

No. 633,707.

Patented Sept. 26, 1899.

R. SWARTZ.
WARMING VESSEL.

(Application filed Dec. 19, 1898.)

(No Model.)

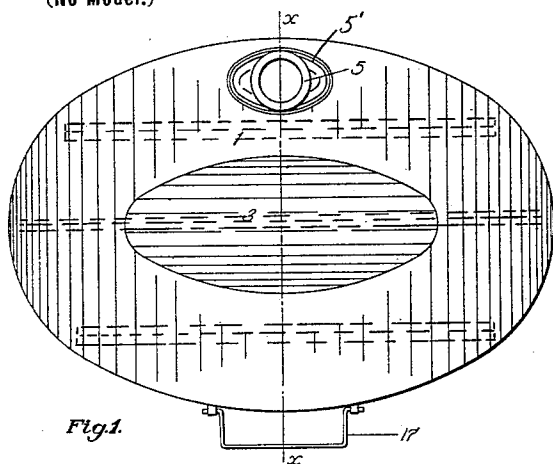


Fig. 1.

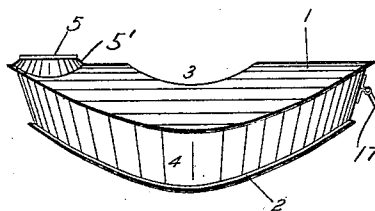


Fig. 3.

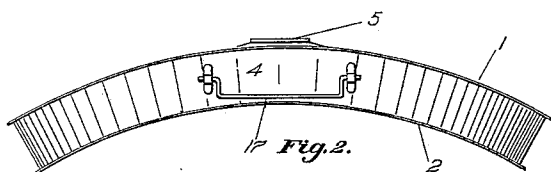


Fig. 2.

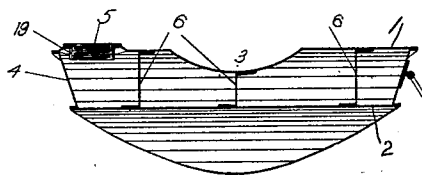


Fig. 4.

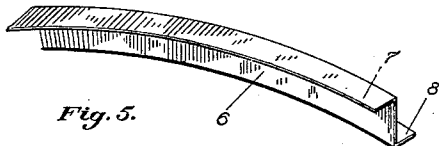


Fig. 5.

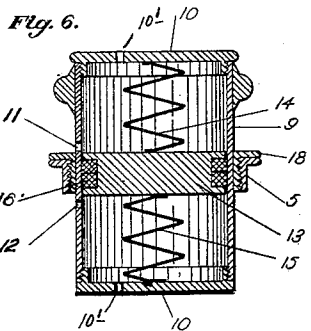


Fig. 6.

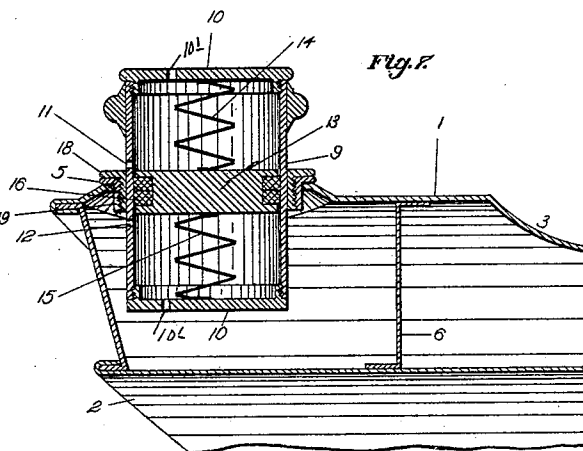


Fig. 7.

Witnesses.

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UNITED STATES PATENT OFFICE.

RICHARD SWARTZ, OF PINE BLUFF, ARKANSAS.

WARMING VESSEL.

SPECIFICATION forming part of Letters Patent No. 633,707, dated September 26, 1899.

Application filed December 19, 1898. Serial No. 699,662. (No model.)

To all whom it may concern:

Be it known that I, RICHARD SWARTZ, a citizen of the United States, residing at Pine Bluff, in the county of Jefferson and State of Arkansas, have invented certain new and useful Improvements in Warming Vessels, of which the following is a specification.

My invention is a warming vessel provided with an automatic atmosphere and water pressure valve; and it consists in the novel construction and arrangement of its parts, as hereinafter set forth in the following specification and claims hereto attached.

My invention is designed to apply heat to the body of a sick person and is adapted to be used in hospitals and private families. The vessel may be filled with hot water or hot air. While primarily intended as a warming vessel, it may also be used as a cooling vessel, in which case it should be filled with broken ice or cold water. Thus the part to which the application is made may be cooled and the inconvenience of dripping towels be avoided.

