A

LETTER,

CONTAINING

SOME OBSERVATIONS ON FRACTURES

OF THE

LOWER LIMBS.

To which is added,

AN ACCOUNT OF A CONTRIVANCE TO ADMINISTER

Cleanliness and Comfort

TO

THE BED-RIDDEN,

OR PERSONS CONFINED TO BED BY

AGE, ACCIDENT, SICKNESS, OR ANY OTHER INFIRMITY.

WITH EXPLANATORY PLATES.

. . . . . omnes omnia
Bona dicere, &c. TER.

BY

SIR JAMES EARLE, F. R. S.

SURGEON EXTRAORDINARY TO HIS MAJESTY,
AND SENIOR SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

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1807.

THE following Letter was written to a gentleman who is now traveling for his amusement, but having formerly studied Surgery, still takes a lively interest in every thing which belongs to it. The subject grew upon me as I wrote; and conceiving that it contains some circumstances which are interesting to the Profession in general, and others which materially concern the Community at large; and as it may be the means of introducing among families a very useful invention, which has been long and much wanted, I have thought it my duty to present it to the Public.

To

G. S. Esq.

Petersburgh.

DEAR SIR;

I received the favor of your last, dated February 18th, and very sincerely congratulate you on the success of the Emperor. May his magnanimous exertions lay a solid foundation for peace and good order throughout Europe!

I am much obliged by your account of the state of medicine and surgery in Russia. The philosophic traveler, who, in addition to general observation, pursues some favorite branch of science, and liberally communicates the result of his inquiries, performs an essential service to society.

With regard to the practice of surgery which you have seen in the North, by your own account, as well as by what I have otherwise learned, it certainly appears to stand much in need of improvement, which indeed we cannot wonder at, if we believe what is related—that in the same country, not many years ago, persons who had received no medical education were pressed into the army to perform the duty of surgeons, as others were forced to serve for soldiers; and at the present time, in Poland, I am informed, there is a most lamentable deficiency of surgical assistance.—In the reign of the late Empress several young Russians were sent to attend the different hospitals in this metropolis for instruction: those who were at St. Bartholomew's were very intelligent, paid great attention to every thing which passed, and certainly returned with much improved knowledge. They also carried back with them several sets of our best-made instruments, which they found far superior to any of the manufacture of their own coun-

try. If you can exert sufficient influence to prevail on the present Emperor, to send annually some young surgeons to see the practice of this country, who with English instruments and proper encouragement should afterwards be distributed through the provinces of his extensive Empire, in my opinion his Imperial Majesty's subjects will be greatly benefited.

In return for your interesting communications, you desire to know what we are doing at St. Bartholomew's, if any new practice has been introduced, and in what position we now place the lower limbs when fractured. To your first questions I can only answer generally, that I have reason to hope we are progressively improving both in physic and surgery;—but to your last, as I know you were always interested in every thing which concerns the chirurgical art, and as I take for granted that you have particular reasons for making

the inquiry, I shall be more circumstantial in my answer, and shall endeavour to give you the best information in my power.

You know I was educated in the school of the late Mr. Pott, who wrote a treatise on this subject, which I think he much under-valued when he entitled it "A few General Remarks on Fractures and Dislocations." The small estimation in which he seemed to hold it, probably arose from the little time and pains he had bestowed on it, having been written and completed, as I have reason to believe, in a fortnight: but it is by no means inferior in utility to his more laboured productions, for it abounds in observations and rules of great consequence on this very important subject: and indeed it has been the principal cause of introducing a new mode of treating fractures, which is now almost universally approved and adopted. The idea of relaxing the muscles

in order more easily to set a broken or dislocated limb is of infinite importance, and was certainly not sufficiently attended to before this treatise made its appearance. I may add, that, tomy certain knowledge, there are many, who have either not read or not attended to it, who still talk of reducing dislocated ankles by extension with the leg in a straight position, in which they would have to encounter the resistance of the strong muscles which are attached to or act upon it.

If it were necessary to add any thing to the advantages which Mr. Pott has mentioned arising from the relaxed position in fractures, it might be observed, that in this situation patients very rarely suffer from cramps and spasms, which are frequently attendant when the limb is laid straight, and are extremely painful and productive of mischief; and I might add, that people whose limbs have been fractured

by a fall, a kick of a horse, or any other accident, are very subject to such agitation of mind that their sleep for many nights is unsound; they continually dream of what they have suffered, and they catch and spring with an imaginary attempt to save themselves. When the leg was laid in a line with the body, the jerk was infallibly communicated to the fractured part, which gave the patient excruciating pain, and destroyed his repose for the remainder of the night; and in the morning the tedious painful process of putting it to rights was necessarily renewed. The involuntary actions of coughing and sneezing had also the same mischievous effect; and whoever has seen fractured legs lying in the straight posture must be sensible that these circumstances have frequently occurred. In the relaxed position the shock is lost in the bended joints of the hip and knee, and the limb is not obliged to move with the body.

