

March 23, 1954

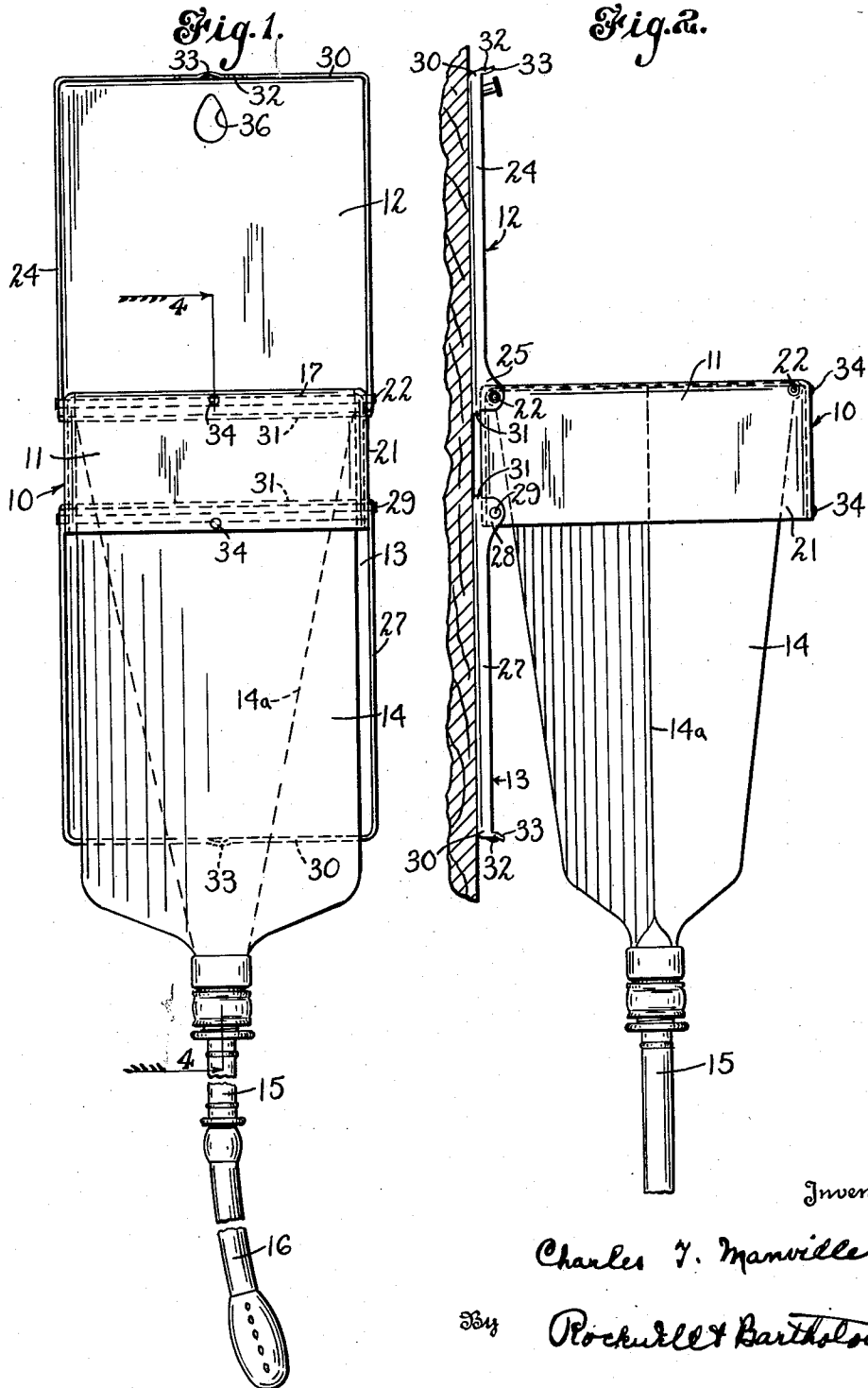
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SYRINGE

