminæ only of the skin are wounded, and unless they extend into the cutis vera no bleeding ensues. For general purposes, let the scarificator be set so that the points of the lancets project from the face of the box to the distance of one quarter of an inch. Before the scarificator is used, observe particularly to raise the skin by means of the syringe and cupping glass. After the incision has been made by the scarificator, the cupping glass is to be applied, and the air drawn out by the syringe. When the skin is sufficiently raised, shut the cock and pull off the syringe from the glass, and it is again available for the successive glasses to be applied.

In testimony of the general usefulness and mechanical construction of this syringe, I take leave to add, in an Addenda, several letters which I have received from eminent professional gentlemen, and some of the first mechanicians.

ANEURISM NEEDLE.

It is highly gratifying to me to be enabled to observe that some of the most eminent professional gentlemen have done me the honour of consulting me in cases where it has been necessary to improve the surgical instruments

then in use. Mr. Kirby, of Dublin, stated to me that he had tried several mechanics in that city, but none of them could succeed in inventing an Instrument for Aneurism to his satisfaction, and he had not the least doubt that I could, with a little perseverance, accomplish it; he then gave me an idea of the operation, in which, as is well known to the surgical profession, the most difficult part consists in passing the ligature under the artery, if deep-seated, and in extricating the thread from the eye of the needle afterwards. The instrument which I have invented, will be found to obviate these difficulties. It has already been used with success in subclavian aneurism by two eminent hospital surgeons, and is generally approved by the surgical profession. The annexed letters will shew how completely I have succeeded.

56, *Warwick Street, Dublin, February* 17*th*, 1823.

Sir,

I have at length received my parcel, and with many thanks I acknowledge your improved Aneurism needle. I deferred my reply to you until I had an opportunity of speaking from experience of the value of the instrument. It is unquestionably a great improvement—it merits all the praise be-

stowed on it by Mr. Travers, and does infinite credit to your genius. Sanctioned by the approbation of Sir A. Cooper, Mr. Brodie, Mr. Travers, &c., it will soon be in the possession of every surgeon of respectability. I am obliged to you for the notice you have taken in your publication of my share of the invention, and shall do you equal justice by stating the circumstances which led to the invention of such importance.

In September last, accompanied by my friend Mr. Melin, I had a long conversation with you on the subject of an instrument for passing a ligature round the subclavian artery. I explained the nature of the difficulties of that operation, and told you that in Ireland I never could get an artist to take my ideas, or form any thing to my mind. You rapidly comprehended the qualities which should be combined in the instrument, and you expressed yourself as certain you could construct one to my satisfaction. In a few days after my return to Dublin, I received, by Mr. Melin, your first attempt, which I returned as insufficient, with futher observations as to your future experiments, and the principles which should guide them. It is most ungenerous in any one to claim the discovery, or to attempt to rob you of the reward so justly due to your labour and genius. As far as my testimony can prevail, you may use it to any weight this letter possesses—you are heartily at liberty to

employ it in any way conducive to your interest, and the establishment of your right.

I have the honour to be, Sir,
Your much obliged, and faithful Servant,
JOHN KIRBY,
President of the Royal College of Surgeons, Ireland.

To Mr. J. Weiss.

16, *Saville Row, April 3rd*, 1823.

SIR,

I HAVE the pleasure to inform you that I have lately employed your Aneurism needle in an operation for axilliary Aneurism, and that I found it enabled me to apply the ligature round the subclavian artery with great facility. I conceive that no other instrument with which I am acquainted would have answered the purpose so effectually: and,

I am, Sir,
Your obedient Servant,
B. C. BRODIE.

To Mr. Weiss.

New Broad Street, January 18th, 1823.

SIR,

I THINK it due to your ingenuity to inform you that I yesterday applied a ligature twice to the

subclavian artery above the clavicle, with your Aneurism needle, and found its application easy and entirely satisfactory in each instance. Whatever be the result of the operation, which unforeseen and difficult circumstances render very doubtful, I feel it my duty to state, that your needle removes a difficulty of which every operating surgeon has complained, in his attempts to noose the deep-seated arteries, and that I should be at a loss to name any modern example of the application of a mechanical contrivance to surgical purposes, so happy in point of simplicity and effect, or so promising in point of usefulness.

I am, Sir, your's obediently,

B. TRAVERS,

Surgeon to St. Thomas's Hospital.

To Mr. Weiss.

HERNIA KNIFE.

For the idea of the improved hernia knife, I am indebted to Mr. Bransby Cooper, who mentioned to me that it would be a very great improvement if the cutting part of the blade could be covered when it was introduced. This I have completely effected to his satisfaction, as well as of other gentlemen who have seen it. I have likewise made an improvement on Assilini's Tenaculum, by making it more

simple and less liable to derangement. In Amesbury's Splints, also, I have made an alteration, by making them one-third lighter, and much more convenient for use.

MIDWIFERY FORCEPS.

It having been frequently mentioned to me by gentlemen, that they occasionally experienced great difficulty in locking the joints of the midwifery forceps, I constructed a pair in which this difficulty is obviated, by making the joint more simple, and placing it in the middle of the handle; thus the inconvenience complained of is remedied, and an additional advantage is obtained by the joint being further from the termination of the blades. The improvement is founded on Assilini's Forceps, which had, however, a very inconvenient joint, and handles so small that the operator could not hold the instrument steady. From these objections my forceps are entirely free, and I have the satisfaction to say that they have been approved of by many professional gentlemen. I have also made an alteration in the blades, which are of a medium width between those of the forceps of Clarke and Davis.

I likewise made another improvement in the Midwifery Forceps, at the suggestion of Dr. Davis, who was so well pleased with it, that he inserted it

in his book as his own invention. He conceived that if it were possible to invent a pair of forceps, one blade of which should be introduced straight, but capable afterwards of being made to fold over the face and chin of the fœtus, it would have a great advantage over the long forceps, in particular presentations. I applied my mind to the subject, and had the satisfaction of laying before the profession an instrument that has been decidedly approved of, as answering all the purposes intended. The adaptation of the folding blade to the lever, makes it a very valuable instrument, giving it an increase of power, besides greater facility of introduction. In using these instruments, some gentlemen prefer the blades covered with leather, while others use them naked; I have added a covering of India rubber, which, from its elasticity and softness, adheres closely to the blade, protects the parts from injury, and removes any objection to the use of covered blades.

ARTIFICIAL PALATE.

The Artificial Palate, an instrument very simple in its construction and application, was first invented at the instance of a gentleman of high rank, who had been debarred from mixing in society by the inconveniences arising from a diseased palate, which, in his case, were very great.

It proved completely successful on the first trial, and he was so much pleased with the contrivance, and so highly gratified at the relief it afforded him, that he gave me a cheque for twenty guineas for the first I made. The artificial palate entirely removes nasal articulation, and the disagreeable effluvia communicated to the breath by this disease; and it has been used in numerous other cases with equal success. Sir Astley Cooper, in his Lecture at St. Thomas's Hospital, May 10th, 1824, treating of the exfoliations in the roof of the mouth, recommends the introduction of extraneous substances, and observes:—

"The best instrument I know is one contrived by Mr. Weiss, whom you all know to be an extremely ingenious man. A gentleman of rank and fortune, afflicted with soreness in the roof of the mouth, applied to Mr. Weiss, to know whether he could make him something which would fill up the opening, and remain there without producing any inconvenience. Mr. Weiss immediately produced an instrument which gave the gentleman the greatest comfort and satisfaction, and answers much better than any other with which I am acquainted."

Since the invention of my silver instrument for the palate, I have found in particular cases, where there is a soft palate, that it has brought on an irritation; it was to obviate this, that I was in-

duced to employ Indian rubber as the material for instruments of this kind, which I have found peculiarly satisfactory in these cases.

IMPROVED URINAL.

The frequent complaints of the many inconveniences arising from the use of glass and metal urinals, on account of their bulk and weight, as well as from other causes, induced me to try oiled silk, and other substances, impervious to water; failing in these, I had recourse to Indian rubber, in which I was for a long time unsuccessful, but at length accomplished my object, and made one for an eminent and distinguished judge, which gave great satisfaction. These urinals are made in various ways, fitted with mounts for preventing the return of the urine, and having valves for hindering any unpleasant smell; they are attached to suspenders; and, when worn, are scarcely perceptible: they may also be cleaned out as often as is necessary.

IMPROVED TRUSS FOR FEMALES.

The common Umbilical truss having been found to be very inconvenient, to females in particular, I have contrived a steel busk, similar to that worn

in the front of stays, which it is intended to substitute for the common busk; to it is attached a steel spring with a pad, which, by the pressure of the stays, is made to answer every purpose of the common inverted spring truss, is attended with no inconvenience whatever, and is not liable to get out of order.

I have likewise made an improvement upon the bandage for Prolapsus Áni, by superseding the use of stiff steel springs, and substituting in lieu of them, straps with easy springs, having a piece of sponge or ivory attached to them, to afford the requisite support.

IMPROVED FEET AND CARRIAGE WARMER.

In consequence of a communication from Sir Astley Cooper, four years ago, that Lord Liverpool was a great sufferer from cold feet, I invented a *chauffepied*, to keep warm for the whole day, without any trouble, with which he was so well pleased, that he mentioned it to his grace the Duke of Wellington, who ordered several of them at different times, as presents. It consists of a stool with an iron plate at top, heated by a lamp, and covered with thick woollen, to preserve a regular heat; it not only warms the feet, but if put into a carriage, with the windows closed, will commu-

nicate nearly as much warmth as a fire, and will completely air a carriage, if placed in it half an hour before it is wanted to be used.

PATENT HORSE PHLEME.

My last improvement is the Horse phleme, in the invention of which I have experienced more disappointment than in that of any other instrument: numerous instruments have been made for this purpose, but none have hitherto succeeded. My first design was to make a spring to act upon the lancet by a blow, as the blood stick acts upon the common phleme, but after having made several, I found, upon trial, that it required too strong a spring to act effectually. I then tried to make the lancet cut its way through the skin, in which I succeeded, but left too long an incision; this defect also I have removed, and have now the satisfaction to state, that I have succeeded in making the most effective instrument for this purpose that has ever yet been invented. I have likewise invented a new Balling instrument, which, from the simplicity of its construction, may be put into the hands of any one, and is not so liable to get out of order as the ingenious and complicated spring instrument invented some years ago.

The success of my poison and enema syringe,

induced me to adapt one of a larger size to veterinary purposes, in which I am happy to state, that I have been equally successful.

In conclusion I have only to observe, that being anxious to improve the construction of Surgical Instruments by every means in my power, it will give me great pleasure to attend to any suggestions of members of the profession with which I may be favoured with reference to this very important branch of Surgery.

TREATMENT OF CALCULI OF THE MALE BLADDER, AS RELATED BY MR. BRODIE; EXTRACTED FROM THE LONDON MEDICAL GAZETTE, MAY 21ST, 1831.

"WHEN a stone passes from the kidney into the bladder, the diameter of which is less than that of the urethra, it is usually conveyed into that canal by the impulse of the stream of urine, and thus the patient gets rid of it. Sometimes, however, even a very small stone is prevented escaping in this manner, in consequence of an enlargement of the prostate gland, forming a tumor projecting into the bladder, and making a kind of valve behind the orifice of the urethra. Many a person is liable to the descent of calculi from the kidney for many years, which are always passed with the urine, until he becomes somewhat advanced in life. Then the prostate becomes enlarged, and the calculi, which descend afterwards, are lodged in the bladder.

"Under these circumstances, it will be prudent for the patient to void his urine lying on his face, or leaning very much forward, so that what we call the anterior may become the depending part of the bladder. You will observe that the valve made by the projecting tumor of the prostate is almost invariably on the posterior part of the bladder—that is, towards the rectum; and if the patient voids his urine in the posture which I have mentioned, the stones are less likely to be interrupted by it than if

he voids it in the usual manner. This, at least, is good in theory, and I may say that it is good in practice also; for a patient of mine, an elderly gentleman, whom I advised to do what I have just mentioned, very soon became relieved of a small stone which had been for some time in the bladder.

"A stone which is of larger diameter than the urethra, of course cannot be voided by the urethra. But you may dilate the urethra; and by doing so I have, in a great many instances, enabled the patient to pass a stone which had been for some weeks, or even for some months in the bladder, and which he certainly could not have voided otherwise. The case here admits of little delay. Every day adds to the bulk of the stone, and diminishes the chance of success. Introduce a bougie, or a metallic sound, of such a size as the urethra will admit without inflammation being induced. Every day, or every other day, according to circumstances, introduce one a little larger; and thus you may dilate the urethra gradually, until it is a good deal larger than its natural size. The degree of dilatation of which the urethra is capable, varies in different cases; but it is generally considerable. When this process has been carried as far as it can, let the patient drink plentifully of diluting drinks. It may be worth while even to give some of the compound spirit of juniper, or other diuretic, at the same time; and the calculus will, probably, some time or another, be carried, by the current of uri. ›,

into the dilated urethra. You may add to the chance of the expulsion of the calculus by adopting the following method. Once daily introduce a large bougie into the urethra and bladder, and there let it remain. Then let the patient drink plentifully of barley-water, or toast and water, or weak tea; so that the bladder may become loaded with urine. When the patient can bear the distention of the bladder no longer, let him place a vessel on a chair, standing, and leaning forward over it. Then let him withdraw the bougie; the urine will follow it in a full stream, and the calculus may probably accompany it. I learned this mode of treatment from a patient who contrived it for himself, and who in this manner became relieved of three considerable calculi, for which an intelligent and experienced surgeon, in a provincial town, had recommended him to undergo the operation of lithotomy.

"If a small stone cannot be made to pass in the way that I have mentioned, you will probably succeed in extracting it from the bladder by means of the urethra forceps. Indeed I may say that you will never fail in doing so, unless the stone is beyond a certain magnitude, or there is something in the condition of the bladder to prevent it retaining a moderate quantity of urine; or unless there is a large tumor of the prostate projecting into the bladder, behind which the calculi may lodge, out of the reach of the instrument.

"I cannot but regard the invention of this method of extracting small calculi from the bladder, as one of the greatest achievements of modern surgery.

"The credit of it belongs to a gentleman who has contributed largely, in a great number of other ways, to the benefit of mankind, and the improvement of our interesting and important art. I need not tell you I mean Sir Astley Cooper. But even he would not have been able to succeed in the plan which he had conceived, if he had not been aided by the mechanical talents of Mr. Weiss, who, when the object in view was explained to him, with his customary zeal and readiness contrived the forceps which I now shew you. I need not give you a particular description of their construction, as you may examine them for yourselves. But you will observe, that they admit of being opened and closed in the bladder, without distending or otherwise irritating the canal of the urethra. When you employ these forceps, the bladder should always contain a moderate quantity (that is, from six to eight ounces) of urine. If the patient, however, has lately made water, you may inject some tepid water into the bladder through a catheter, which, of course, will answer the same purpose. It is generally prudent to ascertain first where the stone lies in the bladder, by examining it with an iron sound. Then introduce the forceps in their closed state, previously warmed and oiled, directing them towards the stone; and when you feel them resting lightly

on it, open the blades cautiously, and endeavour to seize it. If you succeed, and the stone is of a small size, you easily extract it. The forceps do not close on the stone with much force, or make much pressure on it; but they are themselves compressed and squeezed by the neck of the bladder, and afterwards by the urethra; and thus the stone is firmly grasped, and prevented dropping out of the instrument. In this manner Sir Astley Cooper has succeeded, in a great number of instances, in removing small stones from the bladder, which otherwise would have increased in size and made the patients the subjects of a serious operation. If I remember rightly, he extracted as many as eighty stones, of various sizes, from the first or second patient to whom he applied this mode of treatment. I have also employed this method with success in many instances. My first patient was a gentleman who had a sac containing a number of small calculi in the prostate gland. These I extracted with great facility—sometimes three or four in the same day. When this sac was emptied, I found that there were also a number of stones in the bladder, and these I extracted, one after another, in the same manner—three or four score in all. This gentleman lived in the country; and what I have now mentioned was accomplished when he visited London, in two successive years. But the case was a complicated one, and I shall have occasion to refer to it again when I call your attention to the sub-

ject of prostatic calculi. All that I need say of it further at present, is, that a year after the last calculus was extracted by the forceps, the patient died of extensive disease of the bladder and kidneys.

" But these forceps are capable of seizing a calculus of very considerable dimensions ; and not only capable of seizing, but of extracting it, by a slight modification of the operation. The neck of the bladder admits easily of a great degree of dilatation. It is not so with the urethra. An elderly gentleman consulted me with symptoms of stone in the bladder ; but the symptoms were not severe, and I was led to believe that the stone was probably small enough to be extracted by means of Weiss's forceps. The first time that I introduced them into the bladder I seized the stone. I drew it readily through the neck of the bladder ; but I found from the expanded state of the forceps that it was much larger than any of those which I had previously extracted in this manner. When I had drawn the stone some way into the urethra, it was evidently impossible to draw it further without lacerating the membrane of the canal. But I could feel the stone distinctly in the perineum. Nothing appeared more simple than the removal of it by means of an incision made behind the scrotum. Holding the handle of the forceps with one hand, and in such a manner as to cause the stone to project in the perineum, with a scalpel in the other hand, I divided the skin and other soft parts over

it. The stone was easily disengaged from the blades of the forceps, and taken out through the wound. Some months afterwards the patient came to me again, and I found another considerable stone in the bladder, which I removed in the same manner. You see, in this preparation, the two calculi which I have just mentioned. The largest of them is seven-eighths of an inch in one diameter, and six-eighths in another, and the other is only a very little smaller; the difference between the two being scarcely perceptible to the eye.

"The wound in the perineum in each of these cases healed very readily. But in another case I did what, with the experience which I now have, I shall be inclined, if possible, to avoid in future. I extracted the stone which I now shew you from the bladder with the urethra forceps, and drew it with some difficulty into the urethra, as far forward as that part of it which is immediately before the scrotum. In this situation I made an incision on it, and having disengaged it from the forceps, took it out through the wound. This was accomplished easily enough; but there was a good deal of trouble in healing the wound, in consequence of the urine dribbling into the cellular membrane of the scrotum, and producing a succession of troublesome abscesses.

"I cannot doubt that this method of extracting calculi, with the urethra forceps, admits of much further improvement; and the modification of the

operation which I am about to describe, may probably be applied with much advantage to many cases.

"I have already explained to you, that if you introduce a gum catheter, and draw off the contents of the bladder, where there is a small calculus, it very frequently happens, as the last portion of the urine flows, that the calculus is thrown down, as it were, on the end of the instrument. Then, it occurred to me, that if a catheter could be made to open like a pair of forceps, the calculus would very probably fall into it; that if it did not do so at one time, it would do so at another time, and that thus it might be extracted without searching and irritating the bladder—with little or no pain to the patient, and little or no trouble to the surgeon. With these impressions on my mind, I contrived the instrument which I now shew you. It is a pair of forceps with two blades, the opposite surfaces of which are made rough, like a rasp or coarse file. They open by withdrawing a tube, which encloses them, on the principle of one kind of bullet forceps, or of the French lithontriptic instrument. But the forceps are themselves a hollow tube, so that whenever the blades are separated, they answer the purpose of a catheter; allowing the urine to flow out of the bladder. Since this instrument was constructed, I have had only one opportunity of employing it, and that very lately. A gentleman consulted me with slight irritation of the bladder.

I examined the bladder with an iron sound, and detected in it a very small calculus. I then dilated the urethra to its utmost extent. This was easily accomplished, but the calculus did not come away. I introduced Weiss's original urethra forceps, but the stone eluded my search. I therefore introduced my new forceps, the bladder being full of urine; and the blades being expanded, of course the urine flowed. When the bladder was empty, I endeavoured to close the forceps, but found that I could not do it. In fact, the stone was seized, and it was easily removed. It was of the size of a large pea; and the patient suffered not the smallest inconvenience from the operation.

APPENDIX.

EXPLANATION OF THE PLATES.

PLATE I.

INSTRUMENTS FOR EXTRACTING CALCULI FROM THE MALE URINARY BLADDER WITHOUT CUTTING.

Fig. 1. A Stone Extractor with its blades opened to take hold of the stone. *A* is a lever, against which the thumb of the right hand should be pressed, while the handle is drawn back to open the blades *C C*. *B* is a screw, by means of which the blades are prevented from opening beyond a certain extent. In case the instrument should have grasped as large a stone as it will admit, but which is too large to be extracted through the urethra, by taking out this screw the blades may be made to open wider, and thus to loose their hold of the stone.

Fig. 2. A Stone Extractor of a smaller size, and of a different construction. To open the blades of this instrument, the trigger *A* is drawn down towards the handle.

Fig. 3. A Stone Extractor of the smallest size, on a different construction from either of the former. To open the blades of this instrument, the trigger *A* should be pressed upwards with the thumb. This plan is generally considered to be an improvement.

Figs. 4, 5. Two Stone Extractors of different sizes, made according to Mr. Brodie's directions, being less curved, and having a flat steel handle similar to that of the staff used in Lithotomy. This instrument is furnished with a silver spout, *C*, through which the urine may flow, thus facilitating the entrance of the calculi between the blades, by drawing off the water through the instrument.

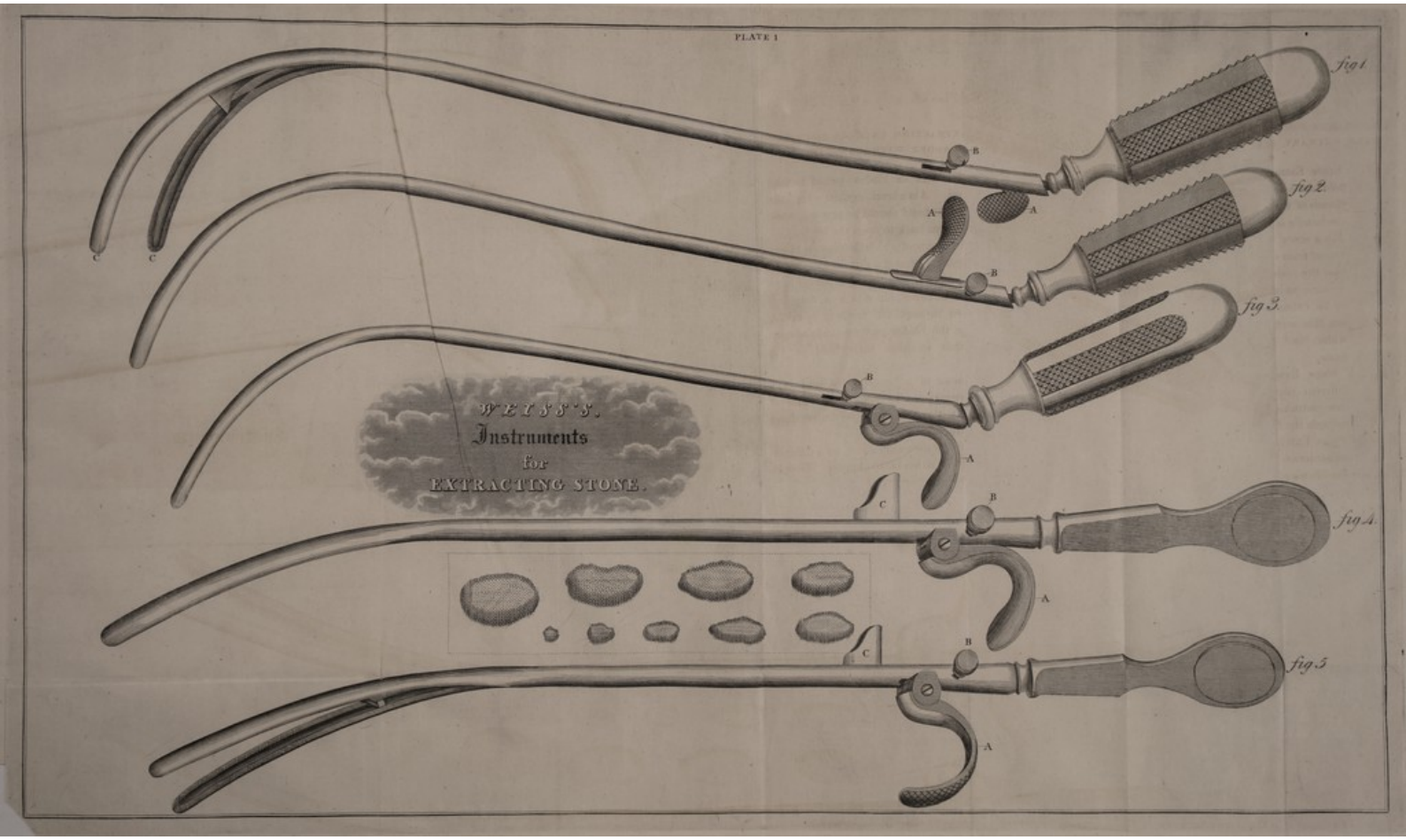


PLATE 1
fig 1
fig 2
fig 3.
fig 4
fig 5
WEISS'S.
Instruments
for
EXTRACTING STONE.
A
B
C

PLATE II.

