Specification of Victor Theodore Junod : vacuum apparatus for the relief of inflammatory diseases.

Contributors

Junod, Victor Theodore.

Publication/Creation

London : Great Seal Patent Office, 1866 (London : George E. Eyre and William Spottiswoode)

Persistent URL

https://wellcomecollection.org/works/kespcffq

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

A.D. 1866, 10th FEBRUARY. N° 414.

SPECIFICATION

OF

VICTOR THEODORE JUNOD.

VACUUM APPARATUS FOR THE RELIEF OF INFLAMMATORY DISEASES.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:
PUBLISHED AT THE GREAT SEAL PATENT OFFICE,
25, SOUTHAMPTON BUILDINGS, HOLBORN.
Price 8d.
1866.

A.D. 1866, 10th FEBRUARY. N° 414.

Vacuum Apparatus for the Relief of Inflammatory Diseases.

LETTERS PATENT to Victor Theodore Junod, of Old Cavendish Street, Cavendish Square, in the County of Middlesex, for the Invention of "IMPROVEMENTS IN VACUUM APPARATUS EMPLOYED FOR THE CURE OR RELIEF OF INFLAMMATORY DISEASES."

Sealed the 7th August 1866, and dated the 10th February 1866.

PROVISIONAL SPECIFICATION left by the said Victor Theodore Junod at the Office of the Commissioners of Patents, with his Petition, on the 10th February 1866.

I, VICTOR THEODORE JUNOD, of Old Cavendish Street, Cavendish Square, in the County of Middlesex, do hereby declare the nature of the said Invention for "IMPROVEMENTS IN VACUUM APPARATUS EMPLOYED FOR THE CURE OR RELIEF OF INFLAMMATORY DISEASES," to be as follows :—

This Invention relates to improvements in what is known as "vacuum apparatus," for exhausting or withdrawing the air from an enclosed space or chamber formed or applied around the arm, leg, or other part of a patient.

In the outset I would remark that vacuum apparatus for the cure and relief of inflammatory diseases was brought into practice by me upwards of 35

years since, but owing to the expensive character of the apparatus it has not hitherto been extensively used, and one of the objects of my present improvements is so to reduce the cost of the apparatus that it may be brought within the reach of all who may require its application.

The first part of my Invention consists in connecting a series of vacuum cups or chambers by means of a flexble air tube, such cups or chambers being suitably arranged for application to the back or other part. From twenty to thirty or more of such vacuum cups may be thus combined together in the form of a "chaplet," the whole series being exhausted by means of one air pump.

The second part of my improvements consists in forming vacuum apparatus for the arm at such an acute angle that painful pressure upon the point of the elbow is prevented, the instrument so formed affording support to the arm around the elbow without giving pain to the patient, thus avoiding the objections attending the use of similar apparatus of the form hitherto adopted. The application of vacuum apparatus to the arm of a patient as previously adopted has been painful and difficult, but by forming it so that it can be placed at an angle pointing upwards according to this part of my improvements all the difficulties hitherto attending its use are avoided. This form of apparatus is constructed with a joint or connection at the elbow.

The third part of my improvements relates to vacuum apparatus applicable to the leg of a patient. The india-rubber "muff" or sleeve hitherto employed for connecting the instrument to the limb was so stout as frequently to cause pain to the patient, but if not of considerable strength is liable to burst when in use, and in order to obviate this difficulty and expense I employ a "muff" or sleeve of silk or other woven fabric as a lining introduced within a sleeve of comparatively thin and soft india-rubber, thus imparting strength to the india-rubber and preventing pain from too great pressure caused by using stout india-rubber; or the india-rubber may be protected from bursting inwards by a collar of metal or other material of sufficient strength, such collars in some cases being capable of expanding in order to adapt them to limbs of different size. Much difficulty has been experienced in adapting vacuum apparatus of this character to the legs of different patients, owing to the varying dimensions of the limbs, and this part of my improvements consists in the application of a ring or collar to the mouth or top of the apparatus so as to adapt the instrument to legs of large or small circumference without inconvenience to the patient. A similar adjusting ring or collar may be used in combination with vacuum apparatus applied to the arm of a patient. Apparatus of this character may be constructed suitable for being applied to part only of the

arm, leg, or thigh of a patient, leaving the hand, foot, or other parts exposed.

