May 22, 1956 H. WOLCOTT 2,746,655

VALVED FLUID DISPENSING SPOUT

Filed June 1, 1954

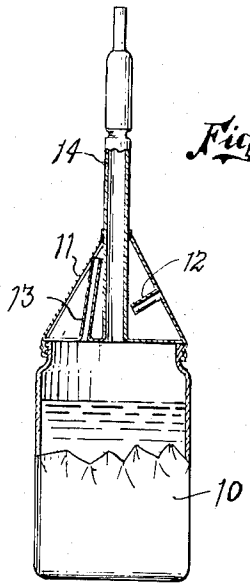


Fig. 1.

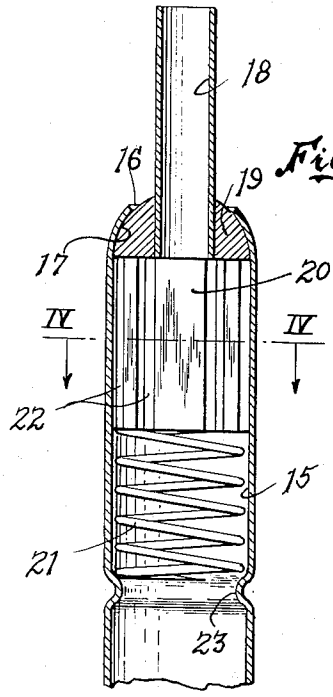


Fig. 2.

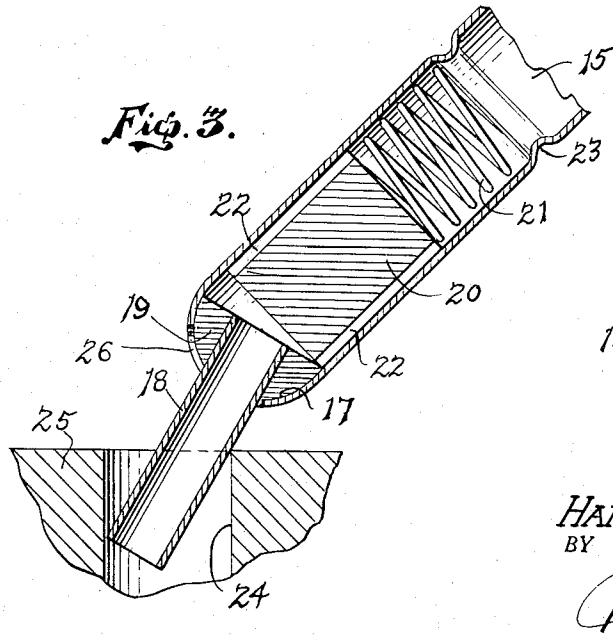


Fig. 3.

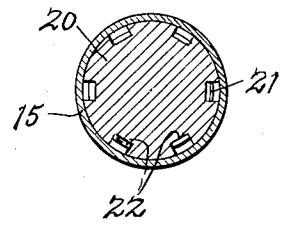


Fig. 4.

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VALVED FLUID DISPENSING SPOUT

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4 Claims. (Cl. 222—509)

My present invention relates to fluid dispensing containers and more particularly to a spout and an automatic flow controlling valve for dispensing semi-viscous fluids from a portable container.

An object of my invention is to provide a novel spout for dispensing fluids from a portable container and directing same into inaccessible receptacles without any spilling or dripping of the fluid on surrounding parts.

Another object of the invention is to provide a spout for fluid dispensing containers such as are employed in garages and service stations for the replenishing of engine oil and/or a filling of the brake and the fluid coupling reservoirs of an automobile.

A further object of the invention is to provide a valved spout composed of a minimum number of operating parts for dispensing fluids from a portable contanier which is practical, inexpensive and efficient in operation.

Other objects and advantages will be in part evident to those skilled in the art and in part pointed out hereinafter as in connection with the accompanying drawings wherein there is shown by way of illustration and not of limitation a preferred embodiment of the invention.

In the drawing;

Figure 1 is a vertical view, partially in section, showing my improved fluid dispensing spout as employed with a vented container of the type illustrated in my prior Patent No. 2,637,470, dated May 5, 1953, and entitled Vented Fluid Dispensing Container.

Figure 2 is a fragmentary vertical view, taken in section, showing the details of my improved spout and valve.

