No. 611,207. Patented Sept. 20, 1898.

J. F. MORRILL.

HOT WATER BOTTLE OR ICE COMPRESS.

(Application filed Feb. 16, 1897.)

(No Model.)

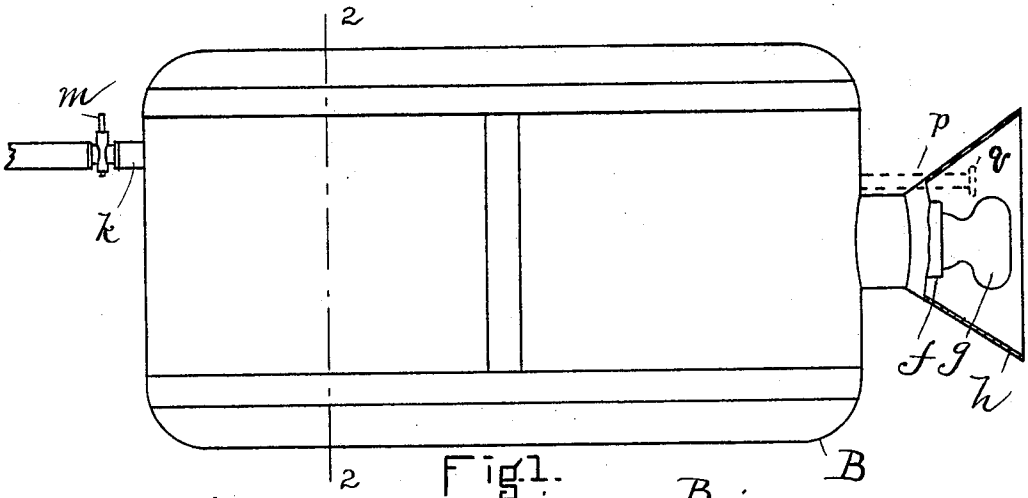


Fig. 1.

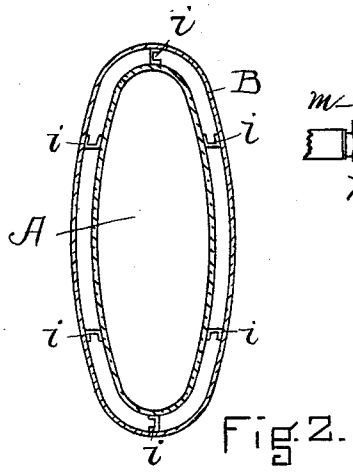


Fig. 2.

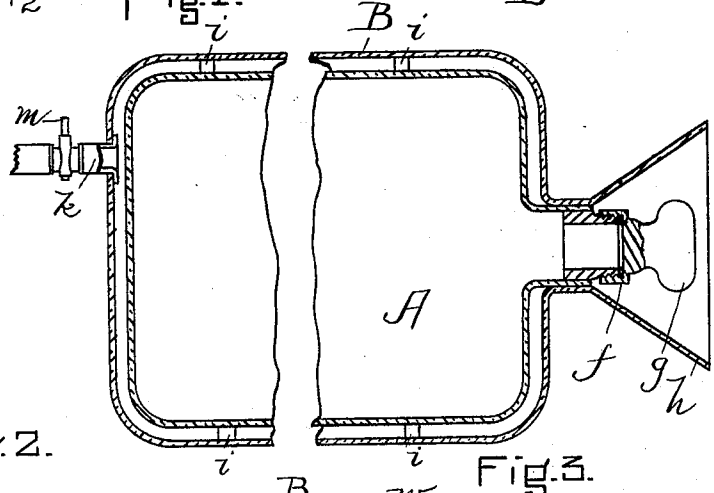


Fig. 3.

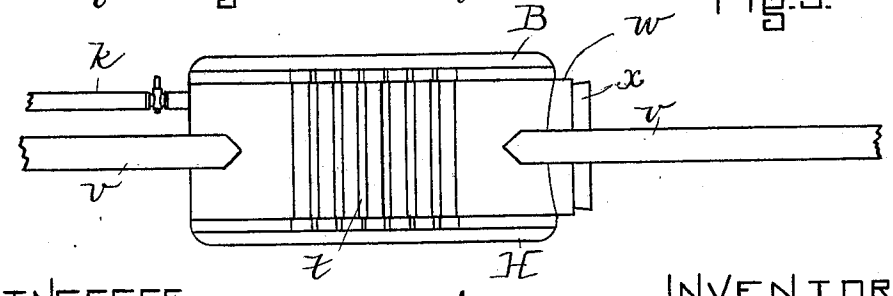


Fig. 4.

WITNESSES.

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JOHN F. MORRILL, OF BOSTON, MASSACHUSETTS.

HOT-WATER BOTTLE OR ICE-COMPRESS.

SPECIFICATION forming part of Letters Patent No. 611,207, dated September 20, 1898.

