

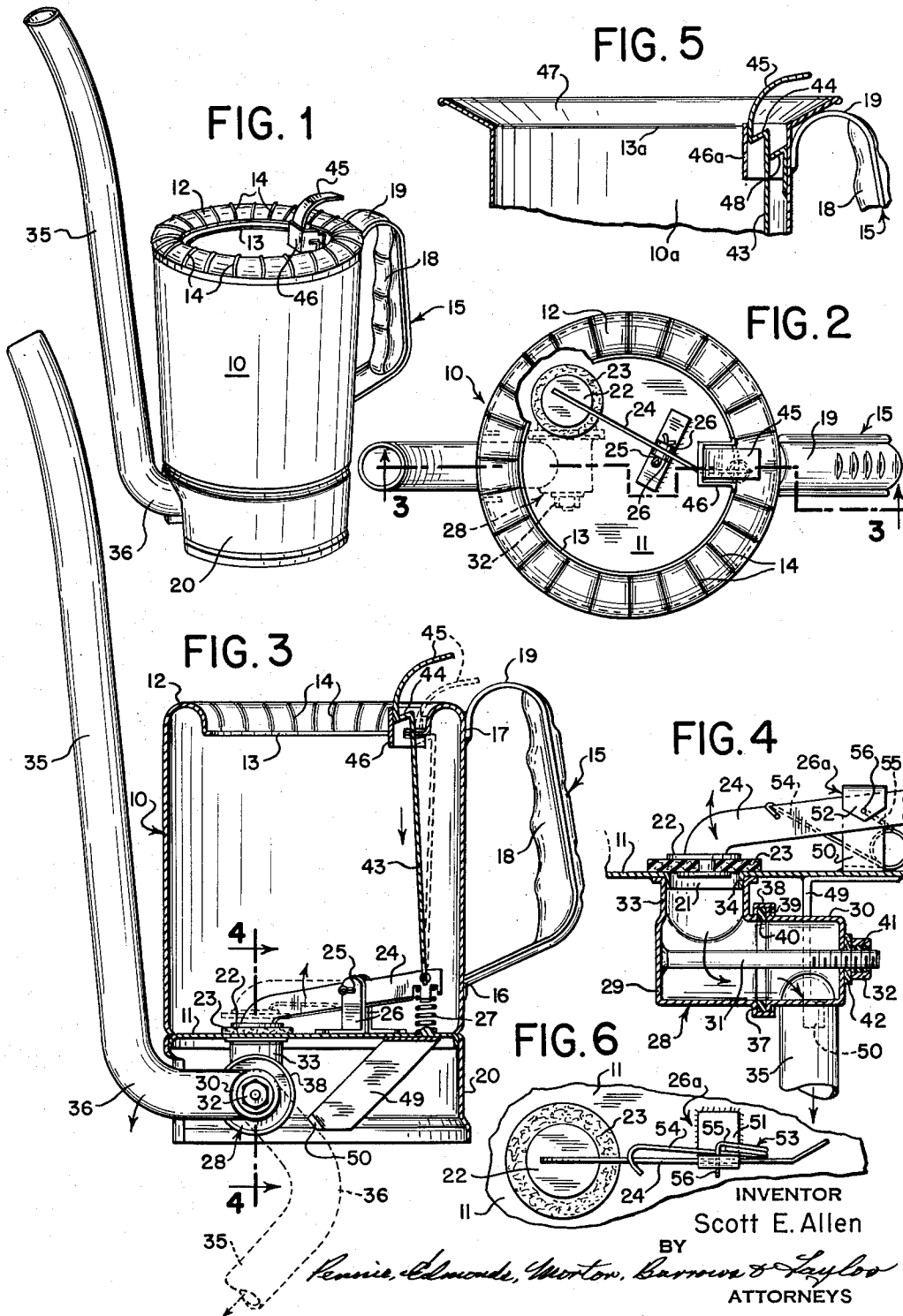
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SWINGSPOUT DISPENSER

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SWINGSPOUT DISPENSER

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This invention relates to containers for dispensing liquids, and particularly to containers which are used at automobile service stations for introducing lubricating oil into the filler opening of the engine. The invention relates more especially to a device known as a swingspout dispenser which is provided with a valve controlled opening at the bottom of which a spout in the form of a tube is connected by means of a swivel or swing joint.

It is customary in re-filling the engine crankcase with oil, after the used oil has been drained therefrom, to measure a charge of oil, such for example as five quarts, in a container having a suitable side handle and with the swingspout at the bottom in a position to prevent the discharge of the oil while the container is being filled. The station attendant then introduces the spout into the filler opening of the engine, at the same time swinging the spout downwardly, and then opens the valve so as to allow the oil to flow into the engine.

