Sept. 6, 1955 H. D. RIVES 2,717,102

FLUID HANDLING DISPENSER

Filed Dec. 11, 1950

Fig. 1.

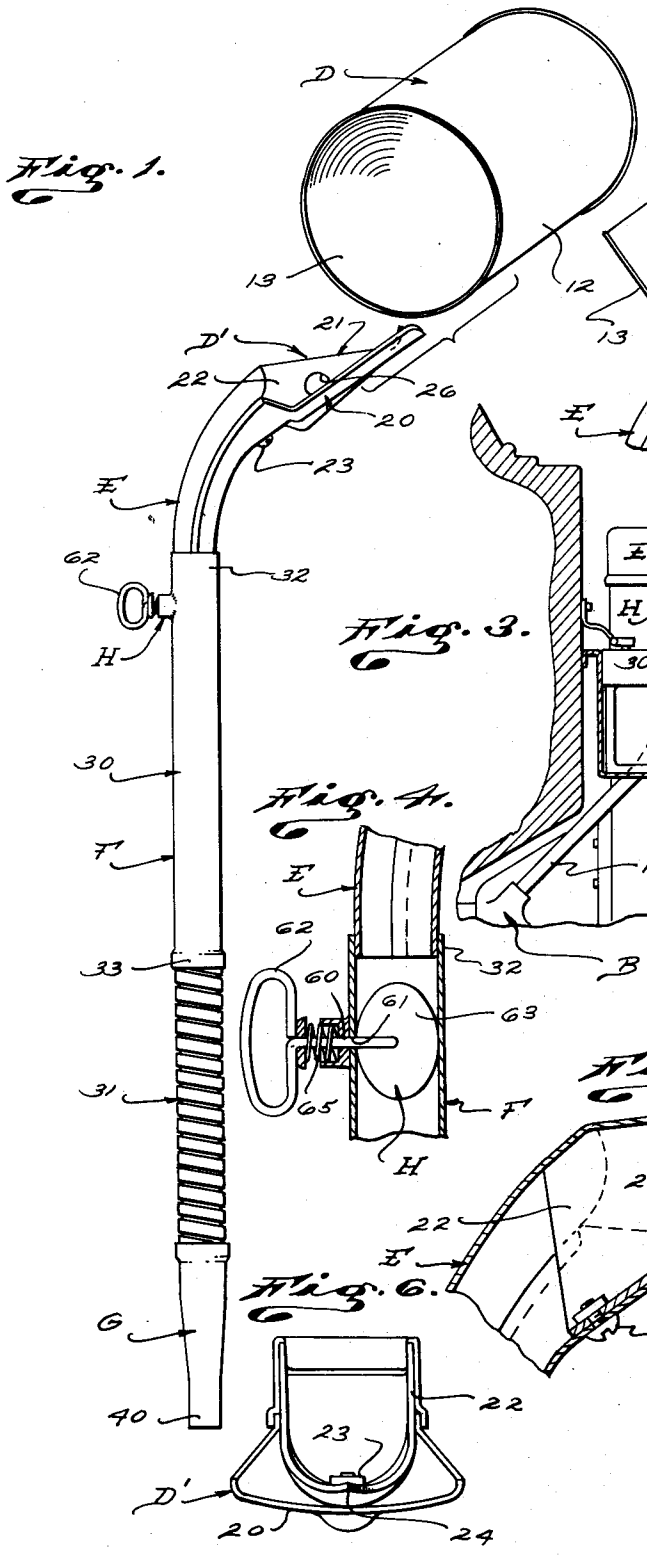


Fig. 2.

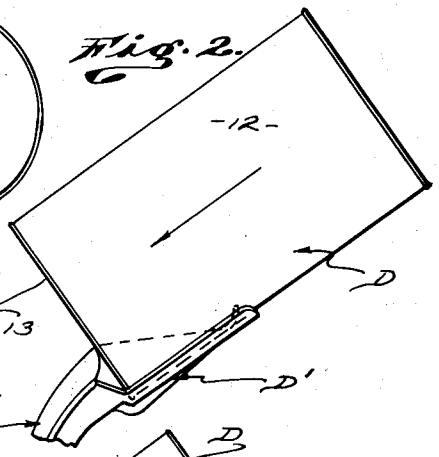


Fig. 3.

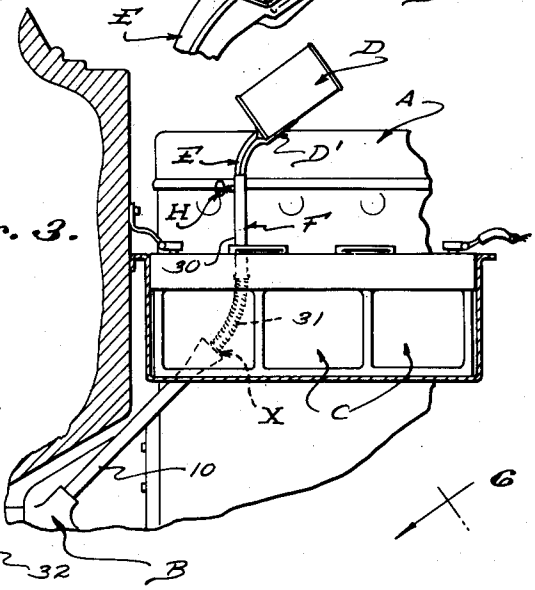


Fig. 4.

