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LIQUID DISPENSING DEVICE

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Fig. 1.

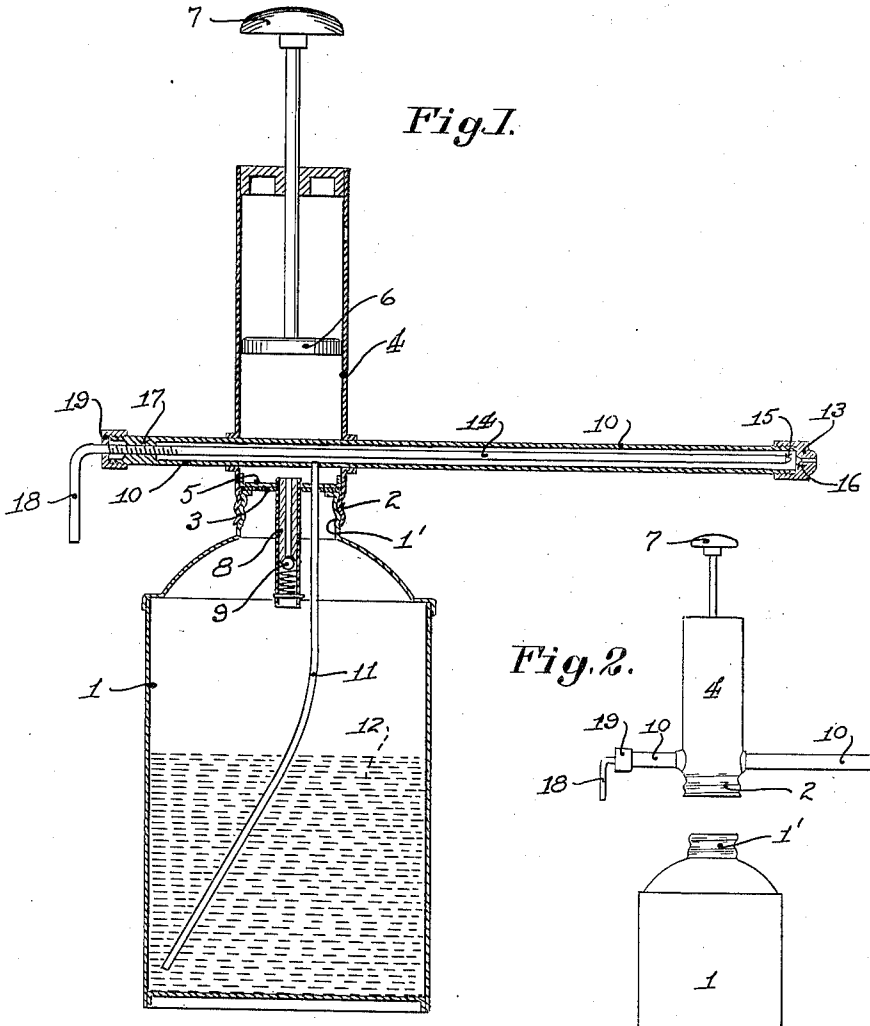



Fig. 2.




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## LIQUID-DISPENSING DEVICE.

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The present invention relates to devices for dispensing fluids, and especially liquids, from the standard packages in which such fluids are customarily sold.

The object of the invention is to provide a simple and inexpensive device which can be readily attached to a standard package, such for example as a screw-top can, in which certain liquids, particularly some kinds of lubricating oil, are sold, and by means of which the liquid can be dispensed in easily controlled quantities, and directed accurately, either as a spray or as a fine stream, to the desired point. The use of the device eliminates the trouble, delay, and possible waste of liquid incident to the usual process of transferring it from its original container to a dispensing device such as an oil squirt can.

It is to be understood that the form, proportion, and arrangement of the several parts of the device may be varied, within the scope of the claims hereto appended, without departing from the spirit of the invention as set forth in said claims.

With this in view, a preferred embodiment of the invention will now be fully described with reference to the accompanying drawings, wherein:—

Fig. 1 is a vertical section of the complete device.