But though rules founded on good sense and experience, and applicable to general practice, are very proper to be laid down and inculcated in every system; yet, in so complicated a science as surgery, it will often be found that, in individual cases, much must still be left to the judgment and skill of the practitioner.

I have every reason to approve in general of Mr. Pott's plan, of placing fractured legs on the outside, on the fibula; yet sometimes we find cases which should form exceptions to this general rule, particularly in fractures of the leg, where the broken end of the superior part of the tibia projects forward. In that case we sometimes find it impracticable to keep the ends of the bone even, without placing it on the heel.

In compound fractures, also, we sometimes find great advantage in placing the leg on the

calf and heel; for instance, where there is a deep wound leading down to the bone on the inside of the leg or ankle, if it lies on the outside it is evident that a cavity must be formed in which the matter will be retained, and which, being in continual contact with the bones, must create great mischief, as it can only be wiped away, and that very imperfectly, once or twice a-day, when the wound is dressed. In this case, sometimes by placing the leg on the heel, an effectual current may be given to the matter, so soon as it is formed; the good effect of which on the wound will soon be perceived. In short, in all those cases where there are wounds, in which a depending opening can be effected by the position on the heel, it is to be preferred.

Except in such and similar cases to those just mentioned, I am, as I before observed, a strong advocate for placing *broken legs* on the outside.

But I must confess that I have long entertained doubts whether this ought to be considered the best position for broken thighs. From the large mass of strong muscles surrounding the bone, from there being only one point of solid contact and no other bone to assist in keeping it steady, the thigh-bone is the most difficult to be placed, and most easy to be displaced, of any in the human frame. From long experience, I am convinced that bending the thigh and laying it on the outside, will not insure a straight and even union; and I appeal to those who have seen many fractured thighs treated in this manner, if the broken ends of the bone do not frequently ride over each other, in consequence of which the broken thigh is often made shorter than the other, and the foot in walking turns outward. These defects, if they are not very wrong, become palliated, and less discernible, from the person being accustomed to meet them, by lowering, as he walks, the pelvis on the de-

fective side. But the fact is as I have stated, and has often raised in my mind great objections to placing fractured thighs on the outside. I conceive that the displacement of the bones in this case is often owing to the weight of the pelvis bearing down the superior part of the broken thigh into a depression in the bed; for if this should give way, and become hollow, the whole of the thigh, as far as the fractured part, will be carried down and sink into it, while the lower end of the bone and knee retaining the first position in which they were placed, an obtuse angle will be formed; as it is impossible to keep on bandages and splints so tight as to counteract a deviation from the right position, when effected by such powerful means. In this case, very able surgeons, to my knowledge, have been and may again be deceived; for if the bandage be undone, and the thigh viewed in this position, the outline of the upper part of the thigh down to the knee will be perfect, and it

will appear straight: but there is often a protrusion of the upper end of the fracture internally, which is not visible, and which nothing but accurate examination with the fingers can, through that vast thickness of soft parts, discover. If it be not noticed in time (that is, very early after the accident, perhaps within a week or ten days, according to the uniting disposition, which varies in different subjects and from different causes), the discovery will be made too late; an adhesion will soon take place between the ends of the bones and the contiguous muscles; bony matter will soon be formed in the interspace, and it will not be in our power to remedy this effect: of course the leg and foot will in future turn outwards. These considerations have led me, contrary to my education, to prefer laying broken thighs in a line with the body, conceiving that in this situation the fracture is less liable to be displaced, and that any deviation from the straight line, whether above or below, or on either side, is more readily discernible

and more easily rectified. I do not wish to insinuate that placing fractured thighs in the straight position is a new idea—I know it has been, and is now, practised by many—I only mean to say, that, though I have long been accustomed to see them laid in a bent posture, for the reasons above given I prefer the other: at the same time, in case of laying fractures either of the leg or thigh in a straight position, we need not lose sight of Mr. Pott's first and great principle, the benefit and use of relaxing the muscles; and, by raising the thigh toward the body, supporting that with pillows, and bending the knee to a certain degree, the same end may be obtained.

There is one case where we can have no choice—I mean when both thighs are broken. Under these circumstances it is evident that the patient must lie on his back, and consequently the thighs must be in the straight position: when thus of necessity placed, they do well;

and this is a strong argument in favor of the practice.