In the swingspout dispensers of this type which are now in use the valve actuating mechanism is constructed in such a way that its operation is awkward and inconvenient. In some cases the operating lever for the valve must be depressed and then moved forward in order to lock it and hold the valve open. In others the operation is awkward because the attendant must first concentrate on moving the operating lever back toward the handle and, in addition, move it sideways in order to hold the valve open.

Also, in the swingspout dispensers heretofore the swing joint was of a complicated nature including a valve to cut off oil flow when the spout is turned upwardly.

In accordance with my present invention the swingspout dispenser utilizes an open top container having a handle at its top and fixed to the side of a container, such handle advantageously having a grip for the fingers to render it easy to lift and hold the container in one hand. Also, the upper connection between the grip part of the handle and the container is curved to fit the side of the hand so that the handle can be readily grasped with the fingers of the hand leaving the thumb extending upwardly. A valve opening is arranged in the bottom of the container and connected thereto is a swing joint having a spout extending from it which is arranged to swing downwardly from an upward position alongside of the container.

A valve member is arranged to move vertically to close and open the valve opening in the container bottom and a vertically shiftable control arm extends upwardly to the top of the container for manually opening and closing the valve. The lower end of this arm is connected to an appropriate mechanism for controlling the valve member, such mechanism advantageously consisting of a simple lever having the valve member mounted upon one end and having the arm pivoted to the opposite end. The lever itself is pivotally mounted on the bottom of the container. The control arm at the top is arranged with an inwardly extending and upwardly engageable shoulder or catch which can be engaged by motion in a downward and outward direction from a suitable part fixed to the container.

An extension of the arm above the catch provides an operating member and is advantageously bent or curved partially over the top of the container and also over the top of the upper connection for the supporting handle. A slide guide loosely engages the arm to hold it in position, and the advantage of the construction is that the

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entire operation of shifting the control arm downwardly and hooking the catch so as to hold the discharge valve open can be accomplished by the thumb and without any special attention on the part of the user.

In the drawings:

FIG. 1 is a perspective view of my improved swingspout dispenser;

FIG. 2 is a plan view of the dispenser;

FIG. 3 is a vertical transverse section taken along broken line 3-3 of FIG. 2;

FIG. 4 is a detailed section on line 4-4 of FIG. 3 but with the filling spout swung to its downward position as shown in dotted lines in FIG. 3, and also illustrating a modified lever mounting and spring;

FIG. 5 is a fragmentary vertical section of the upper part of a modified form of dispenser; and

FIG. 6 is a fragmentary plan view of parts shown in FIG. 4.

Referring to FIGS. 1-3 the dispenser of the invention comprises an open top container 10 for receiving a quantity of lubricating oil to be delivered into the filling opening of an automobile engine. Container 10 is a cylindrical container having a flat bottom 11 with vertical cylindrical walls at right angles thereto and advantageously having an annular turned-in portion 12 to provide a downwardly projecting circular lip or rim 13. Lip 13 constitutes a measuring gauge so that when the station attendant fills the container to this lip he will know that he has a measured quantity of oil therein which, for example, may be five quarts. The formation 12 which is curved so as to space lip 13 at a distance inwardly from the cylindrical wall aids in preventing the oil from spilling over as the filled container is carried to the engine. Formation 12 and lip 13 may be made by spinning, or similar operation, and thereafter radial crimps 14 may be formed in its upper surface for stiffening purposes.

In order to facilitate the handling of the filled container, a suitable handle 15 is mounted on the side near the top thereof. The handle consists of a strip of sheet metal with beaded edges, and is welded, brazed or otherwise secured to the side wall of container 10 at both the bottom 16 and the top 17. The more or less vertical portion of the handle may be provided with a smooth gripping piece 18 with formations thereon for the fingers of the hand. The top portions 19 of the handle is made in a smooth curve so that it may rest comfortably upon the forefinger.

Container 10 rests on an integral cylindrical supporting base 20 this base being open at the bottom and serving to protect certain parts as hereinafter described.

The bottom 11 of the container is provided with a suitable outflow opening 21 of circular form and arranged to be closed by means of a manually operable valve member 22 provided underneath with a soft packing disc 23 for producing a tight closure. Valve 22 is fixed to the outer end of a lever 24 which is pivoted at 25 to a bracket 26 welded or otherwise secured to the inner surface of bottom member 11. A coil compression spring 27 is arranged beneath the outer end of lever 24, and urges or biases the valve 22 towards closed position.

