

Dec. 4, 1934.

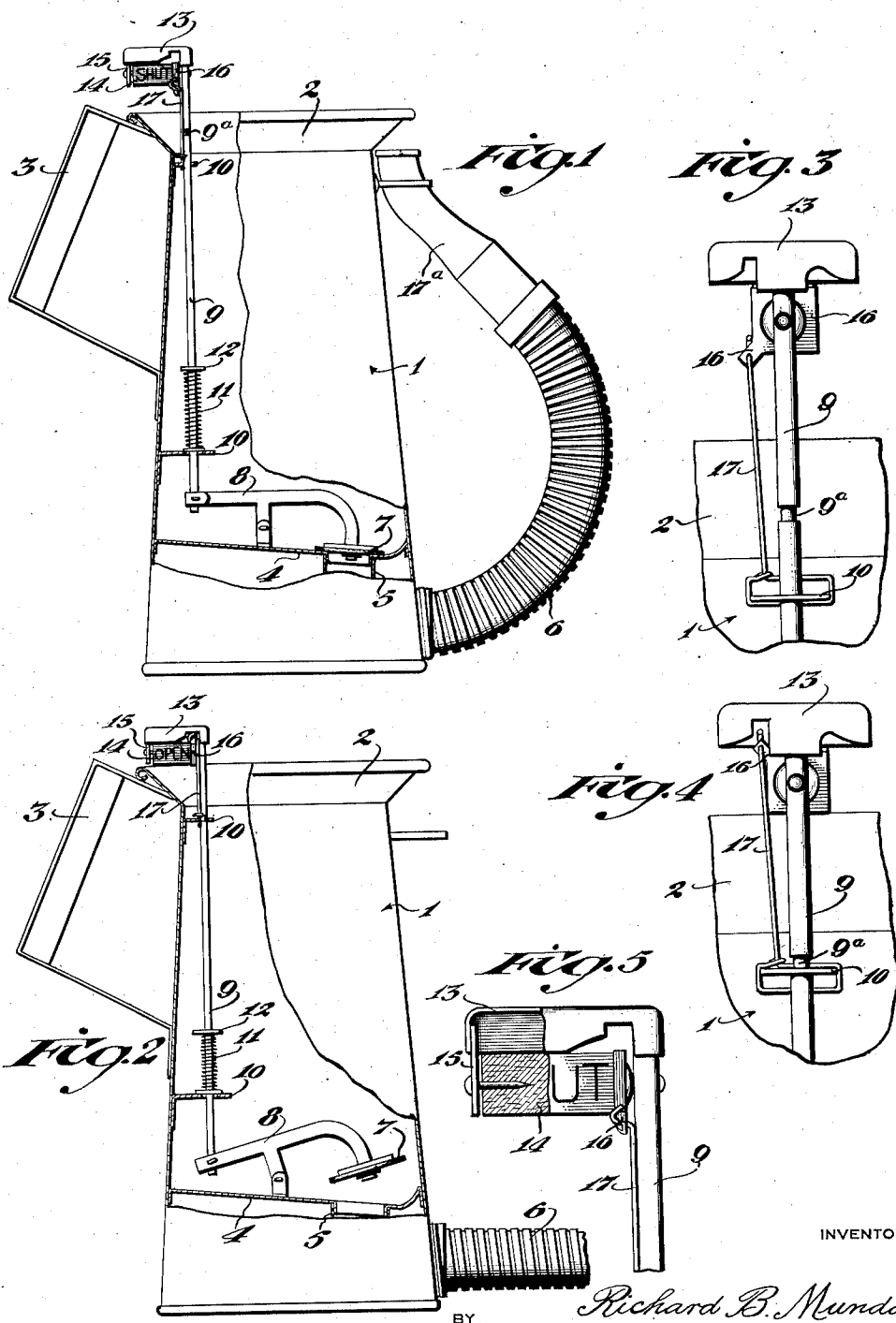
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1,983,239

