

W. MOEHLE.
HOT WATER OR ICE BAG.
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1,340,236.

Patented May 18, 1920.

Fig. 1

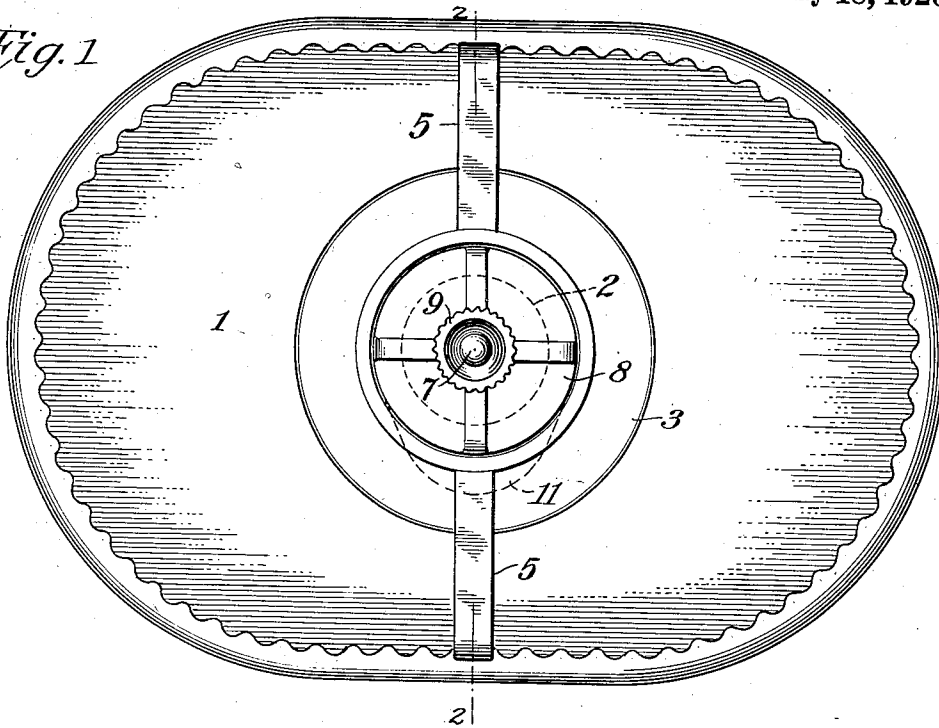


Fig. 2

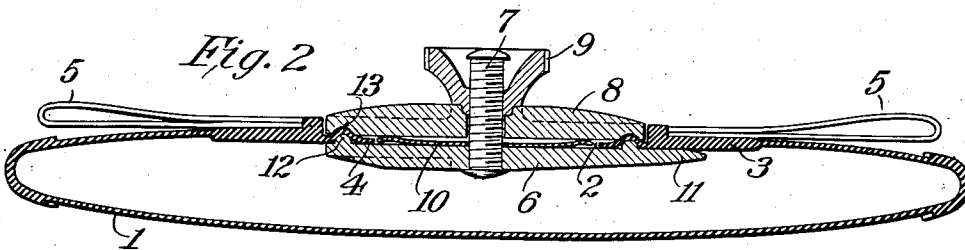


Fig. 4

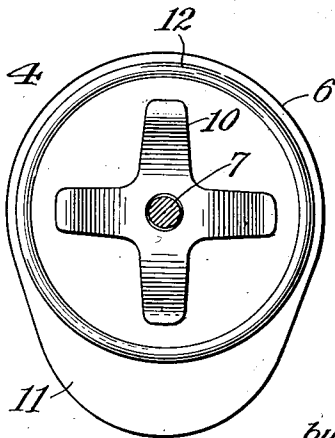
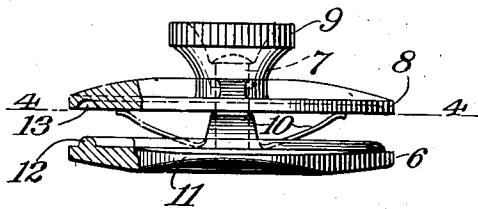


Fig. 3



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UNITED STATES PATENT OFFICE.

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HOT-WATER OR ICE BAG.

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To all whom it may concern:

Be it known that I, WALTER MOEHLE, a citizen of the United States of America, residing at Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Hot-Water or Ice Bags, of which the following is a specification.

My invention relates to bags for holding hot water, cracked ice, or other heating or cooling materials, to be applied to the human body for therapeutic purposes. Heretofore these bags have been made either of oblong form with a nipple at one end in which a plug could be inserted, or in circular form with a nipple fastened at the center and closed by a bulky cap screwed thereon. Both these forms of closure create large, hard lumps, which produce discomfort when the patient lies on the bag, are apt to leak, and are fairly costly to construct and attach to the bag. My present invention overcomes these difficulties and has other advantages to be hereinafter pointed out. The best form of apparatus at present known to me embodying my invention is illustrated in the accompanying sheet of drawings in which—

Figure 1 is a plan view of the bag, Fig. 2 is a section on line 2—2 of Fig. 1, on an enlarged scale;

Fig. 3 is a general side view and partial section of the two-part clamp serving as a stopper, parts being shown in vertical section, and

Fig. 4 is a horizontal section on line 4—4 of Fig. 3.