INSTRUMENT FOR DILATING THE MALE URETHRA.

Fig. 1. A Dilator with its blades closed, the small screw *C* being at the extremity of the groove farthest from the handle. To open the blades of this instrument, hold it firmly at *C*, turn the handle *A* from left to right, and the situation of the screw *C* will indicate the extent of the dilatation. To close the blades, turn the handle from right to left.

Fig. 2. The same instrument with the blades fully expanded, the screw *C* being consequently at that end of the groove nearest the handle.

Fig. 3. The same instrument of a smaller size.

Figs. 4, 5. Straight Dilators to be used in cases of strictures situated near the orifice of the urethra.

Figs. 6, 7. Dilators for Phymosis, constructed on a similar plan with the former.

Fig. 8. Shews the mode of securing an elastic catheter when it is intended to remain in the bladder for any length of time. *A* is an elastic band for encircling the penis. *B B* are two eyes fixed at the end of the catheter by a silver mount, through each of which the string passes, and is fastened to the two eyes *C C*, attached to the elastic band. *D*, a plug to fill up the orifice of the catheter.

Fig. 9. The Improved Gauge for bougies and catheters.

PLATE 2

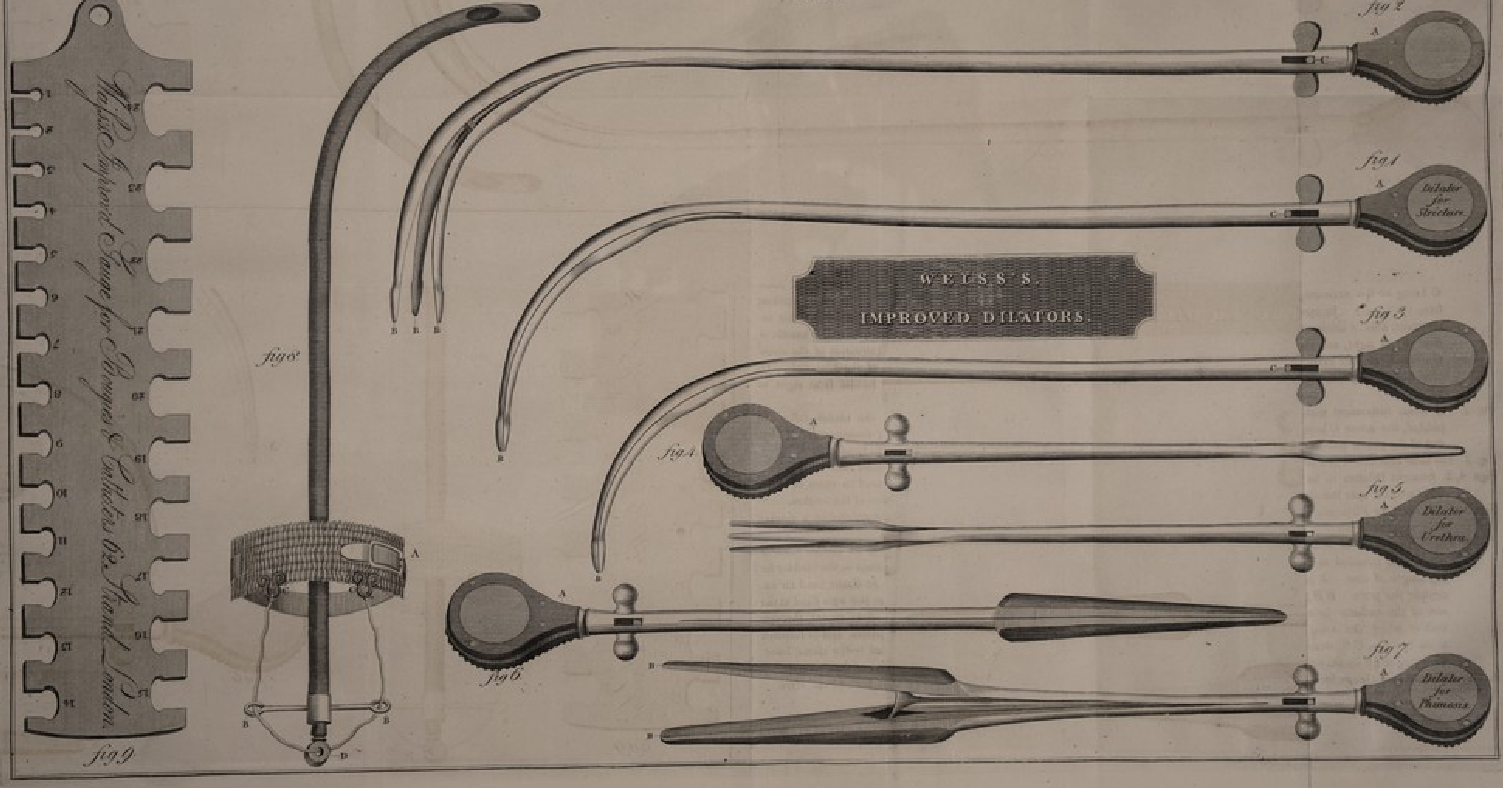

WEISS'S.
IMPROVED DILATORS.
fig. 1
Dilator for Stricture
fig. 2
fig. 3
fig. 4
fig. 5
Dilator for Urethra
fig. 6
fig. 7
Dilator for Phimosis
fig. 8
fig. 9
Weiss's Improved Gauge for Bougies & Catheters 62 Strand London

PLATE III.

NEW INSTRUMENTS FOR DILATING THE FEMALE URETHRA.

Fig. 1. A Female Dilator with its two blades closed, the blade ***D*** receiving in its inner and concave side the convex side of the other blade ***C***.

Fig. 2. The same instrument open.

Fig. 3. Another instrument, with three blades, which dilates more equally and efficiently than the one with two blades.

Fig. 4. The same instrument with its blades open.

To open the blades of these instruments, turn the handles from left to right.

PLATE 3.

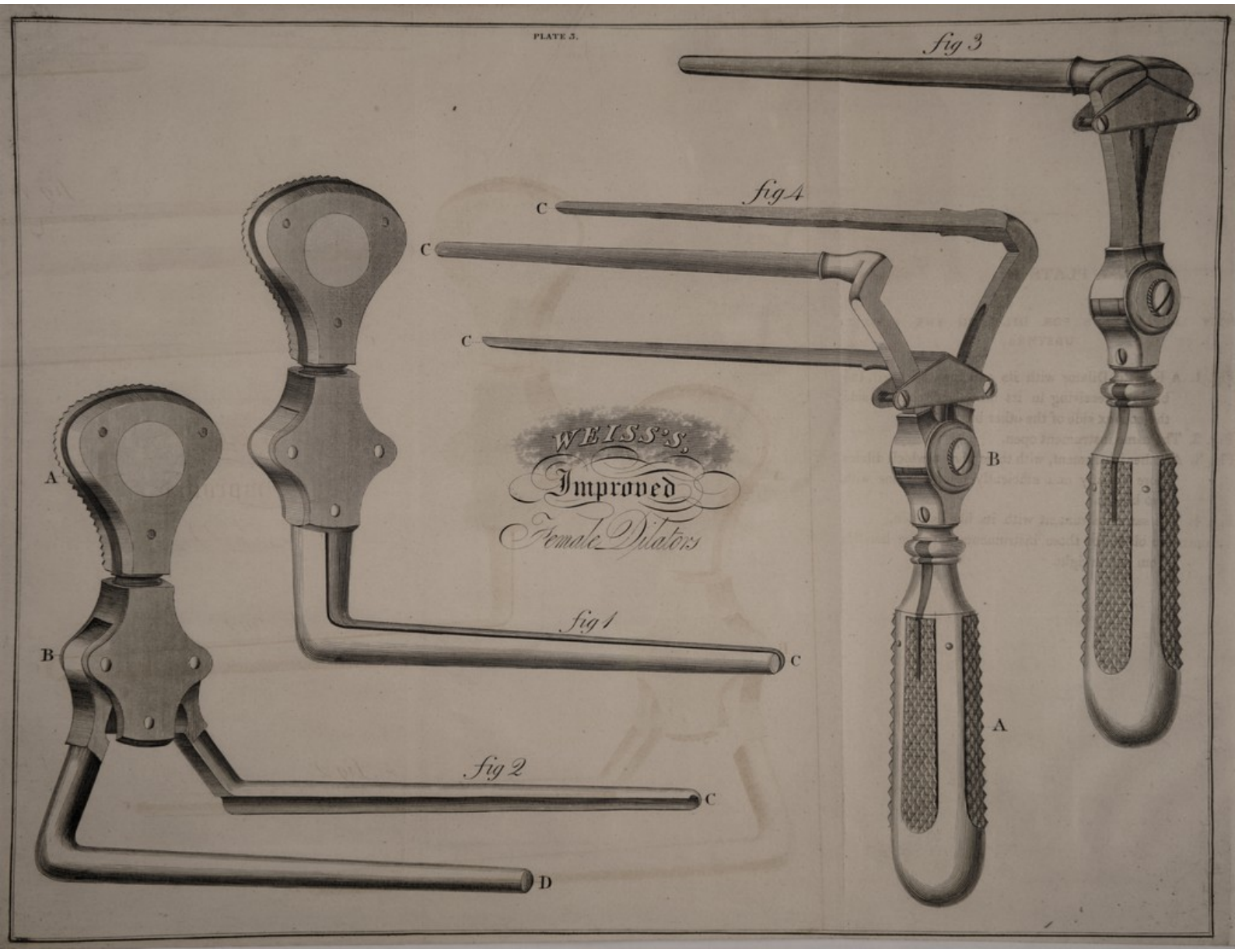


Fig 3
Fig 4
C
C
C
WEISS'S.
Improved
Female Dilators
A
B
B
A
Fig 1
C
Fig 2
C
D

PLATE IV.

INSTRUMENTS FOR DILATING THE FEMALE URETHRA.

These Dilators are constructed upon the same principle as those for dilating Phymosis. The curved one (figs. 3 and 4) is the most approved of, because of its allowing more space for the operator, but they have both been almost superseded by the improved instruments delineated in Plate III.

To open the blades, take hold of the instrument at *B*, and turn the handle *A* from left to right.

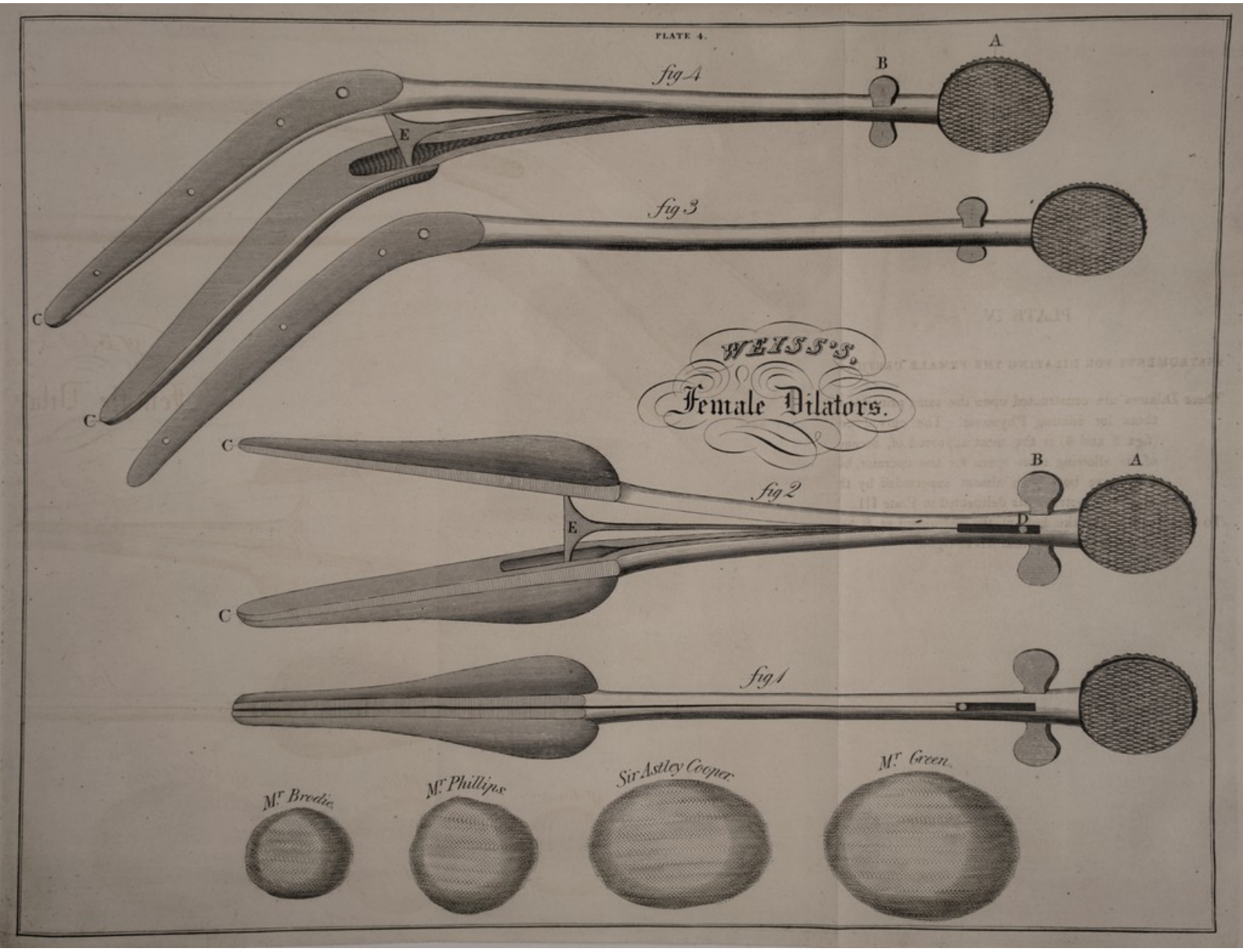


PLATE 4.
fig 4
A
B
E
fig 3
C
C
WEISS'S.
Female Dilators.
C
B
A
fig 2
E
D
C
fig 1
Mr Brodie.
Mr Phillips.
Sir Astley Cooper.
Mr Green.

PLATE V.

TWO INSTRUMENTS OF THE EARLIEST INVENTION FOR DILATING THE FEMALE URETHRA.

Figs. 1, 2. Represent a Dilator having an index at the top to mark the extent of the dilatation. *A*, the handle, which being turned from left to right opens the blades. *B*, a small spring connected with a ratch, which, when set in the direction of the dotted line, prevents the blades from closing, and retains them at any given extent of expansion. When the instrument is to be withdrawn, give the spring *B* a quarter turn, then by reversing the action of the handle the blades will close.

Figs. 3, 4. Represent a Dilator upon the same plan as the former, but more simple in its construction, and capable of being used by the patient herself. *B*, the handle, which being turned to the right, opens the blades *DD*. *C*, a spring connected with a ratch, which prevents the blades from closing. When it is required to close the blades, press down the spring *C*, and turn the handle to the left.

WEISS's,
DILATORS for the FEMALE
Urethra

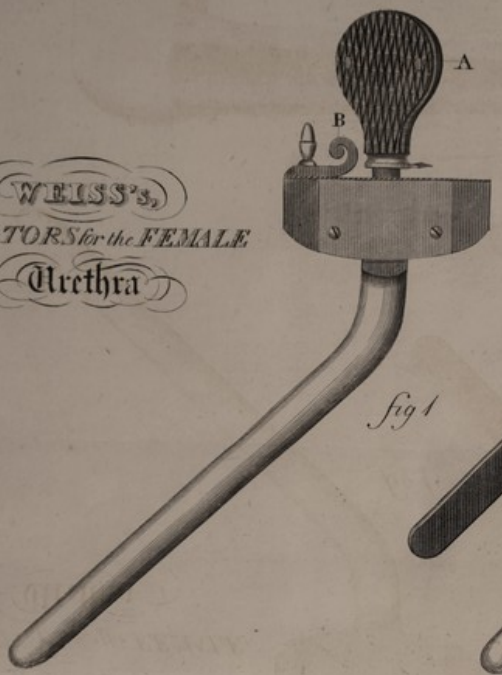


fig 1

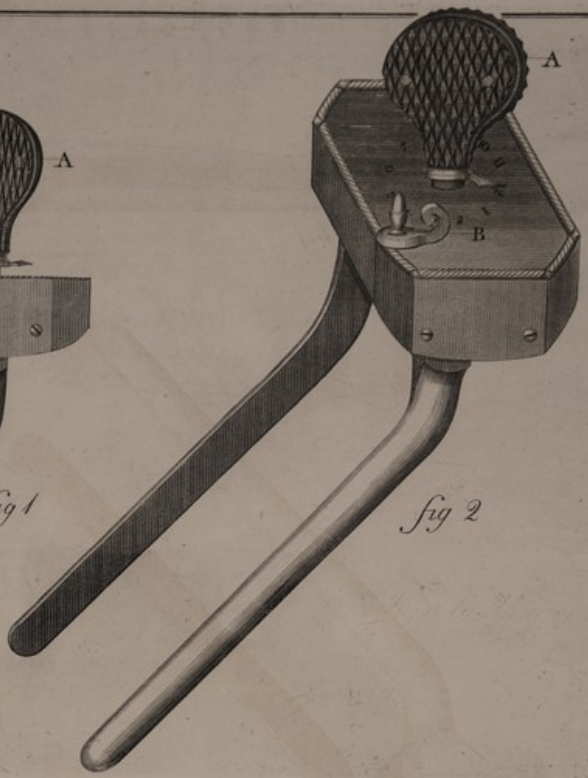


fig 2

PLATE 3

fig 3

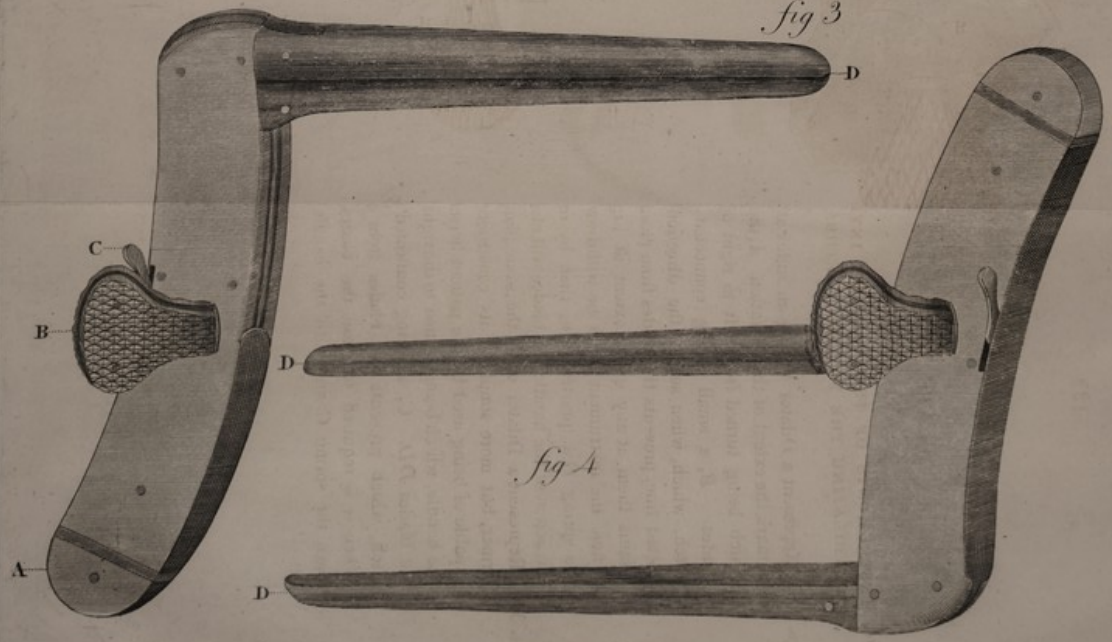


fig 4

PLATE VI.

SPECULUM ANI.

Figs. 1, 2, 3. Are three specula of different sizes, with their blades closed.

Fig. 4. A Speculum with its blades expanded.

Fig. 5. A wooden peg which is inserted between the blades to form a point and facilitate the introduction of the instrument. To open the blades it is only necessary to take hold of the flat part *B*, and turn the handle *A*, when the blades *DD* will expand to any extent that may be required.

Fig. 6. Is an instrument for dilating any part of the rectum without expanding the whole of it, and is much recommended in cases of stricture of that part.

Fig. 7. The same instrument with the springs expanded. *D* is a small rod attached to the ends of the two springs *C C*, and connected with the nut *A*; the nut being turned to the right draws back the rod, and causes the springs to expand. In using this instrument, hold it firmly at *B*, and turn round the nut *A*.

PLATE G.

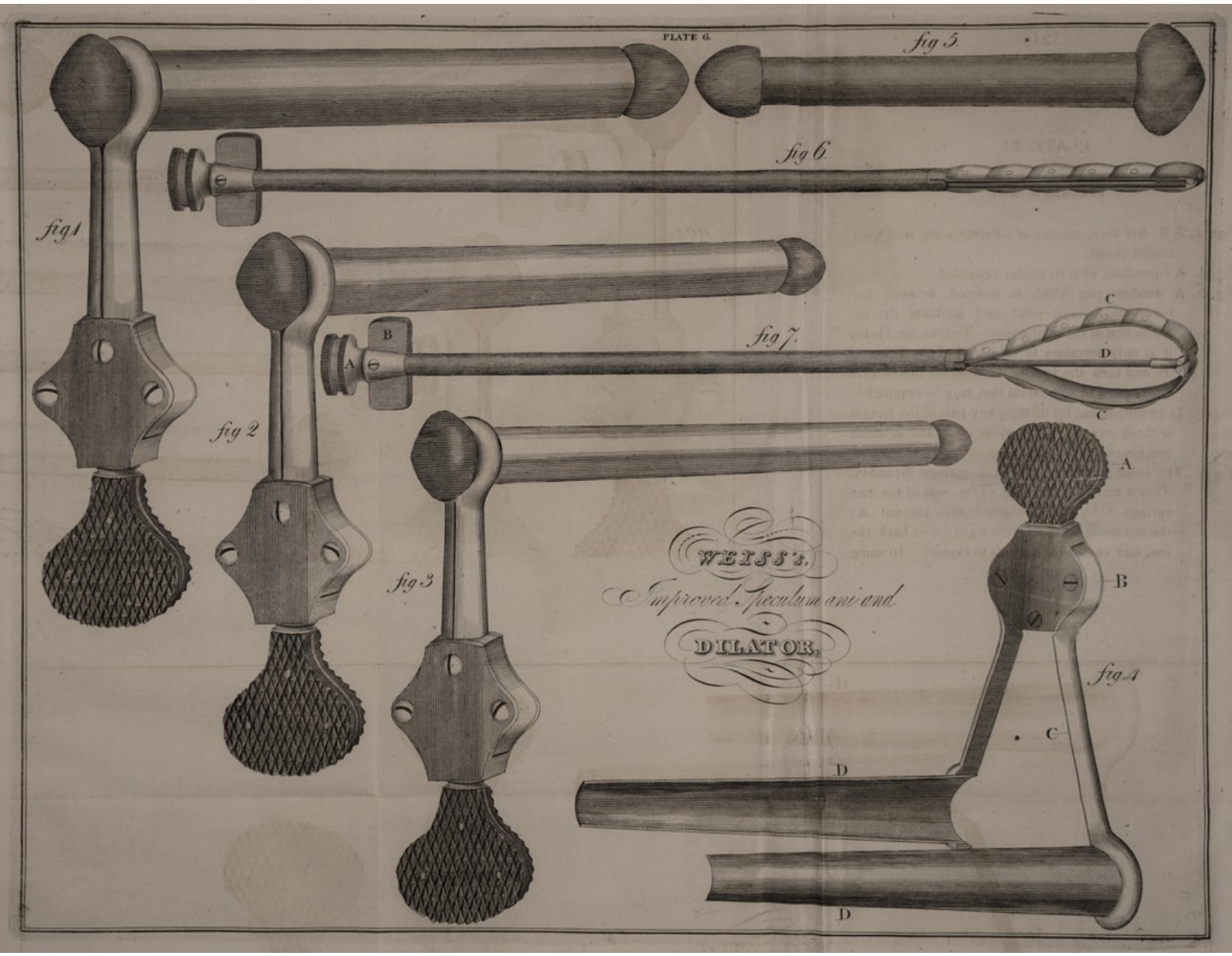


fig 5.
fig 6.
fig 1
fig 7.
B
C
D
C
fig 2
fig 3
A
B
C
D
D
fig 4
WEISS's
Improved Speculum ani and
DILATOR.

