April 14, 1936. A. J. COOPER 2,037,500

MEANS FOR DELIVERING MEASURED QUANTITIES OF LIQUID

Filed Dec. 4, 1934

Fig. 1.

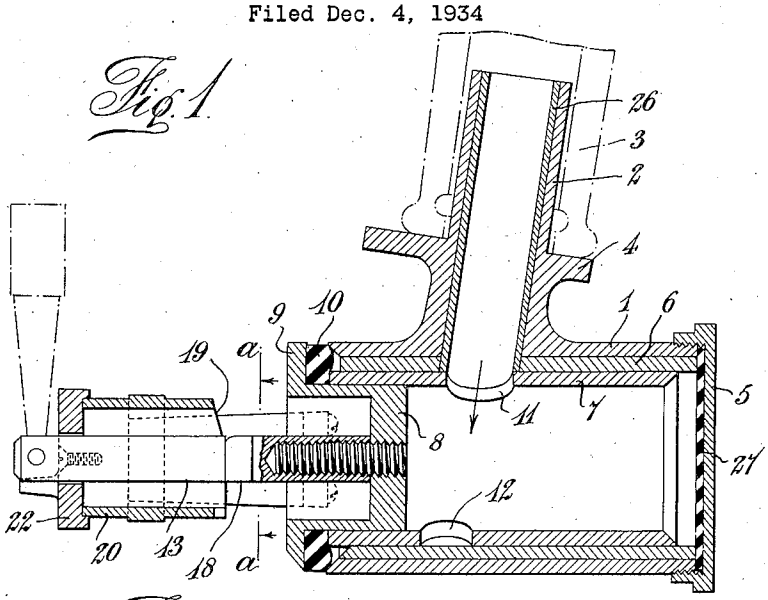


Fig. 2.

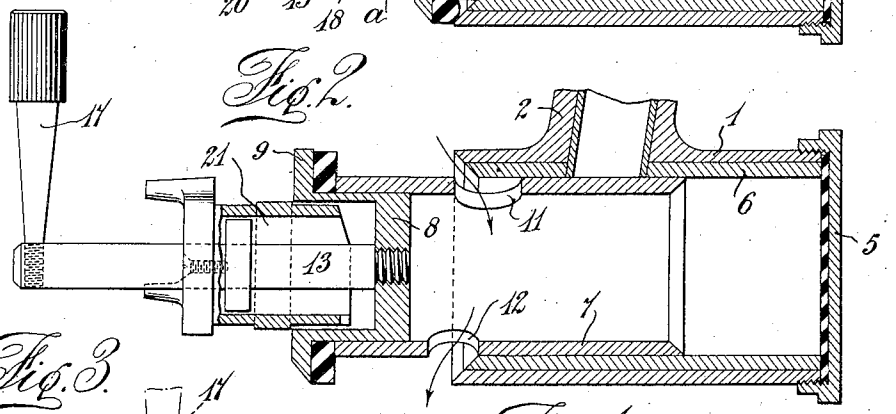


Fig. 3.

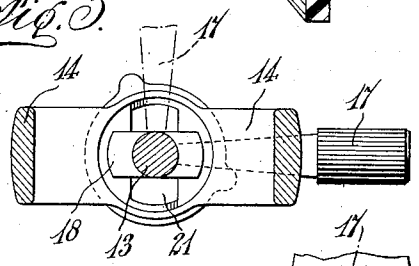


Fig. 4.

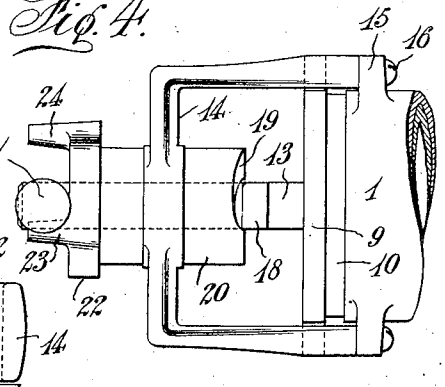
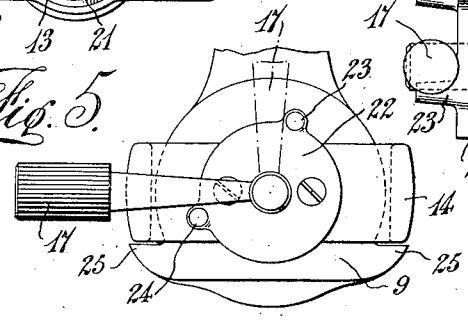


Fig. 5.



