Specification of Alexander Robertson : applying heat or cold to the human body.

Contributors

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A.D. 1871, 15th MARCH. N° 690.

SPECIFICATION

OF

ALEXANDER ROBERTSON.

APPLYING HEAT OR COLD TO THE HUMAN BODY.

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Applying Heat or Cold to the Human Body.

LETTERS PATENT to Alexander Robertson, of Glasgow, in the County of Lanark, North Britain, for the Invention of "IMPROVEMENTS IN APPLYING HEAT OR COLD TO THE HUMAN BODY, AND IN THE APPARATUS OR MEANS EMPLOYED THEREFOR, SUCH APPARATUS BEING APPLICABLE AS PESSARIES OR DILATORS."

Sealed the 25th August 1871, and dated the 15th March 1871.

PROVISIONAL SPECIFICATION left by the said Alexander Robertson at the Office of the Commissioners of Patents, with his Petition, on the 15th March 1871.

I, ALEXANDER ROBERTSON, of Glasgow, in the County of Lanark, North Britain, do hereby declare the nature of the said Invention of "IMPROVEMENTS IN APPLYING HEAT OR COLD TO THE HUMAN BODY, AND IN THE APPARATUS OR MEANS EMPLOYED THEREFOR, SUCH APPARATUS BEING APPLICABLE AS PESSARIES OR DILATORS," to be as follows, that is to say :—

This Invention, which relates to improvements in applying heat or cold to the human body, has for its object the production of a regulated

and equable or nearly equable temperature at any part of the body desired, also to enable that to be effected with a minimum disturbance to the patient. The apparatus for effecting the foregoing objects, consists of bags of various shapes made of vulcanized cloth, vulcanized india-rubber, or other waterproof fabric, and divided into two or more compartments. The bags are provided with two or more openings, having pipes attached thereto, through one or more of which water of the desired temperature is forced or admitted from a reservoir, or is poured in from a vessel by the hand, and which passing through the bag brings it to the temperature desired, after which it is discharged through the other pipe or pipes. By means of this Invention a constant or intermittent flow through the apparatus can be maintained.

This Invention also includes the use of the bags herein-before referred to without inlet or outlet pipes attached, or with only one such pipe, as the bags constructed with compartments as herein-before described are of less capacity and weight than the bags at present used, and are therefore more easily borne by the patient.

In place of applying the apparatus herein-before referred to direct to the human body they may be used to raise or maintain the temperature of any intervening poultice, fomentation, or other application, and they may also be employed for passing into the "vagina," uterus, rectum, or other parts of the human body requiring dilation or support.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Alexander Robertson in the Great Seal Patent Office on the 15th September 1871.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, ALEXANDER ROBERTSON, of Glasgow, in the County of Lanark, North Britain, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Fifteenth day of March, in the year of our Lord One thousand eight hundred and seventy-one, in the 35th year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Alexander Robertson, Her special license that I, the said Alexander Robertson, my executors, administrators, and assigns, or such others as I, the said Alexander Robertson,

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 APPLYING HEAT OR COLD TO THE HUMAN BODY, AND IN THE APPARATUS OR MEANS EMPLOYED THEREFOR, SUCH APPARATUS BEING APPLICABLE AS PESSARIES OR DILATORS," upon the condition (amongst others) that I, the said Alexander Robertson, by an instrument in writing under my hand and seal, 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 Alexander Robertson, do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement, reference being had to the accompanying Drawings, and to the letters and figures marked thereon, that is to say:—

My said Invention which relates to improvements in applying heat or cold to the human body has for its object the production of a regulated and equable or nearly equable temperature at any part of the body desired, also to enable that to be effected with a minimum disturbance to the patient.

The apparatus for effecting the foregoing objects consists of bags of various shapes made of vulcanized india-rubber, vulcanized cloth, or other waterproof fabric, and divided into two or more compartments. The bags are provided with two or more openings having pipes attached thereto, through one or more of which water of the desired temperature is forced or admitted from a reservoir, or is poured in from a vessel by the hand, or is injected by a syringe, and which passing through the bag brings it to the temperature desired, after which it is discharged through the other pipe or pipes. By means of this Invention a constant or intermittent flow through the apparatus can be maintained.

And in order that my said Invention may be properly understood I now proceed more particularly to set forth the system, mode, or manner

in or under which the same is or may be used or practically carried into effect, that is to say:—

Upon the Sheet of Drawings hereunto appended my Invention is illustrated under several forms applicable to various parts of the human body. An apparatus for applying to the chest, stomach, or other rounder portion of the human body, such as the thigh or arm, is shewn distended at Figure 1, the side thereof marked A being in horizontal section, and that marked B being in plan whilst Figure 2 is a transverse section of the same upon the line A, B, Figure 1.