PLATE VII.

SPECULUM VAGINÆ AUT ANI.

Fig. 1. Represents the Speculum with its blades closed upon a wooden peg *B C*, for the purpose of facilitating the introduction of the instrument.

Fig. 2. Shews the Speculum with its blades expanded.

Fig. 3. Represents the Speculum with the tube *E* passed between the opening of the blades. By turning the handle from left to right, the blades are made to expand to any requisite extent.

This instrument may also be used as a Speculum Ani, instead of the one with two blades, delineated in Plate VI.

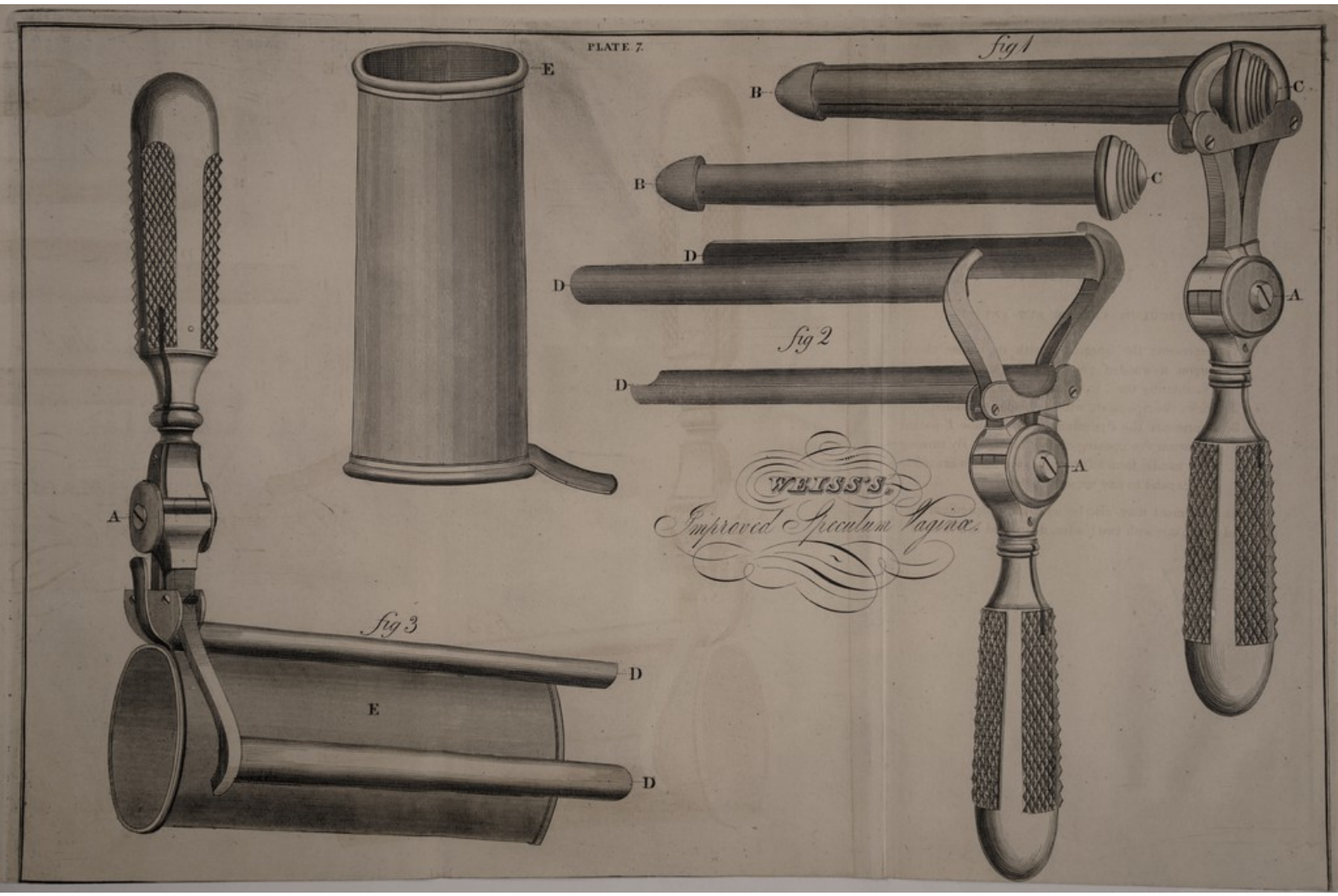


PLATE 7.
Fig 1
B
C
B
C
D
D
A
Fig 2
D
A
WEISS'S
Improved Speculum Vagina.
E
A
Fig 3
D
E
D

PLATE VIII.

INSTRUMENTS FOR BREAKING STONE IN THE BLADDER.

Fig. 1. Represents the curved instrument with its blades closed.

Fig. 2. The same instrument with its blades open.

Fig. 3. Shews the groove in the outer blade *D*, into which the inner blade *C* fits. The one blade working into the other, affords greater strength and certainty than could be obtained were the blades made to pass each other.

In using the instrument, grasp it firmly at *B*, turning the handle *A* from right to left, until the blades are sufficiently expanded to grasp the stone; when the stone is secured, turn the handle to the right, which forces the blade *C* towards *D*, and breaks the stone.

Fig. 4. Is a straight instrument for breaking the stone in the female bladder, when it is too large to be extracted after dilatation of the urethra.

Fig. 5. The same instrument with its blades open. It consists of a pair of strong forceps *BB*, *EE*, furnished with a sliding collar *D*, attached to the screw *C*. When the forceps have grasped the stone, turn the handle *A* from left to right, which working upon the screw *C*, propels the collar along the blades, and by closing them crushes the stone; *DDD* are three collars of different dimensions which may be used according to the size of the stone.

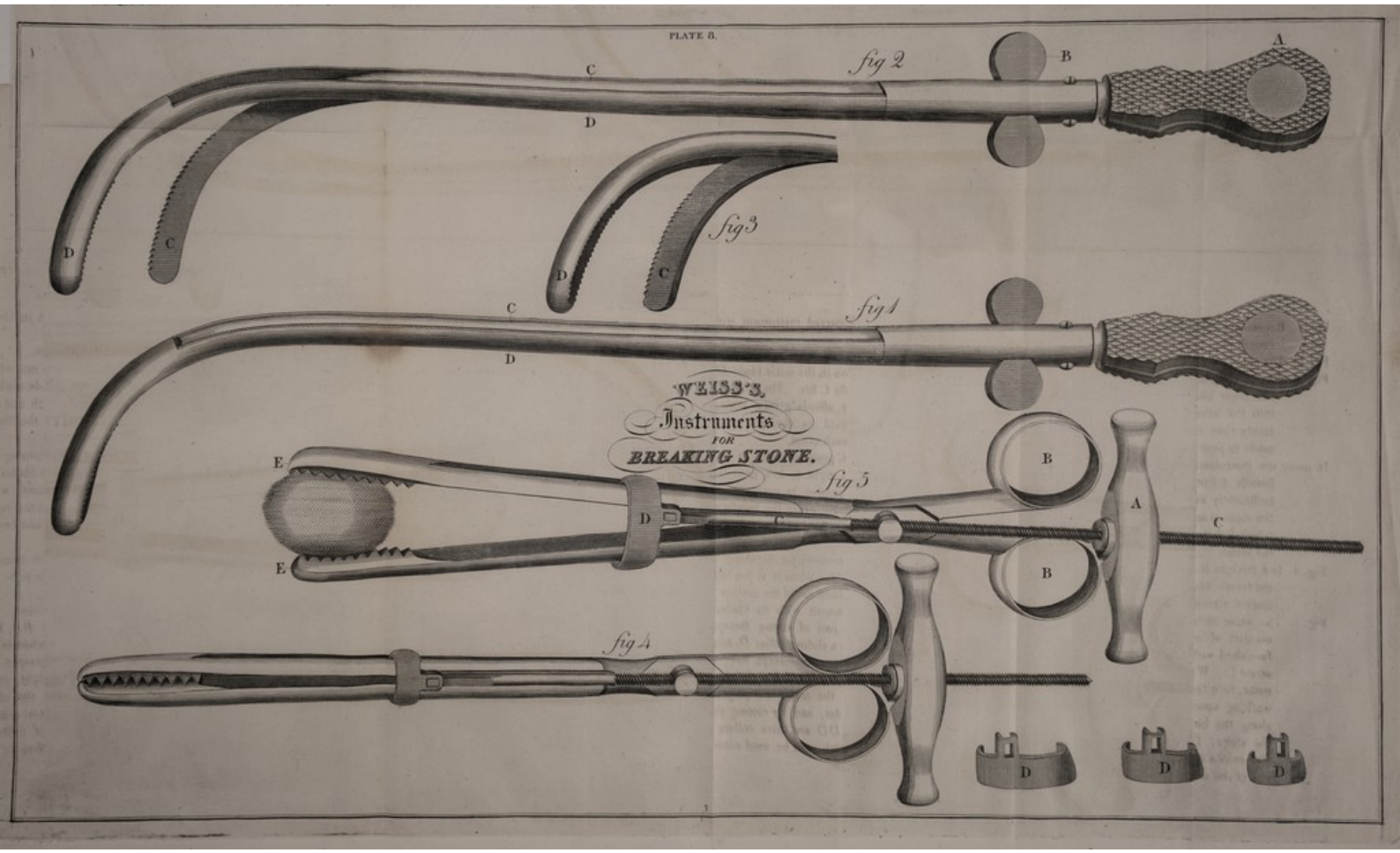


PLATE 8.
fig 2
A
B
C
D
fig 3
fig 1
WEISS'S
Instruments
FOR
BREAKING STONE.
fig 5
E
fig 4

PLATE IX.

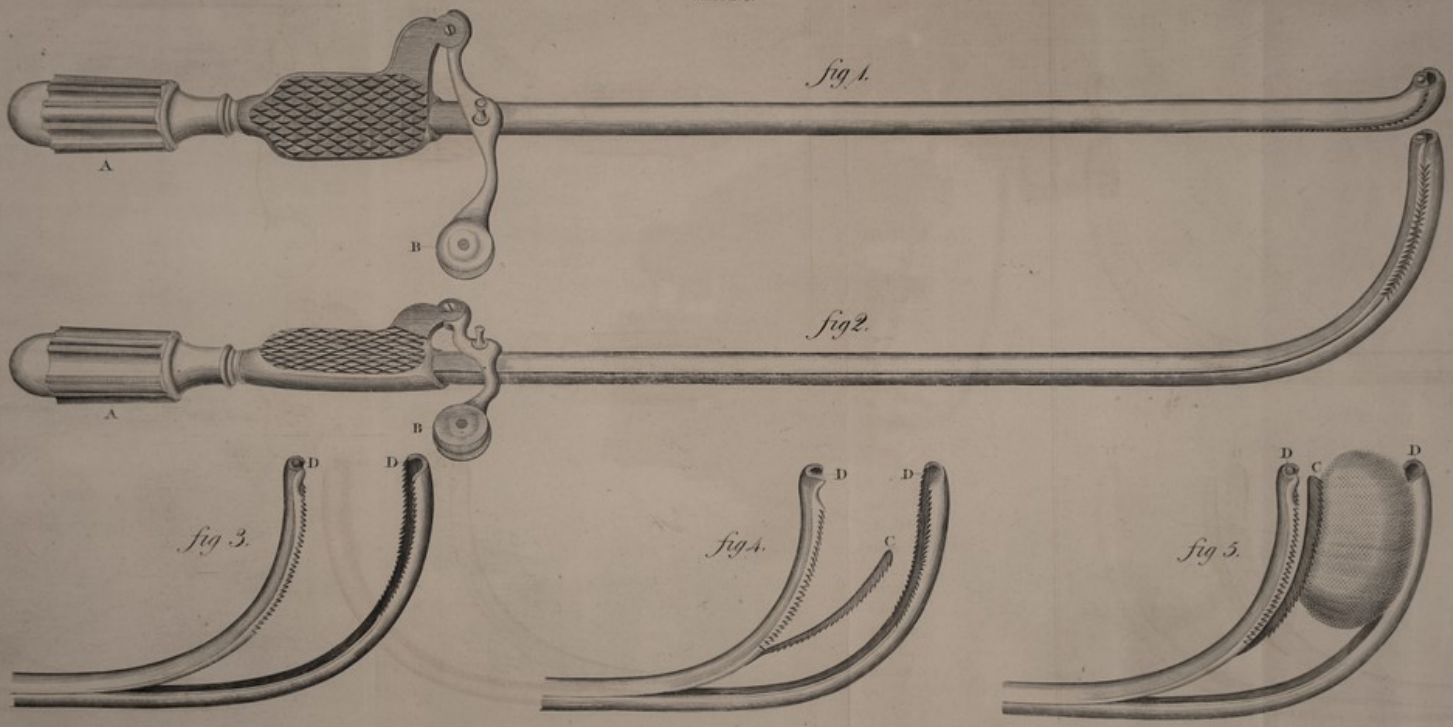
INSTRUMENT FOR SAWING STONE IN THE BLADDER.

Figs. 1, 2. Are two views of the instrument with its blades closed. *A*, the handle, which being turned from right to left, opens the blades *DD*, as in fig. 3. *B*, a lever, which on being drawn towards the handle releases the saw *C*, and allows it to spring forward as in fig. 4.

When the instrument is introduced, turn the handle *A* from right to left, until the blades are sufficiently expanded to grasp the stone; when the stone is secured, work the lever backward and forwards, and the saw will act upon the stone as in fig. 5. Continue this action until the saw has made a deep cut in the stone; then turn the handle *A* forcibly from left to right, by which the blades will be closed upon the stone so as to break it; the pieces may then be taken out with the stone Extractor.

Note. It is important before using the instrument, to ascertain that the saw is secured in the inner blade, which is effected by pressing forward the lever *B*; should this precaution be neglected, the saw will spring out before the blades are opened sufficiently wide to grasp the stone.

PLATE 9.



WEISS'S, INSTRUMENT FOR SAWING & BREAKING THE STONE.

PLATE X.

INSTRUMENTS FOR LITHOTRITY.

Figs. 1, 2. Are two views of the original instrument with two blades. *B* is a sliding tube, which being drawn back by the handle, allows the blades *F F* to open. *A* a screw which secures the sliding tube in its position. *C* a handle connected with the borer *G*, and used for drawing it backwards or forwards. *D* a pulley for working the borer. *H* the bow with a slit at the end *E*, to receive the string after it has passed round the pulley *D*. *I* a screw to regulate the string of the bow.

Fig. 3. An instrument on the same construction, but with three instead of two blades.

The method of applying these instruments, consists in drawing back the tube *B*, which allows the blades to open wide enough to receive the calculus, upon which they are closed, by pushing the tube forward. The bow being attached to the pulley of the borer, the stone is perforated by working the bow backwards and forwards, at the same time pressing the drill gently against the stone.

Fig. 4. An improved French drill. *A* the head expanded. *B* the handle for holding the instrument. *C* a handle connected with a screw inside the drill, which being turned round causes the head to open

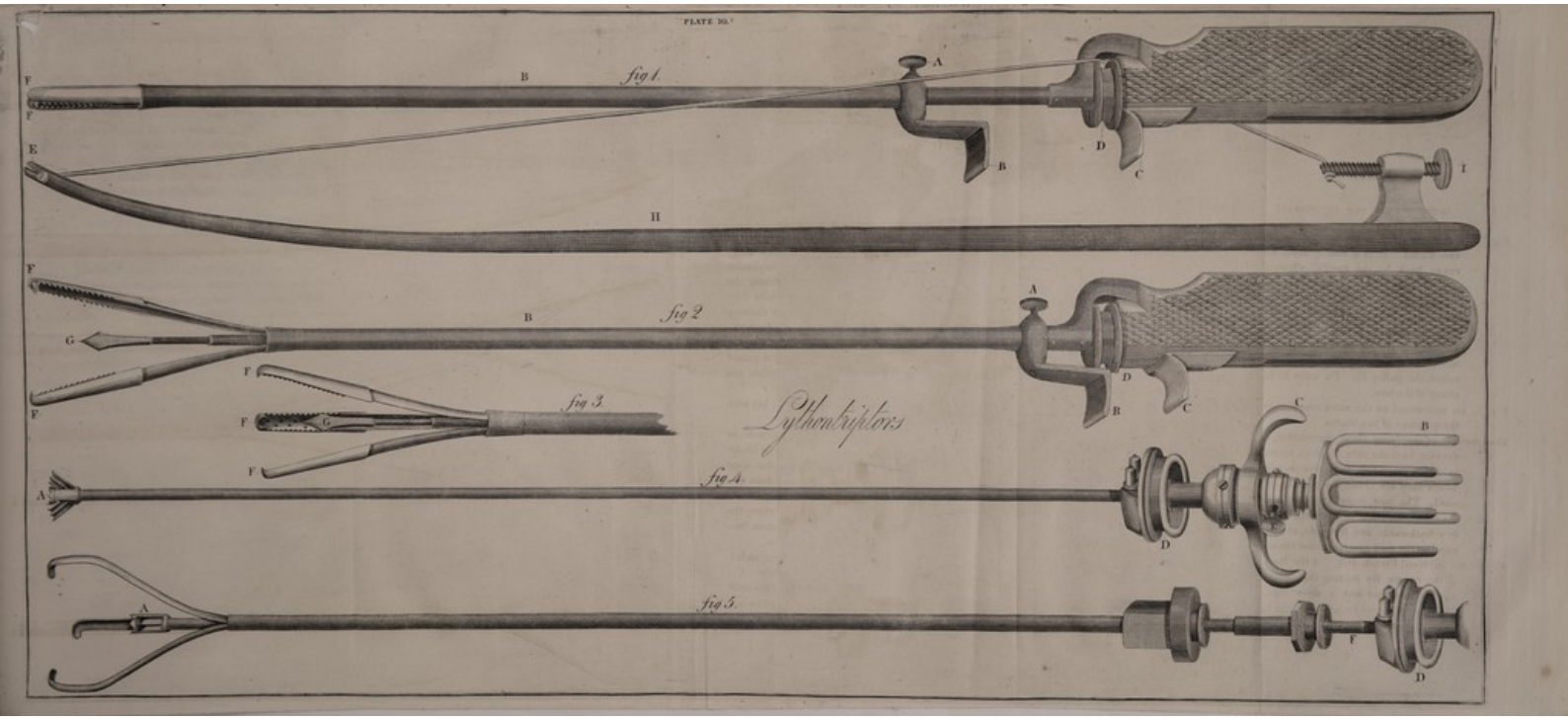
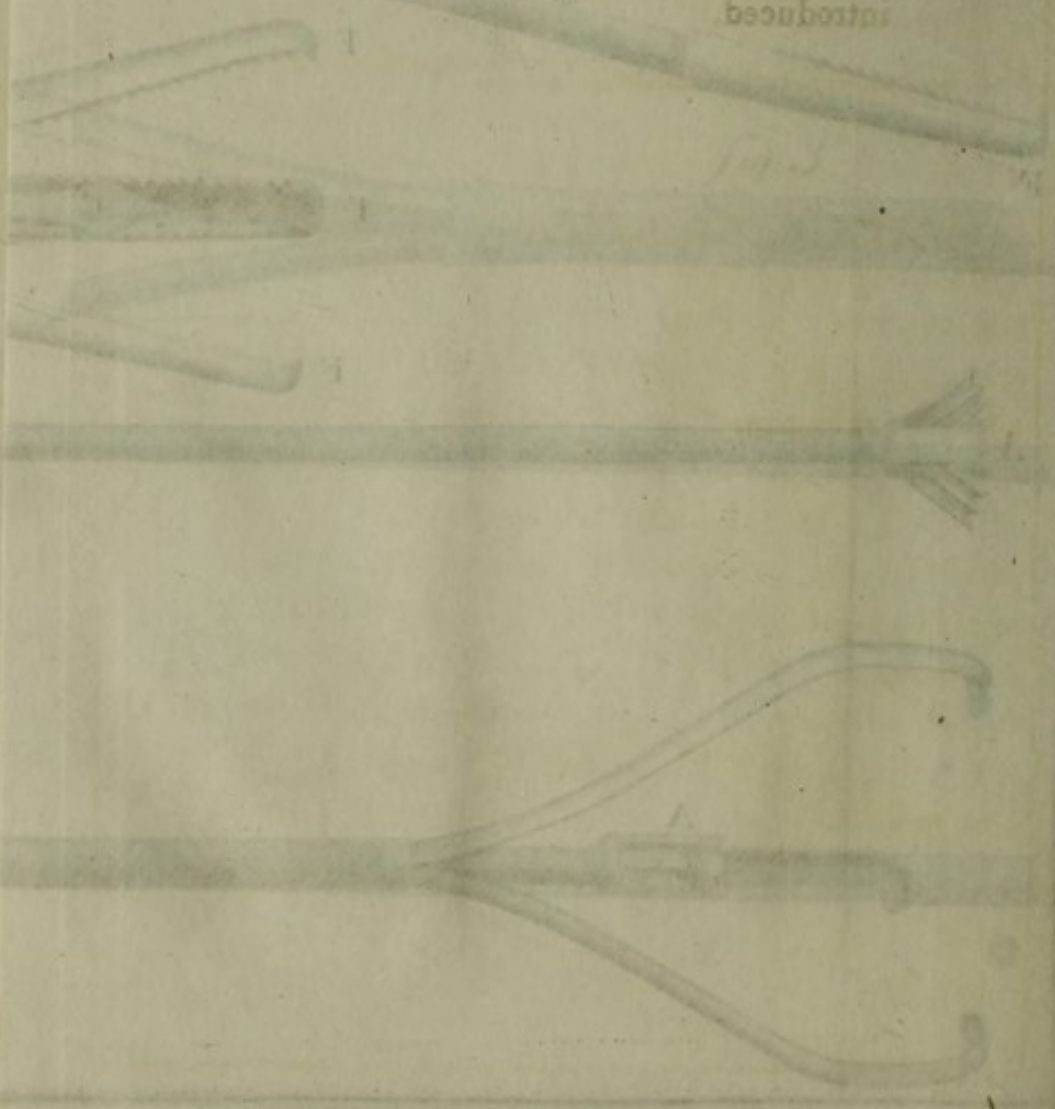


PLATE 30.
fig 1.
fig 2
fig 3.
Lythontriptors
fig 4.
fig 5.



or shut. *D* a pulley for working the drill. *E* a screw which prevents the head of the drill from closing during the operation.

This is decidedly the best of the French drills, although the same objections apply to it as to the others, viz., that the drill cannot be introduced or withdrawn after the instrument is in the bladder; if, also, in grasping the stone, the drill is drawn back to allow a free passage for the stone between the blades, the size of its head prevents them from closing; while, should it be pushed forward that it may clear the blades, it comes in contact with the stone, and prevents their grasping it; consequently, the drill requires to be continually moved backwards and forwards, which increases the difficulty of fixing the calculus.

Fig. 5. A French Lithontriptor with the improved drill introduced.

PLATE XI.

IMPROVED LITHONTRIPTORS.

Fig. 1. The French Lithontriptor used by Messrs. Heurteloup and Civiale. This instrument I have improved upon by making the branches capable of being taken asunder, and withdrawn separately, in case of their becoming in any way entangled in the bladder, or not closing readily. This improvement (which also greatly facilitates the cleaning of the instrument after an operation) I have represented by shewing the instrument taken to pieces, each separate part being marked with a letter corresponding with one on the same part of the perfect instrument.

