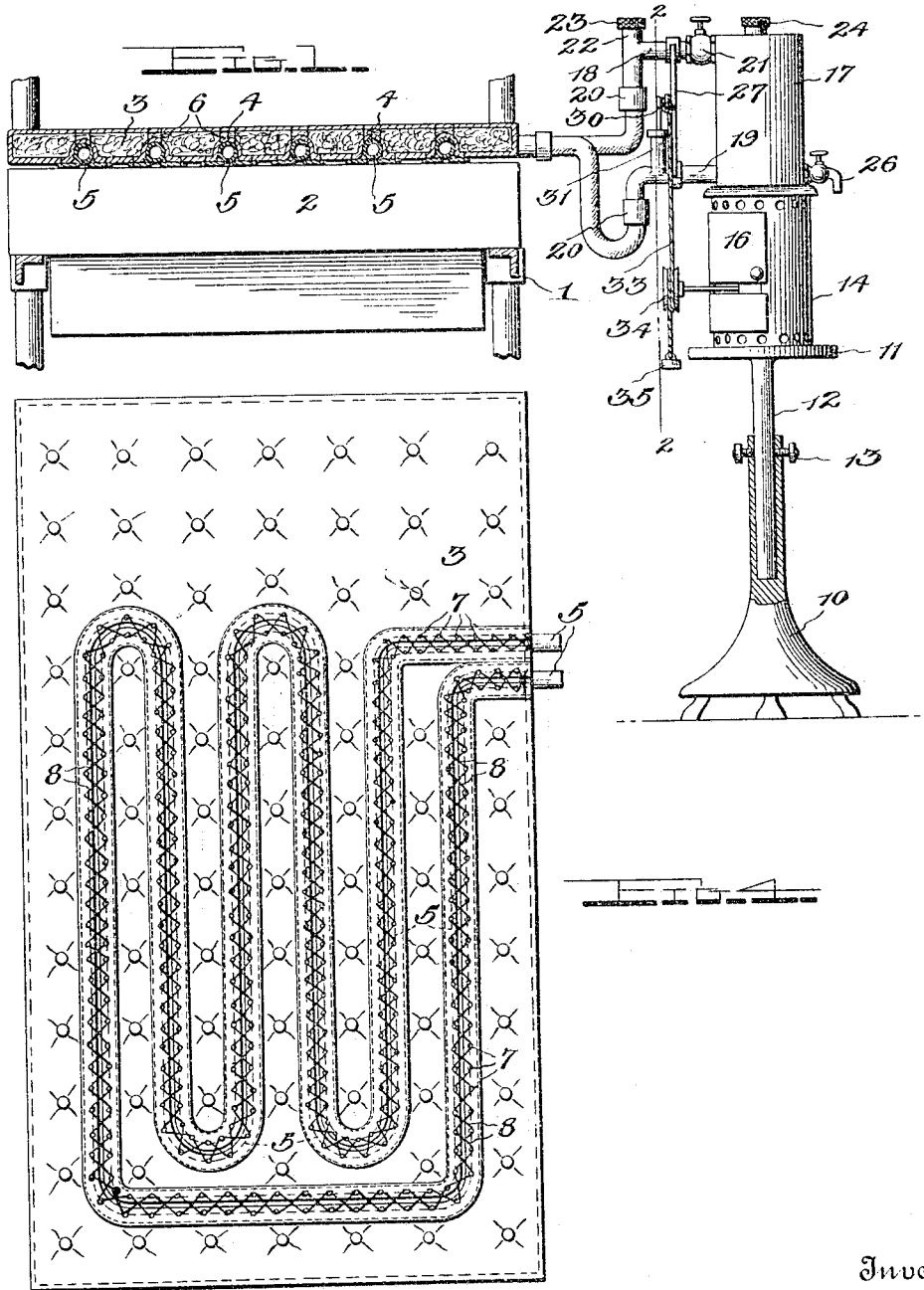


T. C. MITCHELL.
 WARMING APPLIANCE FOR BEDS.
 APPLICATION FILED DEC. 4, 1913.

Patented Dec. 15, 1914.

1,121,277.

