June 1, 1965 W. J. PENTESCO 3,186,604

FAUCET ATTACHMENT

Filed Feb. 25, 1963

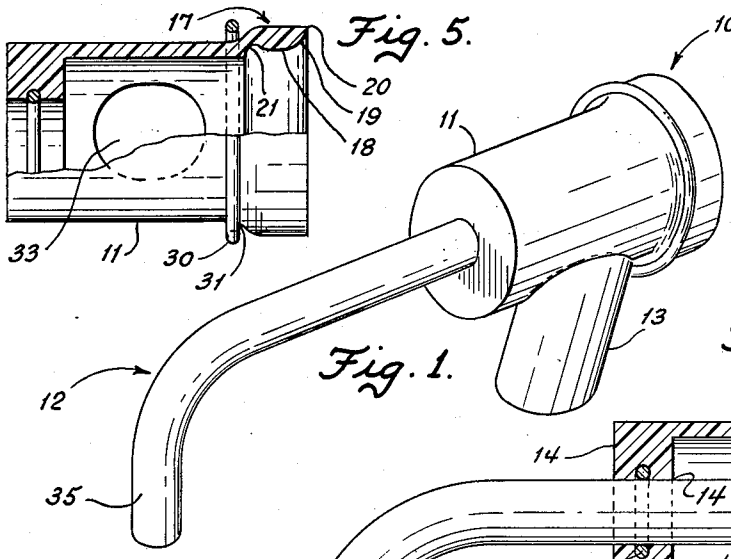


Fig. 5.

Fig. 1.

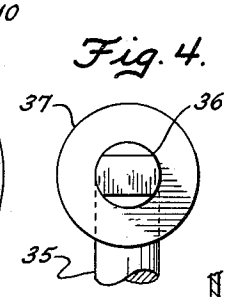


Fig. 4.

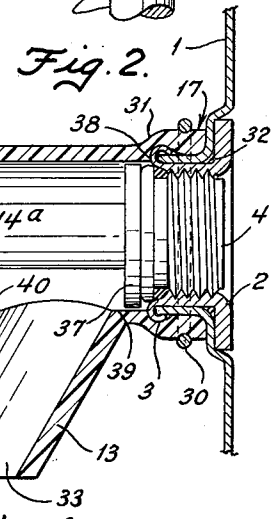


Fig. 2.

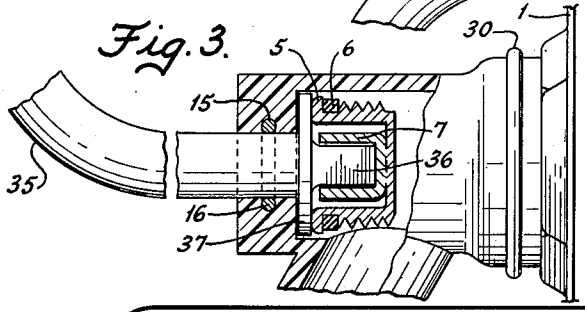


Fig. 3.

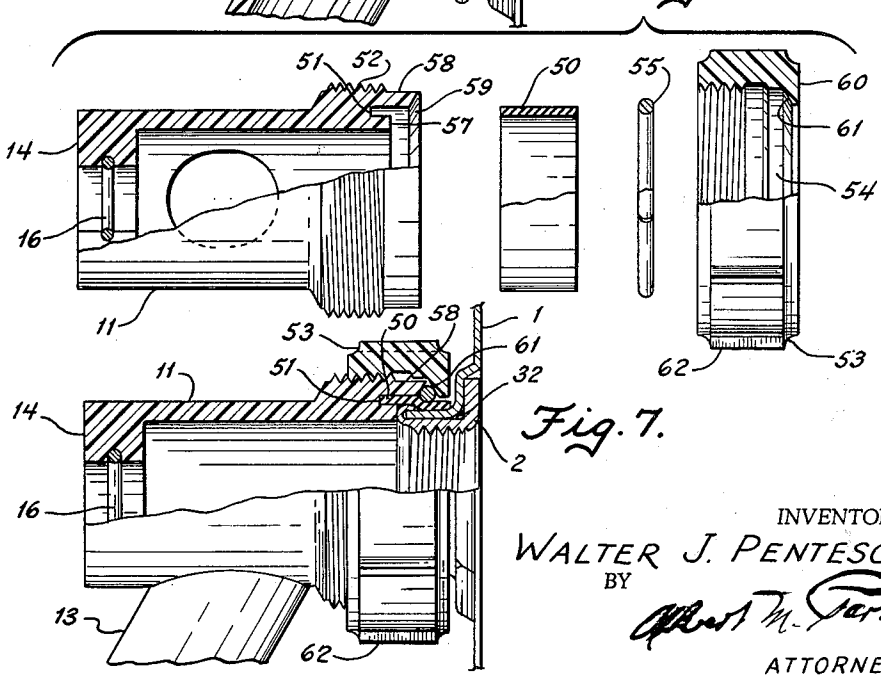


Fig. 6.