Fig. 5.

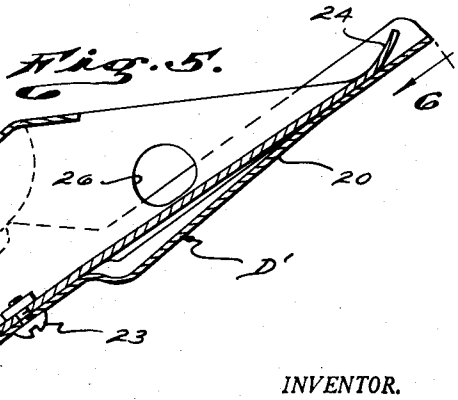


Fig. 6.

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FLUID HANDLING DISPENSER

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1 Claim. (Cl. 222—89)

This invention has to do with a fluid handling dispenser and it is a general object of the invention to provide a device for conveniently and for effectively handling liquid, such as oil, carried in cans and for transferring such liquid from the cans to machinery or parts of motor vehicles as circumstances may require.

Various liquids, and particularly oils, are required in various machines. For example, in the case of motor vehicles, oils are required in transmissions, engines and in other parts, and in some cases the parts requiring oil are so located that the application of oil thereto is exceedingly difficult and this is particularly true when the oil is to be dispensed from cans.

It is a general object of this invention to provide a dispenser or fluid handling device serving to receive the liquid such as oil from a can and which is such as to conveniently and effectively deliver the liquid from the can at a point remote from the can and where delivery is ordinarily difficult.

Another object of this invention is to provide a device of the general character referred to which is simple and inexpensive of manufacture, free of bulky or cumbersome parts, and which is simple, convenient and practical to handle, particularly around or in connection with motor vehicles.

The device of the present invention involves a head having a can guide and a cutter, the guide being an elongate trough-shaped part into which a liquid carrying can may be slid, and the cutter being a sheet metal element with a U-shaped base joined to the guide at one end thereof and with a pointed can-piercing end at the other end of the guide, the cutter being tapered between its ends and having drain holes so that when a can is slid onto the guide it is pierced and liquid drains therefrom. A neck adjoins and continues from the guide and is preferably curved so that the delivery end of the neck is disposed at an angle of about 45 degrees to the receiving end of the neck from which the head projects. A duct is joined to and continues from the neck and preferably includes a straight rigid section that connects directly and permanently to the discharge end of the neck and the flexible section having one end joined to the rigid section. The flexible section is preferably formed of a spirally wound metal strip with edges joined in the manner common to flexible metal ducts. A nozzle is joined to and projects from the other end of the flexible section and is preferably a converging rigid tubular part. The control valve is included in the structure and is preferably located at or close to the point where the rigid section of the duct joins the neck. The valve is preferably a butterfly type valve having a rotatable stem with a handle on its outer end and at the exterior of the device, and having a flat valve element on the stem and in the duct. A spring is engaged with the stem and normally yieldingly resists movement or rotation thereof.

The various objects and features of my invention will be fully understood from the following detailed description of a typical preferred form and application of the invention, throughout which description reference is made to the accompanying drawings, in which:

Fig. 1 is a view illustrating the device of the present invention showing it in side elevation and showing a can carrying liquid about to be engaged with the head of the device. Fig. 2 is a view showing the head of the device and a portion of the neck thereof with the can applied so that liquid will drain therefrom into the neck. Fig. 3 is a view of a portion of a typical machine, for example, a portion of a motor vehicle, illustrating the manner in which the device of the present invention, with a can applied thereto, may be arranged to deliver the liquid from the can to the liquid receiver of the machine. Fig. 4 is an enlarged detailed sectional view of a portion of the device taken at the valve provided for controlling flow through the device. Fig. 5 is an enlarged longitudinal detailed sectional view through the head portion of the device, being an enlargement of the portion of the device shown in Fig. 2 of the drawings, and Fig. 6 is a view taken as indicated by line **6—6** on Fig. 5.

The device provided by the present invention can be used in many situations where liquid is to be dispensed from a can to a point that is not conveniently accessible. A typical situation may occur in a motor vehicle where there is an engine A and a transmission or other unit B requiring oil, and having an oil receiver **10** projecting to a point X near the engine but difficult to reach because of the presence of other parts such as batteries C. The device of the present invention is further such that it can be used to receive liquid such as oil from containers of various kinds, and it is particularly practical for receiving liquid from an ordinary can D such as is illustrated in the drawings. The can as illustrated has a cylindrical body **12** and flat ends **13** closing the body.