A is a sliding tube. *B* a shoulder connected with the tube, by which it may be drawn backwards or forwards, and having one part squared to allow of the instrument being fixed to the operating table. *C* the stem of one of the blades into which the other two fit, with numbers on it for the purpose of ascertaining the expansion of the blades. *D* a shoulder connected with *C* for the purpose of drawing it backwards or forwards. *E* the blades. *F* the end of the blades that fit into the stem *C* at *G*. *H H* two caps furnished with leather washers inside to prevent the escape of the water injected into the bladder. *I* the orifice through which the drills are passed and

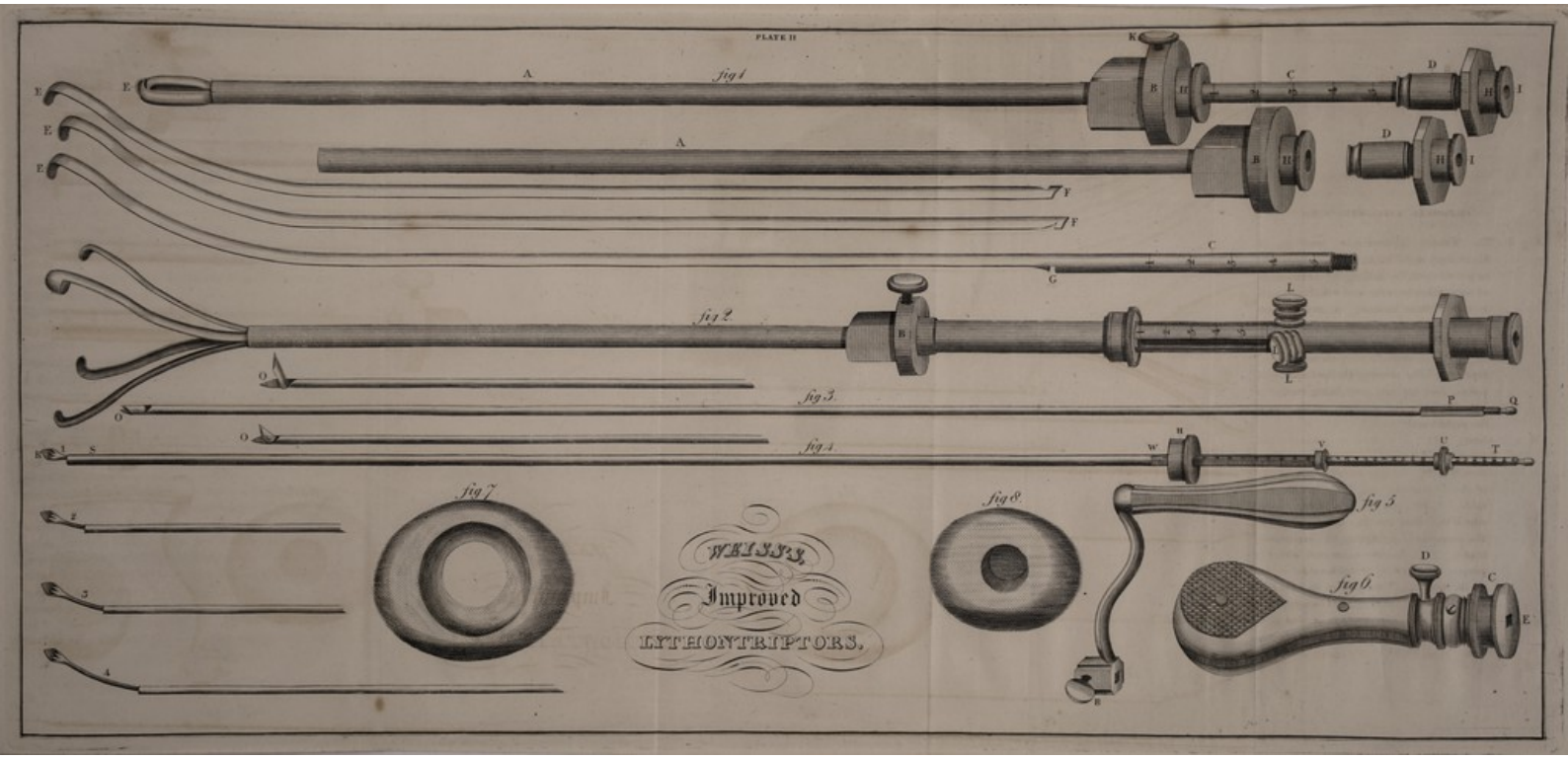
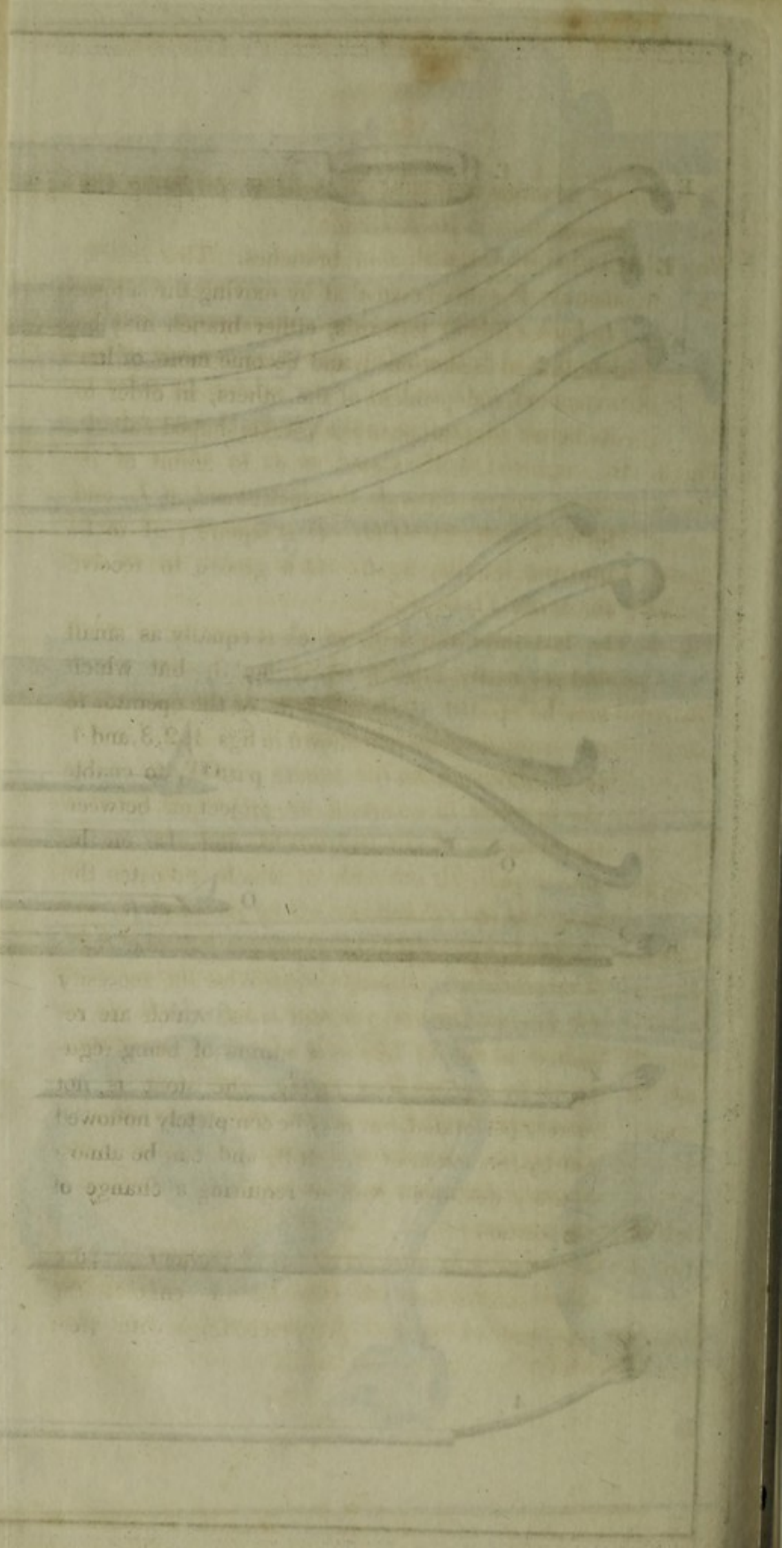


PLATE II
fig 1
fig 2
fig 3
fig 4
fig 5
fig 6
fig 7
fig 8
WEISS'S
Improved
LYTHONTRIPTORS.



the bladder injected. *K* a screw for fixing the sliding tube in its position.

Fig. 2. A Lithontriptor with four branches. This instrument is so constructed that by moving the screws *L* backwards or forwards, either branch may be lengthened or shortened, and become more or less expanded, independent of the others, in order to its better adaptation to the various shaped calculi.

Fig. 3. An improved drill, closed so as to admit of its being passed through the instrument at *I*, and then opened, as *O O*. *P* a square part to fit into the handle, fig. 6. *Q* a groove to receive the screw *D*, fig. 6.

Fig. 4. The last improved drill, which is equally as small and as easily introduced as fig. 3, but which may be opened at the pleasure of the operator to any requisite extent, as shown in figs. 1, 2, 3, and 4. It is graduated on the square part *W*, to enable the operator to ascertain its projection between the branches of the instrument, and also on the square part *T*, one side of which indicates the extent of the circle described by the head *R*, and the other side its projection beyond the tube *S W*. This efficient instrument supersedes the necessity for having drills of different sizes, which are required in fig. 3; and as it admits of being regulated to the greatest nicety, the stone is not merely perforated, but may be completely hollowed out by the action of the drill, and can be almost entirely destroyed without requiring a change of its position.

Fig. 5. Is a winch handle, to be used without a bow. The substitution of this handle enables the operator to regulate his proceedings with great

nicety, as it affords to his sense of feeling the most exact information of the effect and extent of the operation.

Fig. 6. A handle provided with a pulley, *C*, to be used with the bow.

Fig. 7. Represents a stone hollowed out by the improved drill.

Fig. 8. A stone perforated by the largest French drill.

Directions

For using the Lithontriptor.—Having introduced the instrument closed, as fig. 1, inject the bladder by means of a syringe with a stop cock, accurately fitted to the opening *I*, and by immediately introducing a drill, the water will be prevented from escaping. Then sound with the instrument, and having the point resting on the calculus, with the longest branch uppermost (which may be readily ascertained, as the figures are engraved on that side), hold it by the end *D*, and draw the tube *A*, by the shoulder *B*, gently towards you, which will allow the branches to open to their full extent; then, by pressing the shoulder *B* towards the point of the instrument, the calculus will be grasped; the shoulder of the instrument should then be firmly pressed forward and fixed by the screw *K*. After ascertaining, by repeatedly sounding with the drill against the calculus, that it is properly secured within the branches, the instrument should be fixed to the operating table by means of an apparatus for that purpose, or where that convenience is not afforded, it should be held perfectly steady by an assistant, and the operation may be proceeded with according to the following

directions for the drills, figs. 3 or 4, whichever may be preferred.

The drill, fig. 3. Having secured the stone, and introduced the drill, draw it back about half an inch, and turn it till the file mark on the square end *P*, is uppermost, when, by gently tapping it with the handle, the end *O* will open; next insert the square part *P* into the handle (fig. 6), and fix it by turning the screw *D*; then put the drill bow on the pulley *C*, press the handle very gently against the drill, and draw the bow backwards and forwards till the stone is sufficiently perforated in one direction; it will then be necessary to release the stone for the purpose of presenting a fresh surface for the action of the drill.

The improved drill, fig. 4. Close the drill by screwing the nut *U* quite home to *V*; introduce it through the end *I*, till it reaches the calculus, and screw the cap *H* upon the instrument; then insert the square part of the drill *T* into the handle (fig. 5), and secure it by the screw *B*. By turning the handle round, the drill will become gradually extended, and perforate the calculus; and if carefully managed, by keeping the head sometimes within the same circle, and at other times increasing its extent (which may be ascertained by attending to the graduations engraved upon it,) the calculus may be hollowed out until it becomes a mere shell, and easily broken by the *brisecoque* or any other instrument.

This drill may be also used with the bow, by substituting the handle, fig. 6, for the one, fig. 5, inserting the square part *T* into the opening *E*, and securing it by the screw *D*. The drill should be regulated by the nut *U*, and the cap *H* be left unscrewed,

to prevent the drill increasing the extent of its circumference, which should be as large as the stone will admit, at the same time not so large as to allow of the drill touching the branches. Although the use of the bow communicates more power and activity to the drill, and may be preferable for flat calculi, yet the winch handle is highly requisite to enable the operator to ascertain whether he has destroyed either side of the stone, as in that case it will be necessary to work the handle only towards the other side, to avoid the possibility of the drill coming in contact with the branches of the instrument.

The drill may be taken out to be cleaned or changed, by taking off the nut *U*, and drawing the head *R* quite out of the tube *S*.

PLATE XII.

PATENT SYRINGE.

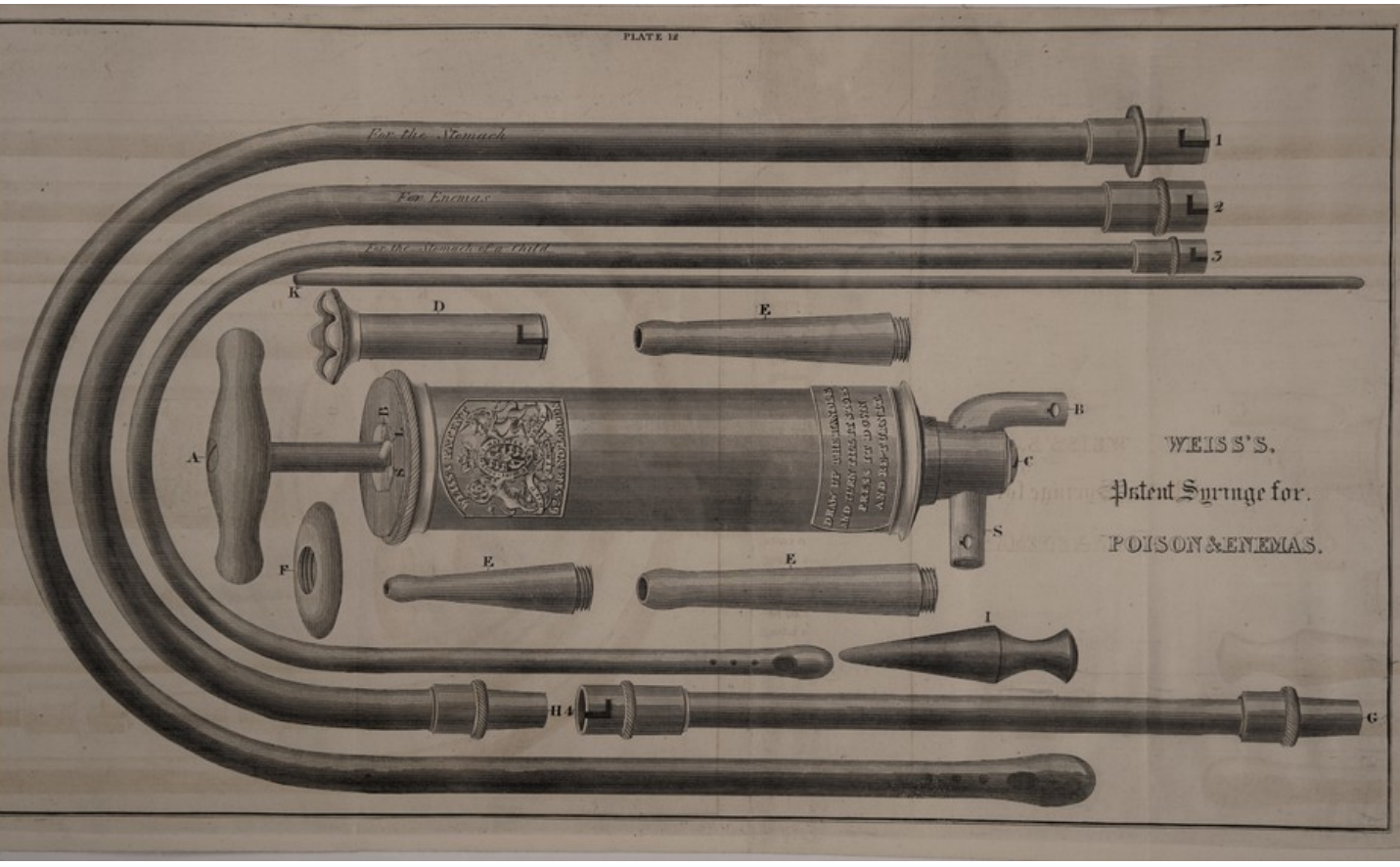
This syringe being made to act without valves, can be filled and emptied through either or the same pipe; when the index *L* points to *S* on the top of the syringe, the short or side pipe is open; when to *B*, the end or long pipe is open; so that if any liquid is drawn through the end pipe, by pressing the handle down it is again thrown out through the same pipe, the action being that of a common syringe; but if, when the handle is drawn up, you turn it towards the side and press it down the liquid will be discharged through the side pipe, and *vice versa:* there is, therefore, no occasion to shift the tubes during any operation.

No. 3, is a small tube for children. This tube may also be used for conveying food into the stomach in cases of locked jaw, &c. *K* a bougie, which being passed up the nostril to the throat, will cause sufficient irritation to make the patient open his mouth; the wedge *I* must then be introduced between the teeth to prevent the patient from biting the tube.

DIRECTIONS.

TO INJECT INTO THE STOMACH.—Introduce the œsophagus tube, No. 1, fix it on the end pipe *B*, and

PLATE 12


For the Stomach
For Enemas
For the Stomach of a Child
1
2
3
K
D
E
A
B
C
S
F
E
E
I
H
G
WEISS'S.
Patent Syringe for.
POISON & ENEMAS.

the short tube 4 upon the side pipe *S*; then put the end *G* of the short tube into the liquid to be injected, turn the index to *S*, draw up the handle, turn it towards *B*, and press it down.

To extract the Contents of the Stomach.—Let the index point to *B*, draw up the handle, turn it, and press it down.

For administering Enemas without the Aid of another Person.—Fix the tube No. 2 upon the side pipe *S*, and upon the end *H* fix the pipe *E* when screwed into the shield *F*; next, on the end pipe fix the metal stand *D*, which will steady the syringe when placed upright in the liquid to be injected, then let the index point to *B*, draw up the handle, turn it towards *S*, press it down, and re-turn it: by repeating this action any quantity may be injected.

For administering Enemas with the Aid of another Person.—Place upon the end pipe the elastic tube and pipe as before, and on the side pipe, the short tube, the end of which is to be put into the liquid; then let the index point to *S*, draw up the handle, turn it, press it down, and re-turn it.

For Transfusion.—The operation may be performed in two ways; either by inserting a tube into the vein of the person from whom the blood is to be extracted, or by allowing the blood to flow into a basin, from which it is pumped into the patient. The former way is preferable in most cases, as the blood is not exposed to the atmosphere.

Join the silver pipes to the elastic tubes, and fix one on each of the pipes of the syringe; then, having introduced one of them into the vein of the person from whom the blood is to be extracted, and the

other into the vein of the person into whom the blood is to be injected, turn the handle towards the *extracting* tube, draw up gently, turn it, and press it down; by repeating this action, any quantity of blood may be transfused, and the syringe being constructed without valves, all danger of its action being impeded by its becoming clogged is removed. If it is necessary to have the blood in a basin, fix the white stand on the curved pipe, and place it in the basin, then proceed as before. To render the apparatus as convenient as possible to the situation of the patient, the tubes are made all of one size, so that either of the silver tubes may be placed on the syringe without the intervention of the elastic tubes, and the latter may also be connected.

It is recommended after using, to throw a little water through the syringe.

Several successful cases of transfusion performed with this patent syringe, have been mentioned in the public journals.

For Cupping.—Fix on the end pipe of the syringe the brass mount, which fits the stop-cocks of the glasses, and proceed according to the directions in Plate XIV.

Hydrophobia.—In many cases it has been recommended to apply a cupping glass, for which this syringe will be exceedingly effectual, as any degree of exhaustion can be obtained; and to make it more complete, two very small glasses are added to apply to the finger, in case of a bite from a viper, &c.

For Catheters, &c.—To this syringe are adapted two catheters, one with an opening on each side to

draw off the contents of the bladder, the other with an opening at the extreme point to inject the bladder; also an elastic tube with several openings to inject the vagina,—ivory pipes for injecting a sinus, the ear, &c. For these no particular directions are required, as the different instruments will fit whichever pipe is found most convenient.

For Moxa.—Place on the syringe the brass tube, which encloses a plate perforated with small holes, and then put into the tube the lighted moxa which will be kept burning by throwing a current of air through the syringe.

This syringe can be likewise applied to many other purposes, too numerous for insertion.

Directions

For keeping the Syringe in order.—Should the Syringe act with any difficulty after laying by, immerse it for a minute or two in hot water. Now and then the piston should be soaked in sweet oil, either by unscrewing the top, pouring in a tablespoonful, and letting the syringe stand upright for a day or two, or by taking out the piston and soaking it in a teacupful of oil. In connecting the elastic tubes, it is recommended always to take hold of them by the brass mounts, which will tend greatly o preserve the tubes.

This syringe is also fitted up separately in very portable cases for each of the above-mentioned purposes, particularly as an enema syringe, for private use, of which three sizes are made in silver and brass.

PLATE XIII.

PATENT SYRINGE FOR ADMINISTERING ENEMAS.

When it is to be used without the aid of another person, join either of the elastic tubes to that with the metal neck No. 2, and fix it on the side pipe of the syringe *A*; then screw one of the ivory pipes into the shield No. 5, fix it upon the neck No. 6, and join the metal stand No. 3 to the end pipe of the syringe *B*; this stand, which is to steady the syringe, you will place in a basin containing the liquid to be injected, and then, having the syringe before you, introduce the pipe, turn the handle till the index *L* points to the letter *B* on the top of the syringe, draw it up, turn it, and press it down. By repeating this action, any quantity requisite may be injected.

When it is to be used with the aid of another person, join the two elastic tubes No. 1, fix them upon the pipe of the syringe *B*, with one of the ivory pipes and shield on the end of them; then on the side pipe *A*, fix the elastic tube No. 2, which being immersed in the liquid, turn the handle till the index *L* points to *S* on the top of the syringe, draw it up, turn it, and press it down.

PLATE 15.

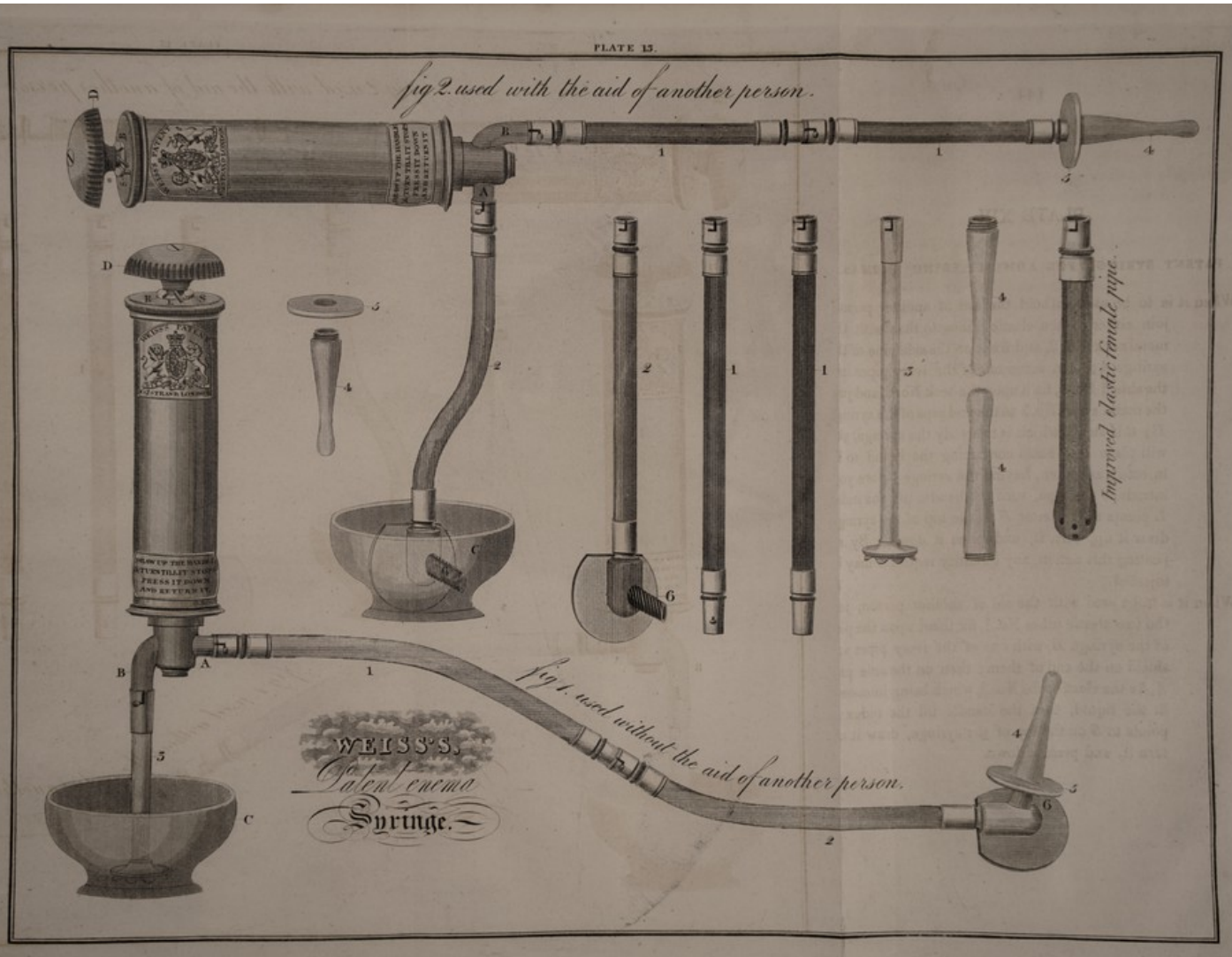


fig 2. used with the aid of another person.
Improved elastic female pipe.
fig 1. used without the aid of another person.
WEISS'S
Patent enema
Syringe.

