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DISPENSING DEVICE

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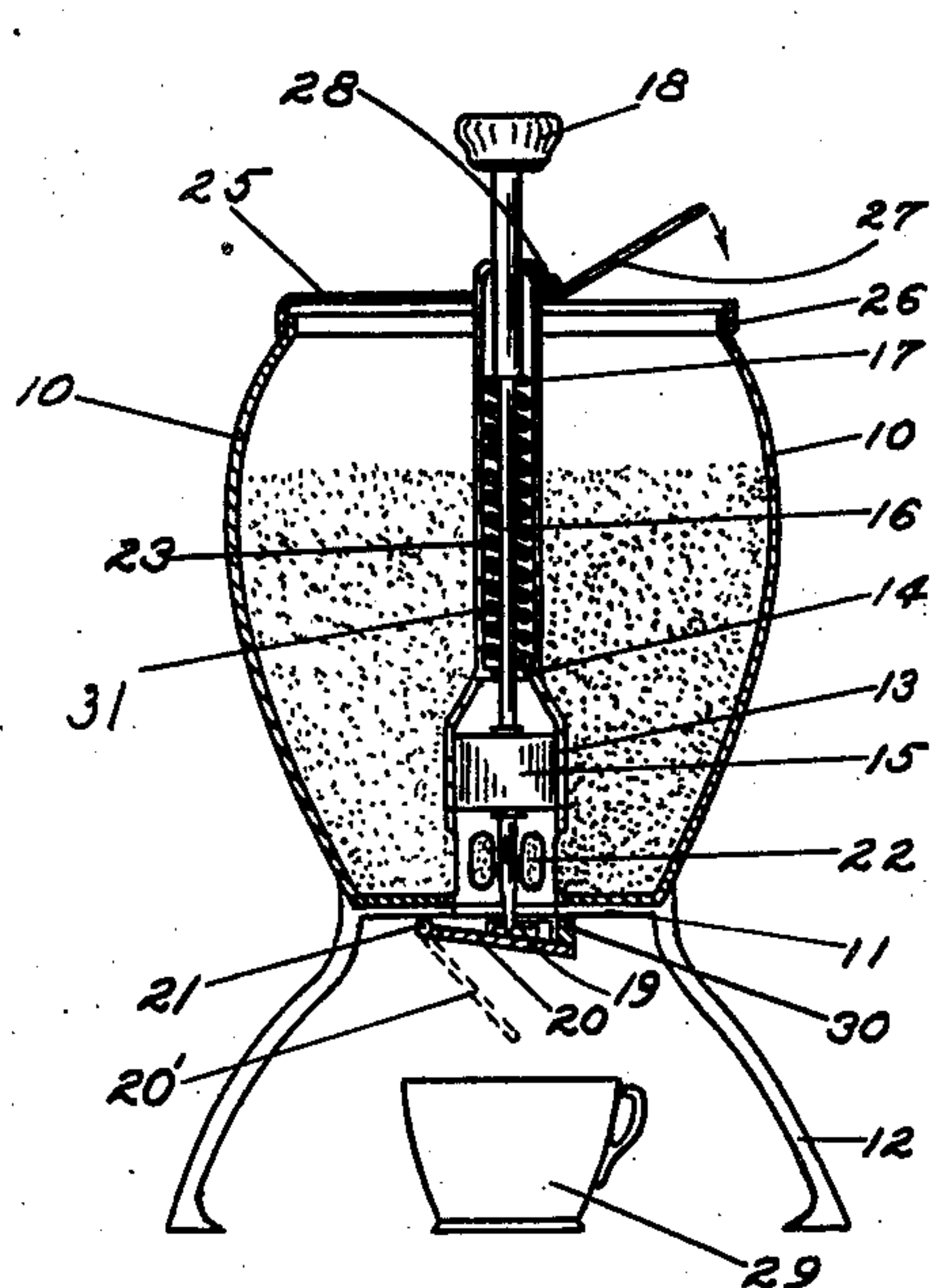


FIG. 1.

