

Sept. 30, 1952

C. T. MANVILLE  
SYRINGE

2,612,161

Filed Jan. 16, 1948

2 SHEETS—SHEET 1

Fig. 1.

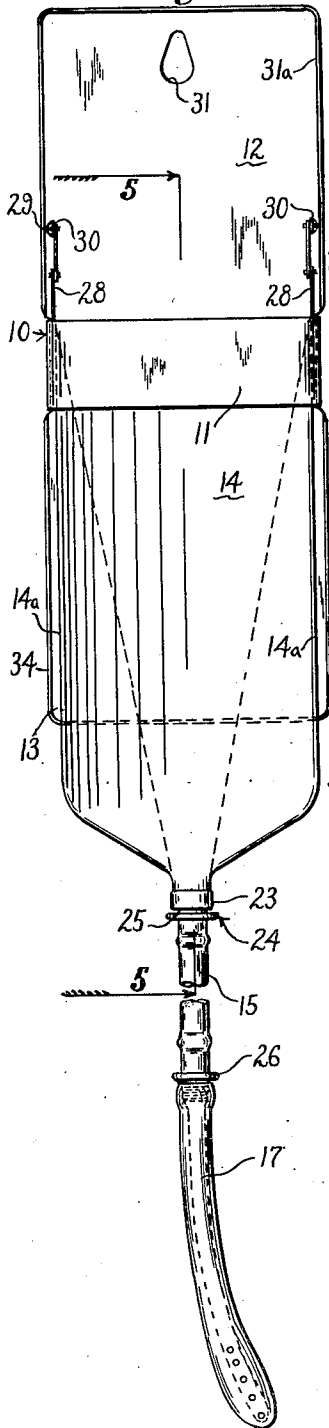


Fig. 2.

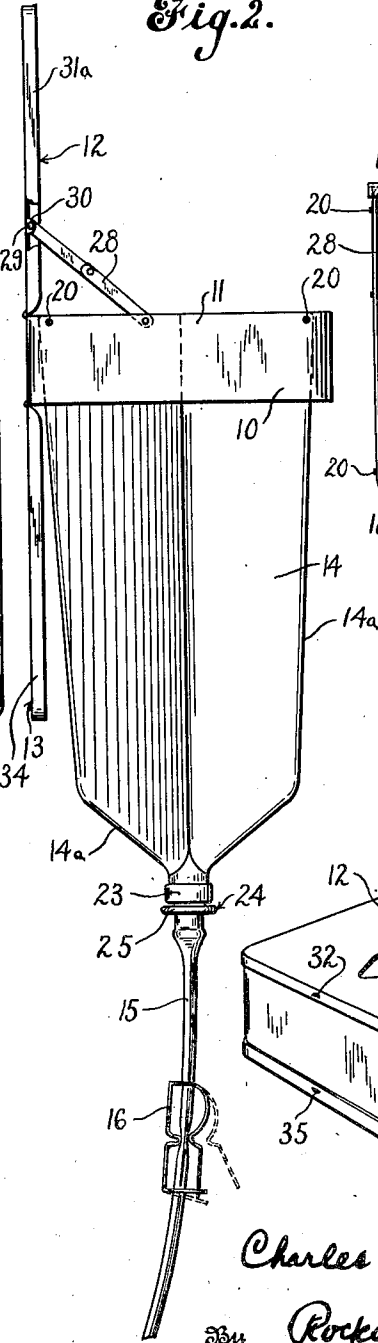


Fig. 3.