Application filed February 16, 1897. Serial No. 623,592. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. MORRILL, of Boston, in the county of Suffolk, State of Massachusetts, have made certain new and useful Improvements in Hot-Water Bottles or Ice-Compresses, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view of my improved hot-water bottle, a portion of the nipple-guard being represented as broken away; Fig. 2, a vertical transverse section of the same; Fig. 3, a vertical longitudinal section shown as broken away, and Fig. 4 a plan view representing the form of bag or bottle particularly adapted for use as an ice-compress.

It is well known that in the use of the ordinary rubber hot-water bottle or bag, which is constructed of only one thickness of rubber or other flexible material, much danger of burning the skin of the person to which it is applied is encountered should the water with which the receptacle is filled be too hot, and from the peculiar construction of these bottles, which offer a large radiating-surface, the contents rapidly cool. In the case where this same form of receptacle is employed as an ice-compress it is filled with cracked ice, and as the bag is bound tightly onto the person of the user the ragged or sharp edges of the ice frequently hurt and prevent the whole surface being engaged effectively with the flesh. Numerous expedients have been employed to overcome these objections—as, for example, covering the bag or compress with felt or similar material which will not readily conduct heat or cold; but these methods are impracticable and inefficient. My invention is designed particularly to overcome these objections, and in carrying it out I make use of means which will be readily understood by those conversant with such matters from the following explanation.

In the drawings, A represents a bag or bottle of rubber or other suitable flexible material for containing liquid or cracked ice. This bag is of the usual rectangular form and is provided with a filler-nipple *f*, closed by a screw cap or plug *g*, surrounded in the usual manner by a flaring rubber guard *h*. As thus far described the device is of the ordinary construction.

In my improvement I form an outer or inclosing air-tight inflatable bag or casing B, entirely surrounding the main bag A and having its walls connected thereto by stays *i* of tape or other suitable material to prevent distortion and the surface of the inner bag from engaging that of the outer.

An air-tube *k* passes through the outer wall of the bag B, whereby it may be inflated, a clamp *m* closing said tube and preventing the escape of air. In Fig. 1 this tube is represented at the bottom of the bag; but a tube *p*, adjacent the nipple *f*, may be arranged, as indicated by dotted lines in Fig. 1, with an air valve or cap *q* disposed inside the guard *h*. In fact, any suitable means may be employed for inflating the outer bag or casing. This outer bag may be made of any material which will hold air, but I preferably employ rubber or the same material as the inner bag is formed of.

The ice-compress H shown in Fig. 4 does not differ in construction in any material degree from the form just described. The outer or inclosing casing B may be corrugated, as at *t*, on one surface to fit portions of the figure, as the neck or forehead, and said casing may be provided at its ends with attaching-straps *v*. As this form is particularly adapted for use with ice the filler-nipple *w*, entering the inner bag, is enlarged to facilitate filling with a solid substance. This nipple is closed by any form of stopple or plug *x*. I do not, however, wish to be confined to constructing my device of any particular shape or arranging its parts in any especial manner, a salient feature of my invention being a liquid-containing bag or receptacle inclosed in an air-inflatable casing, whereby said inner receptacle is entirely surrounded by an air-cushion. It will be seen that this cushion will serve to prevent the ice from hurting the wearer, and the air-space will also prevent danger of burning from contact with the inner bag should it be overheated, while the efficiency of the device is in no wise lessened, the air becoming heated or cooled, as the case may be. It is essential that the outer casing

be of expansible material, as the heat of the water contained in the main bag will expand the air in said casing to a material degree. The air valve or nipple for inflating said outer casing is also essential, as were there no outlet to said casing whereby the air surrounding the inner bag can be changed in a very short time such confined air would become dead and would not heat quickly, if at all. This would greatly decrease the efficacy of the device and render my improvement practically useless.

I am aware that the walls of mattresses and air-cushions have been connected by stays; but such stays connect only the opposite walls of the same casing. They do not and cannot act to effect the result I set up—*i. e.*, the walls of an inner liquid-holding receptacle connected by stays to the walls of an inflatable outer casing inclosing the inner casing, whereby the walls of the two casings are prevented from contacting with each other. For example, when great pressure is applied to the bag and one side of the outer casing depressed its opposite wall, by means of the connecting-stays, will carry the inner bag with it as it distends and prevent the first-mentioned wall from contacting with the inner bag. Otherwise the patient might be burned. None of the ordinary forms of staying effect this. If no stays were used, the inner bag would at all times rest on a wall of the outer.

Having thus described my invention, what I claim is—

1. The herein-described rubber liquid-containing receptacle provided with the filler-nipple, in combination with the expansible casing entirely inclosing said receptacle, and leaving an air-space between; and the air-valve for inflating said casing substantially as described.

2. The herein-described hot-water bottle comprising the flexible bag, A, provided with the filler-nipple *f:* the expansible casing, B, entirely inclosing said bag; flexible stays, *i*, connecting the walls of the casing to the walls of the bag whereby their relative position is maintained; and an air-valve for inflating and deflating said casing substantially as specified.

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Witnesses:
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