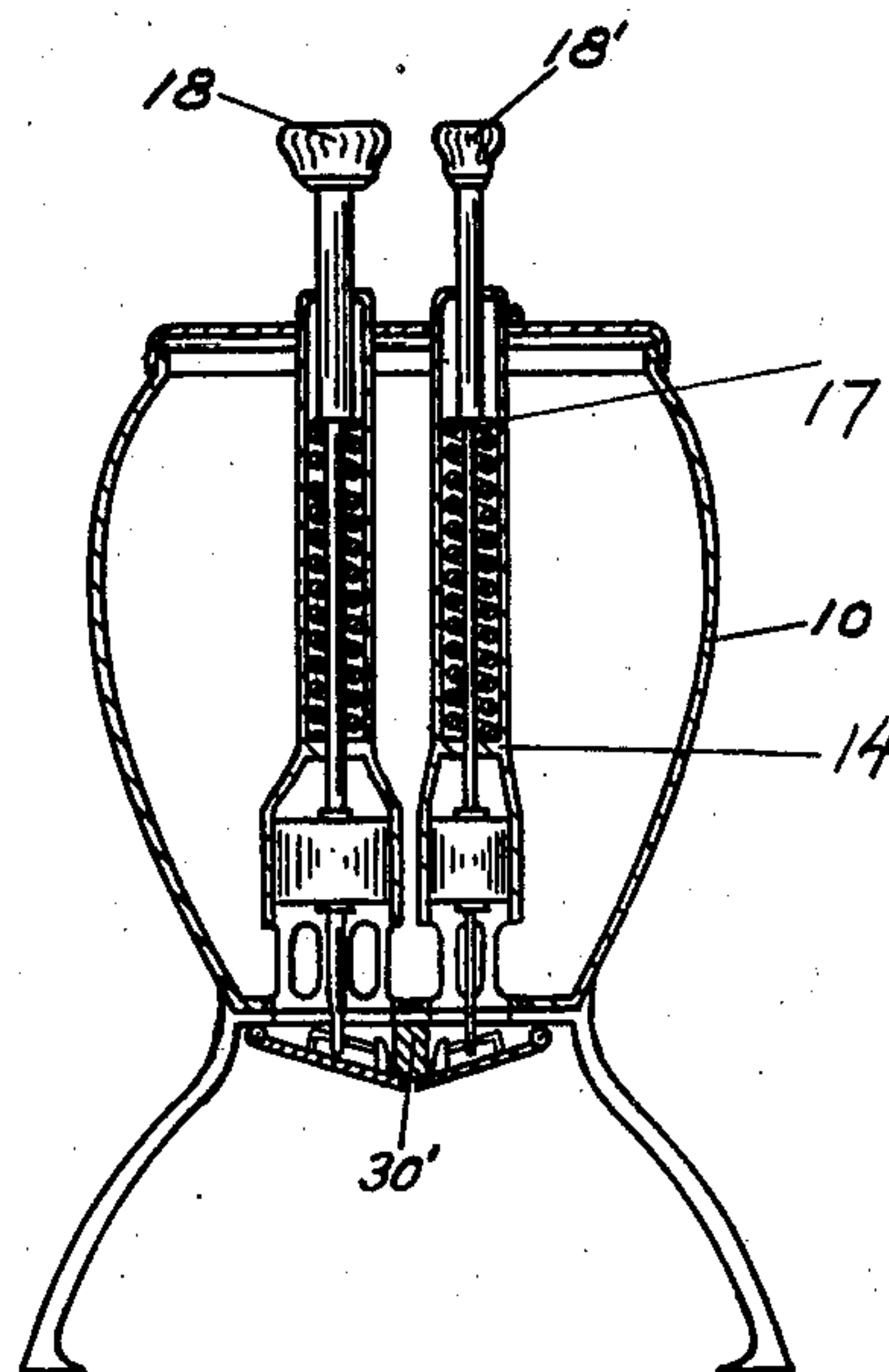


FIG. 2.