PLATE XIV.

PATENT CUPPING APPARATUS.

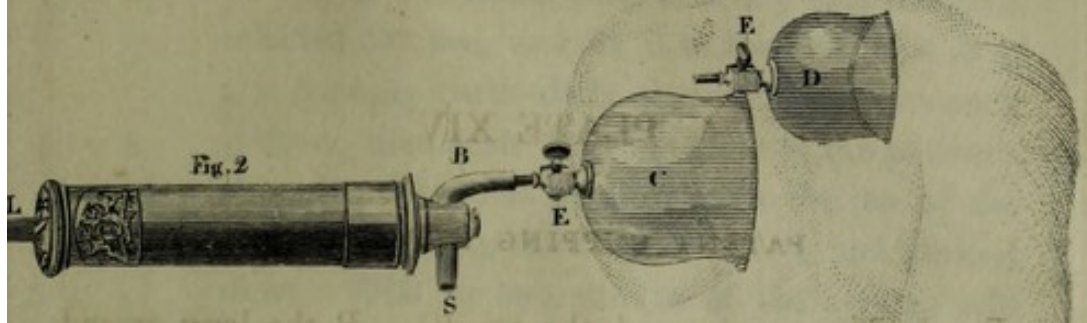
Fig. 1. The syringe. *A* the handle. *B* the long or end pipe. *S* the short or side pipe. *L* the index, which, by turning the handle, will point to *B* or *S* on the top of the syringe, and shews that *B*, the end pipe, or *S*, the side pipe, is open. *C* the cupping glass. *E C* the glass with the cock screwed into it.

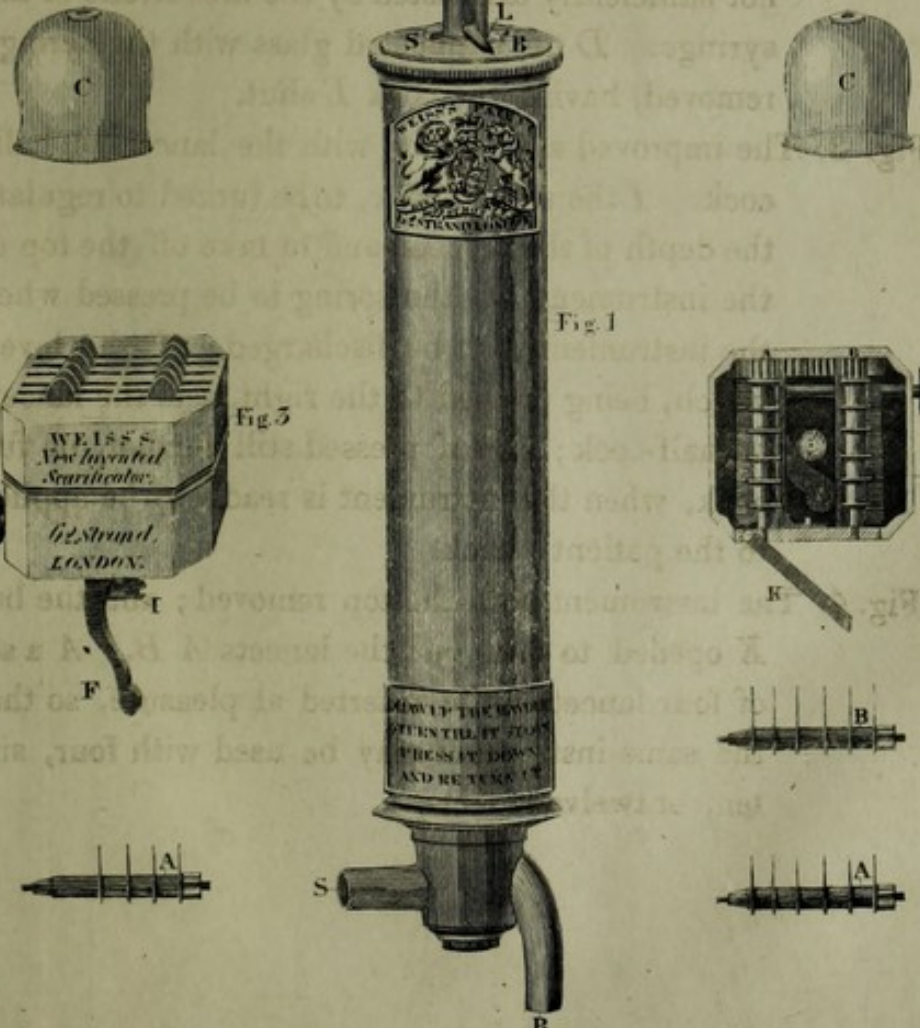
Fig. 2. The apparatus applied to the patient's back, the cock *E* open, and the index *L* pointing to *B* ready to exhaust still more, supposing the glass not sufficiently exhausted by the first stroke of the syringe. *D* the exhausted glass with the syringe removed, having the cock *E* shut.

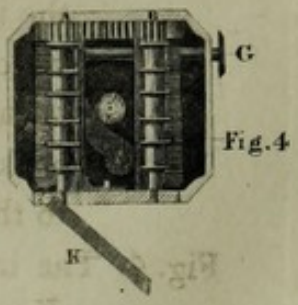
Fig. 3. The improved scarificator, with the lancets on half-cock. *I* the small screw, to be turned to regulate the depth of the lancets, and to take off the top of the instrument; *G* the spring to be pressed when the instrument is to be discharged. *F* the lever, which, being pressed to the right, sets the lancets on half-cock; and if pressed still further, on full cock, when the instrument is ready to be applied to the patient's back.

Fig. 4. The instrument with the top removed; and the bar *K* opened to take out the lancets *A B*. *A* a set of four lancets to be inserted at pleasure, so that the same instrument may be used with four, six, ten, or twelve lancets.

Weiss's Improved Patent Cupping Apparatus.







Directions.—Screw the small cock E firmly into the glass selected for use, and fix it to the end pipe B of the syringe, particularly observing that the cock is open; then press the glass close to the patient's skin, let the index point to B on the top of the syringe, draw up the handle, turn it, and press it down. One or two strokes of the syringe will sufficiently exhaust the glass, then shut the cock E, and take off the syringe, which may be applied to another glass.

When the glass is to be removed, open the cock E for a moment, to let in air; but shut it again, to prevent the blood running out. Should the pressure of the glass be too strong, open the cock E, but shut it again quickly.

Directions.—Screw the small cock *E* firmly into the glass selected for use, and fix it to the end pipe *B* of the syringe, particularly observing that the cock is open; then press the glass close to the patient's skin, let the index point to *B* on the top of the syringe, draw up the handle, turn it, and press it down. One or two strokes of the syringe will sufficiently exhaust the glass, then shut the cock *E*, and take off the syringe, which may be applied to another glass.

When the glass is to be removed, open the cock *E* for a moment, to let in air; but shut it again, to prevent the blood running out. Should the pressure of the glass be too strong, open the cock *E*, but shut it again quickly.

PLATE XV.

PATENT SYRINGE.

This plate represents the different modes of constructing the syringe, each of which is included in the specification, and are here introduced for the purpose of preventing any infringement of the patent unknowingly. Fig. 2 is the one whose construction I have found to answer the best, and it is that which I recommend for general use.

PLATE 15.

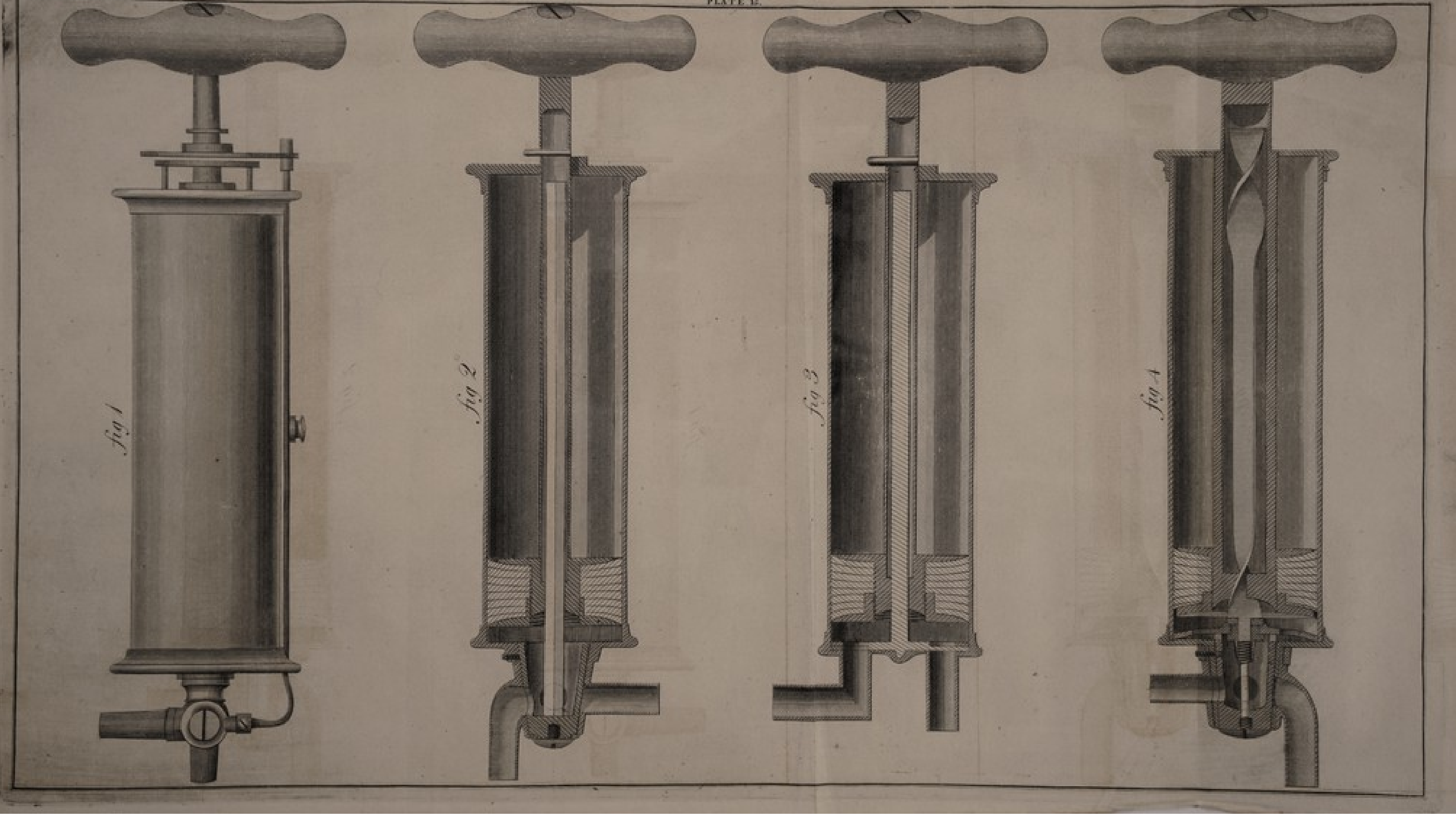


PLATE XVI.

IMPROVED ANEURISM NEEDLE.

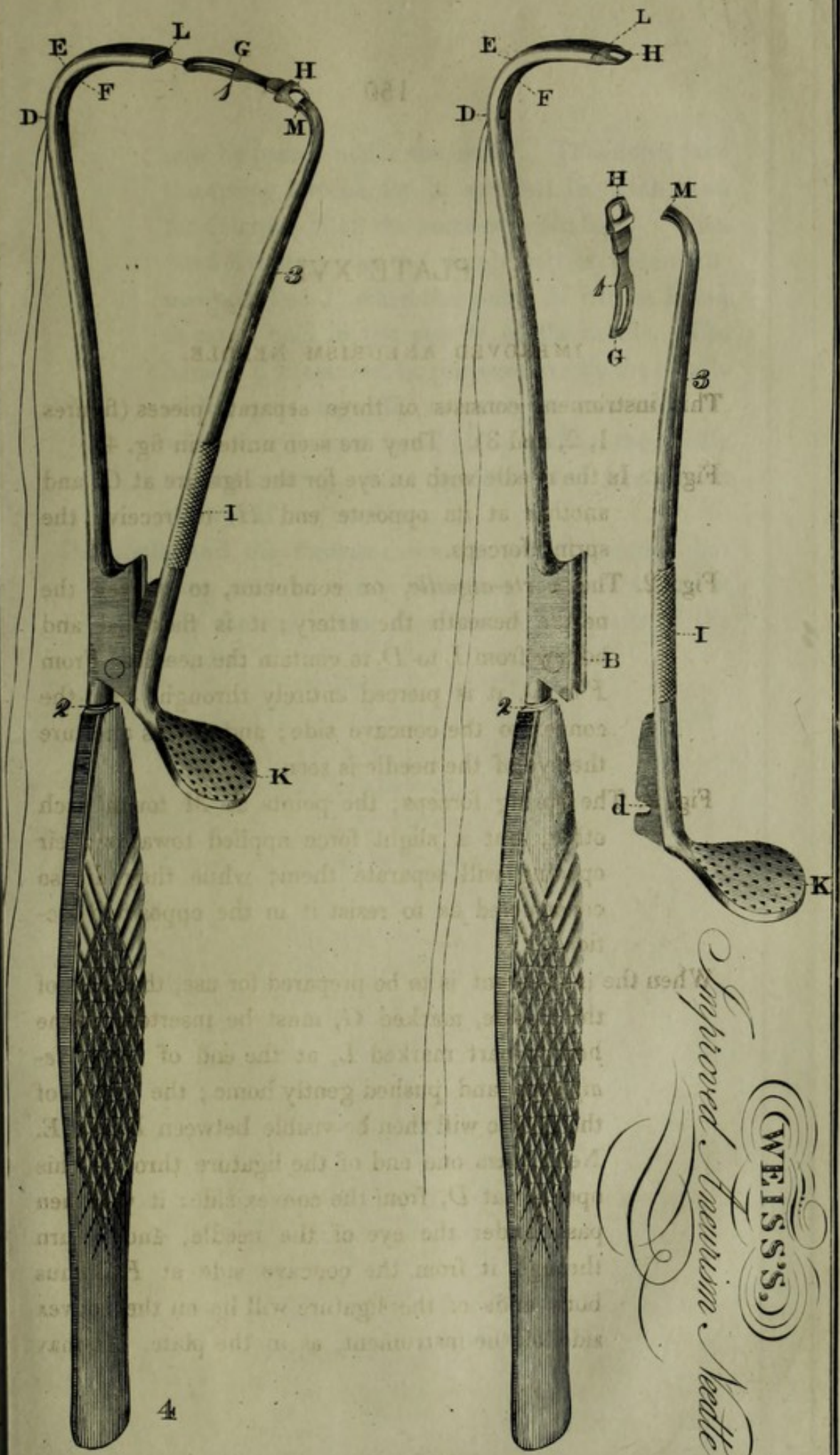
This instrument consists of three separate pieces (figures 1, 2, and 3). They are seen united in fig. 4.

Fig. 1. Is the needle with an eye for the ligature at *G*, and another at its opposite end *H*, to receive the spring forceps.

Fig. 2. The *porte-aiguille*, or conductor, to convey the needle beneath the artery; it is flattened and hollow from *L* to *D*, to contain the needle. From *F* to *D*, it is pierced entirely through, from the convex to the concave side; and at this aperture the eye of the needle is seen.

Fig. 3. The spring forceps; the points at *M* touch each other, but a slight force applied towards their opening will separate them; while they are so constructed as to resist it in the opposite direction.

When the instrument is to be prepared for use, that end of the needle, marked *G*, must be inserted in the hollow part marked *L*, at the end of the *porte-aiguille*, and pushed gently home; the eye *G* of the needle will then be visible between *D* and *E*. Next, pass one end of the ligature through this opening at *D*, from the convex side: it will then pass under the eye of the needle, and return through it from the concave side at *F*. Thus both ends of the ligature will lie on the convex side of the instrument, as in the plate. It may



Improved Aneurism Needle

(WEISS'S.)

now be passed under the artery. This done, take the spring forceps, fig. 3, and rest its notch *d* on the fulcrum *B* of the *porte-aiguille*, fig. 2. Then press the finger on the rough part of the instrument marked *I*, when the points *M* will be found to catch hold in the eye *H* of the needle. The handle *K* must now be pressed towards the handle of the *porte-aiguille*, to raise its extremity *M*, when it will draw forth, along with it, the needle and its ligature. Cut the ligature to free it from the eye of the needle.

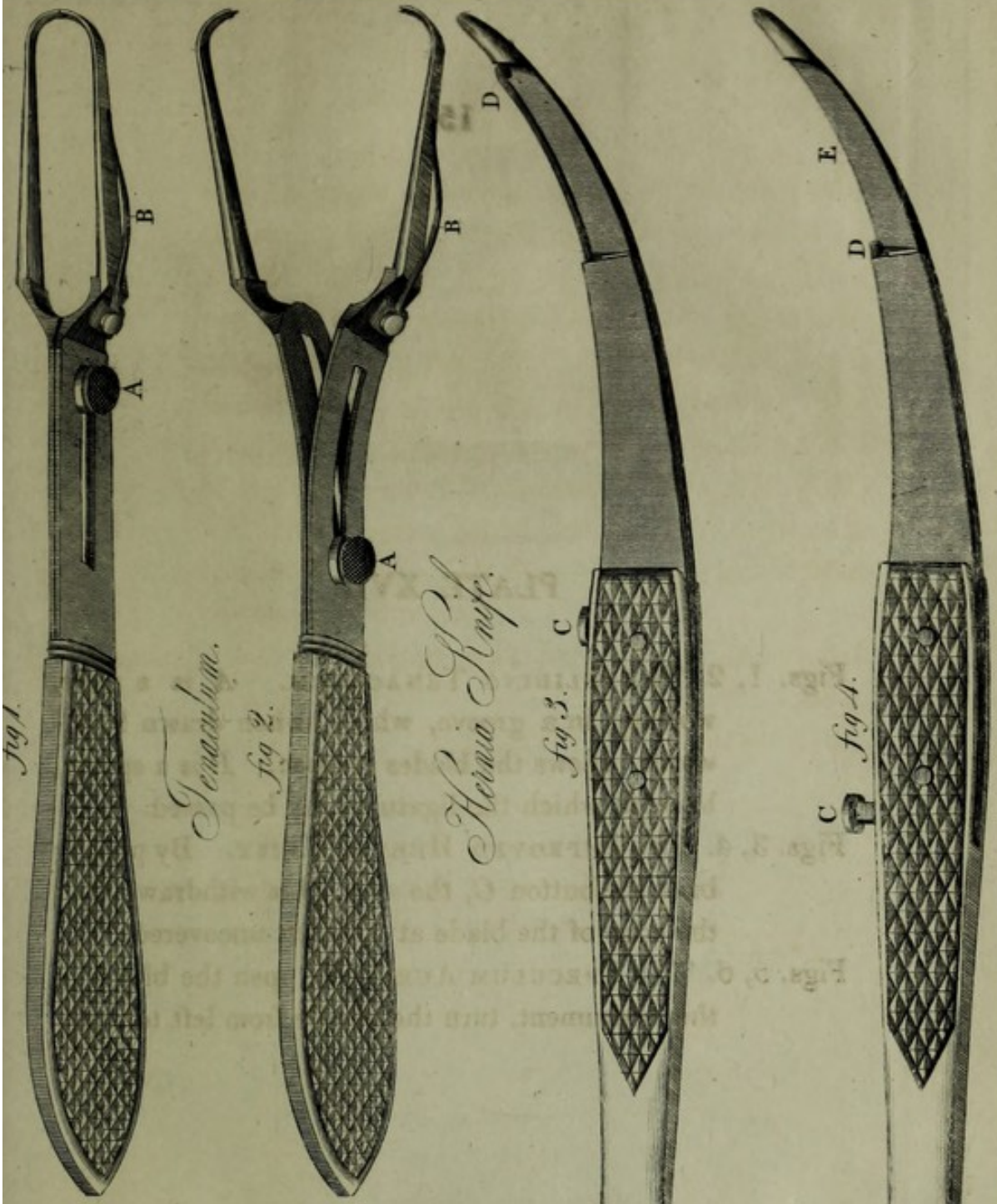
The needle and the forceps cannot be pulled asunder, but they may be easily separated by half a turn of the forceps in the direction of the plane of the needle.

PLATE XVII.

Figs. 1, 2. The Sliding Tenaculum. *A* is a slide, working in a groove, which, when drawn backwards, allows the blades to open. *B* is a spring, beneath which the ligature may be passed.

Figs. 3, 4. The Improved Hernia Knife. By pulling back the button *C*, the slide *D* is withdrawn, and the edge of the blade at *E* is left uncovered.

Figs. 5, 6. The Speculum Auris. To open the blades of this instrument, turn the handle from left to right.



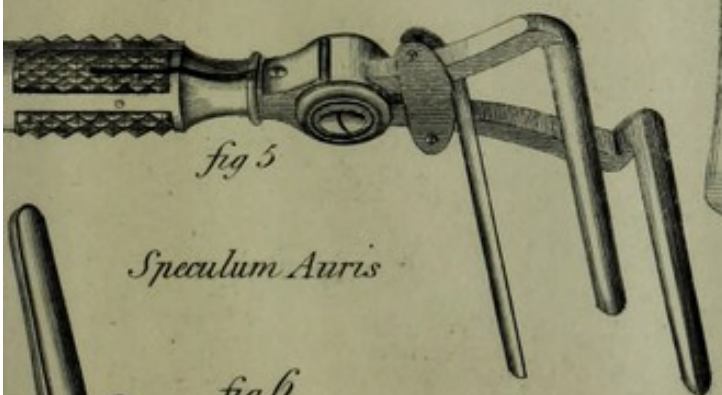


fig 5

Speculum Auris

fig 6

PLATE XVIII.

AMPUTATING SAW.

This engraving represents the slits made in the blade for the purpose of clearing the teeth, and of preventing the instrument from becoming clogged during the operation.

Weiss's

IMPROVED SAW.