Fig. 2 is an elevation, reduced in size, showing the dispensing head separated from the container.

In the drawings, the reference numeral 1 designates a standard liquid containing can of the well known type having a threaded opening 1′ in its top adapted for a screw-cap, not shown. 2 is a threaded coupling member formed to screw upon the can in place of the usual cap. A gasket 3 is provided to make a tight joint. 4 is a pump cylinder secured to and extending upwardly from the coupling member. The coupling member 2 may conveniently be formed integrally with the cylinder 4, as shown, the lower closed head 5 of said cylinder forming, with the gasket 3, an air-tight closure for the can 1.

The cylinder 4 has a piston 6, of any desired form, operated by a knob or handle 7. An outlet connection 8 extends into the can 1 through the lower head 5 of said cylinder, and is provided with a check valve 9. Therefore, by operating the piston 6, air may be forced into the can 1, raising the pressure therein to any desired amount.

A delivery tube 10 extends horizontally through the lower end of the cylinder 4, but has no fluid connection therewith, such mounting of said delivery tube being merely for convenience and support. A liquid supply tube 11, connected with the delivery tube 10, extends downwardly therefrom, through the head 5, into the liquid 12 contained within the can 1. The delivery tube 10 is provided at one end with a nozzle 13 having a small aperture therethrough. A valve rod 14 extends through said tube, its end 15 being tapered to form a needle valve adapted to cooperate with a seat 16 formed in the nozzle 13. Said valve rod is screwed into the tube 10 at 17, and is provided with a handle portion 18 by means of which it may be turned to open or close the valve 15—16. A suitable packing nut 19 is preferably provided to prevent the escape of liquid around the handle end of the valve rod 14.

In the operation of the device, the usual screw cap, not shown, is first removed from the can 1, and the dispensing head above described is screwed on in place of said cap. The valve 15—16 is closed, and the pump is operated a few strokes, by means of its knob 7, to put air pressure in the can. Such pressure is trapped in the can by the check valve 9 and the tight joint formed by the coupling member 2, and the gasket 3. The valve 15—16 is then opened, by turning its handle 18, and the air pressure within the can forces the liquid up through the tube 11 and out through the tube 10 and the nozzle 13 in the form of a fine stream or spray, which can be instantly controlled by the operation of said valve.

When the can 1 is empty, all that is necessary is to transfer the dispensing head to a fresh can.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. In combination with a fluid containing receptacle having a dispensing opening surrounded by a threaded flange, a dispensing head comprising a coupling member having a threaded flange for detachable connection with said threaded receptacle flange, an air

pump cylinder mounted upon said coupling member, said cylinder having a discharge outlet leading into the upper portion of the receptacle, a piston within said cylinder, a delivery tube extending horizontally from the coupling member, a fluid conduit connected with said tube and extending into the lower portion of the receptacle, a nozzle carried by the delivery end of said tube, and a valve within said tube and arranged at right angles to the pump cylinder for controlling the discharge of fluid through said nozzle.

2. In a dispensing device for a container, the combination of a cylinder having at the lower end screw threads for attachment to a container, a transverse partition above the screw threaded portion, having an outlet tube provided with a check valve, a delivery tube extending transversely through the cylinder and provided with a valve, a downwardly extending supply tube connected with the delivery tube, and a piston in the upper part of said cylinder having an operating stem extending through the top of said cylinder.

3. In a dispensing device for a container, the combination of a cylinder having at one end screw threads for attachment to a container, a transverse partition separating the end of the cylinder from the screw threaded portion, and having an outlet tube provided with a check valve, a delivery tube extending laterally from the screw threaded portion and provided with a valve, a downwardly extending supply tube connected with the delivery tube, and a piston operating in the upper portion of said cylinder and provided with a stem extending through the free end of the cylinder whereby on the operation of the piston the air displaced from the cylinder operates said check valve and discharges therefrom through said outlet tube.

In testimony whereof I have signed my name to this specification.

CHARLES C. CURTIS.