PORTABLE FOUNTAIN SYRINGE

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Application April 29, 1957, Serial No. 655,842
3 Claims. (Cl. 128—227)

This invention relates to a portable fountain syringe of the type wherein the water container and the accessories may be all arranged in one compact unitary package that facilitates transport of the syringe in a handbag, suitcase, or the like.

In the syringe of this invention, the water bag is a thin highly flexible container which bag carries an integral pouch for receiving the accessories such as the tube, the tube clamp and nozzles, which bag can be folded to form its own carrying case for the entire unit. It is a feature of the invention that the accessories are placed in a pouch attached to the water bag and are not placed in the water bag itself, thereby insuring that the interior of the water bag will not be contaminated by the accessories. This is accomplished by forming the water bag as a generally rectangular elongated member having opposite flat flexible walls of sheet material joined at their edges to form a water compartment. A pouch for the accessories formed of flexible sheet material is attached to one side of the water bag.

In the preferred embodiment of the invention when the water bag is folded for transport, the resulting case is of a minimum longitudinal dimension. This is accomplished by attaching the pouch to the mid zone of the bag leaving parts of the bag projecting from the top and bottom of the pouch which can be overlapped and serve as flaps to cover the pouch for transport, there being fasteners for connecting the flaps together.

In the preferred embodiment of the invention, the sheet material parts are made of heat sealable material such as polyvinyl chloride, there being transverse seams at the top and bottom of the pouch to serve as fold lines for placing the bag in its transport condition. However, cemented seams may be used under the broader aspects of the invention.

The water bag has the usual nipple connected to the bottom thereof and the arrangement of the bottom portion of the water bag, the pouch and the nipple is such that the tubing, one connected to the nipple for use, need not be disconnected in order that it may be placed in the pouch when the bag is folded into its transport condition.

The advantages and features described above will be apparent from the following detailed description of a preferred embodiment of the invention.

In the drawings:

Fig. 1 shows the bag in its closed or transport condition;
Fig. 2 shows it open with the accessories in the pouch;
Fig. 3 is a section through the nipple taken on 3—3 of Fig. 2;
Fig. 4 shows the bag partially formed;
Fig. 5 is a diametrical longitudinal section showing the relative placement of the sheet material members that make up the bag;
Fig. 6 is a transverse diagrammatic section taken on 6—6 of Fig. 5;
Fig. 7 is a diagrammatic section similar to that of Fig. 6 in a modified form of the invention;
Fig. 8 is a view of the completed bag similar to the view of Fig. 2 except that the bag is only partially open and the tubing is shown connected to the nipple and in place in the pouch.

Referring to Figs. 1—3, the bag 10 has a central or mid zone portion A, a lower portion B, and an upper portion C. The mid portion includes a pouch P for accessories.

The bag is shown closed in Fig. 1 and it is held closed by a flexible tab 11 and a snap fastener 12 that connects to an underlying fastener part 12a visible only in Fig. 8. Aperture 13 pierces the water bag proper, its edges being seamed as at 13a for hanging the bag in use. A slot 14 is formed in the outer wall of the bag for the introduction of water, there being a seam 15 surrounding the slot. At the bottom of the bag a flexible nipple 16 formed of substantially the same material as that of the bag (plasticized polyvinyl chloride in the preferred embodiment of the invention) is sealed to the lower end portion of the bag by means of an internal flange 16a, seen in Fig. 3. The flexible nipple receives a rigid nipple 17 of conventional design over which the tubing T can be forced for use.

As seen in Fig. 2, a seam extends around the periphery or edge of the bag. The pouch P, occupying the mid zone B of the bag, is formed by heat sealing a flexible sheet pocket 21 formed of sheet 21a to the edges of the bag at 22 and across the bag at 23. Snap fastener member 24 is attached to the sheet 21. The closure flap 26 has an edge seam 27 and is attached to the bag above the pouch by a transverse seam 28, there being a supplemental snap fastener part 24a on the flap.