But if there be any doubt of superiority between the straight and bent position of fractured thighs, there is a new contrivance which I conceive must turn the scale in favor of the former, as, in that posture, the introduction of any kind of machine under the patient to relieve him from natural evacuations, and the efforts to raise and assist himself, which from an innate sense of cleanliness he would otherwise almost involuntarily make, are by that invention wholly avoided; and I am sure every gentleman of the faculty will agree with me, that those circumstances are very often the cause of disturbing and displacing fractured thigh-bones, in whatever situation they may be placed.

The contrivance was my son's, whom you remember very young, when you left England.

I shall give you a description of it; and I flatter myself you will allow it does him credit: indeed, I have often thought, that whoever contributes to the relief of pain and misery, to which human nature is too often exposed, is little less meritorious than he who preserves or prolongs the continuance of life; for of small value is length of days, unless accompanied with health and ease.

Daily is the acuteness of man employed in discovering new pleasures and amusements for the healthy and vigorous; and even the sick and infirm are not without their share of comforts and indulgences, which the ingenious mechanic is continually striving to improve and augment: but these, you must have observed, are all calculated for persons who can be moved from place to place, who are capable of rising in a morning, going to bed when fatigued, and enjoying the sweet vicissitude of day and night.

It is surprising, that among so many inventions to promote gratification and convenience, so little has been done for the accommodation of a very large description of persons, who, totally incapable of assisting themselves, and shut out from all the enjoyments of life, are doomed to remain in one situation, painful and miserable, while weeks, months, and often years unvaried, pass away; in which representation the young, the old, the rich, and poor, are equally comprehended, our brave defenders by sea and land, our relations, our friends, and lastly ourselves; for there is not one of us who is not daily and hourly liable to be added to the number; I mean of the bed-ridden, or persons who are unable, from various causes, to leave their beds. These unfortunate beings, in this age of ingenuity and science, in this country so famed for elegance, neatness, and propriety, are, with regard to a particular circumstance, still left in the same state that

they were obliged to submit to perhaps before the days of Hippocrates; at least I can testify, that a long medical life has not pointed out to me any alteration or improvement which has for centuries past taken place in what I allude to.

Accident, producing necessity, you must allow, may sometimes become the grandmother of invention: an accident has led to supply this great defect in the medical department; but as my son's account of it appears to me accurate and interesting, I shall relate it to you in his own words, as he drew it up at my desire.

"WILLIAM CLARIDGE was brought into St. Bartholomew's Hospital, November 20, 1806, with both thighs and the left arm broken. The accident happened at Finchley; where, as he was digging gravel, part of the earth which

he had inadvertently undermined, fell in upon him. He was immediately dug out by his fellow-labourers, and conveyed in a dung-cart to the Hospital. On examination, the right thigh was found fractured about four inches above the knee. The muscles were very irritable, and the limb much contracted; the left thigh, broken in two places, was much swelled and distorted; the left arm was also broken in two places, at the insertion of the deltoid muscle, and within three inches of the elbow, where it was much splintered. After he was undressed, and placed on his back in bed, I reduced and set the fractures, taking care to bring both thighs to an exactly equal length, the only line of conduct which in this case could be pursued, as there was no fellow limb, nor any other means by which it could be ascertained when the extension was sufficient. Both thighs were much contracted, and owing to the violence of the injury, the

time which had elapsed, and the jolting of the cart, were swollen to that degree that it was impossible to feel, or determine when the two ends of the broken bone were in contact. The broken arm also added much to our embarrassment, as in that position it was very difficult to get at and set it properly: however, an eighteen-tail bandage being applied, allowed it to be opened when necessary, without disturbing the fractured bone. Our attention was then called to the thighs; finding, that notwithstanding they were properly secured in splints and bandages, the knees and legs *spontaneously turned out upon the external ankles,* I directed the carpenter to make a frame of two flat boards, to which the soles of the feet were applied and bound: these were connected by a cross piece at top, which kept them steadily together. He took what medicines were thought proper; but in the morning I found that he had passed a very restless night, and had displaced

all the splints except those on the arm. The bandages and splints were replaced; and as he had a good deal of fever, he was bled, and took a febrifuge medicine. The next night he passed tolerably well, and in the morning was perfectly easy. For several successive days I found him with the splints on both thighs loosened, and the bones unset, so that I almost despaired of the well-doing of the case. The poor fellow was almost an ideot, and could scarcely explain his own sensations; but the reason of his extreme restlessness was at last discovered to be owing to an intolerable itching, which was caused by some maggots which were produced under him in the dirty sheets, which could not be changed: these made him scratch and tear off all his splints. —The nurse having got rid of them as well as the nature of the case would admit, the fractures were again put to rights as for a recent accident; and I further took the precaution to connect the upper part of the outer splints by a tape round