The apparatus illustrated by Figures 1 and 2 consists of a bag *a* of vulcanized india-rubber or other waterproof material arranged in compartments numbered respectively 1, 2, 3, 4, 5, and 6, through which water of the required temperature is caused to flow by being admitted to the inlet end thereof through a pipe *b* attached thereto and passing from the outlet end through another pipe *c* similarly attached, both pipes being of any length required. Under the arrangement shewn the water may be poured by hand at intervals into the bag *a* through the inlet pipe *b* and retained therein for any required length of time by means of caps or stoppers *d*, which are screwed on to the ends of the inlet pipe *b* and the outlet pipe *c* respectively, or it may be so arranged that a continuous flow of water is maintained through the apparatus, in which case the cap or stopper *d* is removed from the inlet pipe *b* and one end of a pipe or tube is affixed thereto with its opposite end in communication with a tank or vessel containing water, whilst the cap or stopper *d* is also removed from the outlet pipe *c*, and one end of another pipe or tube if required is attached thereto, the opposite end of which may be provided with a tap through which the water is allowed to flow from the bag *a* in any required quantity which the tap may be obviously adjusted to regulate. The direction in which the water flows is clearly indicated by the arrows on Figure 1. In constructing the apparatus shewn at Figures 1 and 2, the bag *a* is cemented or otherwise fixed in the manner shewn to a rectangular sheet *e*, or the sheet *e* may be of other form of vulcanized cloth, vulcanized india-rubber, or other fabric by preference but not necessarily waterproof, the back of which may or may not be covered with a layer of flannel or other suitable material, whilst upon the opposite side thereof a covering f^1 of flannel or other suitable material is placed stretching over the top of the bag *a* and secured at each side by stitching or otherwise to the margin of the

sheet *e*, and the pipes *b* and *c* as well as the metallic fittings may also be covered with flannel or other suitable material where likely to come in contact with the skin of the patient. In place of employing the screwed caps and joints *d*, *d*, as shewn at Figure 1, it is preferred to employ pipes fitted with taps as shewn at Figure 1ª.

At Figure 3 of the Drawings hereunto appended that side marked A is a vertical section, and that marked *b* is an elevation, whilst the similarly marked sides at Figure 4 are respectively a transverse section when distended on the line C, D, Figure 3, and a plan shewing my said apparatus arranged in the form adapted for a spinal bag and which consists of two compartments E and F which are parallel or nearly so to each other and at a short distance apart, being retained in that position by means of a series of braces *a* attached to each at intervals. To the end of the compartment E an inlet pipe *b* is attached, whilst to the end of the other compartment F an outlet pipe *c* is similarly attached, and these inlet and outlet pipes *b* and *c* respectively may be of any length required, and may or may not be arranged for being detached from the bag by means of the screw coupling shewn at *d* and *e*, Figure 3. At opposite sides of this spinal bag a series of loops *f* are situated for attaching bands or straps for securing the bag to the body of a patient. The flow of water is maintained through the apparatus in a manner similar to that herein-before described with reference to Figures 1 and 2 and therefore need not be again specified, or in place of arranging the spinal bag exactly as herein-before described the two compartments E and F may be closely cemented together along their inner edge instead of being merely connected by braces at intervals, as shewn at Figures 3 and 4, or it may consist of more than two compartments, being in that case constructed like the bag represented at Figures 1 and 2.

From Figure 5 to Figure 9 inclusive another adaptation of my Invention is illustrated in the character of a vaginal or uterine bag, pessary, or dilator, of which when distended that side of Figure 5 marked 1 shews a half vertical section, and the other side, marked 2, a half front elevation, whilst Figures 6 and 7 shew respectively transverse sections upon the lines E, F, and G, H, Figure 5. Figure 8 is a front view of the vaginal or uterine bag, pessary, or dilator when not distended, whilst Figure 9 is a transverse section illustrative of the form into which it is folded when being inserted into the vagina, and as it is to some extent similar to the spinal bag herein-before set forth, being

modified in dimensions and form to suit the contour of the vagina I only specify those points wherein it differs therefrom. Upon the face of the bag E a pocket *g* is formed, into which one end of an instrument is placed when the bag is folded, as shewn at Figure 9, for the purpose of insertion, and to the sides and ends of the bag E a set of loops *h* are attached, by means of which a piece of lint or other fabric saturated or coated with any required fluid or substance may be secured to the bag E and applied thereon to a patient. The inlet pipe *b* and the outlet pipe *c* of the vaginal or uterine bag, pessary, or dilator E, may be of any required length, being preferably provided with taps *i*, for the purpose of regulating the flow of the water; when required the fluid may be injected through the inlet pipe by means of a syringe.