Figure 3 is a view similar to Figure 2 showing the parts in an open and operative position, and

Figure 4 is a sectional view taken along line IV—IV of Figure 2, looking in direction of arrows.

In the servicing of automobiles as in replenishing the brake fluid reservoirs and the reservoirs associated with the fluid couplings of the present day automatic transmissions it is difficult because of an inaccessible location beneath the floor boards of the automobile for the attendant to introduce these fluids into the reservoirs in question and even when exposed by a rolling back of the carpet or a removal of the floor boards there is still the problem of directing the fluid into the relative small filling opening provided for this purpose. In most cases the attendants performing this operation find it necessary to employ a funnel in order to avoid any spilling of the fluid and/or a dripping thereof about the interior of the automobile. Likewise in replenishing the engine oil the operator is generally required to close the open end of the pouring spout of the oil container with his thumb, or as in some cases manually operate a valve associated therewith which generally requires two hands.

To overcome the above disadvantages, I have in accordance with my invention provided a pouring spout for a fluid dispensing container which can be first introduced into the filling opening of a receptacle and then operated to dispense the fluid therefrom in an entirely

automatic manner without danger of spilling or a dripping of the fluid from the spout both before and after the filling operation is completed.

As shown in Figure 1 of the drawing, the spout constructed in accordance with my invention is particularly well adapted for use with a vented fluid dispensing container of the type disclosed in my aforesaid prior patent. Suffice it here to say that in my aforesaid patent there is provided a pouring outlet for a sealed container **10** which has a conical air entrapping chamber **11** with a laterally extending vent **12** and an axially extending vent **13** by which the container **10** is freely vented without any leakage of fluid from the container when discharging a fluid therefrom. In this figure of the drawing my improved spout is designated generally by the numeral **14**.

By now referring to the remaining figures of the drawing it will be seen that my improved spout **14**, comprises a tubular fluid conducting member **15** which is turned in at its extending end to form a discharge outlet **16** of reduced diameter. This turned-in-end of the tubular member **15** also provides a concaved spherical surfaced socket **17** at the end thereof and extending through the discharge outlet **16** there is a tubular spout forming member **18** that carries a collar or shoulder forming member **19** having a convexed spherical surface which conforms with the socket **17** and permits a swiveling movement of the spout **18** with respect to the tubular fluid conducting member **15**. The collar **19** carried by the extending spout **18** is shown as having a flat surface upon its inner side which forms a valve seat and it is held in cooperating fluid sealing relation with the concaved spherical surface of the socket **17** by an axially-movable valve member **20** that is biased into an engagement with the valve seat of the collar **19** by a helical spring **21**. This prevents a flow of fluid from the fluid conducting member **15** when the spout **18** is in its normal position. The valve member **20** is preferably provided with a plurality of axially extending flutes **22** through which fluid may pass, as will hereinafter appear, when spout **18** is moved out of co-axial relationship with the fluid conducting member **15**. In this arrangement the spring **21** is held in cooperating relation with valve member **20** by an inwardly extending beading **23** that is formed by an inward crimping of the fluid conducting member **15**.

To illustrate the operation of my improved invention I have in Figure 3 of the drawing, shown the spout forming member **18**, carried by the tubular fluid conducting member **15** as projecting into a filling aperture **24** formed at the top wall of a fluid reservoir **25**. As here shown, when the spout **18** is thus projected into the filling aperture **24** and the fluid container is moved in an arc the pouring spout **18** will be moved out of axial alignment with the tubular fluid conducting member **15**. This movement will cause the shoulder or ring **19** carried by the spout **18** to move within the socket **17** and thus by virtue of its engagement with the valve member **20** cause this latter member to move axially within the fluid conducting member **15** and out of sealing engagement with the valve seat forming surface of the collar **19**. When this movement of the spout **18** with respect to the fluid conducting member **15** occurs fluid will flow from the fluid conducting member **15** through the flutes **22** of the valve member **20** and to the spout **18** where the fluid will be discharged into the reservoir **25**. In this operation the helical spring **21** will be compressed and when the filling operation has been completed and the spout **18** is withdrawn from the reservoir **25** it will reassume its normal co-axial position with respect to the fluid conducting member **15** and the valve member **20** will be returned to its valve closing position by the spring **21**. The spout **18** can then be removed from the filling aper-

ture **24** without a spilling and/or dripping of fluid, and this without any imediate flipping of the fluid dispensing container **10** into its normal upright position. In this figure of the drawing the concaved socket portion **17** of the fluid conducting member **15** is shown as having a transversely extending slot **26** that is of a width substantially corresponding to the outside diameter of the tubular spout **18** and it is of a length sufficient to permit an angular displacement of the spout **18** to open the valve as described above.