the pelvis: by these means I at last succeeded in keeping them in their position. Still the nurse being wholly unable to move or clean him, without danger of disturbing the fractures, by any other means than by a ladle or a piece of flat board, he necessarily remained in a miserable and filthy condition. Considering how much it would add to the poor fellow's comfort as well as that of his attendants, if the fæces could by any means be from time to time removed, and he could be kept clean, more especially as I dreaded an excoriation, or mortification of the back or nates, if he were suffered to continue in such a state so long as it would be necessary for him to remain in that position, I contrived a bed in which he might be raised up, and the evacuations cleared away without any detriment to the fractured bones. When this was completed, he was carefully moved into it, and after having experienced its help and convenience, to use his own expression, he found

himself in heaven. From this time he continued to go on well; and when I opened the splints, the 18th December, exactly one month from the accident, the bones were perfectly united. I kept him in bed, however, for another fortnight, that they might acquire a greater degree of firmness, as he had only one sound limb to depend on, and that much weakened for want of use."

HENRY EARLE.

February 1, 1807.

I saw the poor man soon after his admission, and found his left arm and both thighs broken, as has been related, and, visiting him afterwards from time to time, had every reason to be satisfied with the mode of treating him, and the unremitted attention which was paid him. In six weeks he was able, with the assistance of crutches, to use his legs: he is now (Jan. 20, 1807) walking about as upright as he ever

did. His father concurred with himself in saying that he had been from his infancy splay-footed; that is, his feet turned out, and he had always been accustomed to walk with his inner ankles in front, to such a degree that he was refused to be admitted as a soldier. This was the cause of the difficulty of retaining his feet in a proper situation, and preventing them from *falling outward on the external ankles*, as you must have noticed in the account of the case, though the reason of it was not at that time conjectured. By the situation the feet were placed in and confined, during the whole time that the ossification of the thigh-bones was going on, the feet are now in a proper direction, and he walks, like other people, straight forward. The poor fellow himself is very proud of the advantageous alteration in his person, and thinks he might now make no bad figure in the ranks. It is certainly an extraordinary occurence, that, instead of being injured, the man

should be improved, by the result of so very serious and complicated an accident.

The model of the bed my son formed in card-paper. The want of such an acquisition, and the utility of this, were so striking, that I immediately procured one of proper dimensions to be made. The contrivance consists in a double bed; the upper one has an opening in the sacking, in a suitable place, and of a proper size, to which a thin mattress, blanket, and sheet, are made to correspond, with a similar aperture: this, by a very simple piece of mechanism, may be elevated to a sufficient height for the nurse to introduce a proper receptacle between that and the fixed bed. The patient being relieved, the bed is gently let down again upon the under one, a thin cushion being placed on the under bed to fill up the opening and make the upper bed level.

There may be those who may see this subject in an inferior point of view: to me it appears important; indeed, what can be more so than the assistance which is given to the helpless and distressed? Cleanliness is said to rank next to godliness; and certainly it may be classed among the chief of earthly blessings, since without it neither health nor happiness can be enjoyed. By this contrivance, not only the poor patient is relieved, but no longer shunned as a loathsome object; his relations, friends, medical attendants, and all who have occasion to see him, visit him with pleasure.

The next patient to whom the double bed was serviceable was a woman of a large size, who had broken her thigh, high up near the trochanter. When laid on the outside of the thigh, she complained of intolerable pain, as the fractured part was immediately pressed on. She

was therefore placed on the double bed, on her back, as in the preceding case; the thigh was bound up in proper splints, her foot was attached to the side of the frame, and she became perfectly easy. Though it was not necessary in this case to confine the other foot to the other side of the frame, it was done at her desire, as she said it made her feel more firm and steady. This person enjoyed all the advantage and convenience of the upper bed being occasionally elevated, without any disturbance to the fractured thigh.

It was next used by a person on whom I had performed the operation for the popliteal aneurism, where motion or exertion of any kind was highly dangerous. To him it proved of the greatest benefit.

After that, it was occupied by a man who had a compound fracture of the leg, and is now

by a person with a broken thigh. In short, there are so many cases in which it must be found necessary, that it is not likely long to remain without a tenant. I only regret that St. Bartholomew's hospital has not sooner enjoyed such a luxury: however, in future it is intended that it shall not be without several beds made on this principle.