Fig. 7.

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FAUCET ATTACHMENT

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5 Claims. (Cl. 222—191)

This invention relates to pouring attachments for containers and more particularly to such attachments including faucets or pouring spouts for use in dispensing the contents of containers, such as barrels, drums and pails.

There are numerous types of faucets presently available which are designed specifically for dispensing the contents of containers and which are fastened thereto by unscrewing the plug out of the closure flange in the container wall and then screwing the faucet into the flange in place of the plug. This arrangement has several inherent disadvantages, the primary one being that the container must always be in an upright position when the conversion is made. Consequently a purchaser of several filled drums must temporarily store them in an upright position until a conventional faucet is inserted and then lift the drums onto a rack which holds them in a horizontal position so the contents can be drawn off by the faucet. This situation is made even worse in cases where there is limited storage space and the drum supplier leaves the untapped drum on a rack and the user has to take the drum down, insert the faucet, and then put the drum back on the rack again in pouring position. Further a special wrench is usually required to remove the plug and another wrench is then required to screw in the faucet. If either one or more of the plugs or one of the wrenches is lost or mislaid, a difficult situation results. Also it is not at all uncommon in using the conventional type of faucets for the valve and valve seat to become damaged or worn, greatly reducing the effectiveness of the faucet and often requiring a bucket to be hung thereon to catch the leakage.

Applicant has overcome these and numerous other disadvantages of the prior art by providing a new and improved faucet attachment, which is simply snapped over the closure flange. Included is provision for engaging the closure plug within the attachment so that it can be unscrewed and the contents of the drum can be dispensed through the faucet. To terminate the flow, the plug is merely screwed back into the flange and, if desired, the faucet attachment is easily removed leaving the container again tightly sealed regardless of its position. As can be seen, the instant invention provides an effective faucet for dispensing the contents of the container and while including a self-contained wrench for removing the closure plug, while providing advantages in both, heretofore unknown in the art.

It is accordingly a primary object of this invention to provide a faucet attachment which can be applied to a container regardless of the position in which it is supported.

Another object is to provide a faucet attachment which incorporates both a plug wrench and a pouring spout.

A further object is to provide a faucet attachment, which is easily and quickly applied to a conventional drum closure structure without the aid of a wrench.

A more detailed object of the invention is to provide a faucet attachment which cannot leak in the closed position as long as the closure plug itself is effective.

More detailed objects will in part be obvious and in part be pointed out as the description of the invention taken in conjunction with the accompanying drawing proceeds.

In that drawing:

FIG. 1 is a perspective view of a preferred form of a faucet attachment in accordance with the invention.

FIG. 2 is a longitudinal cross-sectional view thereof.

FIG. 3 is a view similar to FIG. 2 but showing the plug removed for pouring through the faucet.

FIG. 4 is an end view of the plug wrenching means per se.

FIG. 5 is a cross-sectional view of the faucet housing alone taken at right angles with respect to the FIG. 2 showing.

FIG. 6 is an exploded sectional view of a modified form of the invention.

FIG. 7 is a cross-sectional assembly view thereof.

In the accompanying drawing and in the description to follow, reference is made to the presently preferred embodiments of the invention. It is to be understood, however, that such drawing and description are for illustrative and not limiting purposes, since one skilled in the art might well devise modifications and variations thereof without departing from the scope and spirit of the invention.

The faucet attachment of this invention is adapted to cooperate with a closure structure commonly found on containers known in the trade as barrels, drums or pails. Such closure structure is illustrated in FIG. 2 which shows a container wall 1 having an opening therein surrounded by a neck and fitted with a screw threaded bushing or flange 2. The flange 2 is press fitted within the opening and has its upper end curled over the surrounding container wall forming a circular radially outwardly curled portion 3. Threadably engaged within the flange 2 is a closure plug 4 having a head 5, see FIG. 3, beneath which lies a gasket 6 which seals off any leakage between the plug 4 and the flange 2. Attached within the body of the plug 4 is a wrench engaging insert 7 illustrated in FIG. 3 as a channel-shaped member which is adapted to be engaged by a wrench or tool for the purpose of tightening or loosening the plug within the flange.