Mounted beneath floor 11 and within base 20 there is a swing joint indicated generally by numeral 28. This comprises a hollow elbow member 29 (FIG. 4) and a hollow thimble-like member 30 which are rotatable one with respect to the other and held in assembled position by means of bolt 31 and nut 32. The inlet portion 33 of elbow 29 fits around a circular flange 34 which outlines the discharge opening 21. An annular flange at the upper end of portion 33 may be welded as indicated, or otherwise permanently connected to the lower surface of bottom member 11. The swing joint 28 is thus

securely and rigidly mounted on the bottom of the container.

The thimble member 30 forms a support for a filling spout 35. This is a tubular member having a right angled elbow 36 near its lower end so as to provide a short portion which extends within base 20 and is joined to thimble member 30. Beyond elbow 36 the filling spout has a length of the order of twice the height of the dispenser. This enables the filling opening to be reached without difficulty and makes it possible to support the dispenser, while the oil is draining, by means of the spout. The length of spout 35 may, of course, be varied as desired.

The interior of thimble member 30, through a side aperture, opens directly into the lower end of spout member 35, the thimble member having about the same diameter as the spout member, and the two parts being joined with the lower end of the spout against the side of the thimble member as shown in FIGS. 3 and 4.

In order to provide a rotatable connection between thimble member 30 and elbow member 29 of the swing joint, the elbow member is provided with an annular shoulder 37 (FIG. 4) which is surrounded by a circular flange 38 to form a cup-shaped recess within which a flange 39 on the inner end of thimble member 30 is received. A washer 40 provides a leak-proof packing between these parts. In order to prevent leakage between the threads of bolt 31 and nut 32, nut 32 is of special form including a bushing 41 of fibre. This fibre bushing is squeezed tightly against the threads of the bolt and serves both to keep the nut from loosening and to prevent leakage. A fibre or other washer 42 is also placed beneath the nut.

In order that the attendant may conveniently operate the lever 24 to open valve 22 after the spout 35 has been inserted in the filler opening of the engine, an actuating arm 43 is pivoted at its lower end for swinging movement with respect to lever 24. At its upper end it has a catch in the form of a shoulder 44 which is arranged to engage beneath lip 13 as shown by the dotted line in FIG. 3 so as to hold valve 22 in the dotted or open position after arm 43 has been depressed. Actuating arm 43 may be conveniently made in the form of a stiff strip of metal such as steel, and the catch 44 formed by an offset in the upper portion of this arm. This offset has a surface extending downwardly toward the center of the dispenser so as to facilitate locking engagement with the lip 13.

Above catch 44 arm 43 is continued to form an upwardly and outwardly curving extension 45. This extension curves and extends outwardly toward the upper portion 19 of handle 15, and can be very conveniently reached and actuated by the thumb of the hand which has grasped the handle 15. The arrangement is such that pressure by the thumb to open the valve automatically produces a tendency for the catch 44 to lock beneath rim 13. Consequently, the operator does not consciously have to shift the arm 43 outwardly to engage it in locking position.

In order to maintain the upper corner of catch 44 closely adjacent the edge of rim 13 when the catch is released and arm 43 allowed to move upwardly to close valve 22, a guide member 46 in the form of a U-shaped strap of metal surrounds the lower portion of extension 45 and is fixed in position by having the ends of its legs welded, brazed, or otherwise secured, to the inner edge of rim or lip 13. The vertical width of this guide member is somewhat greater than the vertical movement of arm 43 so as to prevent the outer corner of catch formation 44 from becoming engaged with the upper edge of the guide member.

In FIG. 5 a slightly modified form of container is illustrated wherein the container 10a is provided with a flared top 47. In this modification a special hook member 48 is permanently fixed to the inner surface of the wall of

container 10a and catch 44 is engaged with this hook member to hold the valve open. Guide member 46a is similar to guide 46, except that it is constructed to be secured by soldering, brazing or otherwise to the inner surface of the wall of container 10a. As before, the thumb piece or thumb-operated extension 45 curves and extends outwardly so as to partially overlie the upper portion 19 of handle 15, at least when the actuating arm 43 is locked in engagement with hook member 48.