So much for the relief which the double bed affords—we will now consider its comforts. The common method of refreshing beds under sick persons is by removing the patient to one side of the bed, while the other side is shaken up; after which he is again removed till the opposite side is made. This must be allowed to be only a sort of half-comfort; the bed can be but imperfectly made, and can have no opportunity of becoming cool; consequently the patient is again consigned to the annoyance

of his own heat and perspiration; and in fractures, rheumatism, gout, and many other cases which might be mentioned, even this refreshment it is sometimes impossible to give. That this is the common and indeed the only method hitherto known or practised to recreate sick or infirm persons, I could prove, by having seen many of the first distinction and fortune, both male and female, terminate a miserable existence in a bed from which they have not been removed for weeks, nor has it been possible even to change the sheets for many days. There, "Pomp may truly be said to have been exposed to feel what wretches feel." Had there been any better means of refreshment known, would it not have been recommended to them by their medical advisers? and would it not have been procured at any expence?—By this contrivance, the upper bed may be raised, and the under one completely made, as often as may be thought necessary or agreeable,

without disturbing or discomposing the patient. Or the upper part only of the bed may be made to rise, so as to elevate the head and breast, and place the person in an inclined plane, which, after long lying, is often an agreeable variation and refreshment; and in cases of pulmonic affection, dropsy of the chest, and other complaints, it is, as you well know, an absolutely necessary position. If for any particular purpose it may be required, as in case of an incarcerated hernia, the lower part, or foot of the bed, may be made to rise in the same manner.

Were these the only good effects to be derived from the double bed, they would suffice to stamp its value. If it be objected, that though the under bed may be made, the upper one cannot be changed, it might be answered, that the under one is of most consequence, being the same feather-bed or mattresses the person

is accustomed to lie on, while the upper one has only a thin mattress, blanket, and sheet; but by a contrivance, which will be presently mentioned, it will appear that the upper bed may also at any time be occasionally changed.

After many years experience of the distressful situation of persons who from various complaints could not be removed from their loathsome beds, but have been obliged to remain in them till the very bed and sacking have rotted under them—after having so often witnessed the difficulty, danger, and not unfrequently the injury, which is caused by forcing a bed-pan under a patient in cases of fractures, painful wounds, rheumatic or gouty affections, and many other instances which might be mentioned—after having seen many cases in which it was absolutely impossible to introduce it at all, or its more

filthy substitute, a draw-sheet, when the nurse could use no other method of cleaning the patient than the disgusting means mentioned in the case just related—after having in my own person known what it is to be confined to bed with a broken leg, at another time with the rheumatic gout, when during eleven days I could move nothing but my head — you cannot be surprised if I speak feelingly, and if it be my most ardent wish to relieve others from the inconveniences I suffered. In the unpleasant situation in which I then lay, in extreme hot weather, how happy should I have been made by a contrivance which would have gently raised me, permitted the bed to be fresh made under me, and have given me the exquisite delight of coolness and cleanliness!

It is then my opinion, that not only in fractures and dislocations of the lower

limbs, both simple and compound, but in diseases of the knee, hip, and spine; in fevers, when from long-continued and unvaried position, added to moisture and heat, excoriations and often extensive mortifications take place on the nates, hips, and lower part of the back; in fistulas in perineo; in the gout and rheumatism, in which the least motion is often torture; in the natural confluent small-pox; in child-bearing, particularly in those cases where puerperal inflammation or danger of flooding requires a strict horizontal posture; in cases of insanity, when coercion is necessary; in sickness, weakness from age, or any other infirmity, which prevents persons from leaving their beds or from moving or being moved in them, these double beds will be found of admirable use and assistance.

If these premises are allowed, and I think they may defy contradiction, it necessarily

must follow that no hospital civil or military, no infirmary or workhouse, should be without them. The aggregate benefit which would accrue to the nation from preserving the health of so many individuals, and saving the labor of so many attendants, not to mention the destruction of bedding-materials, is incalculable, *and well worthy the attention of government;* and I should conceive that private families in general will be happy to adopt the plan, and provide for themselves so necessary an article, against a day of age, sickness, or infirmity, from which, at some period or other, few families are wholly exempt, more particularly as it is not necessary to have a new bed, the frame of the upper bed being now made light and portable, of a proper size to hold one person, and adapted to lie on any bed of any width, as you may see represented in the annexed plate, No. 2. When not wanted, it may be folded up and laid aside in a small compass.