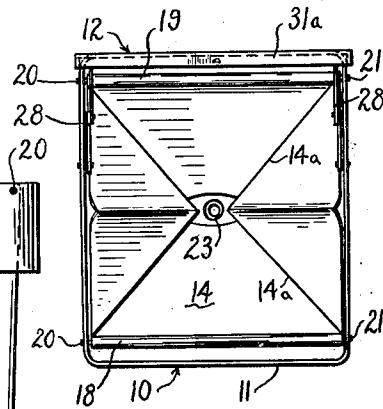
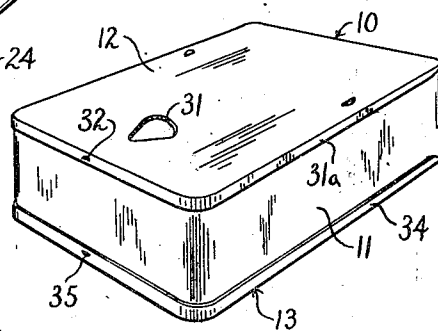


Fig. 4.



Inventor

Charles T. Manville

By *Rockwell & Bartholomew*

Attorneys

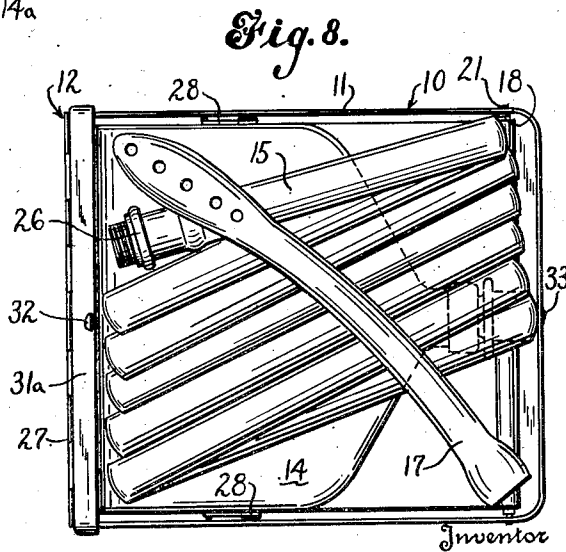
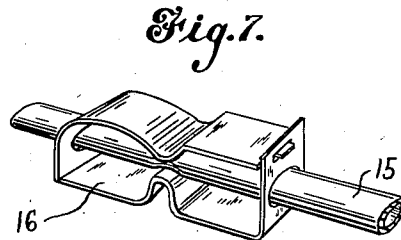
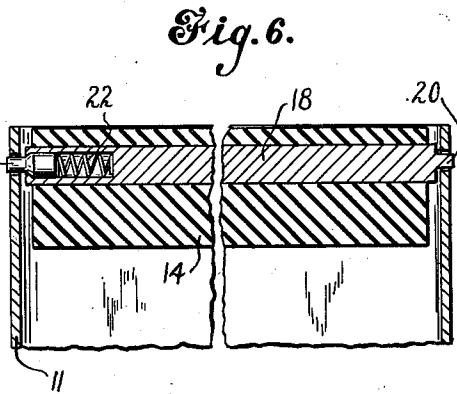
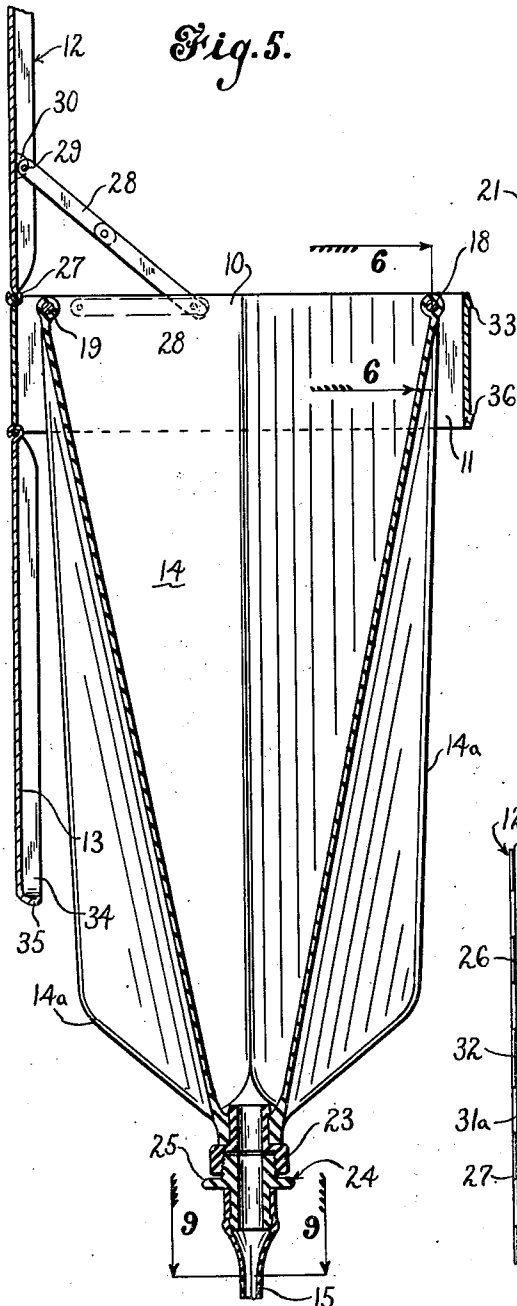
Sept. 30, 1952