The fourth part of my improvements consists in forming vacuum apparatus for the leg or arm in several parts or sections, and in connecting them in the manner herein-before described, by which means they may be packed within each other so as to occupy but little space.

The fifth part of my Invention consists in forming abdominal vacuum apparatus with several internal chambers communicating with each other in order to obtain additional surface contact with the superficial tissue when under the influence of the vacuum process.

The sixth part of my Invention consists in adapting vacuum apparatus of this character to the neck by constructing it in the form of a collar combined with a hood of india-rubber to prevent the entrance of air, and so as to leave the face of the patient exposed.

The seventh part of my improvements consists in the application of an improved vacuum gauge to the air pump or instrument employed for withdrawing or exhausting the air from vacuum apparatus, such as herein-before described, in order to indicate the extent of the vacuum required to be produced. Heretofore I have employed an ordinary vacuum gauge consisting of a glass tube containing quicksilver to indicate the pressure upon a divided scale, but this instrument was expensive, inconvenient, and liable to be broken, and the form of instrument I prefer to employ for this purpose according to this part of my improvements consists of a small case containing a spring which moves a pointer or needle in front of a circular dial plate, a flexible diaphragm being interposed between the vacuum passage and the part connected with the spring and pointer; or a simple vacuum gauge may be made by covering a spiral spring with air-tight tissue, the same being caused to expand or contract according to the degree of vacuum required, which is indcated by a pointer attached to the gauge.

The last part of my present improvements consists in arranging vacuum apparatus so that a number of patients may be treated simultaneously in order to economize time where a number of patients require treatment. For this purpose a number of instruments or apparatus are connected by means of flexible tubes to other tubes communicating with the receiver of an air pump or exhausting apparatus situated in any convenient part of a building or hospital, by which means one physician is able to superintend upwards of twenty patients with but little more trouble than attending upon one. Stop cocks are applied in connection with each apparatus, in most cases placed in the hand or within reach of the patient to regulate the action as required, and

the exhausting apparatus may be actuated and regulated (so as to maintain the vacuum at one uniform pressure) by means of a descending weight arranged in order to actuate the air pump when required, or the vacuum may be obtained and regulated by other arrangements of mechanism if desired. In place of employing an ordinary air pump worked by hand the air may be exhausted by means of expanding and collapsing bellows actuated by the foot of the patient or otherwise.

The vacuum apparatus previously described according to my improvements affords the following advantages, namely:—Considerable reduction of cost; economy of time in its application; prevention of pain to the patient; with compactness of form so as to render it very portable.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Victor Theodore Junod in the Great Seal Patent Office on the 9th August 1866.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, VICTOR THEODORE JUNOD, of Old Cavendish Street, Cavendish Square, in the County of Middlesex, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Tenth day of February, in the year of our Lord One thousand eight hundred and sixty-six, in the twenty-ninth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Victor Theodore Junod, Her special licence that I, the said Victor Theodore Junod, my executors, administrators, and assigns, or such others as I, the said Victor Theodore Junod, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN VACUUM APPARATUS EMPLOYED FOR THE CURE OR RELIEF OF INFLAMMATORY DISEASES," upon the condition (amongst others) that I, the said Victor Theodore Junod, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Victor Theodore Junod, do hereby declare the nature of the said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof, that is to say :—

This Invention has for its object improvements in what is known as "vacuum apparatus" for exhausting or withdrawing the air from an enclosed space or chamber formed or applied around the arm, leg, or other part of a patient.

In the outset I would remark that vacuum apparatus for the cure and relief of inflammatory diseases was brought into practice by me upwards of 33 years since, but owing to the expensive character of the apparatus it has not hitherto been extensively used, and one of the objects of my present improvements is so to reduce the cost of the apparatus that it may be brought within the reach of most of those who may require its application, the use of the improved apparatus being also rendered painless and applied with more facility, an important element in the success of the application.