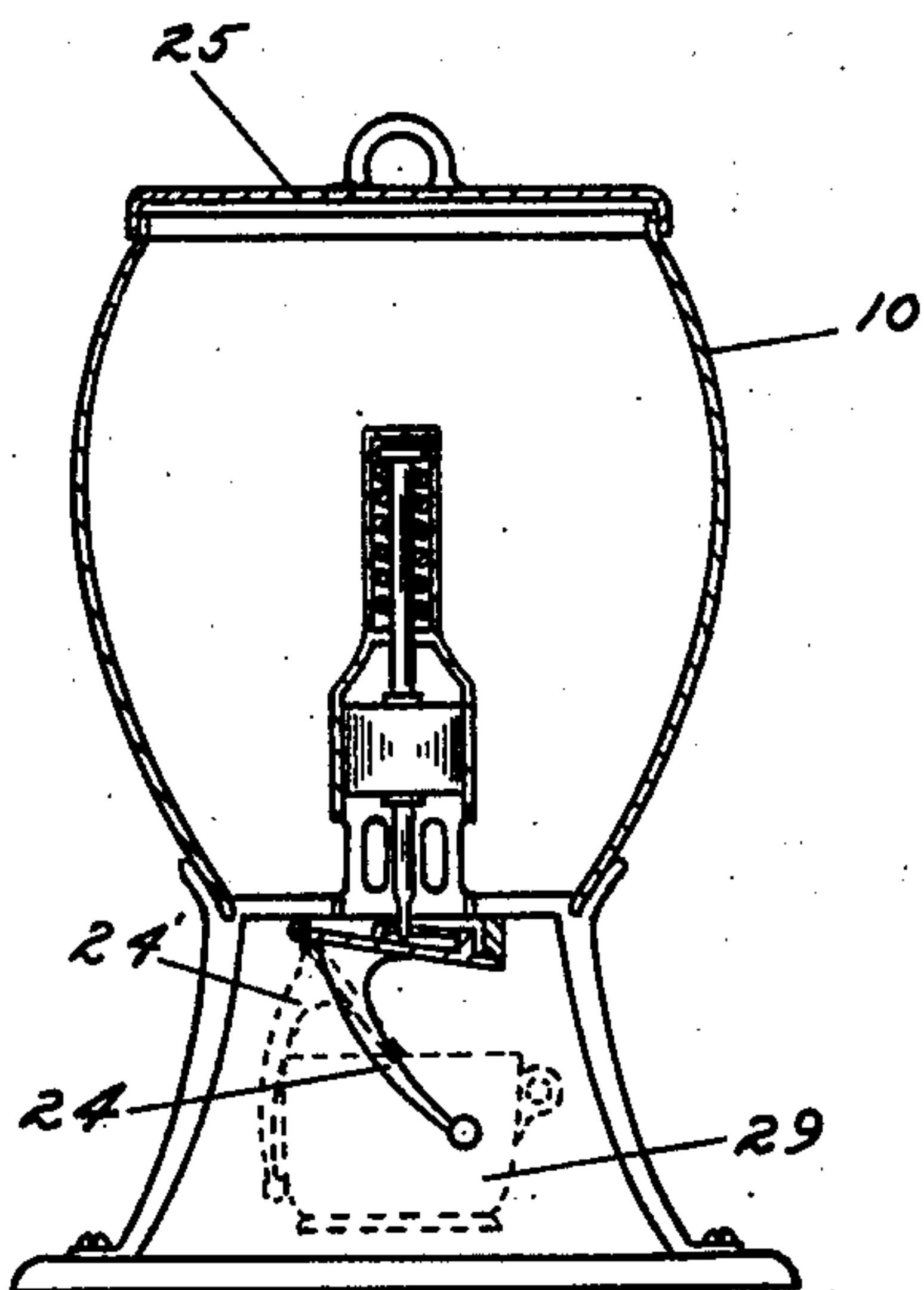


FIG. 3.