C. T. MANVILLE  
SYRINGE

2,612,161

Filed Jan. 16, 1948

2 SHEETS—SHEET 2



*Fig. 9.*



Charles T. Manville

By *Rockwell & Bartholow*

Attorneys

## UNITED STATES PATENT OFFICE

2,612,161

## SYRINGE

Charles T. Manville, Woodbury, Conn., assignor  
to The Seamless Rubber Company, New Haven,  
Conn., a corporation of Connecticut

Application January 16, 1948, Serial No. 2,651

3 Claims. (Cl. 128-227)

1

This invention relates to syringes, and especially to those of the douche type comprising a bag that can be suspended from the wall or other support, the bag being foldable after use so as to be readily portable with the other parts of the syringe.

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 an article of this character in which the syringe, as ready for carrying from place to place, has its several operating parts, including the bag, flexible tube and pipe or nozzle, securely protected.

Another object is to provide an article of this kind which can be very conveniently placed in an operative condition preliminary to use, and folded up after use.

Another object is to provide a folding syringe embodying a box-like cover or case with which a folding syringe bag is associated in a novel and useful manner.

In the 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 wall or other support;

Fig. 2 is a side elevation of the syringe, in the position of Fig. 1, with certain parts omitted;

Fig. 3 is a top plan view;

Fig. 4 is a perspective view of the device as folded up and ready for transport;

Fig. 5 is an enlarged section on line 5-5 of Fig. 1;

Fig. 6 is an enlarged section on line 6-6 of Fig. 5;

Fig. 7 is a perspective view showing the tube and shut-off;

Fig. 8 is a bottom view of the device as packed, the box bottom being in the open position; and

Fig. 9 is an enlarged section on line 9-9 of Fig. 5.

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 to the lower end of which a pipe or nozzle can be connected; 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 or lid, a body supporting the bag and within which the folded bag can be disposed, and a hinged box bottom which in one position retains the bag within the box and in

2

another position permits the bag in its operating position to hang down from the box body. The box body is relatively shallow, and in the operative position of the bag the latter extends downwardly past the body to a considerable degree. The hinged cover of the box 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 is indicated generally at 10, the box body at 11, the hinged top at 12, the hinged bottom at 13, the bag at 14, the flexible tube at 15, the shut-off at 16, and a suitable pipe or nozzle at 17.

The box 10 is preferably made of sheet metal in rectangular shape and has a relatively shallow body, as above indicated, and in plan the box, in this particular instance, is of slightly greater dimension from front to rear than from side to side, so as to accommodate, with some clearance at the front and rear, the bag which in plan is substantially square. The bag, as cured, has entrant side portions or pleats, indicated at 14a, so that it tends 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 box 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.