Having, as I presume, proved the efficacy of the contrivance which has been described, in executing the purpose for which it was designed, I shall endeavour to shew you that it is capable of performing more than was at first intended; and this will add another proof to what I believe will be generally admitted, that a right principle being once established it often happens that many good effects result from it, which were not thought of at the time of the original invention. Thus, with regard to our present subject, when it was found to answer the end for which it was designed, a thought occurred to me, than the same simple

machinery might be made applicable to other purposes which were no less wanted, particularly that it might be made to raise the person of the patient, independently of the upper bed, which on many occasions is a desirable object. For instance, if there should be a wound or complaint in the back, or parts which could not be seen while the patient was lying down, when raised up it might be examined, and applications made to it; besides that, it would give an opportunity of renewing the upper bed, for, clean as it is kept by means of the aperture, the sheets, blanket, &c., must require to be changed.

This was found to be easily effected, by means of a bar, which is made to reach from head to foot, at a proper height above the bed; the ends of the bar turn down, and are fixed in the two uprights which occasion-

ally raise the upper bed, as is shewn in Plate 3. From this bar there will be a firm bearing, on which the patient may be slung, either by broad girths introduced under him, or if that cannot be done, by the sheet on which he lies, the corners of it being tied together over the bar. The uprights then being disengaged from their connexion with the upper bed, and the handle being turned round, the bar will be raised with the person attached to it, and the bed will remain, on which may be put fresh sheets, or what may be wanted: he will then be let down again, and the sheet he has used may be drawn from under him, for it is easy to draw or cut one away, though difficult to introduce a clean one while a person is lying in bed.

Thus may be accomplished an object which you must recollect to have been much wanted: but this bar may be made to answer

other good purposes of equal importance. For instance, when it is not necessary to elevate the bed, the bar may remain fixed, and from it may be suspended a handkerchief or rope, which may be fixed at any distance, and by means of which the patient will be able to raise himself, and vary his position, without being obliged to call for the unready assistance of nurses or attendants—an independent pleasure, which those only who have wanted it can appreciate. —In our hospital-beds, whose tops made of wood are strong enough to bear it, a rope, with a cross handle of wood, is tied to a proper place in the centre for this purpose; but in beds of private families it can only be fixed to the front curtain rod, or frame in the front of the bed, which is an aukward oblique line of direction to pull from, and very frequently neither rod nor frame is strong enough to bear the force applied. If they should give way, as I have repeatedly seen, great mischief might

ensue, particularly in cases of fractured legs. By this bar, all these inconveniences may be obviated.

From this bar also the head and shoulders of the patient may be raised up, without the rest of the body, while a common bed-chair is placed under him upon the bolster, which will support him at any degree of elevation.

A contracted or paralytic arm may be suspended from it, which often of necessity lying across the breast, becomes heavy, wearisome, and not unfrequently painful and oppressive to the breath. A worthy friend of mine, who now lies in bed with the loss of the use of his left arm and leg, assures me that his principal grievance has arisen from the arm lying fixed on his breast, and which could

not be moved: I lately suspended it in the manner here described, and he found great relief.

But what strikes me of still much greater consequence, and what I enter upon with peculiar satisfaction, is the relief that I flatter myself this bar will afford to both patient and surgeon in a case of very great importance—I mean, a common but most serious accident, a compound fracture of the leg. In this case, as is well known to practitioners, patients are often obliged to remain in their beds during many months; while disunited bones and loose splinters cause inflammation and abscesses, which furnish a discharge in such quantity as daily to inundate the bandages and pillows. From this bar the limb may at any time be suspended in a proper cradle or bandage, while the nurse and attendants remove the dirty pillows, cleanse the bed, and get ready for

the surgeon to replace them. All this, as *you* have often experienced—

> " . . . . . Quæque *ipse* miserrima vidi
> *Et quorum pars magna fui,*

has hitherto been done at the expence of the surgeon's back, who in a stooping painful posture is obliged to support the heavy limb, often with the additional weight of splints and bandages (for he dares not trust it in other hands), while all the necessary apparatus is replacing. This is done by his direction, and often in a hurry, to save himself as well as the patient; for his fatigue must necessarily increase every instant, his hands must become unsteady, and the fractured bones will consequently be often jarred or displaced, which cannot fail of bringing on fresh pain and inflammation, and retarding the cure.—For fear of a repetition of this trouble, both surgeon and patient readily incline to put off the evil day, till filth and putrid effluvia make it absolutely necessary to be renewed.

If the facts which I have stated were not too well known to require corroboration, I might observe that I have conversed on the subject with many gentlemen of extensive practice in every branch of the profession, and have met with none who make use of any other methods to relieve or refresh bed-rid patients than the defective means which have been noticed.

