UNITED STATES PATENT OFFICE

1,959,782

WATER CARRIER AND THE LIKE

Francis F. Fenwick, Jr., East Orange, N. J.

Application November 28, 1932, Serial No. 644,581

3 Claims. (Cl. 150—6)

This invention relates, generally, to portable containers for liquids; and the invention has reference, more particularly, to a novel improved form and construction of collapsible carrier or bag for water and other liquids, the said carrier having harness means for attaching the same to the body of the user, whereby the same may be carried on the back of the user, the said carrier being provided with a manipulable discharge hose and pump for discharging the contents of the carrier at will.

This invention has for its principal object to provide a collapsible carrier or bag, comprising a substantially tubular body of relatively flexible material having its lower end closed and its upper end portion constructed to provide a filling mouth; novel means being provided in conjunction with said filling mouth for holding supporting said filling mouth in an upstanding convenient filling position during the filling of the bag in use, the main portion of the bag meanwhile resting upon the ground or other convenient supporting surface.

Another object of the present invention lies in the provision of a novel collapsible carrier bag, which, by reason of its flexible body, will readily adjust itself to the back of the user when carried thereon, and which will therefore avoid causing the user physical discomfort and muscular strain; a suitable attaching harness, including shoulder straps, being provided for mounting and attaching the bag for such carriage, the said bag having a discharge hose communicating with the interior of its lower end portion, whereby the user may, with ease and efficiency, directly control the discharge of the contents thereof.

A further object of the present invention lies in the provision of a carrier bag of the above character having a novel construction and arrangement of clamping means adapted, after the bag has been filled in use, to be easily operated to adequately close the bag filling mouth against the outward escape or splash of the bag content.

The novel carrier bag of this invention is especially adapted for use by foresters as a fire prevention means, the same being easily reduced in size for storage or for carrying when empty, and yet capable of being easily and quickly filled as necessity arises, and, when filled, is easily carried on the back of the user to the desired place of use.

It will be obvious, however, that the device is adapted to serve many other purposes, such, for example, as other forms of fire prevention and fire fighting operations; as a means for carrying and applying sprays and other solutions in horticultural and agricultural operations; and for any other use wherein portable supply of a liquid is desired to be available for controlled discharge.

The invention is clearly illustrated in the accompanying drawings, in which:

Fig. 1 is a pictorial view showing the novel carrier bag of this invention as mounted upon the back of the user.

Fig. 2 is an outer face elevation of the novel carrier bag of this invention.

Fig. 3 is an inner face elevation of the novel carrier bag of this invention.

Fig. 4 is a sectional view taken substantially along line 4—4 of Fig. 2, looking in the direction of the arrows.

Fig. 5 is a longitudinal sectional view through the bag showing the same in position for filling and with the filling mouth receiving the contents of a pail.

Fig. 6 is an enlarged sectional view taken substantially along line 6—6 of Fig. 4 looking in the direction of the arrows.

Fig. 7 is a view taken substantially along line 7—7 of Fig. 5 looking in the direction of the arrows; and

Fig. 8 is an enlarged fragmentary sectional view taken along line 8—8 of Fig. 2 looking in the direction of the arrows.

Similar characters of reference are employed in all of the above described views to indicate corresponding parts.

Referring now to said drawings, the reference numeral 1 designates the novel water carrier or bag of the present invention taken as a whole.

Bag 1 comprises a flexible tubular member 2 made of suitable flexible material which is inherently imperious or which can, by suitable treatment, be made waterproof. Preferably, however, I have found that a seamless tubular woven fabric provides the best material for the bag body, both by reason of its high flexibility and because of its comparatively light weight. Many woven fabrics are available, which, by reason of the tight character of the weave may be found sufficiently water tight for the purpose. It is believed desirable, however, when using a woven fabric, to treat the same, preferably upon its interior surface, with a suitable waterproofing coating, for example, the fabric may be rubberized, if desired.

The flexible tubular body member 2 has its lower end or bottom closed by a transversely extending binding tape 3, which binding tape is tightly clamped upon the lower end of the bag body by means of parallel transverse bars or plates 4 which lie at opposite sides of the lower bag end and are
firmly clamped together by a plurality of spaced bolts 5 which extend through aligned apertures provided in the bars 4, binding tape 3 and in the frame body member 2. The end portions of the bars project beyond the sides of the tubular body member 2 and are apertured to receive coupling rings 8 that are engaged by snap-hooks 7 attached to the lower ends of shoulder straps 8.

