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H. H. CRIMMEL
FRUIT JUICE DISPENSER VALVE
Filed Jan. 9, 1931

1,897,302

FIG. 1

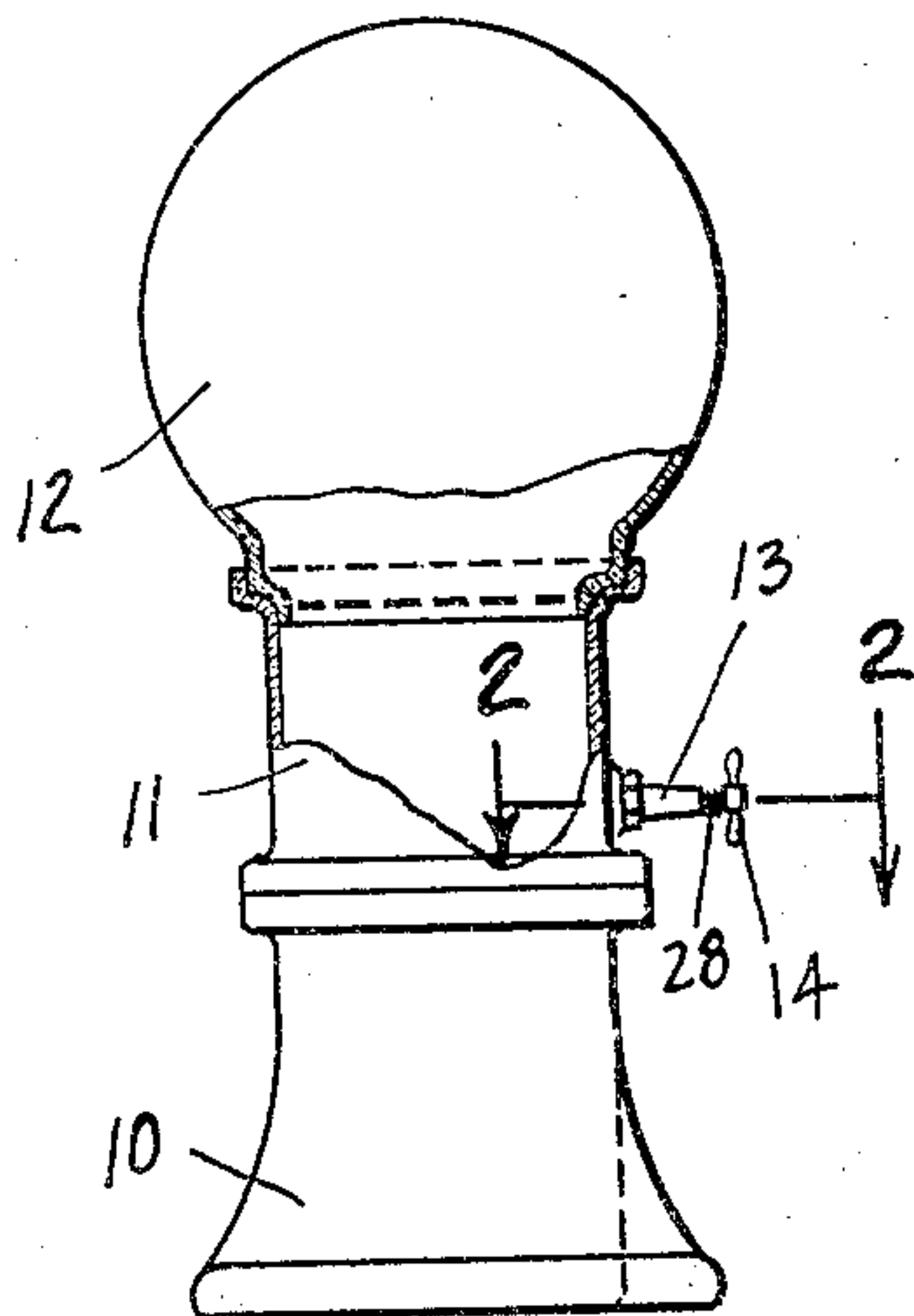


FIG. 2

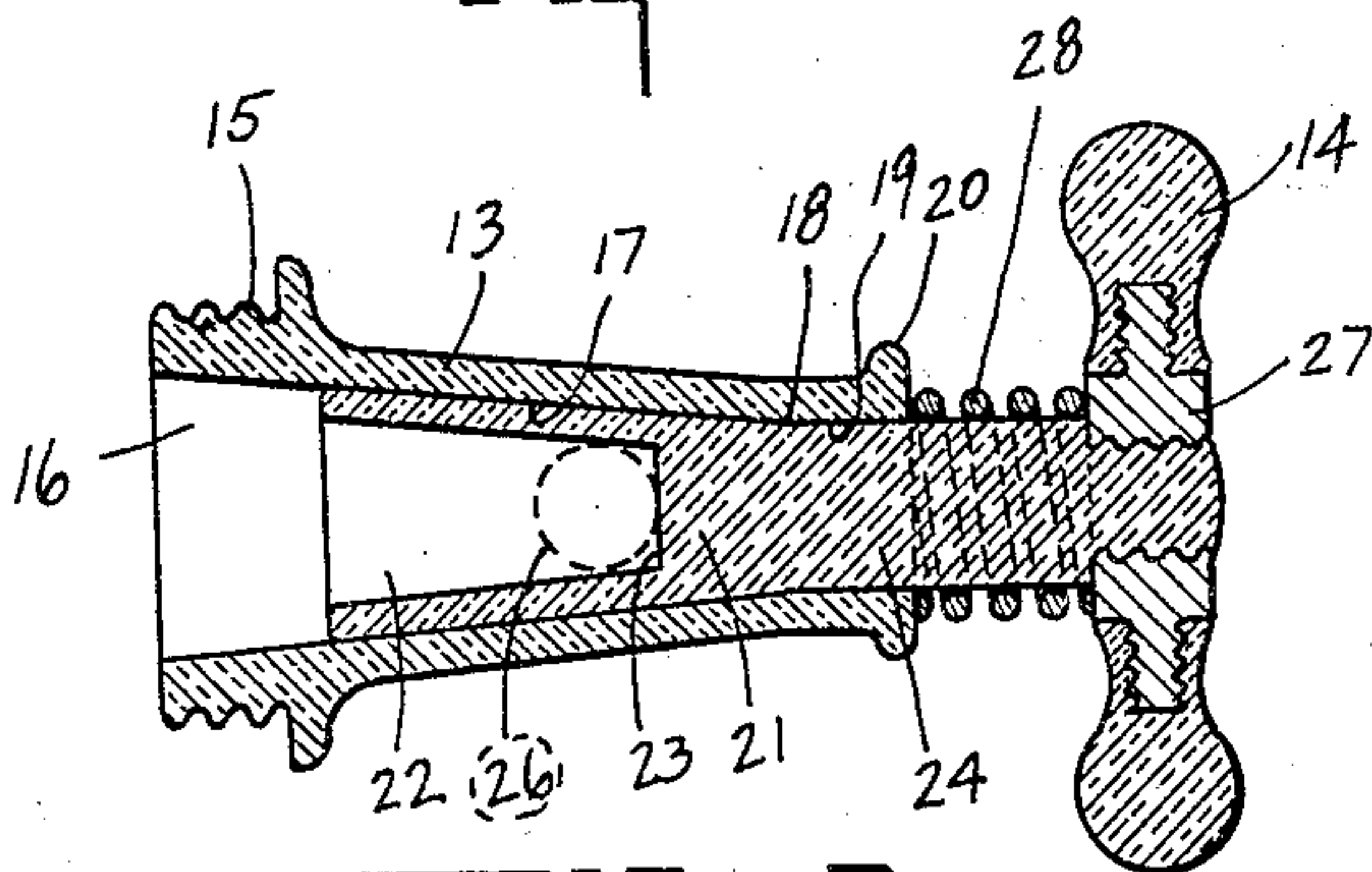