Throughout the drawings, like reference characters indicate like parts. 1, indicates the bag generally, which is preferably of oblong form, flat when empty, and is made of rubber or other watertight flexible material. 2, is a hole, in one wall of the bag, preferably at or near the center, and circular in form. Preferably this hole is surrounded by a thickened or reinforced portion 3, of the wall which is substantially circular but does not extend quite to the edges of hole 2, which edges are left of the same or less thickness than the main portions of the bag walls, so as to form a flexible lip 4.

Loops 5, 5, are disposed on opposite sides of hole 2, and preferably are attached to the reinforced portion 3.

The stopper for hole 2, is formed of a two-part clamping structure both members of

which have transverse dimensions greater than the diameter, or corresponding transverse dimensions, of hole 2, so that when the structure is centered in said hole its members may overlap the edges thereof. Preferably the outer member 8, of the clamping structure is circular and fits into the recess surrounded by the reinforced portion 3 of the bag wall, while the inner member 6, is of the same general dimensions but is preferably provided with a short, tapered extension or lip 11, which facilitates its introduction through the hole into the bag interior. These two members are provided with any suitable means for forcing them together such as the threaded bolt or stud 7, set in the inner member 6, and projecting through a central opening in the outer member 8, to be engaged by a thumb nut 9.

Some form of spring is placed between the members, such as the cruciform, dished, spring metal stamping 10, which is perforated at the center to slip over stud 7.

Preferably also the inner face of one member, as 6, is provided with a circular bead 12, and the inner face of the other member 8, has a corresponding groove 13.

In the operation, the clamping structure with parts held apart by spring 10, is seated in hole 2, the lip 11, serving to facilitate the introduction of inner member 6, through hole 2, into the bag interior. The thumb nut 9, is then screwed down, flexing spring 10, and firmly grasping the thin lip 4, between bead 12 and groove 13, so as to make an absolutely fluid tight joint between the lip 4, and the clamping structure. The insertion of the member 6, can be further facilitated by the operator inserting thumb and forefinger of one hand through loops 5, 5, and, by pulling these apart, distorting hole 2.

Loops 5, 5 may also serve as means for attaching straps to be used in holding the bag on the patient's body. They also serve as means for holding the bag while inserting the cracked ice, or pouring in the water or other filling for the bag, when the stopper is removed.

The bag is applied with the stopper on the side away from the patient's body so that he is not incommoded thereby, even if he lies on the bag, the bed yielding to receive the thumb nut 9.

When the bag is to be emptied the nut is unscrewed, the spring 10, forces the clamp-

ing members 6, and 8, apart as shown in Fig. 3, and the stopper is easily removed from the hole. During this operation the bag may be supported by loops 5, 5, to prevent premature spilling of the fluid contents.

Various changes could be made in the details of the structure described without departing from the general principle of construction and operation of my invention, and some of the minor features, such as bead 12, and groove 13, or the spring 10, or the reinforced portion 3 of the bag wall, or the lip 11, could be dispensed with in some cases. The reinforced ring portion 3, being stronger and more rigid than parts of the bag wall surrounding it, and being practically non-elastic, withstands any radial tensile strains produced when the bag containing liquid is submitted to pressure. Thus such strains are not transmitted to the thinner lip 4, and there is less tendency for the same to be ruptured, or pulled away from the clamping structure, than would be the case if no such stronger, surrounding, ring shaped portion 3, were present.

Having described my invention, I claim:

1. The combination, with a bag having an opening in one wall, of a two-part clamp comprising a disk-shaped member adapted to be introduced into the bag interior and under the edges of the hole, said member having all its superficial dimensions greater than the corresponding dimensions of the said hole and having a tapered extension lip adapted to facilitate such introduction; and an external, disk-shaped member adapted to overlie the edges of the hole, and clamping means for forcing said members together to grasp between them the edges of the bag wall around the hole, and so form a water tight joint therewith.

2. The combination, with a bag having an opening in one wall, of a two-part clamp comprising a disk-shaped member adapted to be introduced into the bag interior and under the edges of the hole, said member

having all its superficial dimensions greater than the corresponding dimensions of the said hole, an external, disk-shaped member adapted to overlie the edges of the hole, and clamping means for forcing said members together to grasp between them the edges of the bag wall around the hole, and so form a water tight joint therewith, together with a spring interposed between the two above mentioned members and adapted to force them apart when the clamping means is loosened.

3. The combination of a water-tight bag having a hole in one wall, the material of which wall is thickened around the hole so as to form a circular reinforcement for the immediate edges thereof, which edges are left thin and flexible, and a stopper for said hole comprising a disk adapted to fit into the circular depression within the ring-shaped reinforcing portion, a second disk adapted to be inserted through the hole into the bag and then underlie the flexible edges of the hole, and clamping means adapted to press the two disks together upon either side of said flexible edges of the bag wall.

4. The combination of a water-tight bag having a hole in one wall, the material of which wall is thickened around the hole so as to form a circular reinforcement for the immediate edges thereof, which edges are left thin and flexible, and a stopper for said hole comprising a disk adapted to fit into the circular depression with the ring-shaped reinforcing portion, a second disk adapted to be inserted through the hole into the bag and then underlie the flexible edges of the hole, and clamping means adapted to press the two disks together upon either side of said flexible edges of the bag wall, the co-operating inner faces of the two disks being provided with corresponding indentations and projections, whereby their grip on the thin wall edges is rendered more secure.

WALTER MOEHLE.