From Figure 10 to Figure 12, inclusive of the Drawings hereunto appended, my Invention is illustrated in form for being applied to the head of a patient, Figure 10 being a back view of a human head, whereon a bag is shewn in transverse section at the side, marked A, and in elevation at the side marked B Figure 11 is a plan of the said bag, whilst Figure 12 is a view of the head in profile with the bag shewn thereon, which is formed with compartments *a*, into which water at the required temperature is admitted through an inlet pipe *b*, and flowing onwards through the several compartments in the direction indicated by the arrows in Figure 11, passes out through the outlet pipe *c*. In the cap shewn at Figures 10 to 12, six compartments are represented, but the cap may be constructed with two, three, four, or other number of compartments.

In common with all the foregoing forms of the apparatus constituting my Invention it may be arranged to allow a regular flow of water through the compartments *a* of the head bag, or it may be filled at intervals as found most convenient or conducive to the requirements of the patient.

In lieu of forming the head bag as before described, it may also be made in a way similar to the chest bag shewn on the accompanying Sheet of Drawings, that is, in a series of compartments extending backwards and forwards over the head, these compartments being shorter at the sides than in the centre from brow to occiput. These compartments are cemented to waterproof cloth or other fabric, and this fabric when the cap is in use lies on the scalp. The compartments are covered on the outside by cloth, flannel, or other suitable material, which is sewed or otherwise connected to the waterproof or other fabric

which lies upon the scalp. This cap, like the others, is provided with inlet and outlet pipes. The cap so made is secured to the head by means of bands or straps, which are tied under the chin.

At Figure 13 of the Drawings, that side marked A is a vertical section and the side marked B is an elevation of an arrangement of my apparatus adapted for application to the throat or neck, and which consists of a vulcanized india-rubber or other waterproof bag *a*, arranged in compartments numbered 1, 2, 3, 4, 5, and 6 respectively, and similar to those herein-before described in reference to the chest bag illustrated at Figures 1 and 2 of the Drawings. Water is admitted to the throat bag *a* by the inlet pipe *b*, and after circulating through all the compartments of the bag *a*, as indicated by the arrows is discharged by the outlet pipe *c*, both of which pipes *b* and *c* are provided with taps or cocks *d* and d^1 respectively, in order to regulate the quantity of water flowing into and out of the bag *a*. The throat bag *a*, as in the case of the chest bag, is cemented or otherwise fixed to a sheet *e* of vulcanized india-rubber, vulcanized cloth, or other fabric, and which is provided at one end with straps or bands *f*, and at the other end with buckles *g* for holding it in position on the throat or neck of the patient; or the sheet *e* may be furnished with buttons, clasps, or other suitable means for effecting that end.

It is to be understood that my Invention may be applied in manner similar to the several adaptations herein-before set forth to other parts of the human body, the bags being shaped to suit other parts, I having specified and shewn on my Drawings such apparatus as applied to some parts of the human body only. Besides being arranged parallel to each other the compartments may be put into the form of coils, or in a more or less circular form, and in place of communicating at one end only they may communicate at both ends.

And it is to be further understood that in place of employing the screwed cap and joints on the inlet and outlet pipes, as shewn at Figures 1 and 3 respectively, there may be employed in all the forms of my apparatus, taps, or cocks, as shewn in connection with the chest bag in Figure 1^a, to the vaginal or uterine bag at Figure 5, and to the throat bag in Figure 13, as in using such taps or cocks there is less liability of losing any part of the apparatus or of injuring it than attaches to the caps and joints shown at Figures 1 and 3 respectively, which have sometimes to be detached.

Robertson's Impts. in Applying Heat or Cold to the Human Body.

In place of applying the apparatus herein-before referred to direct to the human body it may be used to raise or maintain the temperature of any intervening poultice, fomentation, or other application.

Having now described the nature of my said Invention, and the several forms of the apparatus under which the same is put into practice, I wish to observe in conclusion that I am aware spinal bags have heretofore been used, arranged in compartments for holding ice or hot or cold fluids, such, for example, as the spinal bag set forth in the Specification filed under Letters Patent, No. 504, A.D., 1864, granted to John Chapman, for "Spine Bags to be employed in Controlling the Circulation of the Blood by the Combined or Independent Application of Ice, or Iced Water, and Warm Water or other Fluid to the Region of the Spinal Cord;" but in Chapman's said spinal bag no provision was made for producing a constant or intermittent flow of water through the apparatus during the time it was applied to the patient, what therefore I consider to be novel and original, and therefore claim as the Invention secured to me by the herein-before in part recited Letters Patent is, the arrangement or construction of apparatus in compartments and provided with inlet and outlet pipes for producing a constant or intermittent flow of water through the said apparatus, substantially as herein-before described and illustrated upon the appended Sheet of Drawings.