The flutes **22** of the valve member **20** are shown in Figure 4 as six in number and rectangular in cross-section, but it will be understood that these flutes may be more or less in number and of any other suitable configuration.

While I have, for the sake of clearness and in order to disclose the invention so that the same can be readily understood, described and illustrated a specific form and arrangement, I desire to have it understood that the invention is not limited to the specific form disclosed, but may be embodied in other ways that will suggest themselves to persons skilled in the art. It is believed that this invention is new and all such changes as come within the scope of the appended claims are to be considered as part of this invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a valved fluid dispensing container spout of the character described, the combination of a tubular fluid conducting member having its end turned inwardly to form a concaved socket with a coaxially disposed opening therein, a spout forming member having a collar with a convex surface seated in said socket and forming a transversely disposed valve seat at the inner end of said spout forming member, a substantially cylindrical valve member slidably mounted in said tubular fluid conducting member and engaging said transversely disposed valve seat, said cylindrical valve member having at least one longitudinally extending flute in the side thereof, and spring means operating to bias said cylindrical valve member and the collar carried by said spout in sealing relation within each other and with the socket at the end of said tubular fluid conducting member.

2. In a fluid dispensing device of the character described, the combination of a tubular fluid conducting member adapted and arranged to be attached to a fluid dispensing container having its extending end turned inwardly to form an enclosed concaved socket with an opening at its center, an axially extending spout forming member having an annular collar of convexed cross-section seated in said socket for a swiveling movement, said annular collar forming a transversely disposed annular valve seat at the inner end of said spout forming member, a substantially cylindrical valve member slidably mounted within said tubular fluid conducting member having spaced flutes extending axially along its outer surface and engaging said annular collar in a fluid flow inhibiting manner, and spring means operating to yieldingly bias said cylindrical valve member in fluid sealing engagement with said annular collar, whereby said cylindrical valve member may be moved inwardly against the biasing action of said spring means by movement of said spout forming member out of axial alignment with said tubular fluid conducting member.

3. A pouring spout for directing viscous fluids from a fluid dispensing container to inaccessible points, comprising a tubular fluid conducting member adapted at one end to be secured to and carried by a fluid dispensing container, said tubular member having its extending end rolled inwardly to provide a socket with a spout opening of reduced diameter at its center, a tubular spout for said fluid conducting member having a diameter substantially less than the diameter of the opening at the end of said tubular member, an annular collar upon said tubular spout having an outer surface adapted and arranged to movably seat in the socket formed at the end of said tubular fluid conducting member and form a valve seat, a valve member of cylindrical configuration engaging the valve seat of said annular collar, said cylindrical valve member having flutes extending axially along its outer surface through which fluid may flow, and a spiral spring engaging said valve member operating to bias said valve member in sealing relation with said annular collar and retaining said annular collar in sealing engagement within the socket at the extending end of said tubular fluid conducting member.

4. A pouring spout for directing viscous fluids from a fluid dispensing container to inaccessible points, comprising a tubular fluid conducting member adapted at one end to be secured to and carried by a fluid dispensing container, said tubular member having its extending end rolled inwardly to provide a spout opening of reduced diameter with the converging walls forming an annular spherically surfaced socket, a tubular spout extending coaxially through the opening at the end of said tubular member, an annular collar upon said tubular spout having an outer spherical surface adapted and arranged to seat in the annular socket formed at the end of said tubular fluid conducting member, a valve member of cylindrical configuration engaging said annular collar as a valve seat, said cylindrical valve member having flutes extending axially along its outer surface through which fluid may flow, and a spiral spring seated upon an inwardly extending beading formed by a crimping of said fluid conducting member engaging said valve member and operating to bias said valve member in sealing relation with said annular collar and retaining said annular collar in sealing engagement with the spherically surfaced socket at the end of said tubular fluid conducting member.

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