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DISPENSING DEVICE

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1 Claim. (Cl. 221-112)

My invention relates to an apparatus for dispensing measured quantities of sugar or other such commodities, and particularly to a device which can be used in restaurants, homes, lunch stands, etc., for the convenience of persons needing a small quantity of sugar in their beverages when such beverages are served in cups, glasses or other containers.

The object of my invention is not only to dispense such a measured quantity of sugar or other commodities, but to provide an apparatus that will have:

1. A positive action that will force out a given quantity of a given commodity.
2. That will be free from the danger of clogging by the adhesion of sugar or other commodities to the dispensing mechanism.
3. That will afford an easy access to the dispensing mechanism for cleaning or adjustment.
4. That will be semi-automatic in operation, that is, one which may be operated wholly by one hand of the person using it while the other hand of such person may be otherwise engaged, as in carrying a tray with food.

In addition, to accommodate individual requirements of different persons as to the quantity of the commodity needed, I provide means for dispensing two different quantities of said commodity, each quantity being dispensed by a separately and independently acting mechanism, contained in one and the same apparatus.

The apparatus may be made of different materials, such as glass, metal, porcelain, bakelite, etc., transparent glass being preferable, as it affords a view of the contents of the container, and it may be made in different shapes and forms. It is obvious that the mechanism may also be modified and changed without materially departing from the idea disclosed by me. My invention, therefore, is not restricted to the specific form disclosed in the accompanying drawing, but embraces all forms embodying the principle disclosed in said drawing, in which:

Fig. 1 is a sectional view of the entire apparatus, provided with means for dispensing a measured quantity of a given commodity.

Fig. 2 is a sectional view of the apparatus containing two separate dispensing means for dispensing two different predetermined quantities of a given commodity.

Fig. 3 shows a semi-automatic apparatus, being a modification of the device shown in Fig. 1.

I shall now proceed with the detailed description of the apparatus with reference to the said

drawing, in which similar numerals refer to similar parts throughout the several views.

The apparatus consists of a vaselike container 10, a platform 11 supporting said vaselike container, with the dispensing mechanism inside thereof, said platform being in turn supported by legs 12. Centrally from said platform 11, through an opening in the bottom of the container, 10, rises a cylinder 13, preferably made of metal, open at the base, of a diameter substantially larger at the base through approximately one-third of its length and sloping into a uniformly narrower tube 31, in its upper portion and two parts being separated by a centrally pierced wall 14. Within said cylinder 13, hugging its walls, is a piston 15 occupying normally the upper half space of the said cylinder 13. The piston is firmly seated on the shaft 16, the upper portion of which carries a washer 17 and extends axially through the said tube 31, over and above the top of the container 10, where it ends in a knob 18. The lower part of the said shaft extends downward from the said piston 15 and is slidingly joined to the guide rail 19 on the inner surface of the plate 20, hinged at one side 21 to the other side of the platform 11, and closes a substantially circular opening in the said platform of a diameter substantially equal to the inside diameter of the inner section of the cylinder 13. At the opposite side to the hinge 21, the plate 20 is held tightly against the lip 30. The lower half of the wall of the cylinder 13, between the base of the piston 15 and the level of the platform 11 is provided with slots 22 to admit free flow of the commodity in the container into the inside of the said cylinder, under the force of its own gravity. For the purpose of dispensing a predetermined quantity of a given commodity, this part of the cylinder between the level of the platform 11 and the base of the piston 15 may be called a measuring chamber. Said piston 15 is normally held up above the line of the said slots 22 by the tension of the spring 23 contained in the tube 31, between the separating wall 14 and the washer 17 on shaft 16. The wall of the piston is high enough to block the slots 22 when the base of said piston has been depressed to the bottom of the dispensing chamber.

Fig. 2 shows a modification of the device in Fig. 1, in that it provides two dispensing mechanisms, acting similarly and independently, but differs as to the respective capacity of the dispensing chambers and the diameter of pistons therein, so that one has substantially twice the

capacity of the other. The closing plates at the bottom of the dispensing chambers both close upon the common lip 30.

