

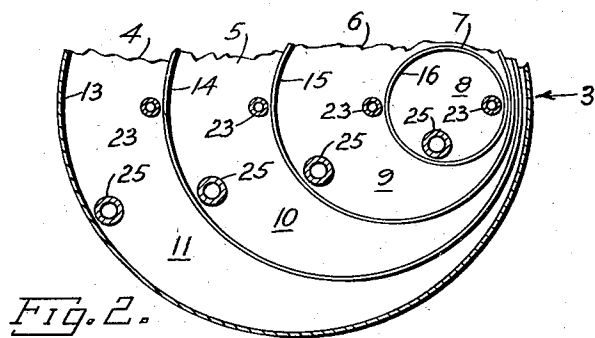
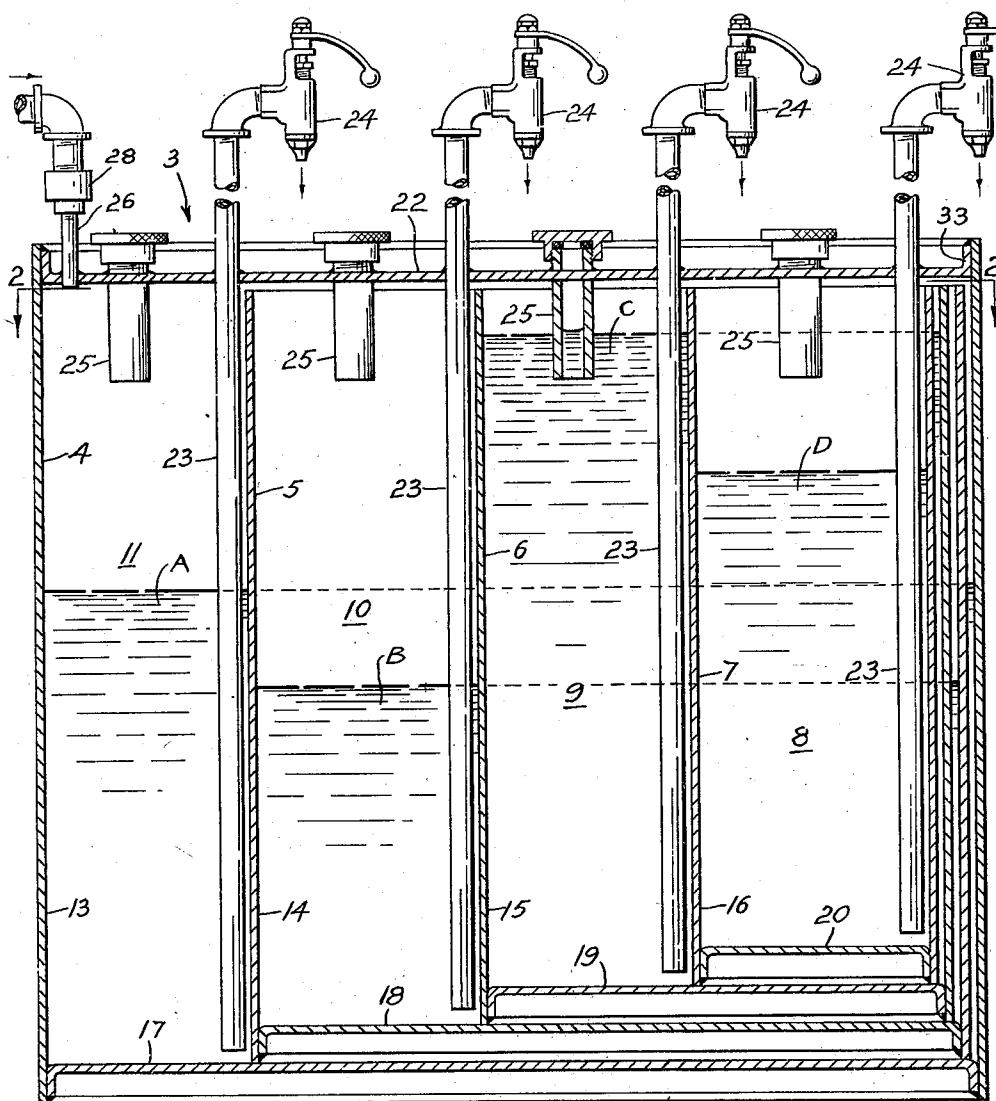
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LIQUID DISPENSER

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UNITED STATES PATENT OFFICE

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LIQUID DISPENSER

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The invention relates to dispensers operated by air pressure wherein different lubricating oils or other liquids are arranged to be delivered from different ones of a battery
5 of receptacles therefor by and upon the opening of an elevated discharge valve for the selected receptacle.