2 SHEETS-SHEET 1.



Witnesses
Chas. R. Gristauer.
J. J. Mawhinney

Inventor
Theresa C. Mitchell,

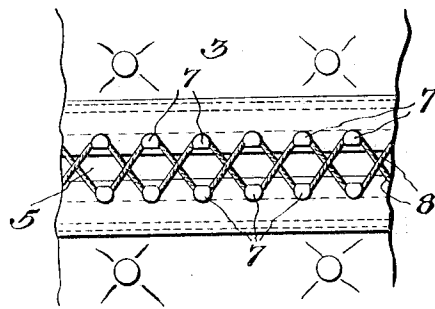
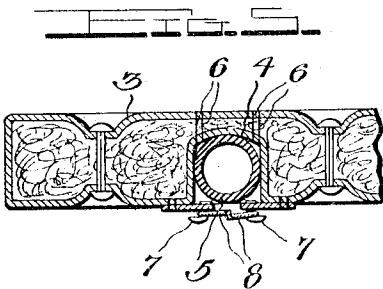
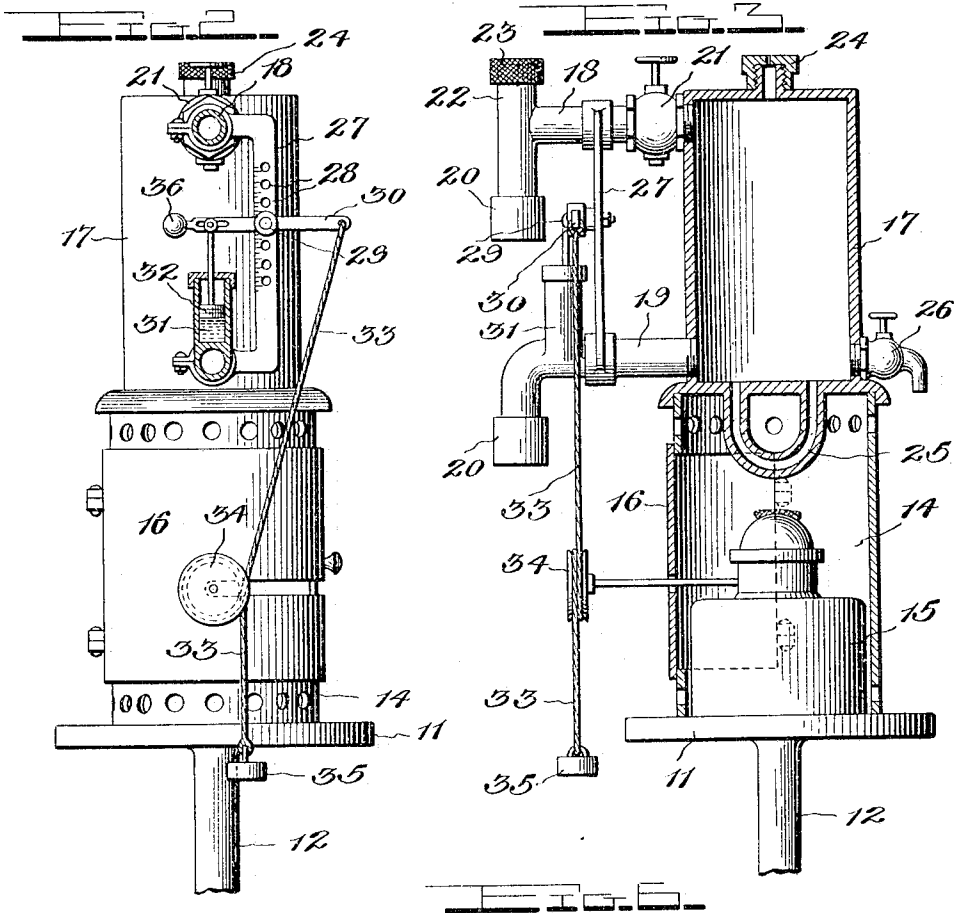
By *Samuel Cushman & Co.*
 Attorneys

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 J. J. Mawhinney

By *Lucius Cushman & Co*
 Attorneys

UNITED STATES PATENT OFFICE.

THERESA C. MITCHELL, OF NEWPORT NEWS, VIRGINIA.

WARMING APPLIANCE FOR BEDS.

1,121,277.

Specification of Letters Patent.

Patented Dec. 15, 1914.

Application filed December 4, 1913. Serial No. 804,651.

To all whom it may concern:

Be it known that I, THERESA C. MITCHELL, a citizen of the United States, residing at Newport News, in the county of Warwick and State of Virginia, have invented new and useful Improvements in Warming Appliances for Beds, of which the following is a specification.

My invention relates to an improved warming appliance for beds.

The object is to provide such an appliance characterized by portability, separability and adaptability to be used in connection with the ordinary felt mattresses of beds. Second, to provide such an appliance wherein the medium of warmth is produced by a circulation of water and means for heating the latter. Finally, such an appliance with means for regulating the temperature of the circulating water.

The invention is illustrated in the accompanying drawings and set forth in the following description.