The device as provided by the present invention involves, generally, a can receiving head D', a neck E joined to and continuing from the head, a duct F joined to and continuing from the neck, a nozzle G joined to and projecting from the duct, and a control valve H preferably located at or close to the point where the duct F joins the neck E.

The head D', as provided by the invention, includes a can guide **20** which is an elongate trough-shaped part along which the can D can be slid and it includes a cutter **21** which is elongate in form and which has a U-shaped base end portion **22** joined to the guide at one end thereof by fastener **23** and provided at its other end with a can-piercing tip **24**, and it has side apertures **26** which allow oil or liquid to drain from the can into the base portion of the cutter when the can is engaged on the head in the manner shown in Figs. 2 and 3 of the drawings. In the particular case illustrated, the fastener **23** is shown as a bolt or screw fastener, and it is to be understood that the guide **20** and the cutter that cooperates therewith may in practice be formed or constructed to include or incorporate various features or refinements such as are found in devices of this general character.

The neck E is joined to and is preferably rigid with the head, having one portion at least in the form of a rigid or integral continuation of the guide portion of the head. The neck E is preferably tubular and in the preferred form of the invention it is arcuate in form and is such as to extend through an arc of about 45 degrees as it continues from the head to the point where it joins the duct F. With such arcuate formation of the neck the device can be arranged with the neck discharging straight downwardly as shown in Fig. 3, while the head of the cutter supports a can D at an angle causing liquid to effectively drain therefrom.

The duct F, as provided by the present invention, is characterized by a rigid tubular section **30** and a flexible section **31**. In the preferred form of the invention, the

rigid tubular section **30** of the duct is straight and has an end portion **32** rigidly joined to and receiving fluid from the neck E. The flexible section **31** of the duct has one end joined to the other end portion **33** of the section **30** and it continues or projects a substantial distance therefrom. The end of the section that connects to the rigid section **30** is preferably rigidly joined thereto while the other end of the flexible section **31** has the nozzle G rigidly attached thereto. The nozzle G is preferably a rigid elongate part, tubular in form and designed to deliver liquid into a rather small opening or receiver. In the case illustrated the nozzle converges from the outer or terminal end of the flexible section **31** and has a delivery end portion **40** considerably smaller in diameter than the various parts of the duct F. In practice the flexible section **31** of the duct F may be of any suitable construction or formation serving to enable the nozzle to be arranged at various angles relative to the rigid section **30**. In the case illustrated, the flexible section **31** is formed of metal, being a spirally wrapped metal band with its edges joined in the manner common to flexible metal ducts.

The valve H provided by the present invention is preferably located in the device at or near the point where the neck E joins the duct F. In the case illustrated, the valve is located at the end portion of the rigid duct section **30** close to the point where this portion of the duct joins the neck. The valve is shown as including a stem **60** rotatably carried in a laterally disposed opening **61** provided in the duct section **30**. A handle **62** is provided on the outer end of the stem and a flat disc or butterfly type of valve element **63** is carried by the stem in the duct so that it can be operated into and out of position where it closes the duct. A helical spring **65** is carried on the stem at the exterior of the duct and operates to normally yieldingly resist movement or rotation of the stem so that the valve will remain in the desired position upon being moved thereto.

To use the device of the present invention, the valve H may be closed by simple rotation of the handle **62** and the head of the device can be applied to a can while the can is conveniently supported or held in any desired position. With the device applied to the can, the unit formed by these parts can be manipulated until the nozzle G is suitably engaged with or introduced into a liquid receiver

10, or the like. With the structure thus positioned, the valve H can be opened allowing the contents of the can to drain through the neck and duct to be delivered by the nozzle into the receiver **10**. In some instances, the structure may be operated in manners other than that just described, for example, if desired, the device can be initially positioned with the nozzle engaged with or in a receiver following which the can may be applied to the head D in which case it is immaterial whether the valve H is operated or closed prior to application of the nozzle to the receiver.

Having described only a typical preferred form and application of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any variations or modifications that may appear to those skilled in the art and fall within the scope of the following claim.

Having described my invention, I claim:

In a fluid handling dispenser for use with a can having a cylindrical side wall and an end held by a bead; a head having a can guide of an elongate trough shape and an elongate can piercing cutter, said can guide and said cutter being located adjacent each other so that the cylindrical side wall of a can may be gripped between them when the end wall of said can is punctured by said cutter, a rigid arcuate tubular neck extending from said cutter, said neck being joined to one end of a straight and rigid duct having a length substantially greater than the combined length of said head and said neck, a manually operable shut-off valve provided in said duct adjacent the juncture of said duct and said neck, a section of flexible tubing joined at one end to the other end of said duct, and an elongated nozzle joined to the other end of said flexible tubing whereby said nozzle may be disposed in various positions out of alignment with said duct.

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