Filed June 14, 1949

2 Sheets-Sheet 1



Inventor

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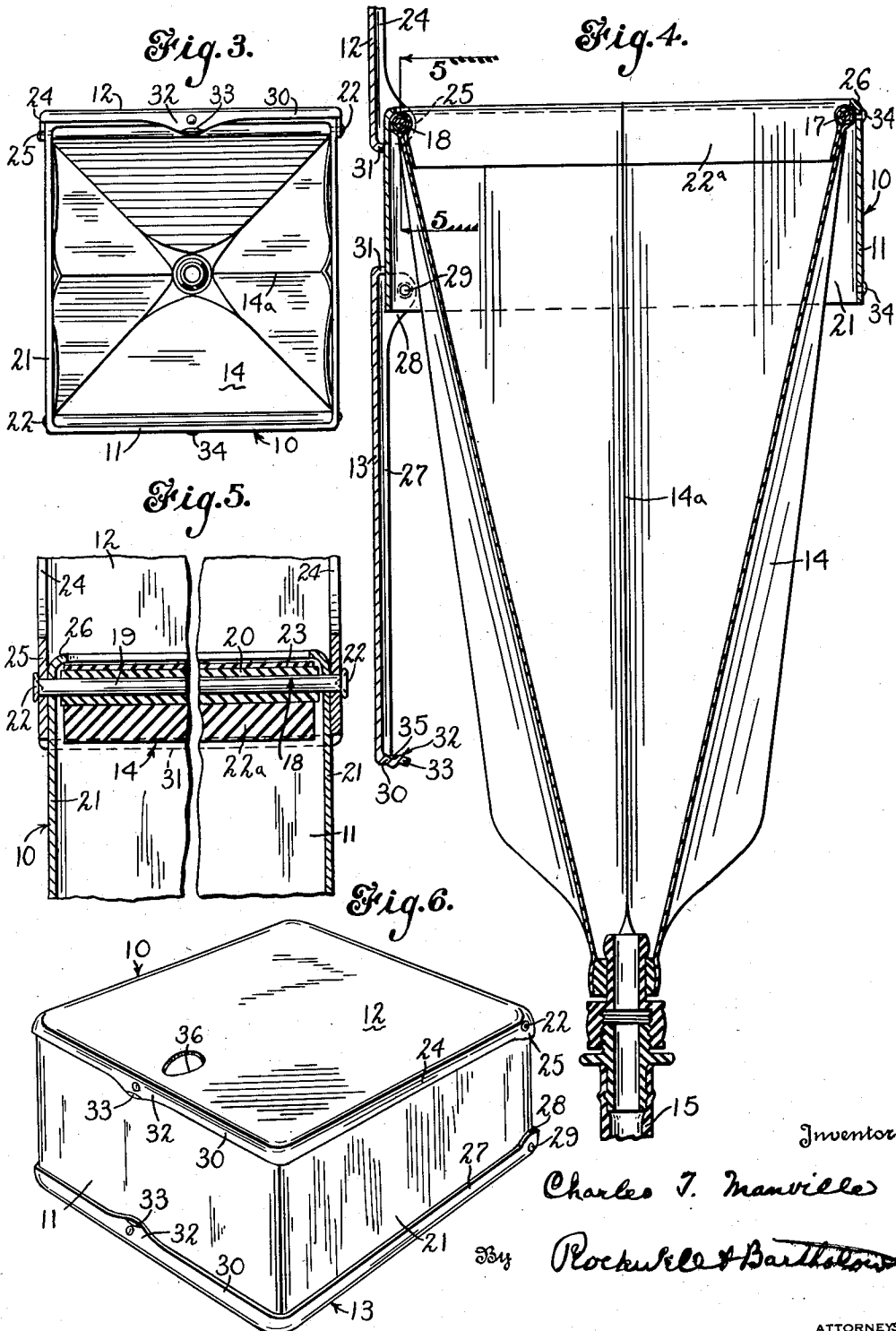
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2,672,869

SYRINGE

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5 Claims. (Cl. 128—227)

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This invention relates to syringes, and especially to those of the douche type comprising a foldable bag and a carrying case with which the bag is associated, the bag when folded being stored within the case, and the case having a lid which, in the operative condition of the article, is attached to and supported from a suitable wall.

One object of the invention is to provide a syringe which can be easily packed and transported and in which the syringe as transported is in very convenient compact form.

Another object is to provide a syringe of the character indicated above in which the bag, which in the operative position is pendent from the body of the case or box, is very effectively supported during use of the article so that there will be no spilling of the liquid contents of the bag.

Another object is to provide an improved relationship between the bag and the case.

Other objects are to provide improved means for connecting the upper end of the bag to the case body and to provide improved means for connecting to the case body the upper lid or cover member of the case.

To these and other ends the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a front elevation, with parts broken away, showing a syringe embodying the invention; the syringe being in the position which it assumes when supported upon a supporting wall;

Fig. 2 is a side elevation of the syringe in the position of Fig. 1, with certain parts omitted, the supporting wall being shown in section;

Fig. 3 is a top plan view;

Fig. 4 is an enlarged section on line 4—4 of Fig. 1;

Fig. 5 is an enlarged section on line 5—5 of Fig. 4; and

Fig. 6 is a perspective view of the article as folded up and ready for transport.