In the particular case illustrated, the bag is attached to and supported from the box 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. 5. In the latter figure, the front rod is indicated at 18 and the rear rod at 19. These rods may be identical, and each may be of the detachable variety shown in Fig. 6, where the rod has trunnions 20 and 21 adapted to engage perforations in the side walls of the box body, the trunnion 21 being axially displaceable for release and being held in the operative position by a spring 22. In this case the trunnion is a separate piece socketed in the body of the rod, and the spring is enclosed in the trunnion socket. By pressing inwardly against the end of the trunnion 21 with a suitable instrument, the rod can be removed from its mounting should it be necessary to install a substitute bag. As shown in Fig. 6, the forward edge portion of the bag mouth has a longitudinal hole through which the associated cross rod extends, and the arrangement at the rear edge of the bag mouth is the same.

The flexible tube 15 is preferably of a generally flattened or elliptical cross section, as

3

shown in Fig. 9, for a reason hereinafter explained, and this tube advantageously has a relatively thin wall. The tube is preferably connected to the bag by a connection such as shown in Fig. 5, including a female socket member 23 carried by the bag at its lower end and a coupling member 24 which is adapted to screw into the socket member and which has a lower end to which the upper end of the tube is secured. The coupling member 24 is relatively short and it preferably has a manipulating flange 25.

The shut-off 16 can be of any preferred type, but it is understood that it is adapted to co-operate with a tube of the section shown in Fig. 9 in a manner to close off the flow of liquid through the tube. The interior opening of the tube is of such contour that, when the opposite sides of the tube are pressed toward each other, they will make contact with each other throughout the width of the tube so as to shut off the liquid.

At the lower end of the tube is carried a coupling member 26 to which the nozzle or pipe 17 is connected by the usual screw connection.

The top or lid 12 of the box is hinged to the box body by suitable hinges 27, and folding braces 28 connect the lid with the box body, having a pivotal connection with each. The connection between the brace and the lid, generally indicated at 29, may comprise a small lug 30 struck out from the lid and serving to mount a pivot pin for the brace. When the lid is swung upwardly, so as to be at right angles to the box body, the lid, by virtue of its connections with the body through the hinges and the braces at the respective sides of the body, will serve to support the box body in the position shown in Fig. 2, when the lid is supported upon the wall or like support. Such support may be provided by a hook or nail (not shown) engaging a suspending aperture 31 which is provided in the lid. This aperture may conveniently be formed in the body portion of the lid near the edge which is remote from the hinge.

In the form shown, the lid or top cover 12 is provided with a flange 31<sup>a</sup> that extends along the sides and across the front. The lid is adapted to be fastened to the box body or bag support so that the lid can be held in the closed position of Fig. 4 when the article is not in use. Different means may be provided to accomplish this. In the example shown, the flange 31<sup>a</sup> is provided at the front of the device with a projection or catch 32 adapted to snap over a projection 33 on the box body (Fig. 5). The bottom lid or cover 13 is provided with a flange 34 similar to the flange 31<sup>a</sup>, and this covering member can be held closed by providing it with a fastening projection 35 adapted to engage a projection 36 on the box body.

When the device is ready for use the top lid, suitably attached to a support, holds the bag carrier at right angles to the supporting wall to which the top lid is attached, and the lower lid or cover is in depending position alongside the wall, as will be evident from Fig. 5, for example. The bag can then be filled with liquid and used in the customary manner. After use and removal of liquid from the bag, the device can be readily folded to place it in condition for transport or for storage, in which condition the box contains the operative parts and has the appearance shown in Fig. 4. Before folding, the pipe is removed from the tube, the bag folded at the lower part so as to be stowed within the lower part of the box body, and the

4

tube disposed in the bottom of the box body in a convenient manner, and the pipe placed in the lowermost part of the body, after which the lower lid is closed and fastened. This may be done conveniently after the upper lid has been closed and fastened. After the upper lid has been closed and fastened, the box may be inverted and the parts conveniently disposed in what was previously the lower part. The pipe 17 has such length that it can be easily placed in the box in the diagonal position of Fig. 8. The shut-off 16 is not shown in Fig. 8, but it is understood that it is customarily used. It is understood that in the position of Fig. 8 only a few folds in the bag transversely of its length are required to stow it in the box in a small space.