Applicant's swing joint 28 is of extremely simple construction inasmuch as it involves only the parts necessary for providing a swinging or oscillating movement between thimble member 30 and the elbow member 29 as the spout 35 is swung from its upper position shown in FIGS. 1 and 3 to its lower position shown in dotted lines in FIG. 3 and in full lines in FIG. 4. During the operation of drawing a measure of lubricating oil into container 10, spout member 35 is in its upper position to prevent the outflow of oil. It is maintained in this position by the frictional engagement between flange 39 and annular shoulder 37 including the friction and sealing washer 40. The desired amount of friction between these parts is adjusted by means of nut 32, which, as previously indicated, is of the lock type by virtue of its fibre bushing 41.

When the station attendant has filled the dispenser or member with oil to the desired level, he swings spout 35 downwardly into the filling opening of the engine and inserts the spout therein for some distance. The container 10 may be supported in this manner in upright position during the filling operation, that is to say, while the oil is flowing out of the container into the engine. For this purpose a brace member 49 in the form of a rigid strip with an angular upper end is welded or otherwise secured beneath the bottom 11 within base 20, as shown in FIG. 3, and its lower end is located to form a stop 50 to engage spout member 35 below elbow 36 and maintain the desired angular relationship between spout 35 and the axis of container 10 to agree with the angularity of the filling opening and thus support the container in substantially upright position. After the spout 35 has been inserted in the filling opening the attendant will manipulate the thumb piece 45 to open valve 22 and to engage catch 44 so as to lock the valve in open position. The attendant is then free to go about some other duty while the oil is flowing into the engine.

A modification of the mounting for lever 24 and of the spring 27 is shown in the upper part of FIG. 4 and in FIG. 6.

The supporting bracket 26a for operating lever 24, instead of being a double bracket like bracket 26, is a single bracket consisting of an upright leg 50 with a single foot portion which is soldered, brazed or otherwise secured to the bottom member 11 of the container. However, the upper portion of leg 50 is folded in a U-fold to provide a downward extension 52 and lever 24 is mounted between this extension and leg 50 of the support.

Instead of the coil compression spring 27, a seat spring 53 is used having two parallel arms 54 and 55 projecting from and connected by a coil or bight. The shorter arm 55 has a portion 56 at its end which is bent at right angles and passes through suitable apertures in leg 50 and extension 52 to form the pivot pin for lever 24. The longer arm 54 is bent at its end and hooked over the upper edge of lever 24. The bight of spring 53 bears against the upper surface of bottom member 11 so that the arm 54 urges or biases the end of lever 24 downwardly to maintain valve 22 in closed position.

By this modified spring arrangement a saving is effected in the cost of manufacture of the dispenser since the bent end of arm 55 is made to serve as the lever pivot, and the assembly of the lever, spring and support is simplified.

I claim:

1. A swingspout dispenser for liquids comprising an

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open top container having a supporting side handle at the top thereof, an outlet through the bottom of said container located off-center with respect to said bottom, a swing joint connected to said outlet and having a spout extending therefrom arranged to swing downwardly, said swing joint comprising an elbow member having vertical and horizontal portions, said vertical portion being secured to the bottom of said container surrounding said outlet and said horizontal portion being disposed adjacent and directly below the vertical portion, a thimble member having the inlet end of said spout mounted on one side thereof, said thimble member being disposed in axial relation to the horizontal portion of said elbow member, a sealing joint between the mouth of said thimble member and said horizontal portion permitting oscillation of said thimble member with respect to said elbow member, means for securing said thimble member and said elbow member in oscillating relationship, and a stop member having a portion positioned to engage the spout when said spout is swung to a downward position, the spout being of a length to extend down into a filling tube a distance sufficient to support the receptacle in a supporting relationship when the stop engages the spout, whereby when the spout is extended down into a filling tube the weight of the receptacle is transmitted through said stop to the spout and the spout acts as a support for the receptacle.

2. In a liquid dispenser including an open top container having a supporting side handle at one side thereof,

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an outlet through the bottom of said container, and a spout extending from the outlet and arranged to swing downwardly, the improvement which comprises a support within the container, a lever pivoted to said support, a valve member for closing said outlet mounted at one end of the lever, an arm connected to said lever and extending to the top of said container for actuating said lever, a spring having two arms, one arm of said spring engaging said lever and to urge it to a position to close said valve, and the other arm of said spring having a portion extending through said support and forming a fixed pivot for said lever.

3. The improvement as set forth in claim 2 in which the arm is connected to said lever at the side thereof adjacent the end thereof opposite the end on which the valve is mounted so that a downward movement of said arm will cause said valve to open and in which the arm near its upper end is offset to form a shoulder, means on the container to engage said shoulder by lateral movement of the arm, and an extension on the arm above the shoulder forming a separate handle, said handle being shiftable laterally to engage the shoulder and hold the valve in open position.

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