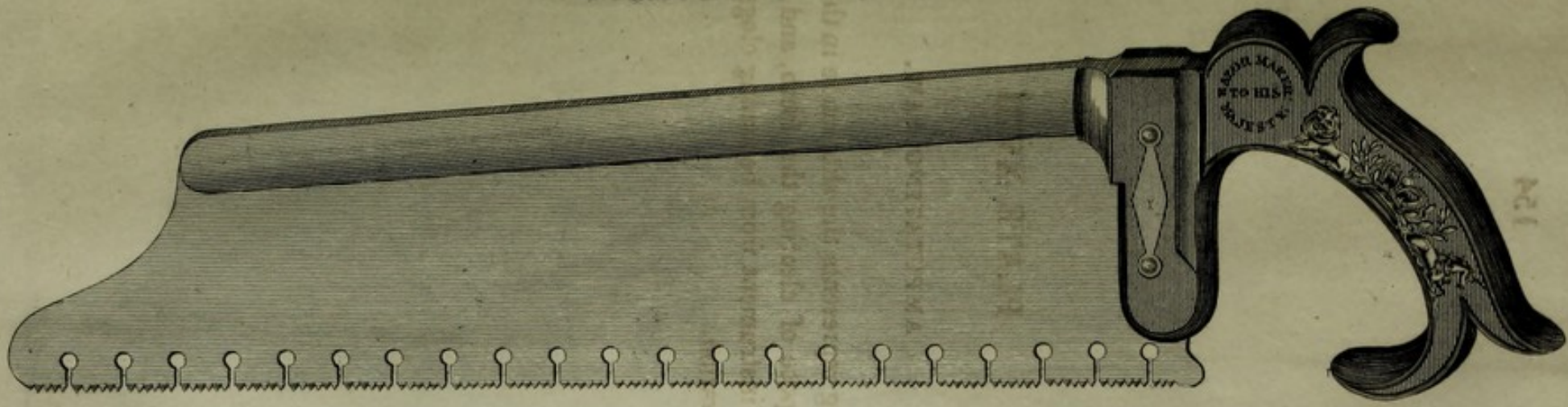


PLATE 18.

PLATE XIX.

INSTRUMENT FOR DISEASES OF THE PALATE.

A the key. *B* the instrument, with one half of the upper plate turned upon the other. *C* the appearance of the instrument when about to be passed into the mouth, with the key inserted. *D* represents the instrument as when worn, the key being withdrawn, and the upper plate forming a complete circle.

To apply this instrument, insert the key into the bottom plate, and turn it half round, as at *C*, then having placed it in the orifice, turn the key back again. The reverse mode will remove it when necessary.

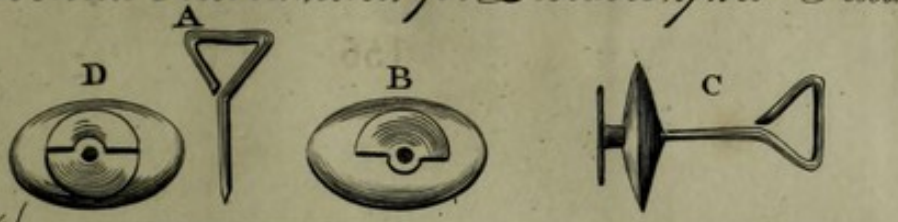
IMPROVED FIELD TOURNIQUETS.

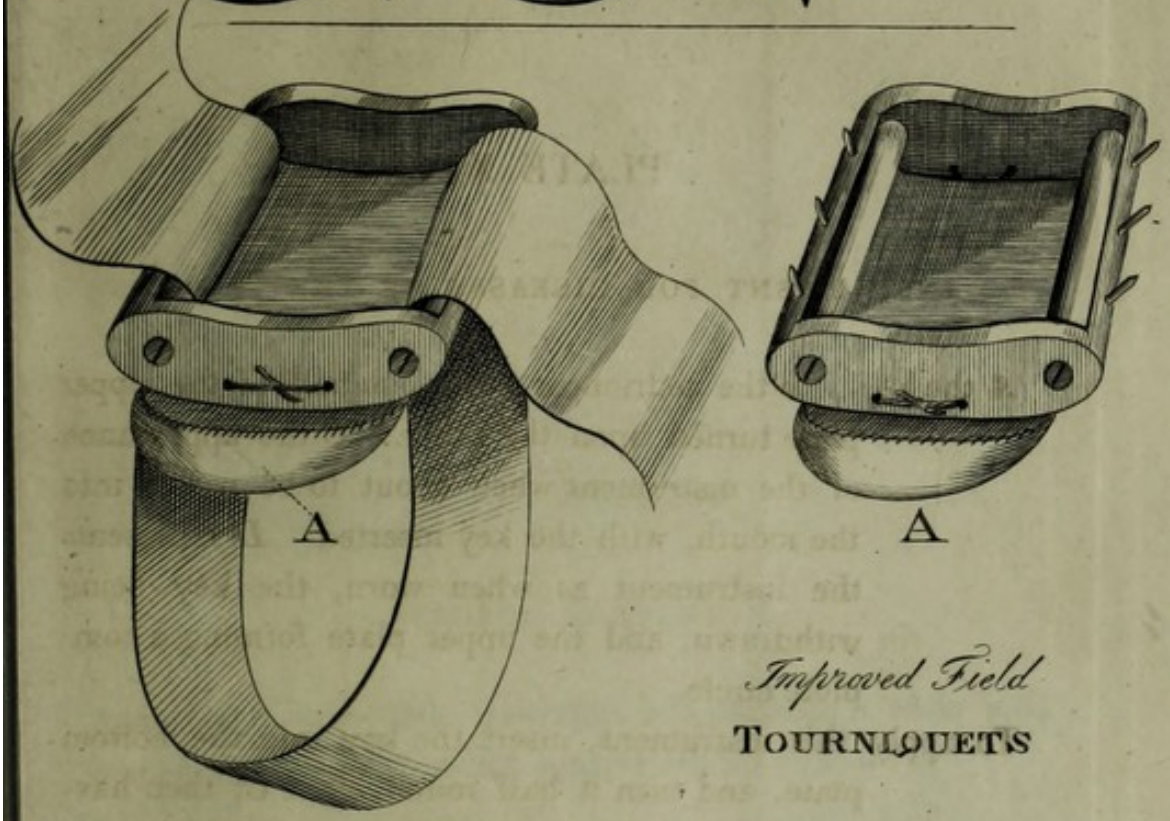
A is a tourniquet of the simplest construction, capable of being tightened by the application of one or both hands, as circumstances may admit.

B is a tourniquet rendered still more powerful by means of a small lever. This little instrument is scarcely inferior to the screw tourniquet.

WEISS's

New invented Instrument, for Diseases of the Palate





Improved Field

TOURNIQUETS

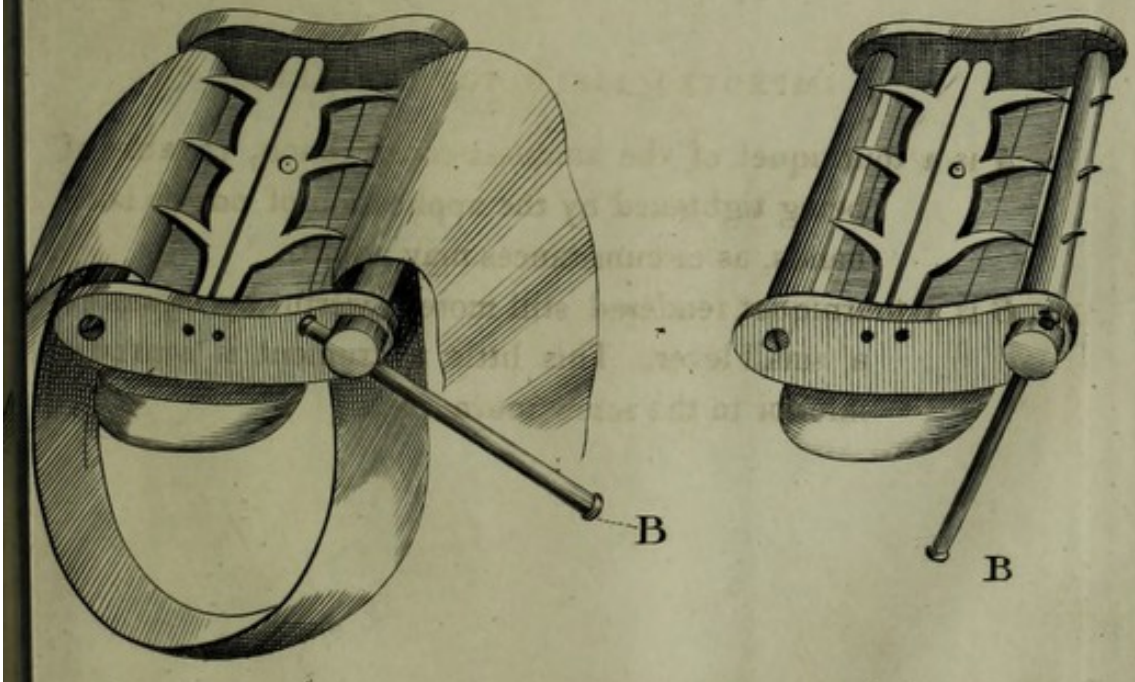
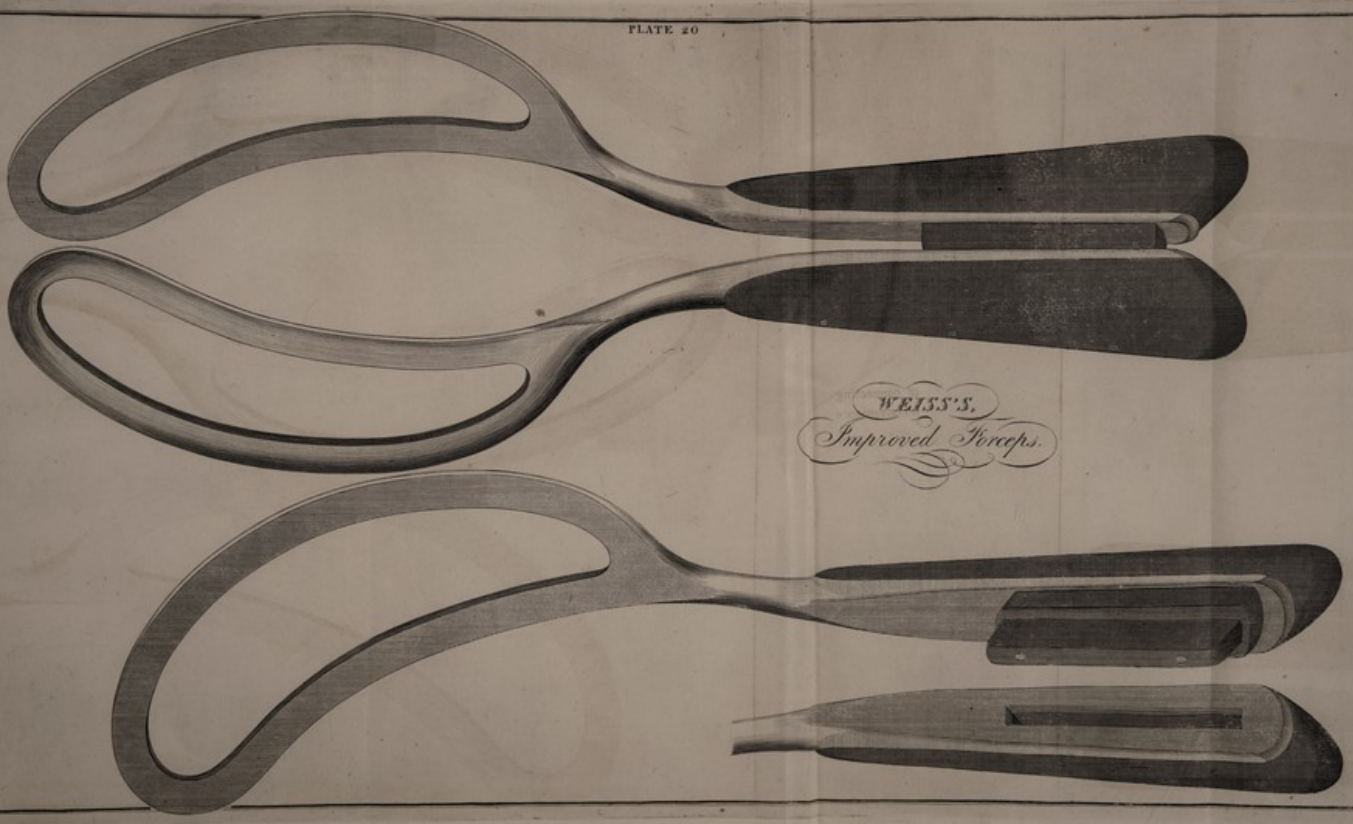


PLATE XX.

MIDWIFERY FORCEPS.

This plate represents the improved method of connecting the blades of the forceps without the inconvenience of a joint.

PLATE 20



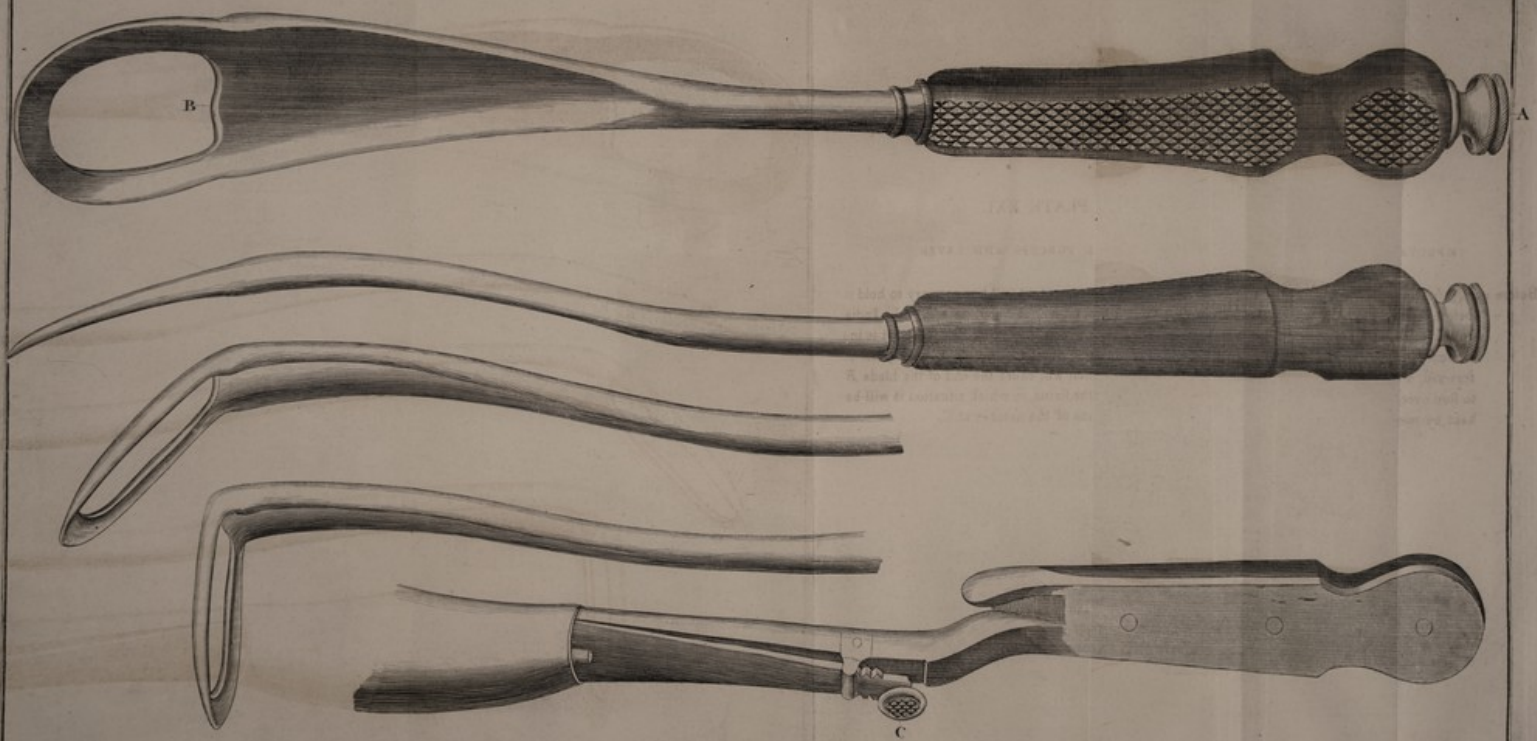
WEISS'S.
Improved Forceps.

PLATE XXI.

IMPROVED FORCEPS AND LEVER.

Before using this instrument, it will be necessary to hold it before a fire, or in hot water, to soften the India rubber with which it is covered. When it is introduced, press down the button *C*, and push it forward, which will cause the end of the blade *B* to fold over the fœtus, in which situation it will be kept by means of the notches at *C*.

PLATE 21.



WEISS'S IMPROVED FORCEPS & LEVER.

PLATE XXII.

BANDAGES, &c.

Fig. 1. A bandage for Prolapsus Ani, consisting of a belt intended to be worn round the waist, to the hinder part of which is appended a strap *A*, furnished with springs, which buckles in front, and has a piece of ivory *B* attached to it for the support of the rectum.

Fig. 2. Is a strap of the same kind as *A*, fig. 1, but furnished with a piece of sponge instead of ivory.

Fig. 3. The improved spring for Umbilical Hernia in females. It consists of a steel busk to be worn in the stays, to which is attached a spring with a pad at the end of it, which keeps up a constant pressure on the rupture.

Fig. 4. Represents the manner of applying the elastic knee cap and ankle bandage.

Bandages &c

Fig 1

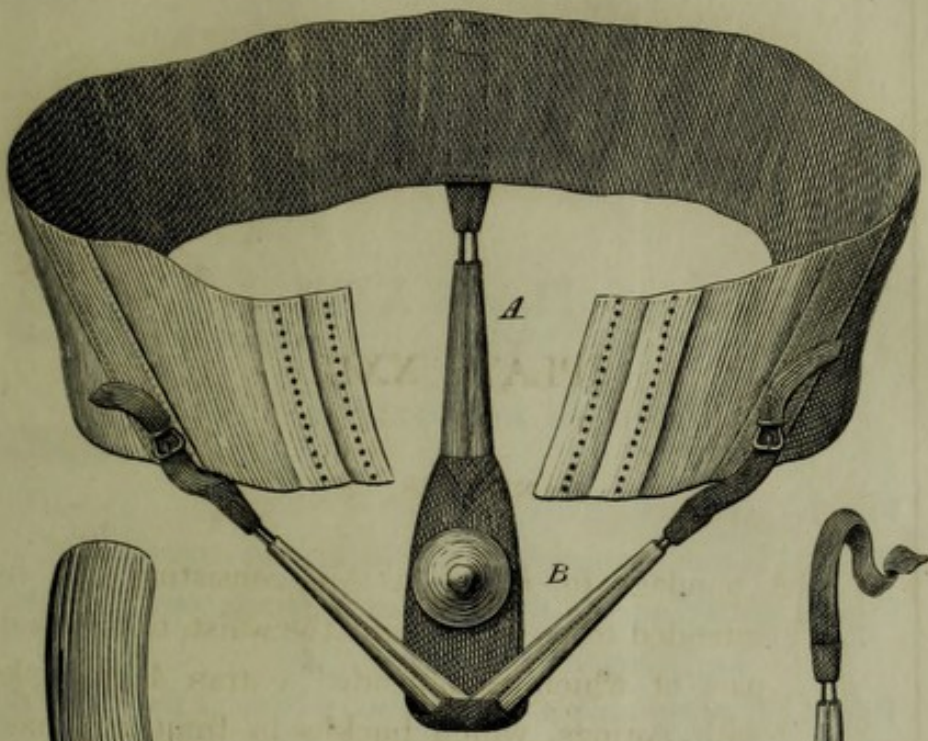
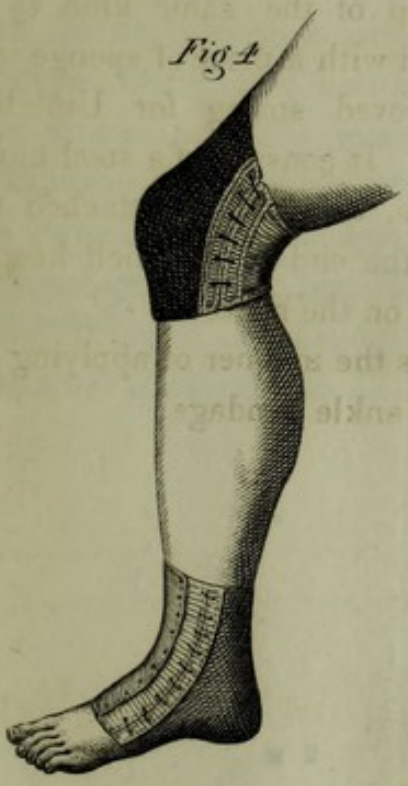


Fig 3

Fig 4



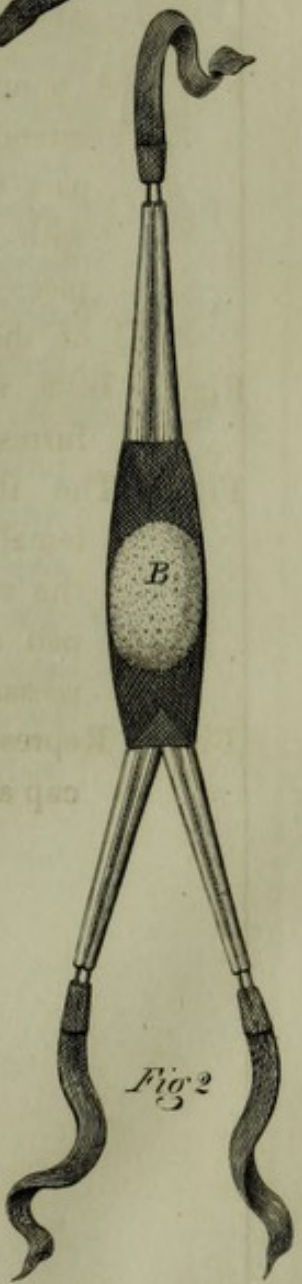


Fig 2

PLATE XXIII.

WEISS'S IMPROVED SYRINGE.

Fig. 1. The syringe fitted up for self-use.

Fig. 2. When prepared for use by another person.

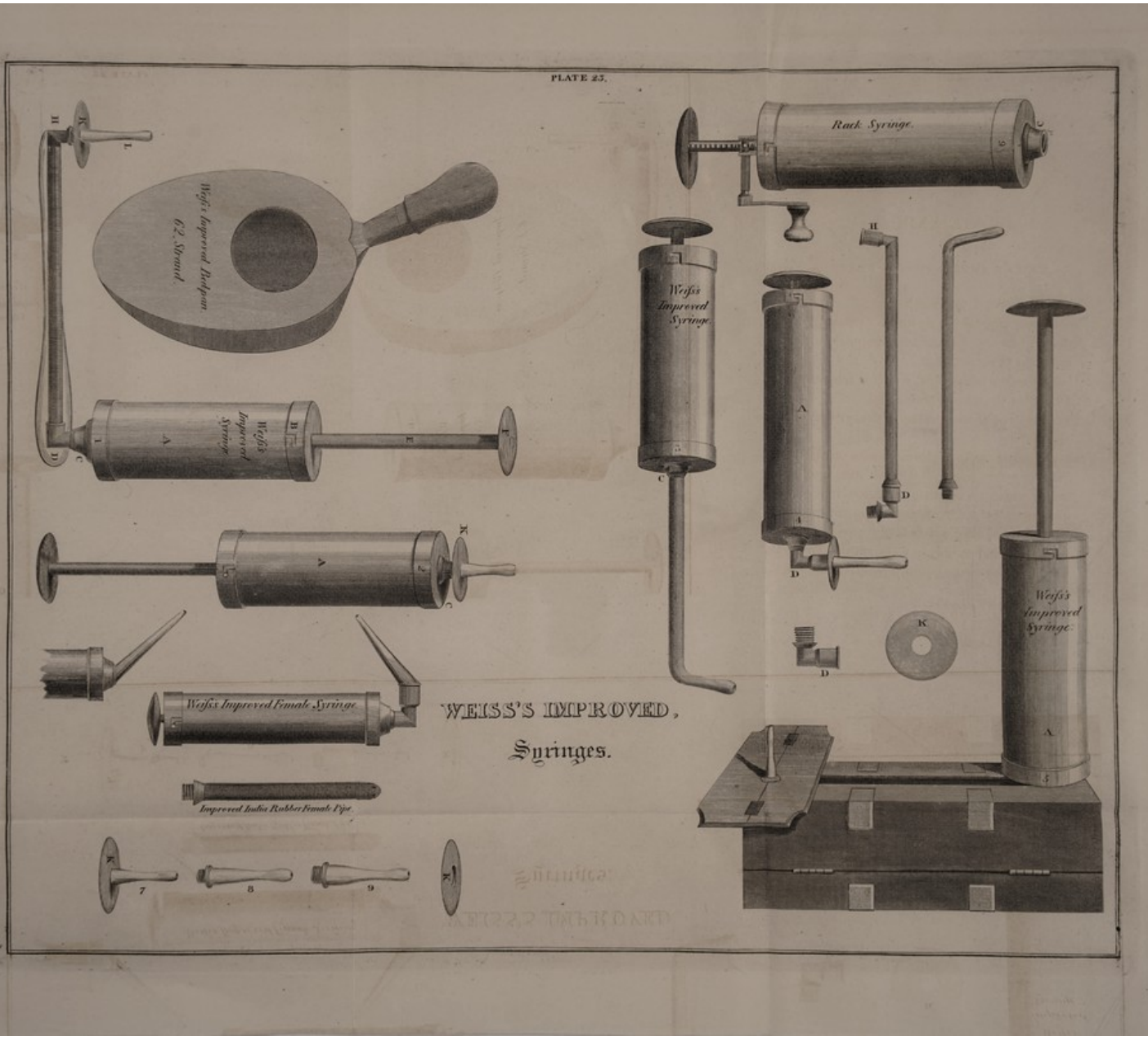
Fig. 3. Fitted up in the manner best adapted for persons inclining to corpulency.