FIGS. 1–5 illustrate the presently preferred form of the invention wherein the faucet attachment is generally indicated by the numeral 10 and has as its principal elements a cylindrical faucet housing 11 carrying a plug engaging wrench generally indicated at 12. Extending laterally from the housing 11 is a pouring spout 13 which is adapted to direct the flow of liquid downwardly and outwardly away from the container wall 1. The faucet housing 11 has an end wall 14 with an opening 14*a* therethrough. Embedded within a circular groove 15, encircling said opening 14*a*, is an O ring gasket 16 which provides a seal against any leakage between the end wall opening and the wrench 12. It is to be noted that although the O ring gasket makes a tight enough fit around the wrench to prevent any leakage, it is also resilient enough to allow the wrench 12 to be displaced longitudinally within the housing with relative ease.

The open end of the cylindrical housing 11 terminates in a resilient engaging formation generally indicated by the numeral 17 which is adapted to encircle the drum closure structure as shown in FIG. 2. In the embodiment illustrated in FIGS. 1–5, it can be seen that the engaging formation 17 is an integral portion of the housing 11 hence, with the latter, would also be composed of a resilient non-metallic material of which polyethylene plastic is a non-limiting example. The construction of the engaging formation 17 is such that the faucet attachment can be easily snapped over the drum closure structure and yet provide a tight, leakproof seal therewith. To accomplish this, the engaging formation 17 is provided with a radially inwardly projecting circular bead 18 which curves outwardly at 19 to meet the outer cylindrical wall of the housing at a line as indicated at 20. Longitudinally inwardly

of the bead 18, in a direction away from the housing end 20, the formation 17 is provided internally with a circular groove 21 which divides the inner cylindrical wall of the housing 11 from the end formation 17. Upon pushing the faucet attachment onto a closure structure as shown in FIG. 2, to secure the engaging formation thereto, the curved surface 19 is engaged with curled portion 3 of the closure flange. Continuing the pushing causes the engaging formation 17 to expand radially outwardly so that the bead 18, in engaged position, fits snugly around the drum stock neck and the groove 21 snugly engages over and receives the curled over bead 3 of the closure flange 2. Should any engaging effect, in addition to the resilience of the formation 17 be deemed necessary, this may be provided by a circular clamping ring, such as indicated at 30. The housing 11 is of slightly reduced diameter than the formation 17 as indicated by the incline 31 down which the ring 30 can be slipped back to the position shown in FIG. 5 when the faucet attachment is not in engaged position or is to be removed therefrom.

Another advantage of this invention is that should the flange gasket 32, which provides a seal between the closure flange 3 and the drum stock 1, become damaged or worn out after extended use, hence permitting leakage at this point, the securing formation 17 would serve as a seal to prevent any leakage that might otherwise occur when pouring from the drum.

The wrench generally indicated at 12 has a right angled handle portion 35 at the outer end thereof and a rectangular plug engaging member 36 at its inner end which is adapted to engage in the socket provided by the wrench engaging insert 7 within the closure plug. A radially outwardly projecting circular collar 37, which has a diameter substantially equal to the internal diameter of the housing 11, extends out from the wrench in back of the member 36. One function of the collar 37 is to clear the inner surface of the housing 11 of any accumulation of material which might otherwise prevent the plug from being easily withdrawn. Also the collar acts as an additional seal against leakage through the opening 14*a* in the end wall 14 when the plug is fully withdrawn.

It can now be seen that to use the faucet attachment, its engaging formation 17 is first snapped over and on to a drum closure of a type generally available. Then the wrench 12 is urged inwardly and turned until the plug engaging member 36 registers with and is seated within the socket provided by the insert 7. Sufficient torque can then be applied to the handle 35 to unscrew the plug 4. As soon as the plug is unscrewed out of the flange, the wrench and plug may be withdrawn longitudinally to the rear of the housing so as to allow the contents of the drum to flow through the pouring spout 13. The internal diameter of the housing 11 is such that the latter overlies the flange curl at 38 to the extent that the closure plug has only a small clearance within the housing. With this relation, as soon as the threads of the plug disengage with the threads of the closure flange 2, the static pressure of the fluid within the drum will urge the plug outwardly and so maintain the latter in engaged relationship on the end of the wrench.

The pouring spout opening 33 is dimensioned to be slightly smaller than the internal diameter of the housing 11 so that if the plug should accidently come off of the plug engaging member 36, it would not fall out through the spout but would be engaged again with the wrench as the latter is again moved inwardly toward the drum opening.