FIG. 3

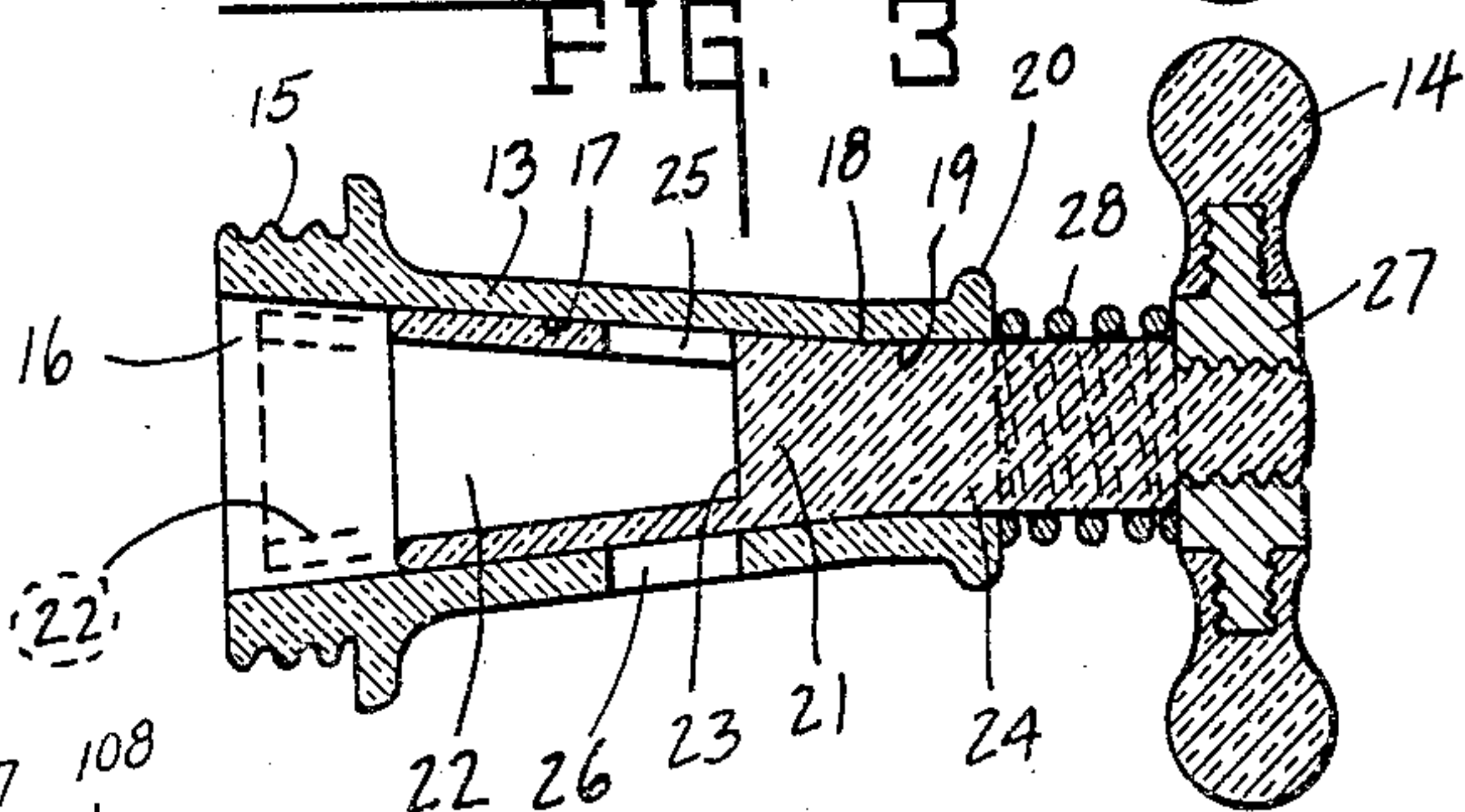
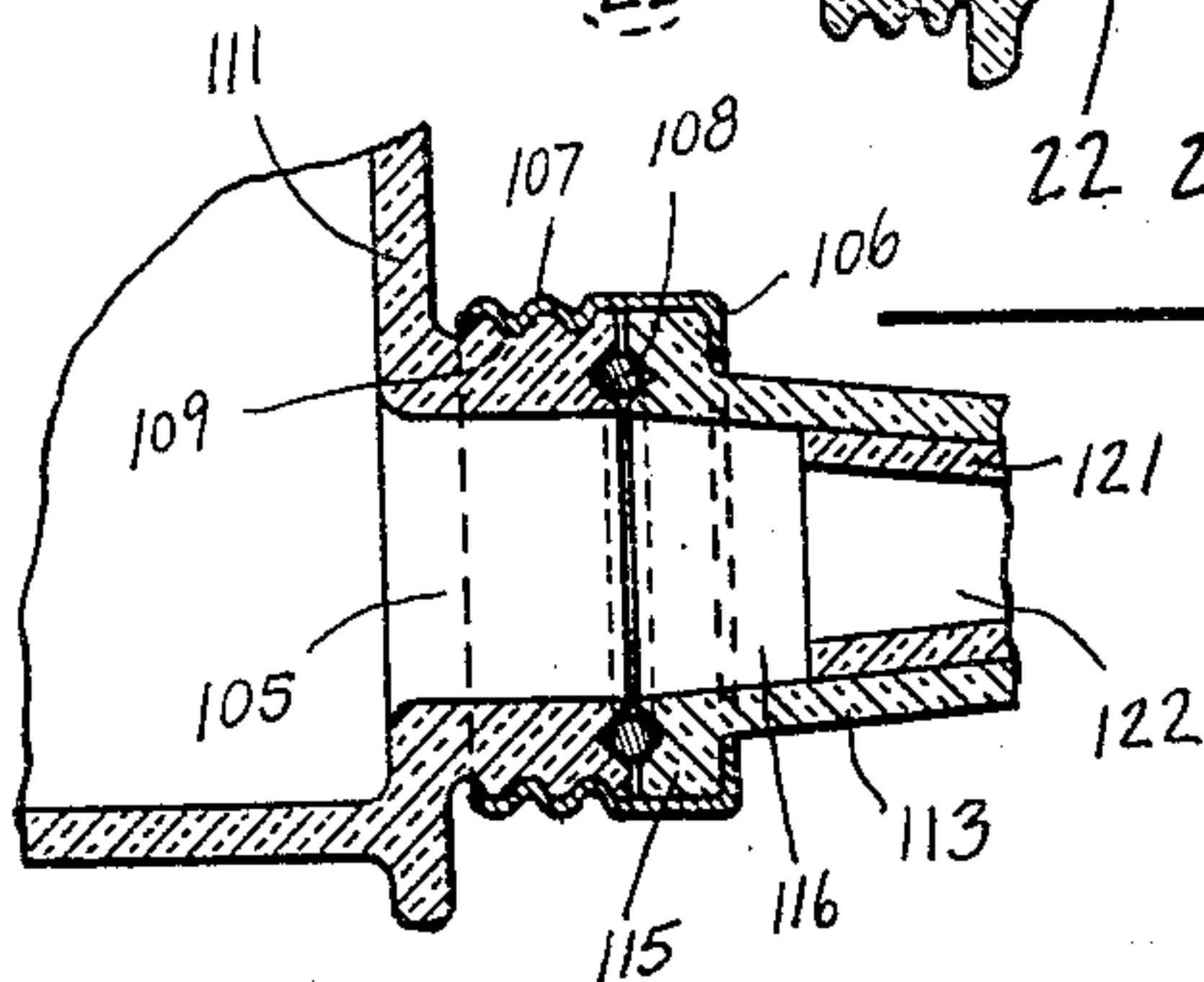