Or if it were necessary to prove to you the want and actual non-existence, in this country, of any such assistance as has been last described, I need but to relate, that *so lately* as the latter end of last year, I visited in consultation a *medical gentleman*, of a heavy corpulent form, in St. James's Street, who had suffered a very bad compound fracture of the right leg, which detained him on his back in bed for nine weeks. The discharge from the wounds was profuse, but the bandages and

pillows were changed only once a week, with the most back-breaking difficulty and fatigue to the surgeon who supported the heavy swollen limb, and no little anxiety and pain on the part of the patient. During all that time he was but once taken up to be removed into another bed, while his own was fresh made, and then we were obliged to call in the assistance of three or four chairmen: the foot of one of them slipping, caused the wound to burst out with a fresh bleeding. I do most sincerely wish, for the doctor's sake as well as many others, that this idea of the double bed had sooner occurred. By the method now proposed, as I hope I have satisfactorily demonstrated, the change of pillows and bandages, and the new-making of the bed, might have taken place at any time, easily, safely, and without hurry or inconvenience.

To persons unacquainted with situations

of this kind, I may appear to have been prolix, and to have dwelt on minutiæ; but I am sure you and all who are accustomed to such scenes, will concur with me, that in a sick bed and in a sick room every thing is important.

Further benefit will, I doubt not, be found to arise from this happy invention; and I feel confident that it will meet the approbation of medical men, patients, their attendants, and friends—a circle which must nearly embrace the whole community.

I am, Dear Sir,

With great regard,

&c. &c. &c.

J. E.

Hanover Square,
April 6th, 1807.

DESCRIPTION

OF

THE PLATES.

PLATE I.

Represents the original bed at St. Bartholomew's hospital, 3 feet 6 inches wide by 6 feet 4 inches in length. This being made expressly for the purpose, the upper bed corresponds exactly, and fits in with the other; but being intended for public and constant use, it is heavier and stronger than is necessary for private families.

Fig. 1 shows the upper bed lying on the under one.

Fig. 2 the upper bed raised to a convenient height.

Plate 1

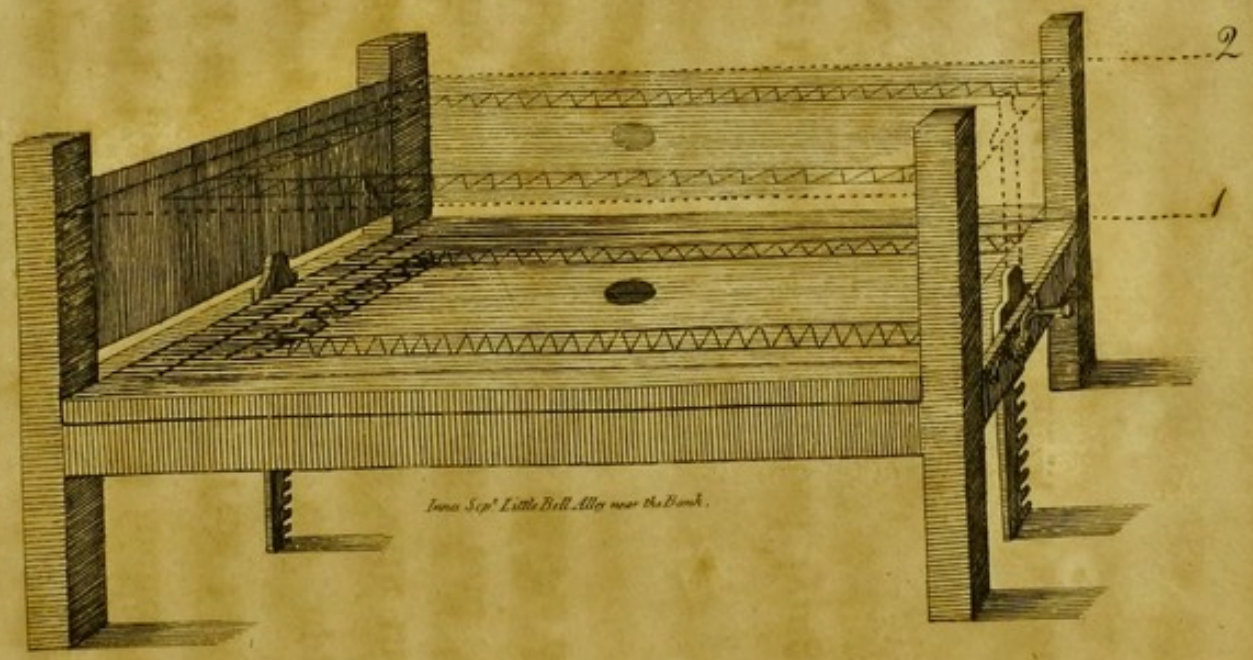

PLATE II.

Shows the improved plan, in which the upper bed is made of sufficient width for one person, but is intended to be placed on and fixed to any bed of any breadth.