In the accompanying drawings, Figure 1 is a top plan view of my invention. Fig. 2 is an edge view. Fig. 3 is an end view. Fig. 4 is a cross-sectional view of Fig. 1 on the line $x x$. Fig. 5 is a perspective view of one of the ribs used to strengthen the vessel. Fig. 6 is a sectional view of the automatic air and water pressure valve. Fig. 7 is a partial cross-sectional view showing the neck raised, so that the vessel may be drained, or the neck may be countersunk, so that it will not be in the way when the vessel is to be embedded in the mattress.

My invention is described as follows: 1 is the top wall of my invention, the vessel being elliptical in shape as regards its face. In edge view it represents the arc of a circle. Its top wall 1 and bottom wall 2 are parallel to each other except as to depression 3 and elevation 5' throughout their entire length and breadth. 4 represents the end and side walls, which flare out a little, running up from the bottom wall. These parts may be united together in any substantial manner that is air and water tight.

In the top of the vessel and near one edge thereof is secured an elevated threaded neck 5, through which the vessel may be filled.

This neck extends a little above the face of wall 1; but it may be countersunk.

In the top wall 1 is a curved depression 3, running lengthwise the wall and wide enough to allow a portion of a man's arm or leg to be embedded therein.

The vessel in edge view is circular in shape, representing the arc of a circle, so that the convexity of the wall 2 will allow it to be applied closely to the abdomen, the back, or any curved portion of the body or large part of any of the limbs.

For the purpose of strengthening the vessel and to keep it from warping or springing under atmospheric pressure or the weight of the body it is provided with internal bracing-ribs 6, which run longitudinally on the inside of the vessel (but they may run crosswise) and partake of the curve of the vessel. These ribs are Z-shaped, looking at them endwise. (See Fig. 5.) The upper foot 7 bears against the inner face of wall 1 and the lower foot 8 against the inner face of wall 2. (See Fig. 4.) These ribs 6 are secured to the upper and lower walls in any substantial manner; but they do not run entirely to the end walls of the vessel, as shown in Fig. 1, thereby allowing space for the air or water to freely circulate throughout the entire vessel.

There is screwed into the threaded neck 5 a cylinder 9. The upper end of this cylinder extends a little above the outer face of wall 1; but it may be countersunk. The upper and lower ends of this cylinder 9 are closed by threaded caps 10, having small perforations 10', one in each. This cylinder is provided with two ports 11 and 12, the upper port 11 being just above the upper face of wall 1 and the lower port 12 just below the lower face of valve 13 when said valve is in its normal position. A spiral spring 14 holds valve 13 down, and a spiral spring 15 holds said valve up. These springs are sufficiently elastic to allow valve 13 to be moved up and down by air, steam, or water pressure. The position of the valve as represented in Figs. 6 and 7 is normal. 16 represents packing-rings. Contraction will move the valve down until the packing-rings 16 get below port 12, letting air into the vessel. As soon as enough air is admitted spring 15 moves the valve up

again in position, closing port 12. Excessive pressure moves the valve up till packing-rings 16 get above port 11, allowing the pressure to be relieved, and as soon as this excessive pressure is relieved spring 14 will move valve down again past port 11, closing port 12 to the outside. Thus the valve automatically moves up and down to relieve the vessel against too much or too little pressure.

10 The cylinder 9 may be used as a stopper and removed to fill or empty the vessel; but I may use an additional opening or stopper for that purpose.

15 The vessel is provided with a hinged handle 17 for convenience in handling.

The cylinder and valve shown in Figs. 6 and 7 may be used in connection with any warming vessel where the shape of the vessel will admit of such connection. The form of the vessel as illustrated in Figs. 1, 2, 3, 4, 20 and 5 is given, however, as the most preferable shape.

Having described my invention, what I claim as new, and desire to secure by Letters 25 Patent, is—

1. In a warming vessel, consisting of an upper wall 1 having a depression 3 and a threaded neck 5 in its raised portion; a lower wall 2; end and side walls 4 flaring outwardly 30 from the bottom wall to the top wall and connecting the two; braces 6 situated on the

inside of said vessel; cylinder 9 fitting in neck 5 and having ports 11 and 12; caps 10, one closing each end of said cylinder and each having a small perforation 10'; valve 13 35 adapted to move up and down in said cylinder; spiral spring 14 operating between cylinder 13 and the upper cap 10, and lower spiral spring 15 operating between said valve 13 and lower cap 10, substantially as shown 40 and described and for the purposes set forth.

2. In a warming vessel, substantially as shown and described, a threaded neck 5, secured in a perforation in the top wall of said vessel; a cylinder 9, having ports 11 and 12, 45 screwed into said neck; caps 10 closing the upper and lower ends of said cylinder each having a small perforation 10'; valve 13, provided with packing-rings 16, adapted to move up and down in said cylinder; spiral spring 50 14 operating between said valve and upper cap and spiral spring 15, operating between said valve and the lower cap, substantially as shown and described and for the purposes set forth.

In testimony whereof I affix my signature 55 in presence of two witnesses.

RICHARD SWARTZ.

Witnesses:

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