LIQUID MEASURE

Filed Oct. 1, 1932

2 Sheets-Sheet 1



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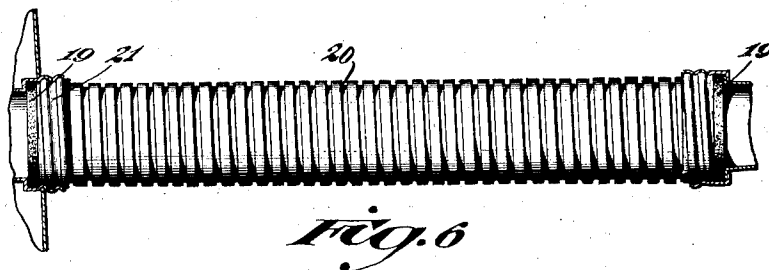


Fig. 6

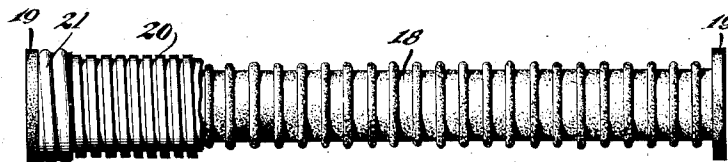


Fig. 7

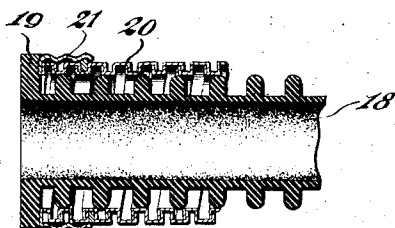


Fig. 8

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1,983,239

LIQUID MEASURE

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Application October 1, 1932, Serial No. 635,804

1 Claim. (Cl. 137—90)

This invention relates to an improvement in liquid measures as commonly employed for dispensing lubricating oil at automobile service stations, of pitcher type, with a discharge spout upon the end of a flexible or bendable tube or conduit, connecting with the bottom of the vessel. The outlet, of the container is valve controlled, with the valve mechanism mounted within the vessel and actuated by a thumb button accessible from the handle of the vessel. The spout when not in use for draining or emptying the vessel extends upwardly and is hooked to the top of the vessel.

It has been the practice to connect the spout with the bottom of the vessel through an intermediate section or length of either flexible metallic tubing or rubber tubing armored by or as a lining for a flexible metallic tubing to obtain a smooth bore to prevent an undue amount of oil adhering to the surface of the bore. Frequent bending of the rubber tube in the same direction as for hanging the spout to the top of the vessel, compresses the rubber of the tube on one side and stretches the same at the opposite side. It has been experienced that when frequently bending the tube to a comparatively sharp arc, it is soon injured to cause leakage.

The present invention, therefore, relates to an improved structure of tube and an object of the invention is to provide a tube for the discharge spout of a liquid measure of increased durability and which will furnish a packed union at its opposite ends for connecting respectively with the outlet of the vessel and the spout.

Further features and advantages of the invention will be more fully set forth in the description of the accompanying drawings in which:

Figure 1 is a central vertical section partly in elevation of the improved liquid measure showing the valve mechanism for the discharge outlet in closed position.

Figure 2 is a view similar to Figure 1 with the parts in position when the valve is open.

Figure 3 is an enlarged end elevation of the operating end of the valve actuating mechanism in position when the valve is closed.

Figure 4 is a view similar to Figure 3 with the parts in position when the valve is open.

Figure 5 is a side elevation of the indicator device.

Figure 6 is an elevation of the improved coupling length of bendable tubing.

Figure 7 is a view similar to Figure 5 illustrating the exterior of the rubber tubing which is enclosed by a flexible metallic tubing.

Figure 8 is an enlarged section through an end of a coupling tubing length.

Referring to the drawings, 1 indicates a vessel or container of pitcher type, made of sheet metal having an outwardly flaring top 2 and a handle 3 toward the top. The vessel has an inclined bottom 4 disposed at an elevation above its base edge to provide for housing a pipe elbow 5 fixed to the bottom 4 and extending laterally through the wall of the vessel and fixed thereto. The outer end of the elbow is threaded for making a union connection with a hose or tube 6. The bottom of the vessel slopes downwardly in all directions toward a discharge outlet eccentrically located and the bottom at the opening is annularly flanged outwardly for telescopically joining with the elbow 5.