In witness whereof, I, the said Alexander Robertson, have hereunto set my hand and seal, this Thirteenth day of September One thousand eight hundred and seventy-one.

ALEXANDER ROBERTSON. (L.S.)

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FIG. 1.

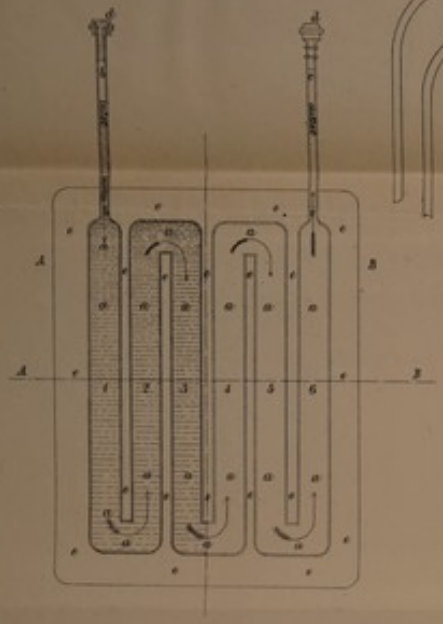


FIG. 1.a

FIG. 3.

FIG. 5.

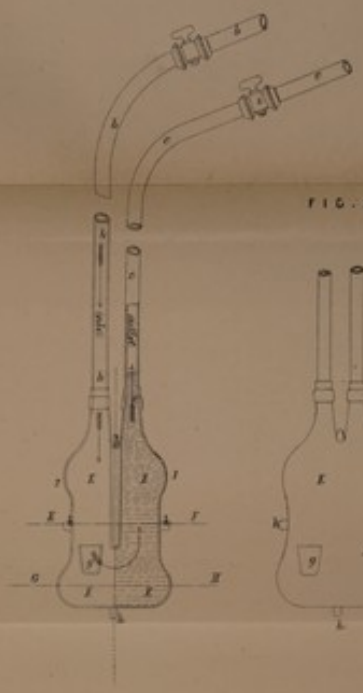
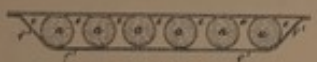


FIG. 8.

FIG. 2.



Section on the line A.B. Fig. 1.

FIG. 4.

Section on the line C.D. Fig. 3.

FIG. 6.

Section on the line EF. Fig. 5.

FIG. 9.

FIG. 7.

Section on the line GH. Fig. 5.

FIG. 10.

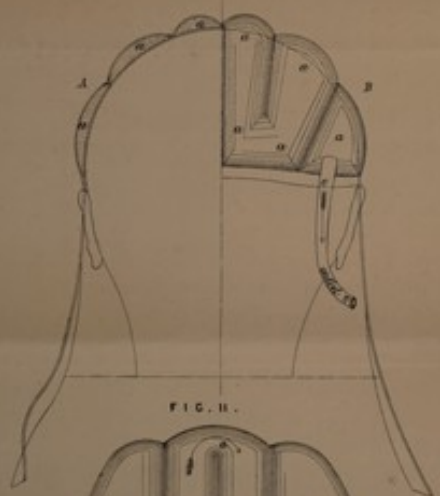


FIG. 12.

FIG. 11.

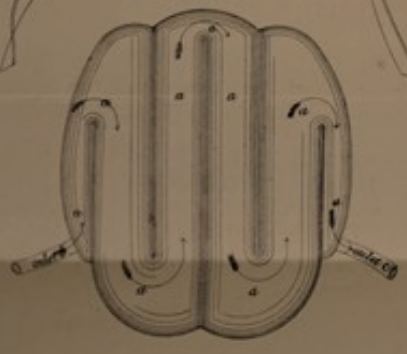
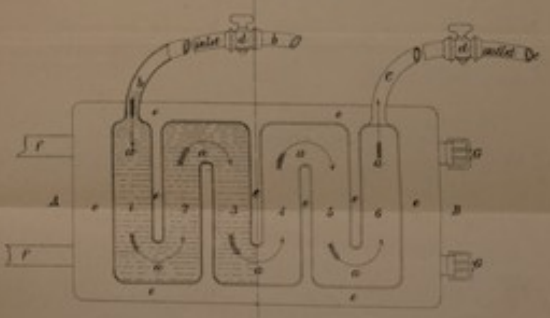


FIG. 13.



The tinted drawing is partly colored.

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