The upper bed is seen lying on the lower bed, — and also as it appears when raised up.

Specimens of the bed may be seen at Mr. Oakley's, N° 8, Old Bond Street, who has undertaken the manufacture of them.

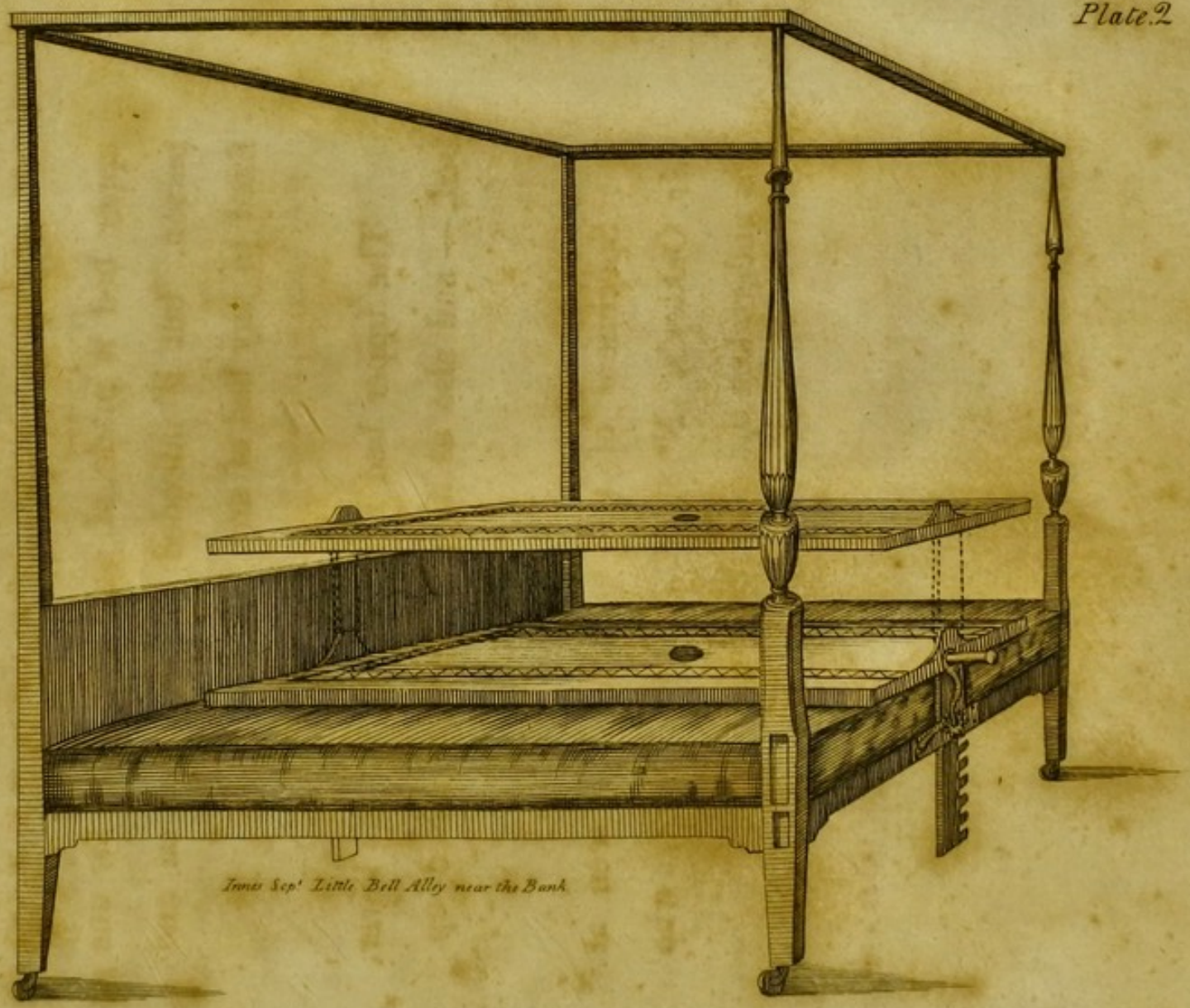
Plate.2
Jones Sc.t Little Bell Alley near the Bank

PLATE III.

In Plate III. is shown the bar which has been described, raised up and reaching from head to foot: it is fixed laterally in grooves made in the two uprights which occasionally raise the upper bed, but in the present view they are unconnected with it, and merely act on the bar.

The dotted line marks how low the bar may be made to descend, in order to receive any weight which may be attached to it, and which with a steady smooth movement may be raised to any degree, from one inch to twenty, or higher if required.

Plate 3