F. M. FURBER.

LIQUID DISPENSER.

APPLICATION FILED NOV. 28, 1916.

1,322,558. Patented Nov. 25, 1919.

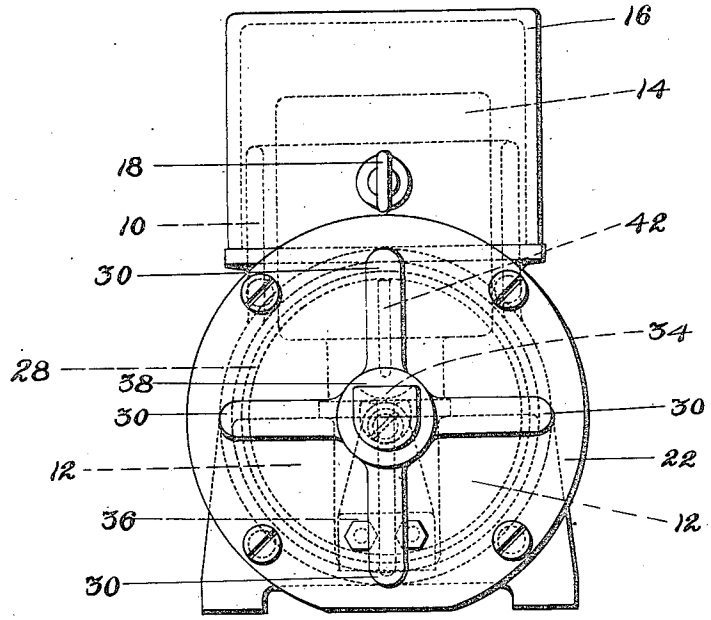


Fig. 1.

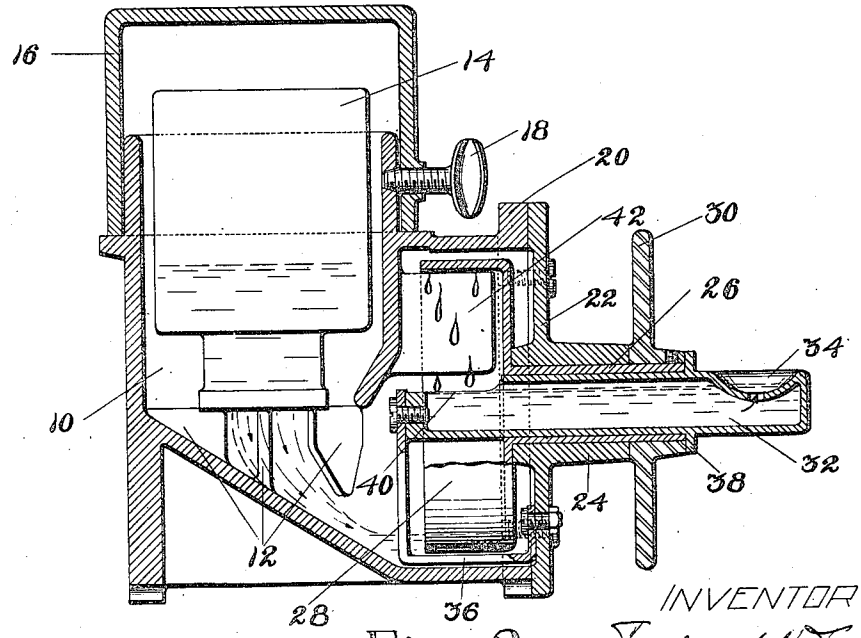


Fig. 2.

INVENTOR

Frederick M. Furber

By his Attorney

Nelson M. Howard

UNITED STATES PATENT OFFICE.

FREDERICK M. FURBER, OF REVERE, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY CORPORATION, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

LIQUID-DISPENSER.

1,322,558. Specification of Letters Patent. Patented Nov. 25, 1919.

Application filed November 28, 1916. Serial No. 133,875.

To all whom it may concern:

Be it known that I, FREDERICK M. FURBER, a citizen of the United States, residing at Revere, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Liquid-Dispensers, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to a liquid dispenser and particularly to a device for economically and neatly dispensing semi-viscous liquids such as enamel, cement and the like.

Certain semi-viscous liquids deteriorate or harden upon exposure to the atmosphere and it frequently happens in the case of such liquids that only a small quantity of the same is required at a time. Furthermore, it may be that such liquids require stirring in order to overcome a tendency to separate while standing within the receptacle. It is, accordingly, the object of this invention to provide a liquid dispensing receptacle, adapted for use with semi-viscous liquid, wherein only a small quantity is exposed to the air and wherein, when this quantity has been used, it may readily be replaced by more.