Inventor
Arthur J. Cooper
By
Attorney

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MEANS FOR DELIVERING MEASURED QUANTITIES OF LIQUID

Arthur John Cooper, London, England

Application December 4, 1934, Serial No. 755,957
In Great Britain December 30, 1933

7 Claims. (Cl. 221—104)

This invention relates to devices for delivering measured quantities of liquid.

The object of this invention is to provide a measuring and delivering device which will be quick in action and particularly suitable for use with liquids of a viscous character. Heretofore it has been difficult to measure and deliver syrups or crushes of a thick and lumpy nature in an efficient manner and the present invention is designed to overcome these objections.

A further object is to construct a delivery valve or like device which will be immune from the corrosive action of the liquid and which will agitate the said liquid in a container to which the device is fitted so as to permit of a more homogeneous mixture being delivered.

With these and other objects in view the invention consists in providing a device comprising a tubular or cup-shaped body having an inlet for connection with a container and a sleeve member adapted to slide within the said body, said sleeve member having substantially oppositely arranged ports or apertures and a rotatable handle member to permit of the partial withdrawal of the sleeve and the locking thereof when in its closed or non-delivery position.

The invention further consists in lining or forming the parts of the device which come into contact with the liquid with a material which will be immune to any corrosive action of the liquid to be measured and delivered.

The invention will now be described with reference to the accompanying drawing, in which:—

Figure 1 is a longitudinal sectional elevation showing in closed position one form of measuring device constructed according to this invention;

Figure 2 is a similar view showing the device in the delivery position;

Figure 3 is a section taken on the line *a—a* of Figure 1;

Figure 4 is a part plan of the device, and

Figure 5 is a part front view, the handle being shown in position for locking the device in its closed position.

As shown, the device comprises a substantially cylindrical body member 1 formed with an inlet tube or member 2 for connection with a fluid container 3. This fluid container 3 may be an inverted bottle or a barrel. In the drawing the part 3 indicates the neck of an inverted bottle. The inlet member 2 is preferably formed with a flange 4 to seat against the neck of the bottle and this inlet 2 may be suitably inclined as shown, means being provided to render the inlet connection fluid-tight. The rear end of the cylindrical body member 1 is closed in any suitable manner, preferably by means of a screwed cap 5. Within this body member 1 and preferably within a liner 6, to be hereinafter referred to, is slidably mounted a sleeve member 7. This sleeve member 7 is preferably constructed of ebonite and is carried by a member 8 formed with a flange 9 which is adapted to close the open end of the body member 1 said flange being fitted with a washer or the like 10 to seal the open end of the body 1 when the valve-like device is in its closed position. The sliding sleeve 7 is formed with a pair of substantially oppositely arranged ports or apertures 11 and 12. The port 11 is adapted to communicate with the inlet 2 when the valve-like device is closed, and the other port 12 is adapted to permit of the delivery of a measured quantity of liquid when in open position. The member 8 of the sliding sleeve 7 is fitted in any convenient manner with a rotatable spindle 13 which has a bearing in a bracket or the like 14 preferably carried in a detachable manner by the body member 1. The said bracket 14 is preferably of substantially U-shape in plan and is connected to flanges 15 formed on the body member 1 by set-screws or the like 16. The outwardly projecting end of the spindle 13 is provided with an arm or handle 17 whereby the sleeve 7 may be moved to its open or closed position. The locking of the sleeve 7 in its closed position is preferably effected by the partial rotation of the said spindle 13 through the medium of the handle 17. This spindle 13 is, in the construction shown, formed with a substantially rectangular-shaped enlargement 18 which is adapted to co-operate with a cam surface or surfaces 19 formed or provided on the end of an inwardly projecting embossment 20 formed on the bracket 14 through which the spindle 13 passes. This embossment 20 of the bracket 14 is formed with a rectangular-shaped recess 21 to receive the enlargement 18 of the spindle 13 during its sliding movement. An outwardly extending embossment or cap member 22 is provided on the embossment 20 and this cap member 22 is formed with arms or stops 23 and 24 to limit the rotation of the handle 17. The flange 9 of the member 8 carrying the sleeve 7 is also provided with means to prevent its rotation during the sliding movement, such as pin-like projections 25 adapted to co-operate with the arms of the spindle-carrying bracket 14. In the construction shown the parts that come