One of the advantages of using a tube 15 of flattened cross section is that such a tube can be readily stowed within the box without the need of coiling it. The tube can be gathered up and stowed very easily, and it is not necessary to arrange it neatly, as shown in Fig. 8. Its turns or folds can be in confused or topsy-turvy arrangement without any harm being done so long as the tube is not caught between the lower cover and the body.

It is also to be understood that when the article is in the folded position, there is sufficient room within the enclosure for additional articles in the way of accessories.

It is understood from what has been said that the transition from the operative position to the transport position is very easy and convenient. Conversely, it will be apparent that the operation of converting from the transport position to the operative position is easy and convenient, taking very little time. Obviously the opening of the lids can be accomplished easily and quickly, and when the lower lid is released the bag will unfold of itself, carrying with it the tube. It is then only necessary to fasten up the top lid and apply the pipe. In the transport position the operative parts are securely enclosed and protected, and for packing the article is of convenient size and shape.

The body of the box serves as a bag carrier in the form of an open frame in which the upper part of the bag is held. This is shown as a shallow member, but the dimensions disclosed are only by way of example.

It is manifestly of advantage to be able to store a principal part of the bag, together with its attached tube, within the lower part of a carrying case. It is also manifestly of advantage to use a tube which does not require coiling, and which will fold and will not kink when stowed away with confused arrangement of the turns or folds. It is also of advantage to employ a pipe, such as a douche pipe, which is received and stored with the syringe tube in the lower part of the syringe case.

The folding braces between the top lid and the body serve to support the bag carrier effectively in a position in which the carrier extends substantially at right angles to the raised top lid. In the form shown, the braces are formed of inter-pivoted links, and the two links of a brace are in alignment with each other when the box body and top lid are at right angles to each other; but other means may be adopted for this general purpose.

In the form shown, the douche pipe 17 is slightly curved in an endwise direction, so as to

5

increase its capacity and yet enable it to be received in the case in a diagonal position.

While the enclosing case for the article is shown as constructed of metal, other material, such as plastic, 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 is shown as being of rectangular shape, but in certain aspects of the invention variation may be made in this respect.

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.

It is of advantage that the bag has a wide-open mouth which, when the top cover is in the upper position, is readily accessible for the convenient filling of the bag.

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. A device such as described, comprising a rectangular box body, a foldable flexible bag supported within the box body so that it may depend from the lower end of the box body, cover means for the box body at the lower part thereof, hinged upper cover means for the box body, and folding brace means between the box body and said upper cover means for holding the box body in right-angular relation to said upper cover means and preventing dislocation of said box body when the device is supported from a supporting wall.

2. A device such as described, comprising a

6

rectangular box body having upstanding end and side walls, a foldable flexible bag having a rectangular mouth within the upper portion of said box body, said bag being provided with through longitudinal openings at the front and rear edges of the bag mouth, and laterally rigid cross rods for said bag having their ends fastened in the side walls of the box body and having their bodies passing through said longitudinal openings.

3. A device such as described, comprising a rectangular box body, a foldable flexible bag supported within the box body so that it may depend from the lower end of the box body, cover means for the box body at the lower part thereof, hinged upper cover means for the box body, and folding brace means between the box body and said upper cover means for holding the box body in right-angular relation to said upper cover means and preventing dislocation of said box body when the device is supported from a supporting wall, said folding brace means including a link pivoted to the box body and a link pivoted to the upper cover means and said links having pivotal connection with each other.

CHARLES T. MANVILLE.

#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
722,819	Decker	Mar. 17, 1903
2,253,571	Miller	Aug. 26, 1941
2,410,367	Shapiro	Oct. 29, 1946