Shoulder straps 8 extend upwardly opposite the inner face of the carrier bag and have adjustable looped upper end portions 9; the heights of which are engaged through slots 9 provided in a transversely extending clamp or coupling bar 11. Shoulder straps 8, in use, are adapted to pass forwardly from the clamp bar 11 and across the shoulders of the user's body with the lower portions of these straps extending downwardly under the user's arms to the transverse bars 4, as shown in Fig. 1. By means of this simple harness arrangement, the carrier bag may be quickly, easily and comfortably mounted on the back of the user.

Connected with and through the wall of the tubular body member 2 at the lower end portion of this body member, is an outlet connection comprising a threaded nipple 12 extending transversely through the said wall. Resilient washers 13 of rubber, leather, or the like, are mounted upon the nipple 12 at opposite sides of the wall of tubular body member 2 and are held in liquid tight engagement with the sides of this wall by metal washers 14 which are pressed against the resilient washers 13 by means of nuts 15 threaded upon the nipple 12. The inner portion of nipple 12 projects into the interior of the user or bag and has a short length of flexible hose 16, of rubber or other suitable material, attached thereto. The outer end portion of nipple 12 has an elbow 17 threaded thereon, which elbow is coupled to a suitable length of discharge hose 18.

Hose 18 is adapted to reach around the body of the user of the bag, so that the free end of the same may be manipulated and directed by the latter. A suitable form of discharge nozzle 19 may be attached to the free end of hose 18. The contained fluid of the bag may be discharged through the hose and its nozzle by gravity, but it is probably desirable to provide a hand pump means 20 at the hose end, whereby the user can force the discharge streams so as to better direct the same as well as throw the same to a greater distance. A typical hand pump means suitable for this purpose is disclosed in my copending patent application, Serial Number 601,562.

The transversely extending clamp or coupling bar 11 is positioned somewhat below the upper end of the flexible tubular body member 2 in order to provide a filling mouth portion 21 having an open upper filling mouth 22. The upper end of the filling mouth portion 21 is illustrated as provided with a suitable tape binding 23 which is illustrated as sewn to the tubular filling mouth portion 21. Clamp or coupling bar 11 cooperates with a pair of pivoted bars 24 positioned on the outer face of the carrier bag to control the opening and closing of the bag in use. Screws or bolts 25 extend through spaced apertures provided in the clamp or coupling bar 11 and through aperture provided through the bars 24 substantially midway of the lengths of these bars. Screws or bolts 25 serve as pivotal supports for the bars 24. The combined length of the two bars 24 is substantially equal to the length of clamp bar 11 so that when the two pivoted bars 24 are swung into aligned relation, as shown in Fig. 6, these pivoted bars extend parallel to and substantially along the entire length of the clamp bar 11, though at the opposite side of the carrier bag.

The greater portion of clamp bar 11 and the pivoted bars 24 are shown as being of substantially cylindrical cross section, although preferably, the surfaces of these bars are flattened somewhat as indicated at 26 in Fig. 8, so that these bars will obtain a firm grip upon the material of the bag body and will serve to press the opposed walls of the bag body together when the bag is closed, i.e., when bars 24 are parallel to and opposite clamp bar 11, thereby preventing the escape of liquid from the bag.

The clamp bar 11 and the pivoted bars 24 are illustrated as indented somewhat in the region of the screws 25 in order to accommodate metal washers 27, the inner surfaces of these washers being substantially flush with the flattened surfaces 26 of the bars 11 and 24. Owing to the relatively large areas of the washers 27, the same, in use, serve to press the portions of the opposite bag walls lying therebetween tightly together, thereby preventing leakage or escape of liquid through the bag apertures accommodating the screws 25.

The pivoted bars 24 are illustrated as retained upon the screws 25 and in snugly abutting relation to the outer face of the bag by means of wing nuts 28 which are threaded on the ends of the screws 25. The pressure of wing nuts 28 is exerted through the looped ends 29 of a U-shaped canal or bracket 33 and through spring washers 31 against the outer sides of the pivoted bars 24. Ordinary metal washers 32 are shown interposed between the wing nuts 28 and the looped ends 29 and are also located at opposite sides of each spring washer 31. Compressed spring washers 31 serve to exert a constant resilient pressure upon the pivoted bars 24 so that these bars will be pressed against the outer face of the bag, while at the same time each spring washer 31 by acting through screw 25 causes the clamp bar 11 to be pressed against the inner face of the bag. The U-shaped stand 30 extends downwardly adjacent the outer face of the bag in an out-of-the-way position, when this stand is not in use, as especially illustrated in Figs. 1, 2 and 4.