into contact with the liquid are rendered immune from corrosion by liners of ebonite or other suitable material. It will be noticed that the sleeve 7 is constructed of ebonite and this is slidable within an ebonite liner 6 of the body 1. The inlet 2 is fitted with a liner 26 and the cap 5 is fitted with preferably a rubber disc 27. Any suitable means may be provided on the end of the member 8 to prevent contact with the liquid. It will be understood, however, that the device may be suitably modified and constructed of stainless steel or other hygienic material.

In operation, and when the said valve-like device is fitted to a syrup or like container and it is desired to eject a measured quantity, the handle 17 is turned so as to disengage the cam locking means 18 and 19 and then pulled forwardly to the position shown in Figure 2. It will be seen that this action will move the sleeve 7 and cut off the inlet supply and the measured quantity contained within and measured by the internal area of the sleeve 7 will drop out of the lower port 12 into a suitable receptacle held below the said port or aperture 12. At the same time air will enter through the port 11. The open end of the body 1 and its liner 6 may be suitably chamfered to permit of the full opening of the outlet port 12 when the sleeve is moved forwardly. When the sleeve 7 is returned by pushing the handle 17 forwardly, the air contained within the sleeve will be displaced by the syrup dropping into the measuring chamber and it has been found that this displacement of air will thoroughly agitate the liquid in the container and intimately mix the contents. It will be understood that the parts may be locked upon the rotation of the handle 17 by means of the member 18 engaging against the cam faces 19. Obviously the size of the sleeve 7 which telescopes into the body 1 may be varied by non-corrosible washers or a sleeve so that the measured quantity of liquid to be delivered will be varied. Obviously ebonite discs or the like to vary the contents may be positioned against the part 8 to reduce the area of the measuring device.

What I claim is:—

1. Means for delivering measured quantities of liquid, comprising a tubular or cup-shaped body having an inlet port, a sleeve member adapted to slide within said body, said sleeve having substantially oppositely arranged ports or apertures, means to permit of the partial withdrawal of the sleeve so as to expose the inlet port and the outlet port in the sleeve, the arrangement being such as to permit of the delivery of a measured quantity of liquid from the outlet port.

2. Means for delivering measured quantities of liquid as claimed in claim 1, wherein the sleeve member is connected with a rotatable handle member to permit of the partial withdrawal of the sleeve and the locking of the sleeve in its closed or non-delivery position.

3. Means for delivering measured quantities of liquid as in claim 1, wherein a rotatable handle member is fitted or formed with an enlargement adapted to co-operate with a cam surface or surfaces in such a manner that the sleeve will be locked in its closed or non-delivery position.

4. A device for delivering measured quantities of liquid, comprising a tubular body having an inlet for connection with a container, a cap or closure at one end of the body, a sleeve slidably mounted within said body and having substantially oppositely arranged ports or apertures, one adapted to communicate with the inlet in said body and the other adapted to permit of the discharge of the liquid when the sleeve is moved to outward position, a rotatable handle connected with the sleeve and having an enlargement movable within an embossment carried by the body, said embossment formed or provided with a cam or cam surfaces for co-operation with the enlargement and arranged to lock the sleeve in its non-delivery position, and a flange formed on the sleeve adapted to co-operate with the open end of the body.

5. A device as claimed in claim 4, wherein the embossment carrying a slidable spindle of the handle member is formed on a U-shaped bracket secured to the body.

6. A device as claimed in claim 4, wherein the flange on the sleeve is formed with extensions adapted to co-operate with the U-shaped bracket and prevent rotatable movement of the sleeve within the body.

7. A device as claimed in claim 4, wherein stops are provided to limit the movement of the rotatable handle.

ARTHUR JOHN COOPER.