That which is new is pointed out in the claims appended to the description.

In the accompanying drawings,—Figure 1 is an elevation of the warming appliance applied to a bed and shown partly in section. Fig. 2 is an inner end elevation of the water heating device, showing the connections in section. Fig. 3 is a vertical section taken through the device at right angles to the disclosure of Fig. 2. Fig. 4 is a bottom plan view of the pad or mattress to which the heating appliance is applied. Fig. 5 is a detail sectional view through one portion of the pad showing the position of the water carrying tube therein. Fig. 6 is a bottom plan view of a section of the pad showing the means for holding the water carrying tube in the seat in the bed.

Referring to these drawings, the reference numeral 1 designates the frame of an ordinary bed and 2 an ordinary stuffed mattress which may be of any of the usual characters of mattress and which is shown merely for the purpose of illustrating the application of this invention.

The numeral 3 designates a bed pad which may be filled with cotton batting or the like of suitable thickness, two inches for example being suitable, so that one resting upon the pad when the latter is placed on the bed will not suffer discomfort from the relative hardness or otherwise of the water circulating pipes combined with the pad as hereinafter

described, and so that the water circulating pipes which are disposed within the planes of the upper and lower surfaces of the bed may not be crushed or distorted in any such manner as to impair the desired free circulation of water therethrough. The pad is provided in its lower surface with a seat or channel 4 to receive the water circulating pipe 5 and this seat traverses in coil form such as shown in Fig. 4 or any other suitable form, the surface of the pad, or so much thereof as may be desired. This pipe seat 4 may be suitably provided by stuffing or drawing in the cotton batting or other filling of the pad, for instance as by stitches 6 shown in Figs. 1 and 5. It will be noted from Fig. 4 that the upper end of the pad 3 is not provided with the seat 4, this portion of the pad being adapted to receive the pillows and it ordinarily not being required to heat such portion of the bed although it is within the contemplation of this invention to do so if it is found desirable.

The water circulating pipe 5 is preferably of rubber so that it may, because of its flexibility be properly disposed in the pipe seat 4 irrespective of the form or tracery of the latter, and when the pipe is disposed in the seat it is flush with or at least does not protrude beyond the plane of the lower surface of the pad and thus is not liable to crushing or distortion. The pipe 5 is held in place in the seat 4 detachably so that it may be readily combined with the pad for use and will maintain its assembled relation when the pad is carried about, either rolled up or otherwise, from place to place as within the room of a hospital, and may as easily be detached so that the pad may be rolled or otherwise folded into more compact form for portability and the rubber pipe itself be separately made into a compact package.

The fastening means shown is preferred, but other suitable devices for that purpose may be employed. As shown particularly in Figs. 4 and 6 of the drawings, the fastening means consists of hooks 7 attached at suitable intervals to the pad at opposite sides of and along the line of the seat 4, and a lacing 8 is strung on these hooks 7 and runs across the seat somewhat in the manner of a shoe-lace.

There is provided in connection with the pad 3 and the pipe 5 a suitable means for heating and circulating water through the pipe, and as shown, this heater is made up

of parts which may be disconnected for convenience of portability and readily set up for use. It is understood that any suitable heating device may be employed, the lamp shown, any other form of lamp or even electrical means may be utilized. As shown particularly in Figs. 1, 2 and 3 of the drawings the heater comprises a base 10 having a support 11 mounted thereon adjustably by means of the stem 12 and set screw 13.

A casing 14 is detachably placed upon the support 11 and houses a heating element such as a lamp 15 adapted to be removed through an opening in one side of the casing normally closed by a door 16.

A water vessel 17 is detachably mounted upon the upper end of the casing 14 by means of a flanged base on the water receptacle such as shown in Fig. 3, the receptacle 17 having pipe connections 18 and 19 at the upper and lower ends thereof adapted to be coupled to the ends of the pipe 5 whereby to provide communication between the pipe 5 and water vessel 17 and admit of water circulation therethrough.

Suitable detachable couplings 20 are employed between the members 18 and 19 and the ends of the pipe 5 admitting of the quick separability of the pipe from the heater. A valve 21 is carried upon the pipe connection 18 whereby to close communication therebetween and the vessel 17, and an extension 22 rises from the outer end of the connection 18 adapted to receive water in filling the appliance, and is closed by a suitable cap 23.

The water vessel 17 is provided with an opening in its top closed by a cap 24 having a small opening therein adapted to admit of the escape of air from the vessel 17.

