(No Model.)

Z. YAMABE.

HOT WATER BAG.

No. 588,043. Patented Aug. 10, 1897.

Fig. 1.

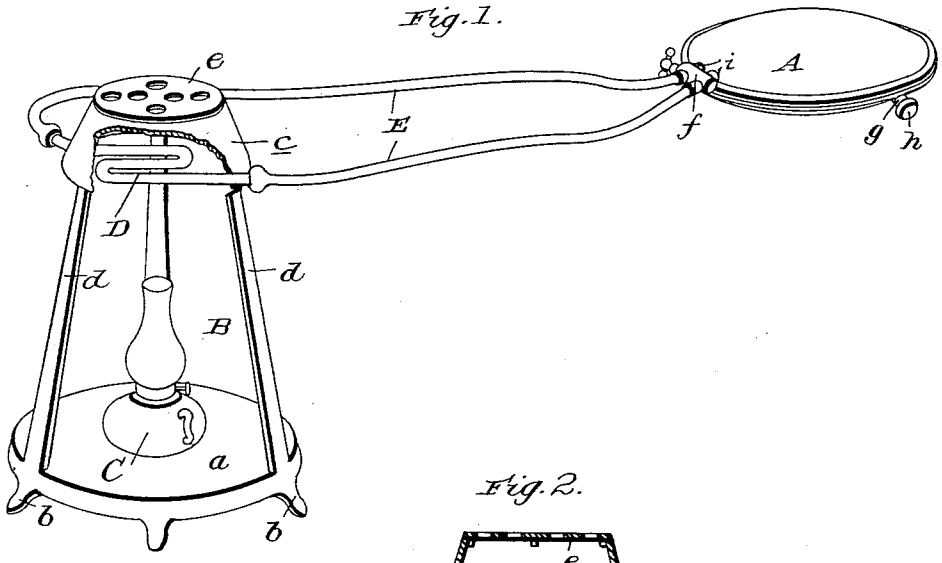


Fig. 2.

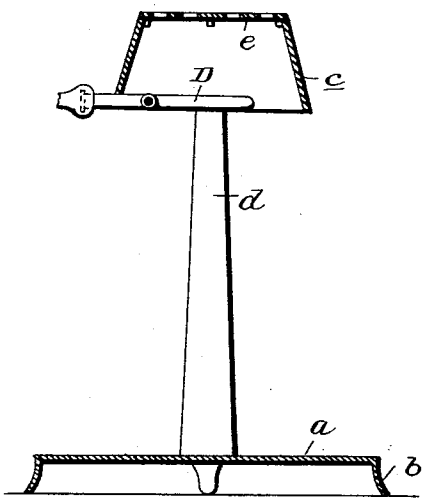
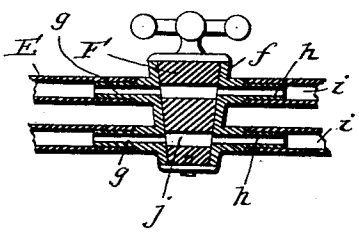


Fig. 3.



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HOT-WATER BAG.

SPECIFICATION forming part of Letters Patent No. 588,043, dated August 10, 1897.

Application filed January 26, 1897. Serial No. 620,763. (No model.)

To all whom it may concern:

Be it known that I, ZENJIRO YAMABE, a citizen of Japan, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Hot-Water Bags; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in hot-water bags for imparting warmth to the bodies of the sick; and it has for its general object to provide an apparatus comprising a hot-water bag and means for maintaining the water in said bag at a high temperature, so as to eliminate the necessity of frequently removing the bag from the bed and refilling it or replacing it with another hot-water bag.

Other objects and advantages of the invention will be fully understood from the following description and claim when taken in conjunction with the annexed drawings, in which—

Figure 1 is a perspective view of my improved apparatus complete and ready for use. Fig. 2 is a vertical diametrical section of the heating-stand, and Fig. 3 is a detail section taken through the valve which controls the passage of the water to and from the water-bag.