Fig. 4. Having only a short pipe, which is frequently preferred for the sake of portability.

Fig. 5. Fitted up for self-use, the box of the syringe forming the seat.

When the instrument requires cleaning, take off the top *B*, pull out the piston, and wash the inside with warm water, taking care to wipe it dry. Should the piston get too loose, put it into hot water for a few minutes, after which apply some pomatum or sweet oil, and it will act correctly. To fill the syringe, pour in the liquid through the hole at the end, which will preclude the admission of air.

PLATE 23.



WEISS'S IMPROVED,

Syringes.

PLATE XXIV.

WEISS'S IMPROVED FEMALE AND ENEMA SYRINGE.

This syringe can be used for injecting the vagina, and for administering enemas to children or adults, where it is necessary only to inject a small quantity. For the vagina, let the pipes be screwed on as *A B C*, or as *A C*, whichever is most convenient. For enemas, without the aid of another person, as *A B D*, or in case of illness, when it may be used by an assistant as *A D*.

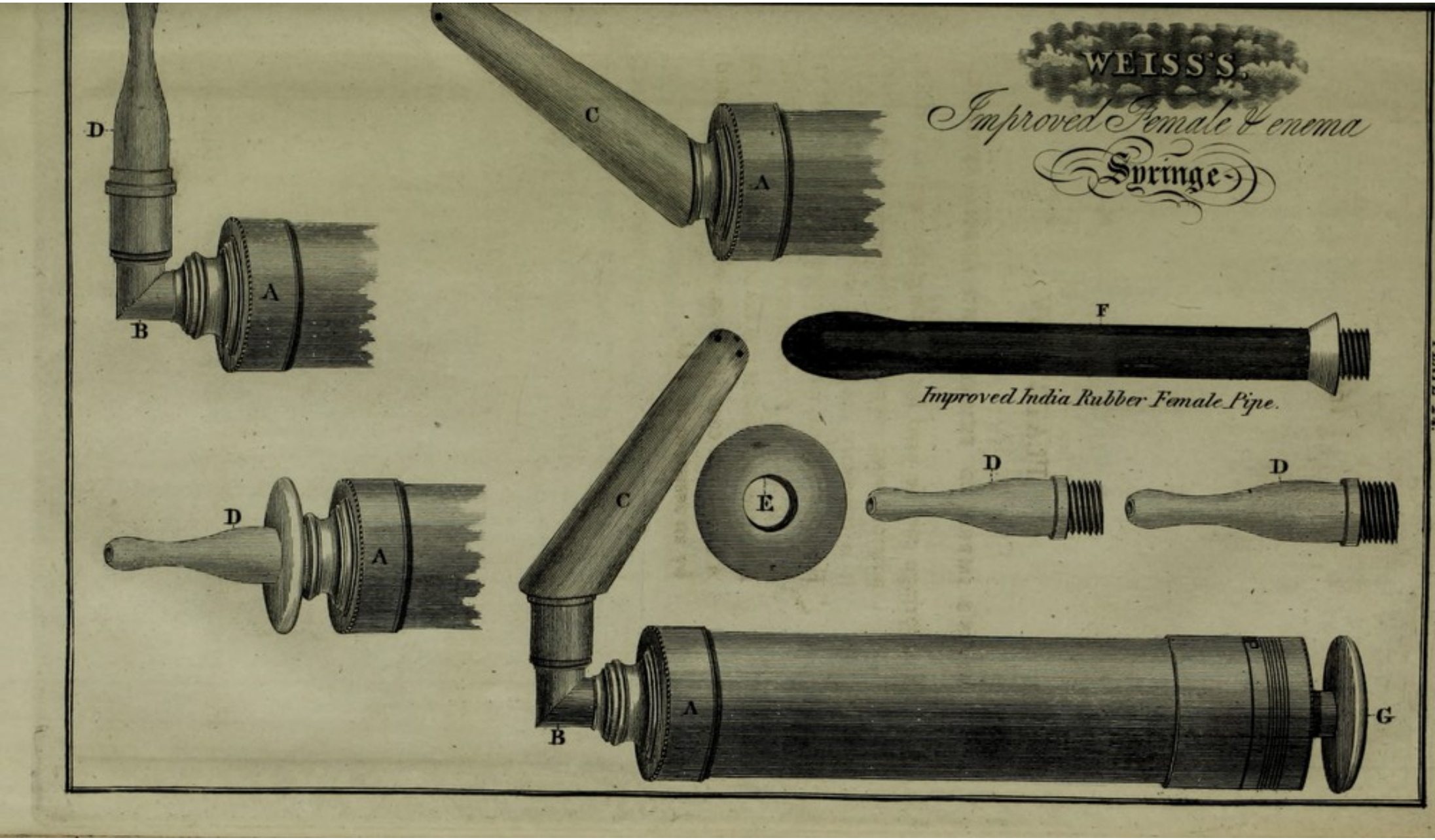

WEISS'S.
Improved Female & Enema
Syringe.
D
A
B
C
A
F
Improved India Rubber Female Pipe.
D
A
C
E
D
D
C
A
B
A
G
PLATE 24.

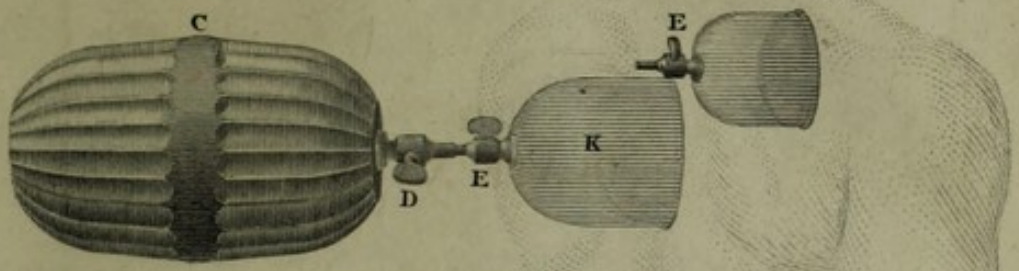
PLATE XXV.

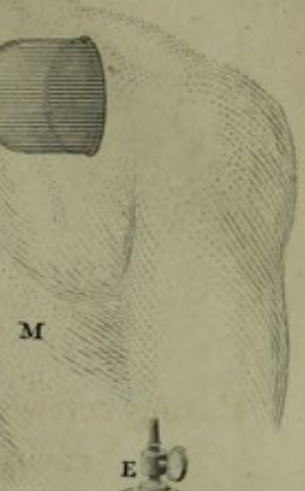
CUPPING APPARATUS.

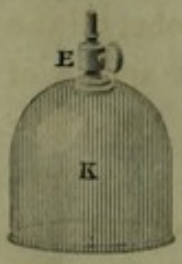
Having screwed the cock *D* firmly into the globe, fill the cavity in the centre of the cup with spirits of wine, and set it on fire; then place the globe upon the cup, taking care that the cock *D* is open, and keep it there till it is quite hot; shut the cock and dip the globe into cold water. Next screw one of the cocks marked *E* into one of the glasses, fix it to the globe, apply the glass to the patient, and open the cock *D*; the cock *E* having been previously opened the air will rush into the globe; when the skin is sufficiently raised, shut both the cocks, and pull off the globe from the glass; when the glass is to be removed, open the cock on the glass.

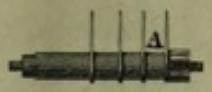
CUPPING APPARATUS.

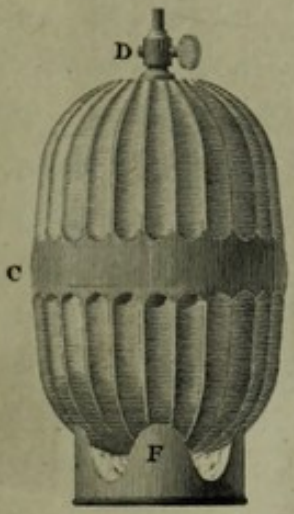
PLATE 25

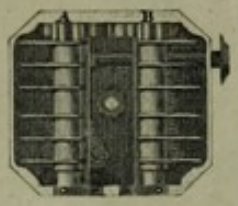












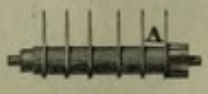


PLATE XXVI.

PATENT VETERINARY SYRINGE.

Having joined the elastic tube *D* to the wooden pipe *F*, and fastened it upon the pipe of the syringe *S*, fix the metal stand to the other pipe of the syringe, and put it in the liquid to be injected; then, having introduced the wooden pipe, turn the handle so that the point on the piston rod is at *B*, on the top of the syringe; draw up the handle, turn till it stops, and press it down. By again turning to *B*, &c., any quantity can be injected.

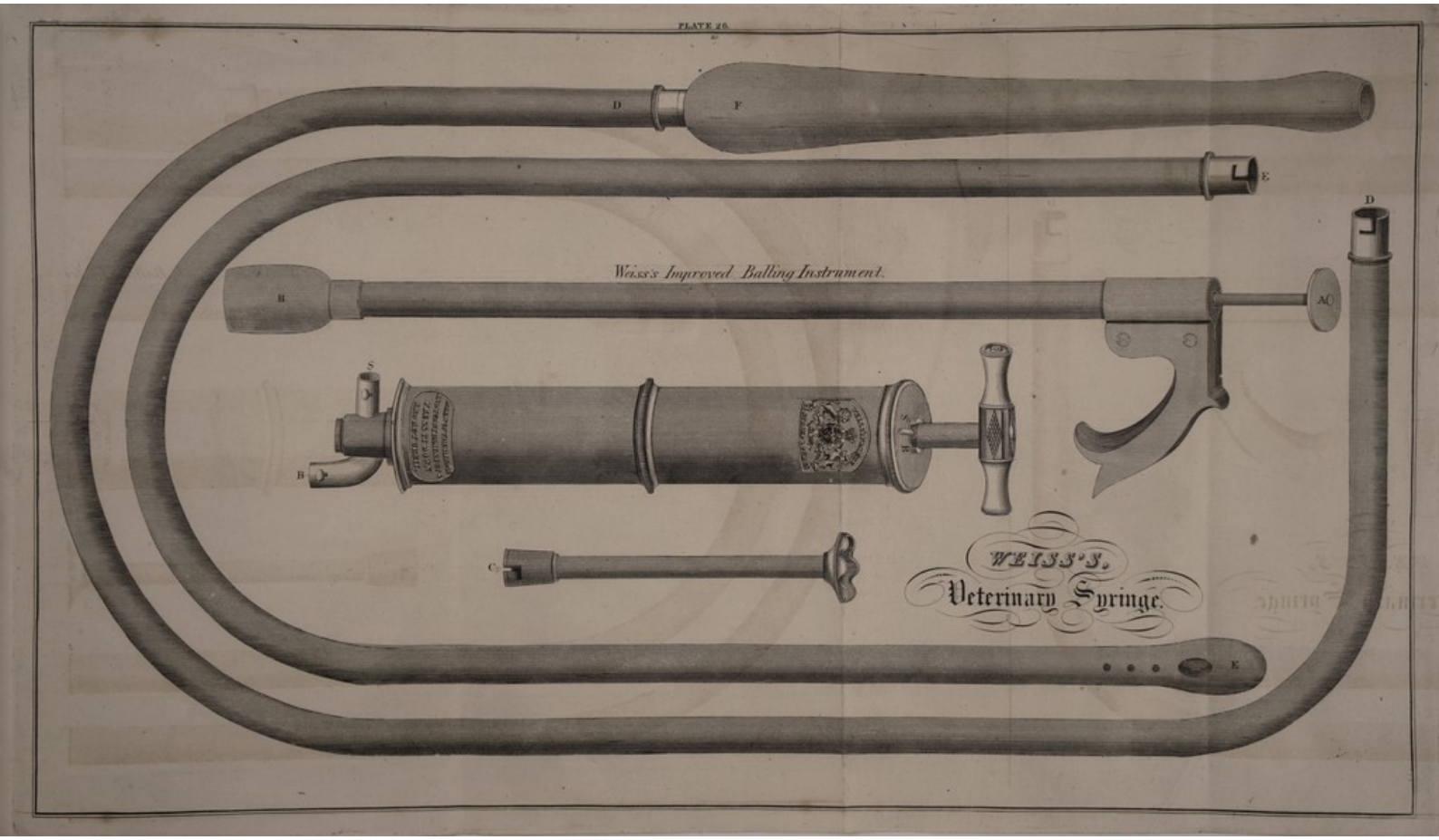
When it is intended to be used as a stomach pump, fasten the tube *E* to the pipe of the syringe *B*; then, having introduced it into the stomach, turn the handle to *B*, and proceed as before.

In using this syringe, observe, that the index on the piston rod always points to that pipe which is open.

Should the syringe act with any difficulty after laying by, immerse it for a minute or two in hot water. Now and then the sucker should be soaked in sweet oil, either by unscrewing the top, pouring in a tablespoonful of oil, and letting the syringe stand upright for a day or two, or by taking out the sucker and soaking it in a teacupful of oil; the former way is, however, recommended.

Stop-cocks can also be attached to this syringe, for injecting anatomical preparations.

PLATE 26.



WEISS'S.

Veterinary Syringe.

IMPROVED BALLING INSTRUMENT.—Draw up the handle *A*, and place the ball in the lower end *B*; then, having put it into the mouth of the animal, push down the handle, by which the ball is forced out of the instrument over the root of the tongue, and must pass into the stomach.

PLATE XXVII.

PATENT HORSE PHLEME.

Fig. 1. Represents a horse phleme of the most improved construction, in which the lancet cuts its way through the skin.

Having inserted a lancet of the size required, take hold of the handle *A* with the fingers of the right hand, pressing the thumb upon *B*; then draw back the handle until it stops, place the brass piece *C* firmly against the vein of the horse, and press down the handle *D*, which will release the lancet. The depth of the incision may be previously regulated by moving the brass piece *C* backwards or forwards. When you wish to change the lancet, take out the screw *F*.

Fig. 2. A phleme constructed on the same principle as the common phleme and blood stick, the lancet being forced forward by the spring *A*, and returning immediately.

PLATE 27.

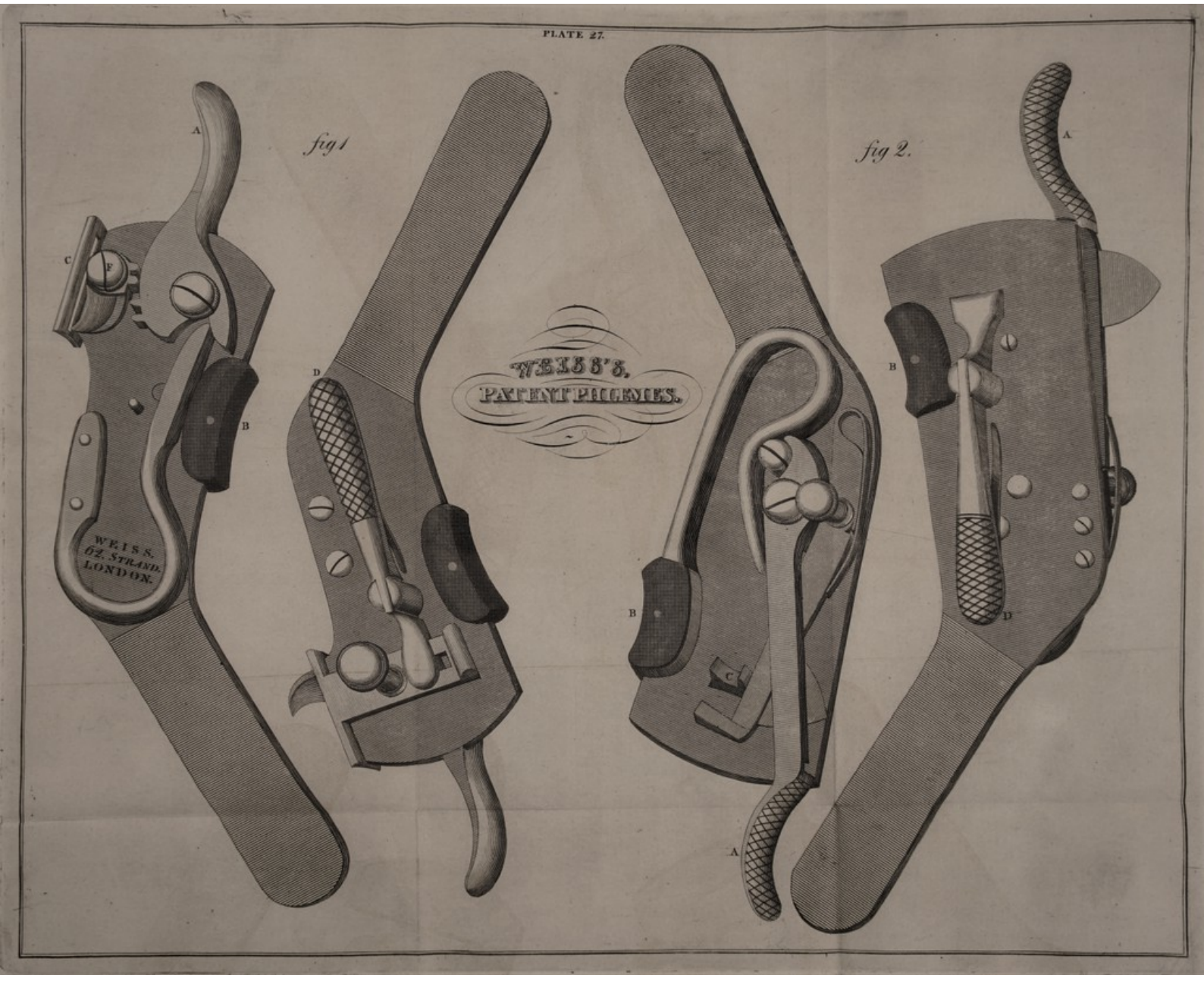


fig 1
fig 2.
A
B
C
D
F
WEISS'S.
PATENT PHEMES.
WEISS,
62. STRAND.
LONDON.

TESTIMONIALS.

In submitting this Book to the Public, I take leave to annex the following Testimonials: my motives for so doing are sufficiently apparent, and will, I trust, be considered in every respect justifiable by the candid reader.

TESTIMONIALS

IN

FAVOUR OF J. WEISS'S INSTRUMENTS.

Victualling Office, Somerset Place, 18th Oct. 1819.

IT appears from the records of the late Medical Board, that Mr. John Weiss has long been employed to furnish instruments for His Majesty's Navy. He is still employed under this Board, and his conduct has been such on all occasions as to merit the approbation of this Board.

J. C. SEARLE,

Chairman of the Board of Commissioners.

Sackville Street, May 12th, 1824.

SUCH are the advantages derived from Mr. Weiss's ingenuity and exertions in the improvements of surgical instruments, and so strongly am I impressed with his merits in that respect, that I have felt myself called upon, as a matter of public duty, to employ him for such instruments as are required in the Royal Hospital of Chelsea, in preference to any other competitor.

EVERARD HOME.

May 14th, 1824.

I MOST heartily concur in every sentiment which has been expressed by Sir Everard Home, and am most decidedly of opinion, that Mr. Weiss deserves all the support and encouragement which the public can give him.

ASTLEY COOPER

May 15th, 1824.

SIR,

I AM particularly happy in the opportunity you have given me of bearing testimony to the utility of the surgical instruments which you have improved with so much skill, industry, and perseverance. Having, in my public situation as Inspector of Hospitals, seen your instruments in constant use during a series of years, I have always heard the different surgeons speak in high terms of their superiority. Persons employed by government, who perform their duty so zealously, ought to be liberally rewarded, as the accidents to which those brave men are liable who fight for their king and country ought to be provided against by the best instruments, and the supply of them is one of the first duties of the superintendants appointed to this branch of the service. For my own part, retired as I am from that service, I much regret that it is not in my power to render you that support which I could wish, and which you deserve by your devotedness and zeal for the interests of his Majesty's navy. I am, Sir, with best wishes for the success of your meritorious assiduity,

Your humble servant,

ANDREW BAIRD.

May 15th, 1824.

SIR,

HAVING long been witness to your talents and industry in the line you profess, though I conceive there is great demerit in injustice, yet I think there is little or no merit in doing justice; therefore I have not the smallest hesitation in thus declaring my opinion of the public utility

experienced from your labours in a very useful employ, of which I have myself witnessed many instances.

I am, Sir,

Your humble servant,

J. HEAVISIDE.

To Mr. Weiss, Strand.

16, *Saville Row, May* 18*th*, 1824.

I HAVE been in the practice of making use of many surgical instruments which have been invented and improved by Mr. Weiss, and I am happy in being able to bear testimony to the great ingenuity which he has displayed in a number of instances.

B. C. BRODIE.

Saville Row, May 14*th*, 1824.

I THINK so highly of Mr. Weiss's talents as a surgical instrument maker, that I now employ him for making and repairing the greater part of the instruments I require for the use of the Royal Military Asylum, Chelsea, the Lock Hospital, and my private patients. I therefore feel myself justified in recommending him to the favourable notice of the Director-General of the Army Medical Board.

P. MACGREGOR.

Berkeley Street, May 16*th*, 1824.

I AM happy to bear my testimony to the ingenuity and talents of Mr. Weiss, which are constantly exerted for the improvement of every instrument used in the practice of surgery, and in the most liberal manner. I consider him to be fully entitled to all the support and encouragement which can be given him, and I recommend him particularly to the consideration of all public bodies.

J. G. GUTHRIE.

Sackville Street, May 14th, 1824.

As surgeon to the Royal Hospitals of Haslar and Greenwich, I have used the instruments made by Mr. Weiss with great satisfaction for many years. I have observed his various improvements and inventions, and now most willingly give my testimony to his ingenuity and merits. He has the credit of inventing many valuable instruments, and cannot be too highly commended for his liberality in endeavouring to extend their application, apparently more for the benefit of surgery and humanity, than for his own advantage. For these reasons, I consider him fully entitled to the approbation and encouragement of the public and the profession.

GEO. VANCE.

Spring Gardens, 17th May, 1824.

I HAVE no hesitation in declaring it to be my opinion, that Mr. Weiss highly deserves the support and patronage, not only of the profession, but of the public and public boards, on account of the industry and ingenuity he has evinced in inventing and improving many surgical instruments of great importance. Mr. Weiss having chiefly supplied the Naval Hospital at Deal, whilst I was surgeon of the institution, and exclusively the Westminster General Dispensary, to which I am attached, well enables me to speak thus decidedly of his merits.

A. COPLAND HUTCHISON.

May 18th, 1824.

HAVING obtained an intimate knowledge of the important and useful surgical instruments which Mr. Weiss has either invented or improved, it is a mere act of duty to the public, and of justice to him, to bear testimony to their general excellence.

The originality of genius, ingenuity of mind, and industrious perseverance, which he has evinced in devising and perfecting those instruments, and the expenses he has incurred in the experiments instituted for their execution, entitle him to the liberal patronage of the medical profession.

The employment of those instruments has rendered some dangerous operations unnecessary, or safer, and some difficult ones easier and more successful, which has greatly tended to raise the reputation of British surgeons.

From the spirit to encourage genius and useful talents, which, I know, actuates those who preside over the medical departments of the army and navy, Mr. W. is strenuously urged to lay his claims to their patronage before them.

R. W. Bamfield.

TO

THE HONOURABLE

THE

ARMY MEDICAL BOARD.