As shown in Fig. 3 the vessel 17 is provided with a depending heating pipe 25 communicating with the interior of the vessel and extending down to proximity with the heating element 15 to insure a quick and thorough heating of the water in the vessel.

A suitable drain cock 26 is carried in the lower end of the vessel 17 and is utilized for draining off the contents thereof when desired. It is very often desirable that the temperature of the water circulating through the pipe 5 be maintained at a standard and that this may be accomplished the appliance is provided with a suitable temperature regulator. As shown, this consists of a thermometric device in communication with the water system, the mercury of which operates a lever which in turn controls the intensity of the heating device, for example, as shown, the flame of the lamp. Specifically this controlling device comprises a vertical plate 27 carried between the pipe connections 18 and 19 in which is formed a vertical row of openings 28 adapted to receive a fulcrum pin 29 for a lever 30 whereby to adjust the

height of the lever as desired. The plate 27 is provided with suitable graduations along one side of the row of openings to assist in adjusting this thermometric device to operate and maintain the system at the desired temperature.

Rising from the pipe connection 19 is a mercury receiving tube 31 in the upper end of which operates a piston 32 movable by the expansion and contraction of the mercury in the tube. The piston 32 has a rod projecting up through the tube 31 and having connection with the short arm of the lever 30 whereby to lock the latter about the fulcrum pin 29.

A suitable cord 33 is secured to the outer end of the long arm of the lever 30, extends down toward the lamp 15 and passes over a grooved pulley 34 mounted on the stem of the lamp controlling the height of the flame thereof. The cord 33 after passing around the pulley 34 extends down a short distance and is provided with a weight 35 adapted to hold the cord 33 taut and turn the stem of the lamp when the lever 30 is moved to slacken the cord. If desired a weight 36 may be placed upon the short arm of the lever 30 to counterbalance the weight 35.

It can be readily seen that upon the expansion of the mercury by a rise of the temperature of the water passing through the pipe connection 19 the piston 32 is raised and the lever 30 rocked to slacken the cord 33 whereupon the weight 35 turns the stem and lowers the flame of the lamp. On the other hand when the mercury contracts by a degree in the temperature of the water passing through the pipe connection 19, the lever 30 is rocked in an opposite direction, by the combined weight of the piston 32 and the weight 36 to draw the cord 33 up and rotate the stem of the lamp in a direction to raise the flame thereof and increase the heat intensity of the lamp.

In filling the system or appliance with water the valve 21 is closed and the cap 23 removed. Water is poured in the extension 22 the same passing into the tube 5 through the latter and then into the bottom of the vessel 17. As the water rises in the vessel 17 the air in the vessel is expelled through the opening in the cap 24. As soon as the system is filled with water the valve 21 is opened to admit a free circulation of the water and the lamp is ignited.

It is thus seen that the appliance may be disassembled into a number of relatively small parts may be readily packed for shipment and may be quickly set up.

It is of course obvious that the water vessel 17 may have connection with any number of tubes 5 for heating any number of pads 3 if it is so desired to apply this system to more than one bed. It will be noted

that this heating system is applicable not only to hospital beds or sick beds in general but also may be applied to beds out of doors as in camps, sleeping porches and the like where it is desired to maintain a certain warmth not otherwise obtainable, further the pads 3 may be of such form as to be applied to beds as herein shown or may be reduced in size and given different shapes for use on chairs or the like when desired.

What I claim is:

1. A warming device as specified comprising a flexible pad having one side depressed to provide a seat or groove in the pad, a warming element seated in said groove, and means for detachably holding the warming element in the groove, said element being adapted to be removed from said seat whereby said pad may be rolled up into compact form.

2. A warming device of the character described comprising a flexible pad having one side depressed to provide a seat or groove in the pad, a warming element seated in the groove, and fastening means for holding the element in said seat, said means being detachable whereby the element may be removed from said pad and the latter be rolled up into compact form.

3. A warming device as specified comprising a flexible pad, having one side depressed and stitched to the opposite side to provide a seat or groove in the body of the pad opening through the side thereof, a warming element seated in said groove and lying wholly within the planes of the sides of the pad, hooks secured to said side of the pad along the line and at the opposite sides of the seat, and a lacing strung on said hooks and across the open side of the seat whereby to detachably retain the warming element in the seat.

4. In a portable warming device, and in combination, a water heater, a flexible tube detachably connected to the heater, a flexible pad, and means securing the tube in the pad, said means being detachable whereby the tube may be separated from said heater and said pad and whereby said pad and said tube may be separately rolled or coiled into compact form for transportation or storage.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THERESA C. MITCHELL.

Witnesses:

C. C. MITCHELL,
J. W. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."