The outlet is controlled by a valve 7 fixed upon an end of a lever 8 pivotally mounted within the vessel. A vertically disposed rod 9 connects with the opposite end of the valve lever 8 and is guided by a pair of brackets 10—10, fixed to and laterally extending from the inner side of the wall of the vessel, preferably in line with the handle.

A spring 11 encircles the valve actuating rod 9 and is interposed between the lowermost bracket 10 and a collar 12 fixed upon the rod for exerting a pressure for automatically closing the valve. The rod 9 extends upwardly above the top of the vessel and its upper free end has a laterally or outwardly extending button or thumb hold 13 in line with and slightly above the handle 3. The valve rod is actuated by the thumb of the hand grasping the handle.

An indicator block 14 of rectangular form is journaled upon the rod immediately beneath the thumb button 13 and extends parallel therewith; one end of the indicator block is journaled within an ear 15 depending from the forward end of the thumb button and the opposite end is journaled in the valve actuating rod by a pin engaged through the rod. The indicator block 14 at its inner end has a lip 16 extending obliquely therefrom to which a pull rod 17 is pivotally connected. The lower end of the pull rod is formed into a loop and engaged about the upper guide bracket 10.

As shown in Figures 1 and 3 the valve actuating rod 9 is in its normal position with the valve closed. The indicator block thus is in a position to expose a face side carrying the display wording "Shut". By depressing the valve actuating rod 9, the indicator block is swivelled to display a second face side marked "Open". The actuating rod has an annular groove 9^a to pro-

vide a locking notch for engagement with the upper bracket 10 through a slight tilting action of the rod for holding the valve open.

It is desirable for automobile service to have an extended flexible discharge spout for the liquid measure, the spout usually connecting with a short length of flexible tubing as a link coupled to the vessel outlet. Flexible metal tubing has been employed, but is objectionable in that its structure interiorly does not provide a flush bore surface, this for dispensing lubricating oil, allows too great a quantity of the oil to adhere to the interior wall of the tube. Therefore, a rubber tubing or hose is utilized as a lining for, or armored by a flexible metal tube. The spout is usually hooked in an upright position to the upper end of the vessel when not in use. This flexes the metal tube or hose to an arc which is very severe to the tubing, causing an undue compression of the rubber material along an inner side of the bend of the tube, and an extreme stretching of the material at an outer side, resulting in a rapid breaking down of the tubing material shortening its life.

The present invention provides a rubber tube as a flexible tube link connection for the discharge spout 17^a consisting of a length of rubber tubing 18 having annular or circumferential flanges or ribs exteriorly integral therewith, and of uniform spacing apart for its full length thereby providing alternate thin wall and heavy wall portions.

As an external corrugated tube, it offers greater flexibility by reason of the thin wall portions with the flanges or ribs compensating and accommodating for excess stretching of the mate-

rial on one side in bowing or bending the tube and for the side which is compressed the flanges or ribs move against and abut one another limiting the bending arc. The flanges circumferentially reinforce the tubing, giving the same increased durability and life and while the major wall portion is comparatively thin, increases the flexibility of the tube.

The tubing at each of its opposite ends has a rim flange 19 integral therewith serving as a gasket and shoulder for making a union connection, one end with the spout 17 and the opposite end with the elbow 5.

The tube is armored by a flexible metal tube 20 of commercial structure having lapped opposite ends forming a screw-threaded rim 21 at the rear side of the union flange of the rubber tube as an attachable element of a union joint enabling the tube to be readily coupled to the spout and vessel of the liquid measure.

The metallic armor 20 covering the rubber tube is of an internal diameter corresponding to the diameter of the ridges forming the circumferential corrugation for the exterior of the rubber tube, leaving the furrows formed by the ribs free, allowing the tube to move within the armor.

Having described my invention, I claim:

A hose, comprising, a flexible tubing of vulcanizable material having uniformly spaced annular ribs about its exterior, and a flexible metal conduit enclosing said tube, having an interior diameter approximately corresponding to the diameter of the ridges forming the corrugation on the exterior of the tube, its ends, each formed as an element of a pipe union.

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