The MEMORIAL of JOHN WEISS, Surgical Instrument Maker, Strand, London;

SHEWETH,

THAT your Memorialist, after many years of careful and laborious application, has invented and improved various surgical instruments, which have been fully approved by the members of your Honourable Board, as well as by other eminent gentlemen of the profession, and have been found of such practical utility, that in experienced and skilful hands they have been the means of saving many valuable lives.

That your Memorialist has never sought to derive from these inventions and improvements that emolument which might have been insured by the exclusive protection of a patent; but has depended for his remuneration solely on that preference which their merits might obtain for them from the profession.

That your Memorialist, fully confident of success in a fair and open competition, is at the same time aware, by experience, how far his interests are liable to be injured by imitators, who, in a clandestine and unworthy manner, con-

vert his labours to their own advantage; and is convinced that his best safeguard against their artifices would be, that public sanction to which those labours might entitle him, from the candid and impartial discrimination of your Honourable Board.

That, without any undue pretension, your Memorialist cannot but regard himself as possessing some claim to that sanction, when he perceives that several of his most useful inventions are now generally adopted by the army. Among other instances, he may be permitted to particularize that of the surgical instrument-case, which he reduced to half its former size, and also that of his Improved Panniers and Packsaddle, which, for utility and convenience, were found infinitely superior to those which had been formerly employed. Of these and similar improvements it is on all hands acknowledged that the merit belongs to your Memorialist; but he perceives, with regret, that the benefit is reaped by others.

That your Memorialist is induced to submit this representation to your Honourable Board at the present moment, in consequence of the decease of Mr. Stodart, who heretofore has almost exclusively supplied the army with surgical instruments, which event affords an opportunity for conferring on your Memorialist that encouragement to which he aspires.

Your Memorialist is induced to submit this representation to your Honourable Board, with the accompanying testimonials from some of the most eminent professional gentlemen in the kingdom, relative to the essential, though humble, services which he has proved himself capable of rendering to the profession; and he would deem himself most happy if your Honourable Board, after a candid consideration of those services, should pronounce him worthy to receive one-half the orders for surgical instruments issued

by you, and an equal share with Mr. Stodart's successor in all repairs of such instruments which may be required.

To that extent his present respectful petition is limited; and if it should be granted, your Memorialist pledges himself that he will zealously, punctually, and to the best of his experience and ability, execute the orders of your Honourable Board.

JOHN WEISS.

ANSWER TO THE MEMORIAL.

Army Medical Department, 29th May, 1824.

SIR,

I AM directed to acknowledge the receipt of your Memorial, and in reply to the prayer thereof, to observe, that the Board do not interfere with that gentleman who is employed to furnish the supplies of medical and surgical stores to the army, leaving to him the selection of the persons from whom the goods are purchased, and confining themselves generally to the investigation of the qualities of the several articles. They are nevertheless always desirous that the army should be provided with the best of the kind of every thing; and they feel a great pleasure in encouraging the ingenious exertions of those who apply their talents to the improvement of the implements for surgery, in which they admit your peculiar merits.

I am, Sir,

Your most obedient,

Humble Servant,

S. REED, Sec.

Mr. John Weiss.

TESTIMONIALS

IN

FAVOUR OF WEISS'S PATENT SYRINGE.

16, *Saville Row, Nov. 5th*, 1829.

I HAVE used Mr. Weiss's Syringe for extracting fluids from the stomach in several instances, and from the experience which I have had of it, I am led to believe that it is, on the whole, a more convenient and useful instrument than any other which has been invented for the same purpose.

B. C. BRODIE.

To Mr. Weiss.

17, *New Bridge Street, Blackfriars, Nov. 18th*, 1829.

AN attentive examination of most of the various Syringes employed as Stomach Pumps, or for administering injections, has induced me to select that of Mr. Weiss for use in my own practice; and having frequently employed it, I can with confidence state, that it is most perfectly adapted to the purpose for which it is intended.

I consider it to possess the following advantages, which are not altogether afforded by any other Syringe that I know of:—

1.—Its action is extremely simple.

2.—It acts readily in whatever position it may be held.

3.—It will inject or remove fluids of a mucilaginous or adherent quality, and even small pieces of solid matter, without any risk of its action being impeded or injured.

4.—The action of the Syringe can be reversed, and either

aperture be made to receive or expel without changing the position of the instrument or altering the connexion of the tubes, merely by a slight movement of the handle.

5.—It is not likely to get out of order.

FREDERICK TYRRELL.

To Mr. Weiss.

Royal Hospital, Greenwich, Nov. 2nd, 1829.

SIR,

IN answer to your letter of the 31st ult., requesting me to favour you with my opinion, in writing, relative to the merits of Read's Patent Syringe, in comparison with your own, I am bound in justice to state, after having had full experience of both, and after having conscientiously recommended Read's before your's was known, the priority of discovery being due to him, that I now give your Syringe the preference, both on account of its being less liable to get out of order than Read's, and because it admits of being worked in any position. I find also, that your's, which you fitted at my suggestion, with different sized elastic Catheters, answers admirably for throwing fluids into the bladder, in cases of Catarrhus Vesicœ.

I am, Sir,

Your most obedient Servant,

R. DOBSON.

To Mr. Weiss.

27, *Sackville Street,* 17*th Nov.* 1829.

SIR,

I HAVE been in possession of your Patent Syringe since the time it was invented; and such is my opinion of its utility, that I think no professional man should be without one.

Some credit is claimed by other men for similar inventions, but it is not my wish to enter into an investigation of

their comparative value, being fully satisfied that your Syringe is admirably calculated for the purposes it was intended.

I am, Sir,

Your obedient Servant,

GEO. VANCE.

To Mr. Weiss, 62, Strand, London.

Lambeth, 10th Nov. 1829.

SIR,

HAVING examined your Patent Syringe, as well as that of Mr. Read, pursuant to your request, with a view to determine their respective merits, I beg to state to you my opinion, that your's is decidedly superior in principle and in operation, for the following reasons:—The Syringe of Mr. Read requires to be held in one position, or its valves are in danger of being altogether useless, and the instrument consequently so. Your Syringe is so constructed as to act in any position, and thus more extensively applicable. In Mr. Read's Syringe, the introduction of any solid or mucilaginous substance would disable the valves, whilst your Syringe possesses the advantage of extracting solids in common with liquids, without impairing its action. A third advantage in your patent is the double-acting principle, whereby much time is saved, when the loss of it may prove fatal.

I am, Sir,

Your obedient Servant,

HENRY MAUDSLAY.

To Mr. Weiss, Strand.

Pimlico, Nov. 17th, 1829.

SIR,

I HAVE examined the Syringe made by Read, which you left here yesterday for the purpose of comparing it with that made by yourself, which I have had some time by me,

and to determine the comparative advantages of the two; I prefer the Syringe of your construction, especially in its application as a Stomach Pump, and for the following reasons:—

1.—It can be so applied without any previous change of parts, and may thereby be alternately used for ejecting and injecting, if any case should so require it.

2.—Its action being by a cock instead of valves, it will not easily clog by mucilage or lumpy matter, whereas the other would be deranged in its action by such causes.

3.—Your's may be used either in a perpendicular, horizontal, or oblique position, whereas that made by Read will not act without especial regard to position, which it would, in many cases, be difficult to preserve in the hurry and agitation incident to its use as a Stomach Pump.

I am, Sir,

Your's, &c.

TIMOTHY BRAMAH.

Mr. Weiss.

37, *Howland Street, Fitzroy Square,*
9th Nov. 1829.

SIR,

I HAVE made use of your Patent Syringe during three years, and consider it to possess very decided advantages over any other instrument for the same purpose that I have tried or examined. The certainty that the passages will be fully opened and fully shut, by the double-passage cock which is applied in lieu of valves, is a most important advantage; and another is the facility of reversing the action of the Syringe, and causing it either to extract or to inject through the same tubes, without changing those tubes, or any part of the apparatus, merely by turning the handle one way or the other. The circumstance that your Syringe will operate with certainty when held in any position that the pos-

ture of the patient may require, is of great consequence. All these properties of your Syringe concur to render its operation certain and expeditious; and it appears to me, that the want of any one of those properties must tend to occasion delay, and to embarrass the operator; whereby in many cases of poison the relief might come too late. Mr. Read's Patent Syringe, from its structure, I consider to be a far less complete instrument than your's, on account of the want of certainty in the action of the ball-valves, their liability to become clogged up by substances which would pass freely through your Syringe: the necessity of holding his Syringe in a particular position must occasion great inconvenience in obliging the patient to take a position which will conform thereto; also the necessity of changing the tubes, in order to inject liquid into the stomach, after having extracted the poison, must occasion delay and inconvenience.

I am, Sir,

Your most obedient Servant,

JOHN FAREY.

To Mr. Weiss.

Central Dispensary, Liverpool, Oct. 22nd, 1829.

SIR,

I RECEIVED your letter this morning, and am glad to have an opportunity of bearing my testimony to the superiority of your Patent Poison and Enema Syringe.

At the institution to which I have been attached for some years, I have had very frequent occasion to use the Stomach Pump, scarce a week passing without its employment.

We have at present three instruments, the original, constructed by Jukes, Read's, and your own, which latter has been constantly employed in preference to the other two, since we obtained it from you. It answers the purpose so completely, that I much doubt whether any further improve-

ment is possible. The same preference is given to your's both at the North and South Dispensaries in this town.

I am, Sir,
Your very obedient servant,
FRANCIS ARCHER.
Surgeon.

To Mr. John Weiss, Strand.

I PERFECTLY agree with Mr. Archer in the superiority of Mr. Weiss's Syringe.

HENRY NEWNUM,
House Surgeon, Central Dispensary.

North Staffordshire Infirmary, Newcastle-under-Lyme, Oct. 22nd, 1829.

SIR,

THE Medical Officers of the North Staffordshire Infirmary have much pleasure in bearing testimony to the merits of your Patent Syringe; they consider it an instrument displaying much ingenuity in its contrivance, while from the simplicity of its construction, it can be worked with the greatest ease and effect. It has now been in use in the Infirmary for several years, and has invariably given satisfaction. They have occasionally used Read's Syringe in their private practice, but have no hesitation in giving a decided preference to your's.

GEORGE WOOD.
T. G. COOMBE.
JAMES SPARK.
J. SEDDON, *House Surgeon.*

Denbighshire Dispensary, 22nd Oct. 1829.

DEAR SIR,

PROBABLY the best testimony I can give of the relative merits of your Syringe and Read's is, that I originally

procured his, but in consequence of finding the inconvenience of its only acting when held perpendicularly, I disposed of it, and procured one of your's, which I find to answer all purposes to my entire satisfaction.

I am, dear Sir,

Your obedient Servant,

R. D. WILLIAMS.

To Mr. Weiss.

P.S. Give me leave to add, that we use your Syringe, and it is universally approved of, at the Denbighshire Dispensary and Asylum for the Recovery of Health, to which institution I am a surgeon.

R. D. W.

Birmingham, Oct. 22nd, 1829.

SIR,

IN consequence of having just removed to Birmingham, I did not, till this morning, receive your letter. I hasten to reply to it.

I have had considerable experience in the use of your Patent Syringe, and for simplicity of structure, facility of application, and little liability to derangement, give it the decided preference to Read's or any other modification of the instrument which I have yet seen. To Read's Syringe I had, from the first, an objection; and this feeling, the little experience which I have subsequently had in its employment has tended to confirm.

I am an almost utter stranger to you, and can have no object in this communication but the interests of truth and science. The best evidence which I can give of my opinion respecting your Syringe is, that I possess one, and invariably recommend it to my professional friends, and to my patients.

With every wish for the success of this, and all your other

inventions, which have for their object the relief of human suffering,

I remain, Sir,

Your obedient servant,

SHIRLEY PALMER, M.D.

38, *New Street.*

To Mr. John Weiss.

Bath, Oct. 27th, 1829.

SIR,

In reply to your inquiry respecting my opinion of the relative merit of your Patent Enema Syringe, I can feel no hesitation in avowing my decided preference of them to any other species of the various instruments which, in the course of an extensive practice, I have tried. I consider them indisputably superior to others, particularly from being constructed without the appendage of a valve, so frequently productive of obstruction to the action of the piston on admission of the smallest solid substance incautiously remaining in the injected fluid. I entertain not the remotest doubt of any surgeon, on discovering this singular advantage in the use of your Enema Syringe, determining to persevere in their adoption, as preferable to every other instrument of the kind hitherto invented.

I must apologize for having been unavoidably precluded, by pressure of professional avocations, from complying with your request of an immediate answer.

I am, Sir,

Your obedient servant,

CHARLES HICKES.

To Mr. Weiss.

Stilton, Oct. 23rd, 1829.

SIR,

In reply to your letter we beg to observe, that we have used your Syringe repeatedly and variously. We consider

it a most valuable instrument, more especially that by its simple construction it is hardly possible, with common attention to cleanliness and your printed directions, for it to get out of repair. We wish you success, and remain,

Your's, faithfully,

JOSEPH VISE,
HENRY OLIVER, } Surgeons.

Doncaster Dispensary, Oct. 24th, 1829.

SIR,

I am desired by the Surgeons of the Doncaster Dispensary, to state that your Syringe has been used in a great number of instances with the most decided success, not only in cases of poisoning, but in others also where an Enema Syringe has been required. I am further requested to state, that in their estimation, your Stomach Pump certainly possesses some important advantages over Read's, and that it is eminently calculated to answer all the purposes for which it was originally designed by the inventor, to whose ingenuity the profession at large stand considerably indebted.

Your's very respectfully,

N. PEARSON, Secretary.

Liverpool, Oct. 22nd, 1829.

DEAR SIR,

I have great pleasure in bearing testimony to the superiority of your Patent Syringe over every other which I have seen, for extracting poisons from the stomach. I have repeatedly tried it, and it is undoubtedly much superior to Read's, as it may be held in any position, a matter of great importance when you consider that the patient may be unable to sit up or to accommodate himself

to the wishes of the operator. It is also equally efficacious in the administering of injections; and I consider it one of the greatest improvements ever made in the construction of this useful and important instrument.

They ought to be examined very frequently, and the piston kept well oiled, in order that they may be ready for use when wanted, which is always in a hurry.

I remain,

Your's sincerely,

R. BICKERSTETH.

Glasgow Royal Infirmary,
29th Oct. 1829.

SIR,

Owing to absence in the country, I have only received your letter to-day. I am extremely happy to have it in my power to testify as to the efficiency of your Stomach Pump. I have not had an opportunity of comparing it with Read's, but I can scarcely conceive an instrument better adapted for the purposes for which it was devised, than your's. The only Stomach Pump of different construction from your's which I have seen, is that with stop-cocks; but your instrument, from the superior facility with which it can be worked, possesses great advantages over this. We have now got several instruments of your construction in this hospital, and they have uniformly given us satisfaction, both as regards the excellence of the material and workmanship, and the ingenuity of their contrivance. I think your Stomach Pump inferior to none of them. I hope this letter will not arrive so late as to be useless to you.

I remain,

Your obedient servant,

CAMPBELL M'KINNON, M.D.

House Surgeon, Glasgow Infirmary.

Canada Hospital Ship, 23rd Oct. 1829.

DEAR SIR,

Your letter of the 19th inst. only reached me to-day, having been mis-directed to Sheerness. In reply, I have much pleasure in being able to state, that my confidence in the powers of your Syringe continues unabated. It is the most useful of all the instruments hitherto invented, combining power and facility of operation, with the least possible inconvenience to the patient. When its mode of action is understood, any man can use it with as much expedition and care as a surgeon could. In my hospital my attendants use no other.

I am, dear Sir,

Your obedient servant,

ARCH. ROBERTSON,

Surgeon.

Stafford Infirmary, Friday, Oct. 23rd, 1829.

SIR,

I have great pleasure in stating to you my opinion of your Syringe, because that opinion is decidedly in its favour, as being far better adapted to answer the purposes for which it is intended, whether injecting or exhausting, than Read's or any other I have seen. Before we procured your's at our county Infirmary, we had one with a stop-cock at the end, and another at the side, to be opened and closed by the hand of the operator alternately. This was very troublesome, and liable to occasion blunders. I have in my possession a similar Syringe, but having bullet valves. This is better than the former, but liable to become wholly inefficient by solid particles interposed between the ball and its perforated socket while being used.

Your's, in great haste,

RICHARD HUGHES.

To Mr. Weiss.

Yarmouth, Oct. 22nd, 1829.

SIR,

In answer to your's of yesterday, I beg to remark, that I have, on several occasions, and in various ways, used your Syringe with the most satisfactory result uniformly obtaining to its employment, namely, in injecting the stomach when the powers of deglutition were incompetent to ingestion—in emptying that organ when it contained deleterious material—in lithotomy operations to depurate the bladder—in the administration of enemas, when the necessity of alvine dejections became urgent—in cupping, &c.; and so useful and efficient have I found it, that I do not hesitate to affirm, in my estimation, it ranks very high among the most valuable of modern inventions.

An examination of the mechanism of your Syringe (lent me by a friend when first offered to the notice of the public) principally conduced to my ordering the one I now have, which you furnished me with about five years since, having in that inquiry discovered (to my great satisfaction) in it, simplicity of construction, in a marked degree, ever constituting an important desideratum with me in the selection of apparatus for purposes of surgical occupation; of its possessing, in addition, the farther considerable recommendation of the greatest facility of application under almost any circumstances of position, however inconvenient, and requiring very little trouble to keep it in order. It has never in one instance occurred to me to find it clogged.

If adding my humble testimonial to the many others you will have no difficulty in procuring, in favour of an instrument so generally useful, so essentially requisite in preventing the baneful effects of poison, &c., &c., can in any way avail in securing the merit so deservedly your right, then I shall have greater pleasure in having contributed what I should otherwise have deemed only as an acknow-

ledgment justly due to you from one, to whom your Stomach Syringe has been so instrumental in accomplishing the desirable and gratifying effects, loudly demanded in the cases I have adopted it.

In great haste, I remain,

Your's obediently,

W. WEBBER.

To Mr. Weiss.

Framlingham, Oct. 22nd, 1829.

SIR,

I very much regret having procured one of Read's Patent Syringes previously to seeing the one constructed by you, as in many respects your's is decidedly superior.

I am, Sir,

Your's respectfully,

W. JEAFFRESON,

Surgeon.

To Mr. Weiss.

Denbigh General Dispensary, Oct. 22nd, 1829.

SIR,

It gives me much pleasure to offer you my testimony in favour of your Patent Syringe. I have repeatedly used your's, and from the very efficient manner in which it acts, I should scarcely be prevailed upon to use any other.

I am, Sir,

Your obedient servant,

RICHARD PHILLIP JONES, M.D.

Physician to the Denbighshire General Dispensary and Asylum for Recovery of Health.

To Mr. Weiss.

Shrewsbury, 21st Oct. 1829.

SIR,

IN answer to your letter which is just arrived, I have great satisfaction in bearing testimony to the merits of your Syringe. I have never myself used Read's; but in making the comparison of the two as to their simplicity, acting in every position, and liability of being clogged by any substance passing from the stomach, I have no hesitation in giving a preference to your's.

I am, Sir,

Your obedient Servant,

THOS. SUTTON.

Portland House, Cheltenham, 21st Oct. 1829.

SIR,

IN reply to your letter, I have much pleasure in bearing testimony to the efficiency of your Syringe in removing poison from the stomach.

About eighteen months since I was called to see a young woman who had taken a large quantity of laudanum; she obstinately resisted the efforts which had been made by two persons to induce her to swallow emetics. I was compelled to employ the wedge contained in the case in order to force open the mouth, which enabled me to introduce the œsophagus tube, and remove the poisonous fluid. I have also repeatedly employed the Syringe for the purpose of administering enemas, and in every case it has given me perfect satisfaction.

I am, Sir,

Your very obt. Servant,

S. H. MURLEY.

Market Harborough, 21st Oct. 1829.

SIR,

I AM not able to speak to the comparative merits of Read's and your Syringe, having never seen the former used. In two cases when arsenic had been taken into the stomach, I made use of your's with the greatest satisfaction. I found it most easy in application, and most effectual in operation; both my patients recovered. The other medical gentlemen of this place have not, I believe, been called upon to use any stomach pump, or I would have added their testimony with best wishes.

I remain,

Your's faithfully,

JOHN ABBEY.

Woodbridge, 21st Oct. 1829.

DEAR SIR,

I HAVE great pleasure in answering your letter of the 19th inst. which I received this morning, desiring to know my opinion of the merits of your Patent Syringe for poison and enemas, compared to Read's.

I have had but few cases of poison in an extensive practice of thirty years, and in no instance a fatal one, and I have not used your Syringe nor Read's in any case; but as an instrument for enemas, your Syringe is, in my humble opinion, most perfect; and I have recommended it to my friends generally, who have spoken of it in terms of high consideration.

Although I have fortunately not been called upon to use the Patent Stomach Syringe, I believe it to be a very perfect instrument, and justly merits public approbation.

I remain,

Your's faithfully,

GEO. D. LYNN.

Liverpool, 22nd Oct. 1829.

SIR,

I HAVE used the large Syringe of Read's for emptying the stomach; between it and your's there cannot be a moment's hesitation as to which is the better; of his smaller and recent Syringe I know nothing from actual trial.

I have used your Syringe repeatedly, and am perfectly satisfied with the mode in which it executed what was desired.

Mr. Minshull, a surgeon of our dispensary, has authorized me to say, that he has repeatedly used your Syringe, and is perfectly content with it.

I remain,
Your obedient Servant,
WILLIAM GILL.

Salford and Pendleton Dispensary, 23rd Oct. 1829.

SIR,

AT the request of Dr. Harland, I write to inform you, that as the Doctor has never used either your Patent Poison Syringe or Read's, he therefore cannot well give an opinion. Your Syringe is the one used at this institution, and I have had occasion to use it several times, and have always found it to answer very well.

Read's Syringe I have also had an opportunity of using, but I give your Syringe the preference, because it is a more simple and much less complicated instrument, can be used with more ease and freedom, and, on the whole, possesses (in my opinion) far superior advantages to that of Read's.

I am, dear Sir,
Your's very respectfully,
THOS. SLACK,
House Apothecary.

Manchester, 23rd Oct. 1829.

SIR,

IN reply to your letter of the 20th inst., requesting my opinion of your Patent Syringe for poison and enemas, I beg leave to state, that from ample opportunities I long since came to the conclusion that your's was the best. The reasons why it is superior are these :—the facility with which it is applied and worked in any position—the circumstance of its requiring no change of pipes, or turning of cocks, &c. is a great convenience—the uniform certainty with which it acts, and its portable size, are advantages which render it unquestionably superior to any thing yet offered to the profession. For the last four or five years I have used one of your's, which has never failed to answer the intended purpose.

I am, Sir,

Your obedient servant,

JOHN JESSE.

To Mr. Weiss.

Dublin, Oct. 23rd, 1829.

DEAR SIR,

I BEG you will have the goodness to inform me whether I can have from you the new Parisian instruments for lithotrity, and what the expense of them is. With respect to your Syringe for the extraction of poison, and the injection of enemata, I am surprised you have not an agent for their sale here, they are so wholly superior to any other instrument of the same kind which I have used.

I am, dear Sir,

Truly your's,

J. KIRBY.

Norwich, Oct. 25th, 1829.

SIR,

I WAS in London when your letter reached Norwich, and it has only this morning fallen into my hands; I lose no time in replying to it. I have possessed no opportunity of using, or even of inspecting the Syringe of Mr. Read; but I am in possession of that Syringe that has been invented by you. I have occasionally used it for the purposes to which it is applied and applicable in practice. I will not, in this age of mechanical wonders, presume to say, that it is not susceptible of improvement; but I certainly do think it would be matter of extremest difficulty to add to its power or usefulness. It is admirably simple in its structure, possesses great facility of application, and it is altogether an excellent and an admirable instrument.

I am, Sir,

Your obt. Servant,

W. DALRYMPLE.

To Mr. John Weiss, Strand.

Stamford, 28th Oct. 1829.

SIR,

THE indisposition of one of our firm, and the absence of the other, has prevented an earlier reply to your letter of the 19th inst. We have no hesitation in giving a decided opinion in favour of your Stomach Syringe, having procured them from you for medical gentlemen in this town and its vicinity, and have consulted them on this occasion, and they would, if necessary, bear testimony in favour of your Syringe over Read's or any other maker.

We are, Sir,

Your obt. Servants,

MILLS & NEWSAM.

THE END.