In the device selected for illustration, the syringe comprises a folding bag of rubber or other plastic material carrying at its lower end a flexible tube; and it also comprises a box or case which in this instance is constructed of sheet metal, the box being provided with a hinged top lid or cover, a body supporting the bag and within which the folded bag can be disposed, and a hinged bottom or lower cover which in one position retains the bag within the case and in another position permits the bag to hang down be-

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low the case body. The hinged lid or upper cover in the open position serves as a means whereby the syringe can be suspended from a supporting hook or nail.

In the drawings, the box or case is indicated generally at 10, the body at 11, the hinged top cover at 12, the hinged bottom at 13, the bag at 14, the flexible tube at 15, and the nozzle attached to the pipe at 16.

The case 10 is preferably made of sheet metal and has a relatively shallow body, and in plan the case in this particular instance is of slightly greater dimension from front to rear than from side to side, and accommodates a bag which in plan is substantially square. The bag is usually of vulcanized rubber and has reentrant side portions or pleats indicated at 14^a, so that it has a tendency to lie flat in a condition in which it can be readily folded up, but the upper end of the bag is attached within the case body in such a manner that the upper end is held open, the result being that the bag when empty, and in the pendent position, assumes the shape shown in the drawings.

The bag is attached to and supported from the case body by means of cross rods fastened in the body near the upper edge of the latter and near the front and rear walls of the body, as shown in Fig. 4. The front rod is indicated at 17 and the rear rod at 18. Each of these attaching rods comprises, as shown in Fig. 5, a rod body 19 and a tube or sleeve 20 of rubber or other suitable material surrounding the rod body. The sleeve 20 extends across the space between the side walls 21 of the case body. The ends of the bodies 19 are provided with flared hollow or recessed portions so that the end portions of the rods can be bent to form flanged clinching heads 22 by which the rods are secured in place, as shown, for example, in Fig. 5. At the top of the bag the sheet rubber material is turned upon itself to provide a part 22^a like a hem at the sides and ends of the bag, which is provided at each end with a through opening 23 in which the corresponding rod body and its associated sleeve are closely fitted. In this manner the bag at its front and rear edges at the mouth thereof is securely mounted upon the respective attaching rods.

At the forward edge of the bag mouth the attaching rod 17 has the end portions of its body extending through perforations in the side walls of the case body, and the rod body is clinched against the outer faces of said side walls. In the case of the rod 18, however, the rod is utilized in

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providing a hinge between the lid 12 and the case body. For this purpose the lid 12 is provided with downturned side flanges 24 which adjacent the rear end of the lid are extended to provide hinge lugs 25 positioned outside of and against the side walls of the case body, and these lugs are provided with perforations registering with perforations in the side walls, and the rod body 19 extends through these perforations and is clinched against the outer faces of the lugs 25 in a manner such that the rod body 19 is rigid with the lid and swings with the lid when the lid is opened and closed.

Preferably the upper edge of the case body is turned inwardly on a gradual curve, as shown at 26, along the sides and ends of the case body so as to overhang the mouth of the bag to a certain extent and thereby inhibit the spilling or leakage of liquid being poured into the bag.

The lower cover or bottom 13 is provided with side flanges 27 and with hinging lugs 28 corresponding to parts previously described, and the lugs 28 are outside of and against the side walls of the case body and are hinged by means of short rivet members 29 extending through registering perforations in the hinge lugs and the side walls.

Each of the covers 12 and 13 is provided with a flange 30 at the forward edge and a flange 31 at the rear edge of the same depth as the flanges 24 and 27 except for a fastening portion 22 hereinafter mentioned. The hinge lugs 25 and 28 project laterally beyond the flanges 31, and when the covers reach the positions shown in Figs. 2 and 4, in which they are vertically disposed, the flanges 31 have their edges come into engagement with the rear wall of the case body through the length of said wall so as to provide stops. These stops come into action when the cover is swung into a position in which it is at right angles to the body.

The fastening portion 32 of the lid flange, mentioned above, is of somewhat greater depth than the remainder of the flange and is downwardly sloped toward a point at the lower edge, and is provided with a lower tip 33 adapted to contact and ride over a small rivet 34 applied to the front wall of the case body, and there is a frictional interlock between the head of the rivet 34 and a surface of a cup-like recess 35 at the inner part of the fastening portion 32. By this construction an effective snap fastening is provided between the cover and the box body which will hold the cover in the closed position in an effective manner, although permitting convenient opening of the cover when that is desired.