The first part of my Invention consists in connecting a series of vacuum cups or chambers (made of metal or glass) by means of a flexible air tube, such cups or chambers being suitably arranged for application to the spine or any other part. From twenty to thirty or more of such vacuum cups (one of which is represented in the Drawing marked A) may be thus combined together in the form of a "chaplet," the whole series being exhausted by means of a small air pump.

The second part of my improvements consists in forming vacuum apparatus for the arm at such an acute angle that painful pressure upon the point of the elbow is prevented, the instrument so formed affording support to the arm around the elbow without giving pain to the patient, thus avoiding the objections attending the use of similar apparatus of the form hitherto adopted. The application of vacuum apparatus to the arm of a patient as previously adopted has been so painful as to cause it to be completely discarded, but by forming it so that it can be placed at an angle pointing upwards according to this part of my improvements this is avoided. This improved form of apparatus is constructed with a joint or connection above the elbow, and by reason of the arm being bent upwards at an acute angle the point of the elbow is projected forward so that the arm will rest on the flat surface of the elbow, and all painful pressure on its extreme point will be completely prevented by this simple contrivance.

Figure 1 of the Drawing hereunto annexed shows a side view of vacuum apparatus constructed according to this part of my improvements, (*a*) being

the joint where the two parts are connected, and are rendered air-tight by an india-rubber bracelet or collar fastened to one of the parts.

The third part of my improvements relates to vacuum apparatus applicable to the leg of a patient. The india-rubber "muff" or sleeve hitherto employed for connecting the instrument to the limb was so stout as frequently to cause pain to the patient, but if not of sufficient strength is liable to burst when in use, and in order to obviate this injury and expense I employ a "muff" or sleeve of silk or other woven fabric as an inner muff to be used in combination with a sleeve or muff of thin and soft india-rubber as may be desired; the inner muff of silk or other fabric imparting sufficient strength to the india-rubber, and preventing pain from too great pressure caused by using stout india-rubber as heretofore employed.

Figure 2 shows an improved muff, which overcomes the difficulty which has hitherto prevented the use of this apparatus. The india-rubber may be also protected from bursting inwards by a collar of metal or other material of sufficient strength, such collars in some cases being capable of expanding in order to adapt them to limbs of different size; or the metal collars may be made in two parts, and be connected together upon the limb by means of a sliding bolt *b*, *b*, as shown in Figures 3 and 3×, or other suitable fastening. Figure 3 shows vacuum apparatus for the leg constructed in accordance with this part of my improvements. The large or small opening (1, 1×, Figure 2) of the muff is applied according to the size of the limb of the patient, the other opening being connected with the apparatus, so that the same muff will fit all sizes. Between the cloth muff and the india-rubber muff a pillow is formed around the limb of wool or other soft material to prevent any painful pressure from the muff.

Much difficulty has been experienced in adapting vacuum apparatus of this character to the legs of different patients owing to the varying dimensions of the limbs, and this part of my improvements consists in the application of a collar to the top of the apparatus so as to adapt the instrument to legs of large or small circumference without inconvenience to the patient. A similar adjusting ring or collar may be used in combination with vacuum apparatus applied to the arm. Apparatus of this character may be constructed suitable for being applied to part only of the arm, leg, or thigh of a patient, leaving the hand, foot, or other parts exposed.

The fourth part of my improvements consists in forming vacuum apparatus for the leg or arm in several parts or sections, and in connecting them in the manner herein-before described, by which means they may be packed within each other so as to occupy but little space. This improvement admits of the

apparatus for the leg being reduced in compass when packed up, by the top part (Figure 3) sliding completely inside the next part, as well as the foot part, which is connected by a joint, thus making the apparatus very portable.

The fifth part of my Invention consists in forming abdominal vacuum apparatus in the form of a stomach warmer, to which I have added several internal chambers communicating with each other in order to prevent the superficial tissue coming into contact with the internal surface of the apparatus when under the influence of the vacuum process.

The sixth part of my Invention consists in adapting vacuum apparatus around the neck by constructing it in the form of a collar of gutta percha or other suitable material combined with a hood of thin india-rubber to prevent the entrance of air, and so as to leave the face of the patient exposed.