In the said drawings similar letters designate corresponding parts in all of the views, referring to which—

A indicates the water-bag of my improved apparatus, which may be formed of rubber and may be and preferably is similar in construction to the ordinary bag, so as to permit of it being placed upon a patient in a bed, and B indicates the heating-stand, which is designed to be placed upon the floor or upon a suitable support at the side of the bed. This stand B may be of any construction suitable to the purpose of my invention, but I prefer to have it comprise the base *a*, which is mounted upon short legs *b* and is adapted to serve as a support for a lamp C or other suitable heating device, and the casing *c*, which is supported above the base *a* by bars *d* or other suitable means and has its lower and upper ends open, the latter being occupied by a foraminated lid *e*, upon which a teapot or other receptacle to be heated may be placed, as shown.

D indicates a worm of pipe which is arranged in the casing *c* directly above the lamp or heater C, so as to be highly heated by the upward passage of heat and flame therefrom. This worm of pipe D has its ends extended through the casing *c* and connected with flexible tubes E, of rubber or other suitable material, which may be of any desired length, and are connected in turn with two nipples *g* on the casing *f* of the valve F. (Better shown in Fig. 3.) The said valve-casing *f* also has two nipples *h*, arranged in alinement with the nipples *g* and connected by tubes *i* with the water-bag A in a water-tight manner.

The valve or valve-plug F is provided with two diametrical ports or passages *j*, and is consequently adapted to connect the nipples *g h*, so as to permit of a free circulation of water toward and from the water-bag, and in another position to close communication between said nipples *g h*, so as to stop the circulation of water. In consequence of this and the fact that the valve is arranged adjacent to the water-bag A, as shown, it will be seen that when the bag becomes too warm the patient can close the valve until the temperature of the bag is sufficiently reduced, when he can again open the valve to permit the warmed water to pass to the water-bag and the cooled water to pass back to the worm of pipe D to be reheated. It will also be observed that one is enabled to partly close the valve and thus diminish the circulation of the hot water without entirely stopping the same, which is an important advantage.

The bag A is provided with a filling-tube *g*, which is normally closed by a cap *h;* but I would have it understood that I do not confine myself to providing the bag with the filling-tube, as such tube may be placed either on the bag or at any point in the length of the tubes E or pipe D.

In using my improved apparatus the valve F is opened and a supply of water sufficient to fill the bag A, tubes E, and pipe D is introduced into the same through the tube *g*, and said tube is closed by the cap *h*. The lamp C or other heater on the base *a* of stand B is then lighted, when the worm of pipe D will be quickly heated and the water in said

pipe D and in the tubes E and bag A will be set in circulation and in passing through said pipe D will be quickly heated. This circulation of the water in the worm D, tubes E, and water-bag A will be maintained so long as heat is applied to said worm, and consequently it will be observed that the water in the bag A will be kept warm, thus obviating the necessity of frequently removing the bag and refilling it with warm water or replacing it with another bag.

In the event of the water in the bag becoming too warm for the patient the valve F is closed until the bag is sufficiently cooled, when it may be opened again.

It will be seen from the foregoing that my improved water-bag may be introduced into a bed as easily as the ordinary bag and that it will be quite as comfortable to the patient. It will also be seen that in addition to heating the water supplied the bag A the heating-stand serves as a convenient means for heating tea or other liquid to be administered to the patient. It will also be observed that with all of its advantages my improved apparatus is exceedingly simple and may therefore be produced and sold with profit for a small price, which is a desideratum.

In conclusion I would have it understood that while I prefer to employ the worm of a pipe D, I do not desire to be confined to the same, as the tubes E may be connected with any other receptacle to which heat may be applied for heating the water.

Having thus described my invention, what I claim is—

The apparatus for the purpose described comprising a stand, a closed receptacle for water arranged in said stand, a device for heating the said receptacle, a water-bag of rubber or other suitable material, a valve-casing arranged adjacent to the water-bag and having two pairs of nipples arranged diametrically opposite each other, tubes connecting one pair of nipples and the water-bag, flexible tubes connecting the other pair of nipples and the interior of the water-receptacle and the valve or valve-plug arranged in said casing and having two diametrical ports or passages for connecting the opposite nipples, whereby the water may be caused to circulate in a closed cycle and the circulation may be started, regulated, and stopped by the patient to whom the bag is applied, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

ZENJIRO YAMABE.

Witnesses:
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