When it is desired to fill the bag, the same is placed upon the ground or other supporting surface, as shown in Fig. 5, with the outer face of the bag lowermost, in which position, the stand 30 may be caused to assume a substantially upright position and will cooperate with the main portion of the bag to support the filling mouth portion 21 of the bag in an upright position for conveniently receiving the liquid. In order to permit access of liquid into the bag, the pivoted bars 24 are turned into substantially vertical positions or at right angles to the clamp bar 11, as shown in Figs. 5 and 7. With the pivoted bars 24 thus extending at right angles to the clamp bar 11, the central portion of the outer wall of the bag will readily open, as shown at 33 in Figs. 5 and 7, thereby permitting water entering the mouth portion 21 to pass down and into the interior of the bag.

After the bag has been filled as from the tail 34, the bars 24 are again turned so as to extend parallel to and opposite the face of the carrier bag, thereby serving to squeeze the inner and outer walls of the bag at the neck of the filling mouth portion 21 together, as shown in Fig. 6, and preventing the escape of liquid. The clamp bar 11 is illustrated as provided with outwardly directed stop lugs 35 at its ends, which lugs cooperate with lugs
provided on the ends of the pivoted bars 24 to limit the turning movement of these pivoted bars when these bars are turned to closed position shown in Fig. 6, in which position the bars 24 are disposed in parallel relation to the clamp bar 11. Thus, by the simple expedient of turning the inner ends of the pivoted bars 24 downwardly from their positions shown in Fig. 6 to their positions shown in Fig. 7, the bag is opened sufficiently to be filled, whereupon the turning of the inner ends of the pivoted bars upwardly, will effect the closure of the bag and prevent leakage or the splashing of fluid therefrom. Owing to the presence of the U-shaped stand or bracket 30, the bag filling mouth portion may be easily and conveniently disposed in an upstanding position for filling the bag, thereby eliminating the common necessity of having someone hold the bag while another person puts the water or other liquid thereinto.

Owing to the flexible nature of the tubular bag body 2, the same will readily conform to the shape of the user's back and will therefore fit comfortably so as to distribute the water to best advantage while at the same time leaving the user's arms and hands free to manipulate and direct the discharge hose.

It will be noted that owing to the use of the clamp bar 11 and the transverse bars 4 as supports for the ends of the shoulder straps 8, these shoulder straps are firmly and conveniently attached to the bag so as to be dependable in use, while at the same time simplifying the construction of the bag.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, as defined by the following claims, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. In a liquid carrier, a flexible tubular bag body closed at its lower end and having a filling mouth portion at its upper end, a clamp bar extending across one side of said bag body, pivotal members carried by said clamp bar and projecting through apertures provided in said bag body, a pair of bars mounted on said pivotal members at the opposite side of said bag body, means on said pivotal members for urging said pair of bars toward said clamp bar, said pair of bars being turnable into positions at right angles to said clamp bar for enabling the filling of said bag body and being turnable into parallel relation with said clamp bar after the bag body is filled for squeezing the opposite walls of said bag body together, thereby closing said filling mouth portion.

2. In a liquid carrier, a flexible tubular bag body having a filling mouth portion, clamp means at the neck of said filling mouth portion for effecting the closing or opening of said filling mouth portion, said clamp means comprising a clamp bar extending across one side of said bag body, bolts carried by said clamp bar and projecting through apertures provided in said bag body, pivoted bars mounted upon said bolts at the opposite side of said bag body, means on said bolts for urging said pivoted bars toward said clamp bar, said pivoted bars being turnable out of parallel relation with said clamp bar for effecting the opening of said filling mouth portion and being turnable into parallel relation with said clamp bar for effecting the closure of said filling mouth portion, and a bracket member attached to said bolts and adapted to rest upon a supporting surface during the filling of the bag body for holding said filling mouth portion in an upstanding, easily accessible position.

3. In a liquid carrier, a flexible tubular bag body having a filling mouth portion, clamp means at the neck of said filling mouth portion for effecting the closing or opening of said filling mouth portion at will, said clamp means comprising a clamp bar extending across one side of said bag body, bolts carried by said clamp bar and projecting through apertures provided in said bag body, pivoted bars mounted upon said bolts at the opposite side of said bag body, means on said bolts for urging said pivoted bars toward said clamp bar, said pivoted bars being turnable out of parallel relation with said clamp bar for effecting the opening of said filling mouth portion and being turnable into parallel relation with said clamp bar for effecting the closure of said filling mouth portion, and cooperating stop members carried by said clamp bar and by said pivoted bars for limiting the turning movement of said pivoted bars when said bars are moved into parallel relation with said clamp bar.

FRANCIS F. FENWICK, Jr.