The length of the housing 11 and the location of the opening 33 are so related that as soon as the plug is disengaged from the threads of the flange, the contents of the container will be allowed to escape at the position indicated by the numeral 39 hence further reducing the possibility of leakage between the drum closure structure and the resilient engaging formation 17. The end wall 14 is so spaced from the opening 33 as to form a shoulder 40 above

which the collar 37 and plug head 5 are positioned when the faucet is in fully open position. These relationships allow for the maximum flow through the faucet with a minimum amount of longitudinal movement of the plug. Also the close confinement of the plug eliminates the possibility of the plug becoming disengaged from the wrench and re-oriented in such a manner as to prevent the faucet from being easily shut off.

To close the faucet, hence stopping the flow, the wrench carrying the plug is moved longitudinally inwardly and then rotated so as to thread the plug into the flange 2. It can readily be seen that the plug and its gasket completely seal the opening and consequently each time the faucet attachment is used on another drum, there is a new gasket which insures against any leakage when the faucet is in its "off" position.

As shown in FIGS. 1–3, the wrench handle 35 has a sufficient radius of curvature so that the housing and the wrench can be assembled by simply slipping the housing over the handle. However, other arrangements could be employed without departing from the scope of the invention.

In FIGS. 6 and 7, there is illustrated a modified form of the invention wherein parts common to those previously discussed carry the same reference characters. In this form of the invention the faucet may be made of plastic or of metal as desired but, instead of having the resilient engaging means as an integral portion of the faucet housing, it is formed as a separate collar 50, of a suitable gasketing material of which rubber is a non-limiting example. The collar 50 is secured within an annular slot 51 extending into the housing 11 from the inner end thereof. In this instance, the housing 11 has an external thread 52 formed thereon for engagement with an internally threaded coupling nut 53. Inside the coupling nut 53 is a cylindrical surface 54 upon which a spring steel split ring 55 seats when in normal position. Referring now to FIG. 7, it will be seen that the end face 57 of the inner wall of the channel 51 abuts the curled portion 3 of the closure flange 2. The outer wall 58 of that channel extends to a position slightly beyond the face 57 and has an end face 59 inclined outwardly. The coupling nut 53 has a radially inwardly projecting wall 60 at its inner end which wall also has an inclined inner surface 61 so that when the coupling nut is tightened onto the faucet housing 11, the inclined surfaces 59 and 61 form an inverted V, as shown in FIG. 7, which embraces the split ring 55 closing it radially inwardly against the gasket 50 to displace and compress the same around the drum stock 1 of the drum closure structure. In order to facilitate the turning of the coupling nut 53 on the housing 11, that nut is provided with a number of radially outwardly projecting lugs 62 which may be struck with a hammer or some other tool to complete the tightening or start the loosening of the nut.

From the foregoing, it is readily apparent that the invention provides a simple, economical solution to a number of problems inherent in conventional faucets such as are employed in dispensing the contents of drums and the like.

It is to be understood that changes may be made in the construction described and shown and various embodiments of the invention can be made without departing from the scope thereof. It is accordingly intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not a limiting sense.

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

1. In a faucet attachment for metal drums, a cylindrical housing formed of yieldable resilient material having a straight cylindrical interior surface, an end wall and an open end, a pouring spout extending laterally from said housing, said end wall having a centrally located circular opening therethrough, an elongated rod-like

wrench member extending through said end wall opening and terminating in a closure plug engaging means within said housing, said open end terminating in an integrally formed resilient engaging means for securing said faucet attachment to a container closure structure and an abrupt annular shoulder forming the juncture of said cylindrical interior surface and said enlarged engaging means.

2. A faucet attachment for application to container closure structure comprising a cylindrical housing having a straight cylindrical interior surface, an end wall and an open end, a pouring spout extending laterally from said housing intermediate said ends, said end wall having a centrally located circular opening therethrough, an elongated rod-like wrench member extending through said end wall opening and terminating in a closure plug engaging means within said housing, said engaging means including a longitudinally movable, quick acting, torque imparting surface and a circular collar surrounding said wrench member having an outside diameter corresponding to the diameter of said interior cylindrical surface, said open end of said housing terminating in resilient engaging means for encircling a closure neck formation.

3. A faucet attachment, as in claim 2, said housing being formed of a yieldable resilient material and said neck engaging means being formed as an integral part thereof.

4. A faucet attachment, as in claim 2, said resilient neck engaging means comprising an annular band extending from said open end of said housing.

5. A faucet attachment, as in claim 4, said housing having an exteriorly threaded portion adjacent said open end, and a coupling nut threaded over said portion, said coupling nut having means for urging said resilient engaging means radially inwardly about said closure neck formation.

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