The seventh part of my improvements consists in the application of an improved vacuum gauge to the air pump or instrument employed for withdrawing or exhausting the air from vacuum apparatus, such as herein-before described, in order to indicate the extent of the vacuum required to be produced. Heretofore I have employed an ordinary vacuum gauge, consisting of a glass tube containing quicksilver to indicate the pressure upon a divided scale, but this instrument was expensive, inconvenient, and liable to be broken, and for this cause has for many years been discarded, and the form of instrument I prefer to employ for this purpose according to this part of my improvements consists of a small case containing a spring, which moves a pointer or needle in front of a circular dial plate, a flexible diaphragm being interposed between the vacuum passage and the part connected with the spring and pointer; or I construct a simple vacuum gauge made by covering a spiral spring with an air-tight tissue, the same being caused to expand or contract according to the degree of vacuum which is indicated by a pointer attached to a gauge.

The last part of my present improvements consists in arranging vacuum apparatus so that a number of patients may be treated simultaneously in hospitals or elsewhere in order to economize the time of the operator where a number of patients require treatment. For this purpose a number of instruments or apparatus are connected by means of flexible tubes to other main tubes communicating with the receiver of an air pump or exhausting apparatus situated in any convenient part of a building or hospital, by which means one physician is able to superintend simultaneously upwards of twenty patients with very little more trouble than attending upon one.

Stop-cocks are applied in connection with each apparatus, and in most cases can be placed in the hand or within reach of the patient, so that the

patient can regulate the action as required, and the exhausing apparatus may be acted upon and regulated (so as to maintain the vacuum at the same level by its own self-acting power at one uniform pressure) by means of a descending weight arranged in order to act upon the air pump when required. It is better, if possible, to have three receivers and three descending weights (instead of one) with a row of three main pipes similar to those used for gas fixed against the wall of the chamber, and passing the head of the bed of each patient. By this means it is possible to connect the patient with the receiver where the vacuum is kept at a slight degree for many hours, and if required all day and all night, and thus it is also possible to make the descending weight heavier or lighter at pleasure. In place of employing an ordinary air pump worked by hand, the air may be exhausted also by means of small aspiring bellows having a spiral spring inside set in motion by the foot of the patient or otherwise.

The vacuum apparatus previously described according to my improvements affords the following advantages, namely, considerable reduction of cost, economy of time in its application, prevention of pain to the patient, with compactness of form so as to render it very portable.

In witness whereof, I, the said Victor Theodore Junod, have hereunto set my hand and seal, this 28th day of July, in the year of our Lord One thousand eight hundred and sixty-six.

V. T. JUNOD. (L.S.)

Witness,

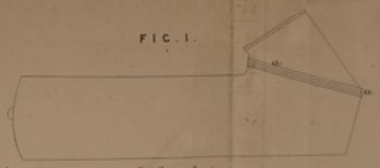
J. G. TONGUE,
Patent Agent,
34, Southampton Buildings,
Chancery Lane, W.C.

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1866.

A.D. 1866. Feb. 10. N° 444.
JUNOD'S Specification.

[1 SHEET.]

FIG. 1.

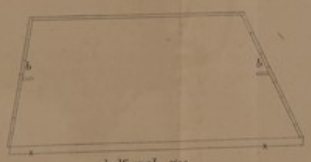


one fourth real size

FIG. 2.

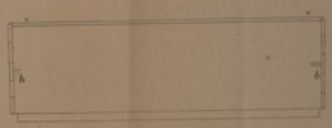
one fourth real size

FIG. 3.



half real size

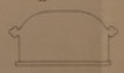
FIG 3*.



half real size

Note This figure shows an additional portion suitably formed for lengthening a vacuum instrument for the leg, and may be connected underneath at x x with Fig 3. when required to give to the instrument increased length, so that it will come under the bend of the knee, in order to avoid pain to the patient. The parts are retained together by the inner muff of silk, covering the connected parts

A



The filed drawing is not colored.

Drawn on Stone by Malby & Sons

London: Printed by George Edward Eyre and William Spottiswoode,
Printers to the Queen's most Excellent Majesty. 1866.