An object of the invention is to provide a dispenser of the class described in which a
10 plurality of receptacles is assembled in such a manner as to provide a truly unitary and particularly compact structure.

Another object of the invention is to provide a dispenser of the character described
15 in which the receptacle elements thereof are of a standard structure and are arranged to be preformed as separate members of the unit.

A further object of the invention is to
20 provide a dispenser of the character described having no pipe or other connections through the bottom thereof whereby it is disposable anywhere on a supporting surface without special provision therefor.

Yet another object of the invention is to provide a unit of the class described in which the operating compressed air therefor is
25 applied in a particularly simple manner.

A still further object of the invention is to
30 provide a dispenser of the character described in which the various delivery pipes are disposed in a convenient aligned relation and at the same time function to secure the receptacle elements in substantially fixed
35 relation.

Still another object of the invention is to provide a dispenser of the character described in which the various compartments provided are of differing capacities.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of a preferred form of the invention which is illustrated in the
45 accompanying drawings, in which:

Figure 1 is a central vertical section through a unit embodying the invention.

Figure 2 is a reduced and somewhat diagrammatic plan view taken at the plane
50 of the line 2—2 in Figure 1.

As herewith particularly disclosed, the present invention is embodied in a unit 3 which is built up of a nested assembly of receptacle elements 4, 5, 6 and 7, the exact
55 number of said receptacles comprising the unit being generally immaterial. These receptacles, it is noted, are progressively smaller and the inner receptacles 5, 6 and 7 are arranged to be entirely within the space defined within the outer receptacle 4. The
60 compartment 8 provided by the innermost receptacle 7 is of course determined entirely by the shape of its cavity, while the capacity of the compartment 9 provided by next receptacle 6 is that of the latter receptacle
65 less the outside volume of the receptacle 7. Similarly, compartments 10 and 11 are defined in the receptacles 5 and 4. Obviously, the capacities of the various compartments 9, 10 and 11 are determined solely
70 by the relative sizes of the receptacles which cooperate to define them, it being clear that the actual sizes of the various receptacles may be varied for predetermining the compartment capacities.

In the present embodiment of the invention, the various receptacles of which the unit is formed are of similar section in plan, being cylindrical with their axes vertical. As shown, the inside diameters of the receptacles, beginning with the outermost receptacle 4, are approximately in the continued ratio of 4 to 3 to 2 to 1 whereby the capacities of the compartments 11, 10, 9 and 8 are roughly in the ratio of 7 to 5 to 3 to 1,
85 the thickness of the receptacle walls and bottoms being ignored. These ratios are, of course, variable in terms of the receptacle sizes, and may be predetermined in accordance with the demand for the different
90 liquids A, B, C and D to be dispensed.

The various receptacles 4, 5, 6 and 7, will now be noted, are respectively constructed as individual barrel-like members having tubular side walls 13, 14, 15 and 16 and bottoms
95 17, 18, 19 and 20, each of said bottoms being in the form of a circular disc providing an edge flange portion for securing the disc to the wall member, as by welding. In this manner, the receptacles are arranged
100

to be cheaply and quickly made and are of a form in which they are particularly strong against distortion or other damage. It is noted that the receptacle walls serve, in effect, to vertically partition the space of the outer receptacle and such walls do not, of course, intersect.

The outer receptacle 4 is provided with a head in the form of a plate 22, which plate is provided with an upturned edge flange 33 for a fitted and sealed engagement with the wall 13 adjacent the top edge thereof, said head being secured in position, as by welding, after the various receptacles have been disposed in their desired nested relation.

Delivery pipes 23 are provided, said pipes extending upwardly through the head 22 from points adjacent the bottoms of the various compartments of the unit and being provided at their upper and outer ends with suitable delivery valves 24. Capped filler pipes 25 are also provided in the head 22, said pipes preferably extending downwardly in the various compartments to points below the top edges of the inner receptacles, which edges preferably define a plane adjacent, but slightly spaced from, the head 22. The various delivery and filler pipes, it is noted, are fixed in the head in sealed relation thereto, as by welding.