FIG. 4



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FRUIT JUICE DISPENSER VALVE

Application filed January 9, 1931. Serial No. 507,555.

This invention relates to a combination glass container and glass valve therefor.

The chief object of this invention is to detachably mount a glass or similar vitreous valve body and included valve upon a glass or similar vitreous container.

Another object of this invention is to provide a valve construction which is so arranged that it is capable of liquid discharge control, either by reciprocation or by rotation of one part relative to the other.

One feature of this invention consists in the formation of a valve whereby it may be rotated or reciprocated so that it will always clean itself and will not stick but may be readily freed, thereby permitting its use with syrups which have a tendency to stick the valves now employed therewith.

Another feature of the invention consists in the arrangement of the container, valve body and included valve such that the only parts exposed to the liquid to be discharged are of a glass or vitreous material not readily subject to corrosion or deterioration and the like, by any acid other than hydrofluoric.

The full nature of the invention will be understood from the accompanying drawing and the following description and claim:—

In the drawing, Fig. 1 is a side elevation of a dispensing apparatus embodying the invention parts being broken away to show parts in section. Fig. 2 is an enlarged sectional view through one valve structure and is taken on the line 2—2 of Fig. 1 and in the direction of the arrows. Fig. 3 is a similar view of the same valve but is taken at right angles to the plane of Fig. 2. Fig. 4 is a sectional view (enlarged) of a modified form of connection.

In the drawing 10 indicates a suitable pedestal or base upon which is mounted a vitreous container 11 and a vitreous globe 12. Container 11 detachably supports a vitreous projecting valve 13 operated by handle 14. Container 11, globe 12 and base 10 are of glass or other vitreous material so that the fruit juices will not attack and corrode the same or form poisonous solutions.

The point of failure in structures of the aforesaid character invariably has been in

the valve structure which controls the discharge from the container. Valves of metal have gradually been eaten away by the acid. Valves of metal have also become clogged with pulp accumulations. Valves of metal have also stuck due to the moisture evaporating from syrups between the relatively movable valve parts and binding same. Accumulations such as pulp from the juice also usually prevented complete seating of the valve. The valve then leaked, creating a nuisance and unsanitary condition, because the drippings attracted flies and other vermin.