A feature of the invention consists in a delivery trough mounted above the normal level of the liquid within the receptacle and arranged to deliver liquid exteriorly of the receptacle together with a combined stirrer and conveyer which is preferably rotatable and is adapted to dip into the liquid to stir the same and raise it above its normal level for delivery to the trough.

Important features of the invention are found in the mounting of the delivery trough above the normal level of the liquid in the receptacle and in its construction which is such as to provide for overflow of excess liquid into the receptacle whereby overflow of liquid at the delivery end of the trough is precluded.

Another feature of the invention consists in a finger cup which may be filled with a small quantity of the liquid to be dispensed and which is arranged so that an excess supply of liquid delivered to the cup will be returned to the receptacle. In a practical form of the invention, the means for supplying the cup with liquid from the receptacle is constructed and arranged to maintain the liquid at a constant level in the cup below the brim thereof.

Other features of the invention will be apparent from a consideration of the following specification together with the appended claims wherein the scope of the invention is defined.

In the accompanying drawings,—

Figure 1 is a front elevation of the device; and

Fig. 2 is a view in vertical transverse section.

A receptacle 10 is provided with ribs 12 arranged to support the neck of an inverted bottle 14 containing the liquid to be dispensed and has a substantially air-tight cover 16 which may be retained in place by means of a thumb-screw 18. The lower part of the receptacle is so designed that its capacity to the top of the ribs 12 is substantially the same as the capacity of the inverted bottle 14. It is found in practice that where semi-viscous liquids of the nature indicated are used directly from the bottle, there is a considerable loss due to hardening on the bottle or inability to drain the contents completely within a reasonable period. By means of this construction, however, it is possible to invert the bottle and leave it in this position the whole time that the contents are being used so that sufficient time is allowed to drain the contents completely. Because of the substantially air-tight construction of the receptacle, there is practically no deterioration or loss from exposure to the air.

An extension 20, at one side of the receptacle, is provided with a removable wall 22 at the center of which is arranged a hollow boss 24 adapted to act as a bearing for the hub 26 of a rotatable ring or hollow drum 28. A star wheel 30 may be attached to the outer end of the hub 26 to enable the ring 28 to be rotated readily. This ring will preferably be so located that its center and in fact a major portion of its periphery is above the normal level of the liquid in the receptacle, which level will never be above the top of the ribs 12. On the other hand,

the dimensions of the ring will be such that the lower portion of its internal periphery will dip even into a relatively small quantity in the receptacle. A delivery trough 32, constituting an outlet for the receptacle, is arranged to extend beyond the wall of the receptacle at a point above the normal level of the liquid. This trough is provided at its outer end with a finger cup 34 communicating with the trough and adapted to receive a small amount of liquid for removal by the user. In the particular arrangement illustrated, this trough is arranged concentrically with the rotatable ring and within the hollow hub 26. It is secured against rotation by means of a bracket 36 fastened at one end to the inner end of the trough and at its other end to the removable wall 22 of the receptacle. By means of this arrangement, all moving parts of the device with the trough may be removed from the receptacle by detaching the wall 22. A flange 38 is provided upon the outer end of the trough to cover the end of the hub 26 and the hub of the star wheel 30 thereby avoiding the possibility that some of the liquid might work into the bearing of the rotatable hub 26. The trough is preferably covered within the hub 26 to prevent contact of the liquid therewith and its inner end is cut away at 40 to a point below the level of the walls of the trough outside of the receptacle so that it will overflow into the receptacle in case an excess supply is delivered thereto and tend to maintain the liquid in the finger cup 34 at the desired level. Above the inner end of the trough and co-acting with the inner periphery of the ring or hollow drum 28 is a scraper 42 which is formed integrally with the receptacle 10 and is adapted to remove the liquid picked up by the ring and transfer it to the trough. Obviously, the exact vertical relation of the scraper and trough illustrated, is not essential.

When it is desired to use the device, supposing that a bottle of enamel or similar liquid has been inverted within the receptacle, the ring 28 will be rotated by means of the star wheel 30, thereby raising the liquid above its normal level to deliver it, with the assistance of the scraper 42, to the outlet of the receptacle, here the trough 32. When the trough 32 has become filled, the liquid will enter the finger cup 34 and it may be removed in small quantities for use. Any excess of liquid in the trough will overflow the cut away portion 40 into the receptacle, thus avoiding waste of the liquid by spilling outside of the receptacle. When the level of liquid in the trough has been lowered by use so that the liquid no longer enters the finger cup, it is only necessary to rotate the ring by the star wheel 30. This will transfer more liquid to the outlet trough and at the same time stir the contents of the receptacle to remix the constituent parts which may have been separated by standing for a considerable period.

Although I have herein shown and described the preferred embodiment of this invention, it is to be understood that various modifications thereof may be made without departing from its true scope and spirit as defined in the following claims.