It will now be noted that the common space defined above the surfaces of the liquids in the various compartments is arranged to contain air under pressure, whereby, when any one of the valves 24 is opened, liquid from its associated compartment will be automatically and immediately discharged therefrom.

Means are accordingly provided for supplying compressed air to said space and for automatically maintaining the required pressure therein. As shown, the necessary connection with a source of compressed air is provided through a pipe 26 extending through a wall of the receptacle and discharging above the plane of the upper receptacle edges. Preferably, and as shown, the pipe 26 is mounted on and extends through the head 22, it now being noted that all of the necessary pipes for the structure are carried by said head and may be mounted thereon before the same is fixed in its operative position in the unit. In this manner, the air will not be discharged through the liquid even though the compartment underlying the mouth of the air pipe is full, the filling limit being, of course, the aforesaid plane of the top edges of the under receptacles. If the pipe 26 is to be connected with a high-pressure compressor, an automatically operating pressure reducer and service valve mechanism would be interposed in said pipe, such being indicated at 28.

With plurality of delivery pipes 23 pro-

vided in connection with a battery of receptacles, as in the present instance, it will usually be desirable that at least the protruding portions of such pipes be spaced apart and preferably be aligned in a common vertical plane as shown. Furthermore, the disposal of the receptacles in position to provide the various compartments in proper registration with the filler pipes 25 must be maintained, and such is accomplished by so disposing the delivery and filler pipes that they cooperate to secure the receptacles in their required positions. Thus, as shown, the wall 16 of the receptacle 7 passes between the filled pipe 25 for the compartment 8 and the delivery pipe 23 for the adjacent and encircling compartment 9, and the walls of the other receptacles are similarly disposed with respect to cooperating delivery and filler pipes. In this manner, the various inner receptacles, though loose in the outer receptacle 4, are held in proper operative relation to the filler pipes.

Preferably, and as shown, the relation of the pipes is such as to permit some relative movement of the receptacles whereby the necessity for an exact fitting of the pipes to the nested receptacles is avoided. As shown, the various receptacles are arranged with their axes in the same plane with the pipes whereby the various compartments are of crescent section when viewed in plan, such relation being particularly brought out in Figure 2.

The present dispenser, it will now be noted, has been particularly designed for the dispensing of the different lubricating oils at service stations for motor vehicles, but its use is not intended to be so limited.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while we have described the principle of operation, together with the device which we now consider to be the best embodiment thereof, we desire to have it understood that the device shown is merely illustrative, and that such changes may be made, when desired, as fall within the scope of the appended claims.

Having thus described our invention, we claim as new and desire to secure by Letters Patent of the United States the following:

1. In a container for liquids, a battery of preformed and mutually unattached receptacles assembled in nested relation to define more than two liquid receiving compartments within the outermost receptacle, said latter receptacle being sealed and the remaining receptacles having open tops, straight delivery pipes extending upwardly from all the compartment spaces and

through the top wall of the outermost receptacle for support thereby and being aligned in a common plane, and filler pipes extending downwardly into the different compartment spaces through said top wall of the outermost receptacle for support thereby, said pipes cooperating with the inner receptacles for effecting a relatively fixed positioning thereof with respect to each other and to the outer receptacle whereby the different compartments constantly register with the same said pipes.

2. In a container for a plurality of liquids, a battery of at least three mutually unattached cylindrical receptacles assembled in nested relation to define a plurality of mutually encircling compartments for the liquids within the outermost receptacle, a straight delivery pipe extending upwardly from the bottom of each compartment, said pipes being substantially equally spaced and lying in a common vertical plane, a discharge valve for each of said pipes, and means utilizing compressed air for effecting a flow of liquid from an open valve.

3. In a container from which to dispense a plurality of liquids, a battery of mutually unattached receptacles nested in mutually supporting relation to define a plurality of mutually encircling compartments for the liquids within the outermost receptacle, said latter receptacle being provided with a sealing top therefor and the remaining receptacles having open tops whereby the various said compartments are in communication, a set of discharge pipes for the compartments carried by said receptacle top extending downwardly into the compartments and upwardly from said top and provided with dispensing valves at their upper ends, and a set of capped filler pipes carried by and extending through said top for discharge at the different said compartments, the pipes of each said set being mutually coplanar and the said pipes being mutually cooperative with said receptacles to retain the same in relatively fixed relation in the battery.

In testimony whereof, we affix our signatures.

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