The valve structure (see Figs. 2 and 3) includes a sleeve or body 13 having a suitable portion 15 for detachable connection to the container 11. This may be by threaded connection. The body 13 preferably is of glass or similar vitreous material. The bore 16 therein extends entirely through and is tapered as at 17 to the point 18. The remainder 19 is relatively cylindrical and this is a small portion of the length of the bore. The end of the body 13 may be beaded as at 20.

Slidably and rotatably mounted in the bore 13 is a tapered plug 21, the taper corresponding to the taper of the bore 16. The plug 21 is chambered as at 22 and this terminates short of the end of the same as at 23. The plug is extended at 24 as a cylindrical extension. It has a relatively close or tight fit within the cylindrical portion 19 of the bore of the body. Preferably, the two cylindrical portions are ground glass fits and the two tapered surfaces are ground glass fits when seated. The chamber 22 communicates with an aperture or opening 25 formed in the side wall of the plug 21. The body 13 includes the aperture or opening 26 extending laterally through one side and preferably the lower side of the valve.

The cylindrical end portion 24 of the plug 21 suitably supports a handle supporting member 27 which supports handles 14, as indicated. Interposed between member 27 and the beaded portion 20 of the valve body, is a coil spring 28. Spring 28 normally retains the valve plug in projected relation so that the tapered cone plug portion is tightly retained

in the tapered bore. The result is a perfect sealing valve.

It will be apparent from the foregoing that a valve of this character is operative when the handles 14 are pushed inwardly in opposition to spring 28. At such time the liquid flows around the plug and out through the discharge 26. This would be normal operation when handling syrup substantially free from pulp. When the dispensing device is utilized for the dispensing of fruit juices including pulp, the valve would be operated as a turn valve and the pulp would discharge into the chamber 22 and out through the openings 25 and 26 when the valve was turned so that said openings register. Rotational and circular movement of the plug would secure perfect sealing and prevent valve leakage, since the plug would substantially grind itself in to a tight fit even if some material were trapped between the plug and the interior of the body. The valve is so arranged that it is normally closed when released for axial movement by the spring and the apertures are not in registration.

In the aforesaid valve construction, there are no metal parts exposed to the action of the fruit acids. Should syrups accumulate between the plug and the tapered inner surface of the body, the sticking plug may be readily freed by rotating the same or pushing in upon the valve as found most convenient.

In Fig. 4 there is illustrated a modified form of valve mounting. In this form of mounting the container 111 includes the neck 105 externally threaded at 109. The valve body 113 abuts the neck and each includes a mating groove that receives a rubber or non-corrosive sealing ring 108. Valve body 113 terminates in flange 115. A threaded metal connector 107 has an inwardly directed locking flange 106. With this arrangement the glass valve may be rigidly attached to the glass container without exposing metal or other corrosive material to the contents to be handled.

The invention claimed is:—

A valve suitable for the dispensing of fruit juice and the like, including a glass body having an elongated tapered internal bore therein, and a cylindrical extension of said bore at its smaller end, said bore having an axial open opposite end and a lateral discharge directly communicating with the tapered bore intermediate the ends, an exteriorly tapered glass valve plug member of considerable less length than the bore and seatable therein, said plug member including a coaxial chamber having an open end communicating with the body bore at its large and open end and having a closed opposite end, and a cylindrical extension of appreciable length and materially greater than the bore extension

for appreciable reciprocation of the plug in the tapered bore and cylindrical extension thereof and capable of independent rotation in the last mentioned cylindrical extension and the bore, said chamber having a lateral discharge opening intermediate the ends and adapted to register with the bore discharge opening, an exposed handle portion carried by the exposed end of the cylindrical extension of the glass plug member, and externally exposed yielding means interposed between the handle portion and the end of the cylindrical portion of the glass body and concentric with the cylindrical extension of the glass plug member for normally constraining the latter toward valve closing position, said plug member in its reciprocation having a cleaning action in the bore and providing for the discharge through the bore and chamber when the discharge openings communicate and permitting discharge between the body and plug and through the plug chamber and discharge opening to and through the body opening when the plug member is moved axially in opposition to the constraint.

In witness whereof, I have hereunto affixed my signature.

HENRY HAYS CRIMMEL.