The upper lid 12 is provided with a suitable opening or aperture 36 to be engaged by a nail or hook on the supporting wall, and in use the device has the position shown in Figs. 1 and 2. When in this position, the bag can be filled with a liquid and used in the customary manner. It is important to note that in this position of the parts the case body is strongly braced by the engagement therewith of the upper and lower lids in the manner described above. Therefore, the case body, when the bag is filled with liquid, will not be displaced so as to take a position in which liquid will be spilled out of the bag. After use and removal of liquid from the bag, the device can be readily folded to place it in condition for transport or storage, in which condition the case contains the operative parts and has the appearance shown in Fig. 6, the bag being folded within the case, and the tube together with the

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pipe 16 and/or other appliances being stored in the case under the folded bag. Before folding the bag, the pipe is removed from the tube, the bag folded at the lower part so as to be stored within the lower part of the case body, and the tube disposed in the bottom of the case body in a convenient manner.

The mouth portion of the bag is of such dimensions that along the sides and ends it is overhung, at least in part, by the intumed edge at the upper part of the case body, and the cross rods are set into the case body so as to be very closely adjacent the front and rear walls of the latter, the result of this arrangement being that the leakage of liquid over the upper edges of the bag, and between the bag and the walls of the case body, is inhibited. The cross rods are permanently connected to the case body, and thereby the bag is permanently connected to it so that there is no difficulty occasioned by the misplacement or loss of the bag element, which is at all times ready for use. The bag mouth fills the case body near the upper edge of the latter, so as to extend substantially from side to side and from end to end. The case body, with its enclosed bag, is strongly supported from the supporting wall through the media of the upper and lower covers in a position in which the case body extends at right angles to the wall.

The construction used for hinging the upper lid is of the most simple and effective kind, the rear cross rod serving as a part of the hinge, thereby reducing to a minimum the number of separate parts used in the assemblage. The hinging axis is near the upper edge of the case body and close to the rear wall of the case body, but within this wall, and is coincident with the axis of the adjacent cross rod.

While the enclosing case for the article is shown as constructed of metal, other materials, such as plastic material, may be used for this purpose. In any event, the case is preferably relatively rigid so as to serve as a protection for the contents. The case not only protects the syringe parts, but serves to prevent clothing and the like from coming into contact with moisture remaining on the syringe parts after use.

Various modifications and changes in the details can be made without departing from the principles of the invention or the scope of the claims.

What I claim is:

1. An article such as described, comprising a rectangular case body having upstanding side and end walls, a flexible bag suspended within the upper part of said case body by parallel cross rods attached to the side walls of the case body and located respectively closely adjacent the upper front and rear edges of the case body, and covers for said case body at the upper and lower parts thereof, the upper cover being hinged to said body on an axis coincident with the axis of one cross rod, said cross rod being extended at the ends past the side walls of the case body to engage said cover and provide the hinge connection.

2. A device such as described, comprising a rectangular case body, a foldable flexible bag having an open mouth portion supported within the case body adjacent the upper edge of the latter by means of cross rods, and an upper cover for said case body hinged to the case body by one of said cross rods, said upper cover having hinge lugs through which the ends of said cross rod are extended, said upper cover having a stop

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flange engageable with the rear wall of the case body so as to hold the cover member at right angles to the plane of the case body when the apparatus is in the operative position.

3. A device such as described, comprising a rectangular case body having upstanding side and end walls, a foldable flexible bag having a mouth portion adjacent the upper edge of the case body, said mouth portion having a hemlike portion of double thickness, said hemlike portion having openings formed therein at the front and rear edges of the bag mouth, supporting cross rods surrounded by tubular members disposed within said openings and fastened to the side walls of the case body, and a panel-like member serving as an upper cover for the case body having hinge lugs through which the rear cross rod is extended, said upper cover having a stop flange extending across its rear edge portion adapted to engage the rear surface of the case body so as to hold the case body at right angles to said cover.

4. A device such as described, comprising a rectangular case body having upstanding side and end walls, a foldable flexible bag having an open mouth disposed and secured within the upper part of the case body, and cover means for the case body including an upper cover member hinged to the case body adjacent the rear wall of the latter, said cover member having a stop flange engageable with the rear surface of the rear wall of the case body for holding the case body at right angles to the cover member.

5. A device such as described, comprising a

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rectangular case body having upstanding side and end walls, a foldable flexible bag having an open mouth secured in the upper portion of said body, an upper cover member for the case body hinged to the latter adjacent its upper edge and having a stop flange engageable with the rear surface of the case body, and a lower cover member for the case body hinged to the case body adjacent its lower edge and having a stop flange engageable with the rear surface of the case body, said cover members interacting to hold the case body in a plane perpendicular to a supporting wall to which the upper cover member is attached.

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