In the dispensing apparatus of the semi-automatic type shown in Fig. 3, the closing plate 20 is provided with a lever 24, extending at an angle from the said plate downward. The function of the lever is to serve as a means of opening downward said plate and to afford an outlet for the contents of the measuring chamber, that is, the slotted part of the cylinder 13. The plate and the lever in the open position are shown by 24'.

The container in type shown in Fig. 1 carries a cover 25 made of metal or other suitable material, and corresponds in outline to the outline of the mouth of the container, said cover being seated on the collar 26 of the container 10. A part of said cover, substantially semi-circular 27, is connected to the larger section by a hinge 28, and affords access to the inside of the container. The cover for the type of the dispensing apparatus, shown in Fig. 3, is made in one piece.

The mode of operation of the dispensing apparatus is as follows:

When the container 10 is filled with sugar or other commodity suitable for dispensing, a quantity of said commodity will, under the force of its own gravity, flow through slots 22 into the interior of the measuring chamber, that is, the lower section of cylinder 13 below the base of the piston 15, and will rest there upon plate 20. The quantity that will find its way into the said cylinder may be predetermined in amount to a teaspoonful, a plurality of it, or to a fraction thereof, said quantity depending upon the diameter of the cylinder 13, the distance between the base of the piston and the plate 20, the width and height of the slots 22 and the ease with which a given commodity will flow into the said space inside the cylinder. All those factors may be easily ascertained by calculation or by trial. It is, however, observed that no exact accuracy in measuring is claimed and that in actual use the quantities dispensed at different times by the said apparatus may somewhat vary.

Normally, the piston 15 is positioned above the slots 22. When depressed from its normal position above said slots to the bottom of the cylinder 13, it will force out any commodity contained in the slotted part of the said cylinder, while the plate 20, actuated by the lower part of the shaft 16, will be opened down and assume an inclined position, as shown in dotted lines 20', allowing the commodity so forced out from the cylinder to slide down upon said incline. As a

rule, some suitable receptacle, such as a cup 30, will be placed under said dispensing apparatus and receive the measured quantity of the commodity.

When the pressure upon the knob is released, as when the person operating said receptacle removes his or her hand from the knob or ceases to exert pressure upon it, the tension of the spring 23, acting on the washer 17 upon the shaft 16, will cause the piston 15 to rise and to resume its normal position above the line of the slots 22, when another quantity of a commodity, under the influence of its gravity, will flow into the slotted section of the cylinder, and the operation forcing it out by the action of the piston may be repeated.

The operation of the apparatus shown in Fig. 3 differs in this respect from the operation of the types shown in Figs. 1 and 2, that it is not necessary to install any knob on top of the apparatus in order to depress the piston. The lowering of the piston in the apparatus shown in Fig. 3 may be accomplished by means of a lever 24, attached to the outer side of the plate 20. The person operating the device may press the side of the lever by means of a cup or other receptacle held in his or her hand, when the pressure thus exerted will serve to open downward the hinged plate 20. The plate, being connected to the piston 15 by means of the shaft 16, will lower said piston to the bottom of the cylinder 13, thus forcing out of the slotted portion of the cylinder any commodity that may be therein. The commodity so forced out will slide upon the inclined plate 20 into the cup below.

What I claim, therefore, is:

A container, a pedestal support therefor, a tubular chamber of predetermined capacity affixed to the bottom of the container over an opening therein, the access to the chamber being at right angle to the level of said bottom, and the diameter of the opening being substantially equal to the diameter of the chamber, slotted means in the wall of the chamber to admit free flow of contents into said chamber, a piston within said chamber in close contact with the walls thereof, an extension of said chamber within said container, a spring inclosed within said extension for yieldingly supporting said piston above the line of slots, a hinged door closing the chamber from the bottom, means connecting said door with the piston and lever means extending downward from the door to actuate said door and piston.

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