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

1. In a device of the class described, a liquid receptacle, a finger cup mounted upon said receptacle and communicating with the interior thereof and constructed and arranged so that the level of the liquid in said cup cannot exceed a predetermined maximum, means comprising a combined stirring and transferring device arranged to dip into the liquid and deliver it to said cup, and means outside the receptacle for operating said device, whereby the contents may be thoroughly stirred without danger of overflowing said cup.

2. In a device of the class described, a liquid receptacle, a delivery trough mounted within said receptacle above the level of the liquid and having a portion outside the receptacle to present said liquid for access by the operator, and movable means dipping into the liquid for stirring the same and delivering it to the trough.

3. In a device of the class described, a liquid receptacle, a delivery trough mounted upon said receptacle above the level of the liquid in the receptacle, a rotatable ring concentric with respect to the trough and arranged to dip into said liquid to lift it above its normal level, and means for transferring the liquid from the ring to the trough.

4. In a device of the class described, a liquid receptacle, a trough mounted upon said receptacle and overhanging the receptacle at its inner end, a finger cup communicating with the outer end of said trough, and means for conveying liquid from said receptacle to the inner end of said trough, said trough being constructed and arranged so that it will overflow at its inner end before it overflows at the outer end.

5. In a device of the class described, a liquid receptacle, a finger cup mounted upon said receptacle and communicating with the interior thereof, means for elevating liquid from the receptacle to said cup, and means constructed and arranged so that the level of the liquid in said cup cannot exceed a predetermined maximum whereby overflow of the liquid is prevented.

6. In a device of the class described, a liquid receptacle, a delivery trough mounted upon said receptacle above the normal level of the liquid therein, a rotatable ring concentric with respect to the trough and ar-

ranged to dip into the liquid, a scraper located in operative relation to the ring and the trough to transfer the liquid from one to the other, and means outside the receptacle for rotating said ring.

7. In a device of the class described, a liquid receptacle provided with an outlet outside the receptacle and above the normal level of the liquid in the receptacle, said outlet being arranged to give access to the liquid by the operator, a combined stirring and transferring device arranged to dip into the liquid and lift the same above the normal level, manually operable means external of the receptacle for operating said device, and means inside the receptacle arranged to remove the liquid from said device and convey it to the outlet.

8. In a device of the class described, a liquid receptacle, a delivery trough mounted upon said receptacle above the normal level of the liquid therein, a rotatable hollow drum arranged substantially concentrically with said trough to dip into the liquid, means outside the receptacle for rotating said drum, and a scraper arranged to remove liquid from the internal periphery of the drum and located substantially directly above the inner end of said trough.

9. In a device for dispensing small quantities of semi-viscous liquids, a receptacle provided with an outlet, means for transferring liquid from the receptacle to the outlet, means in said receptacle for supporting an inverted container, and a cover for rendering the receptacle substantially airtight with the container in inverted position, said receptacle being constructed and arranged so that its capacity below the lowest point of said container is at least as great as the capacity of the container whereby the container may be left in inverted position and allowed to drain completely.

10. A device for dispensing small quantities of semi-viscous liquids comprising a receptacle, a delivery trough mounted on a wall of said receptacle above the normal level of the liquid therein, means for transferring the liquid from said receptacle to said trough within the receptacle, and a finger cup extending over the outer end of the trough and provided with an opening communicating therewith, said trough being constructed and arranged to regulate the level of the liquid in the cup.

11. A device for dispensing small quantities of semi-viscous liquids comprising a receptacle, a delivery trough mounted on a wall of said receptacle above the normal level of the liquid therein, and provided with a delivery portion outside the receptacle, and means for transferring the liquid from the receptacle to the trough within the receptacle, said trough being constructed and arranged to prevent overflow of the liquid at said delivery portion of the trough.

12. A device for dispensing small quantities of semi-viscous liquids comprising a receptacle, a delivery trough mounted on a wall of said receptacle above the normal level of the liquid therein, and provided with a delivery portion outside the receptacle, and means for transferring the liquid from the receptacle to the trough within the receptacle, said trough being constructed and arranged to provide for overflow into the receptacle so that overflow of liquid at said delivery portion of the trough is precluded.

13. In a device of the class described, a liquid receptacle, a finger cup, and means for supplying the cup with liquid from the receptacle and including an overflow device arranged to maintain the liquid at a constant level in the cup below the brim thereof.

14. In a device of the class described, a liquid receptacle, a finger cup, and means for supplying the cup with liquid from the receptacle constructed and arranged to maintain the liquid at a constant level in the cup below the brim thereof, and to return any excess supply of liquid to the receptacle.

15. In a device of the class described, a liquid receptacle, a finger cup, and means for supplying the cup with liquid from the receptacle constructed and arranged to return to the receptacle a portion of the liquid.

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

FREDERICK M. FURBER.