A diagrammatic or exploded section of the parts before assembly appears in Figs. 5 and 6. Here, it can be seen that the water bag proper is formed of a flexible sheet 31 and that the flap 26 is formed by folding a sheet 26a double over a shorter sheet 26b. The parts are joined by heat sealing across the lines x—x indicated in the drawings, as is the nipple 16 shown in Fig. 3 although the order of assembly and the exact nature and number of component parts is not critical to the invention. One method of pre-assembly is illustrated diametrically in Fig. 4 and the following operations can be formed in any suitable order.

The water filling slot 14 is punched through the sheet 31 and seam 15 is made. Sheet 21a forming the pouch is placed on the bag sheet 31 as are the sheets 26a and 26b forming the flap 26. These parts are attached by transverse seams 23 and 28, respectively. The tab 11 is likewise heat sealed to the assembled sheets as shown, and the nipple 16 is inserted through a suitable aperture through the sheets and nipple flange 16a is heat sealed to the sheets. The composite main sheet is now folded upon itself along a line passing through the nipple, as indicated in dot-dash in Fig. 4. If rounder corners are desired, the sheet may be trimmed at this point or it may be trimmed previously. All unconnected edges are then heat sealed to render the water compartment fluid tight. This operation also joins the edges of sheet 21 forming the pouch to the outer wall. Aperture 13 is then punched through both walls and its edges heat sealed at 13a, and nipple 17 is fitted thereby completing the construction of the fountain syringe.

In Fig. 7 a modified form is shown wherein the pouch P1 is formed by creasing sheet 21a at each side to render the pouch extendible to a greater degree than the form of Fig. 6.

Reference to heat sealing has been made in this specification. This is the process well-known in the plastics art and is a simple and rapid means of obtaining strong fluid joint in material such as that preferred for the construction of the bag; namely, plasticized polyvinyl chloride. The
heat sealing can be done by pressing the bag between specially formed dies that are heated to the proper temperature, or by the use of a heated presser foot which is pressed against the surfaces to be sealed and moved over a path representing the desired means. This operation is not part of the invention. As mentioned, cement can be used to make the seams.

To summarize, a bag formed in this manner is flat and flexible and forms its own carrying case with an integral pouch for the accessories. The accessories never touch the interior of the bag so that the water flowing from the bag in use is never contaminated. Placement and dimensioning of the pouch, as shown, results in a maximum utilization of the water bag portion of the syringe as a carrying case, in that when the parts B and C are folded along the seams 23 and 28, which act as fold lines, a closed bag of minimum longitudinal dimension results. Also, as seen in Fig. 8, the tube T need not be disconnected when the bag is folded or closed in order to place the tube in the package.

Having completed a detailed description of the invention so that those skilled in the art may practice the same, I claim:

1. A fountain syringe bag comprising a flat water compartment running substantially the full length of the bag and formed of opposed walls of flexible sheet material, an opening in the upper end of the outer wall for introduction of water to said compartment, an outlet nipple at the lower end of said compartment, a pouch on the outer wall of said compartment there being a transverse line of attachment for said pouch extending across the outer wall of said compartment at the bottom of the pouch, said line of attachment being spaced a substantial distance from the bottom of said compartment, the top of said pouch being spaced a substantial distance from the top of said compartment, a closure flap for said pouch secured across the top of the pouch along a transverse line of attachment, said transverse lines of attachment forming fold lines with the portions of said compartment above and below said pouch overlapping in the folded condition of the bag, and means to fasten said overlapped portions together.

2. A fountain syringe bag comprising a flat water compartiment running substantially the full length of the bag and formed of opposed walls of flexible sheet material, an opening in the upper end of the outer wall for introduction of water to said compartment, an outlet nipple at the lower end of said compartment, a pouch on the outer wall of said compartment there being a transverse line of attachment for said pouch extending across the outer wall of said compartment at the bottom of the pouch, said line of attachment being spaced a substantial distance from the top of said compartment, a closure flap for said pouch secured across the top of the pouch along a transverse line of attachment, said transverse lines of attachment forming fold lines with the portions of said compartment above and below said pouch overlapping in the folded condition of the bag, and means to fasten said overlapped portions together.

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