Jan. 16, 1962 M. S. RAPAPORT 3,016,929

FILLING MECHANISM FOR GLASSES

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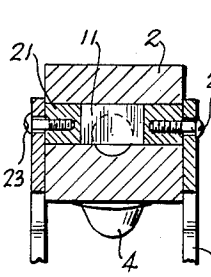
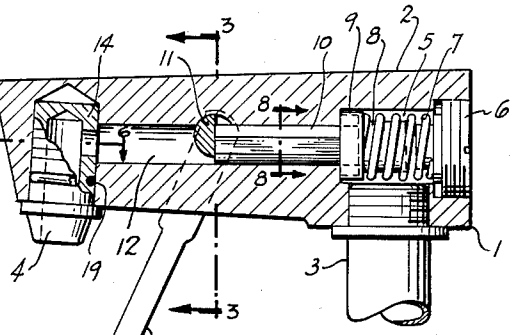


Fig. 3.



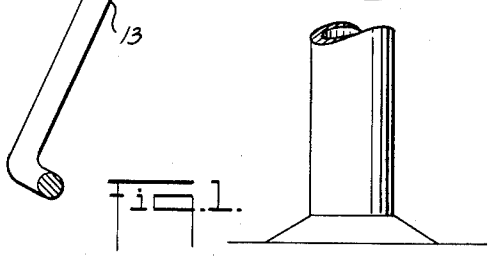


Fig. 1.

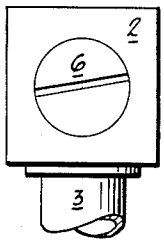


Fig. 2.

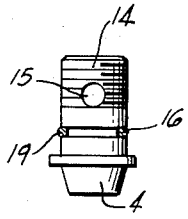


Fig. 5.

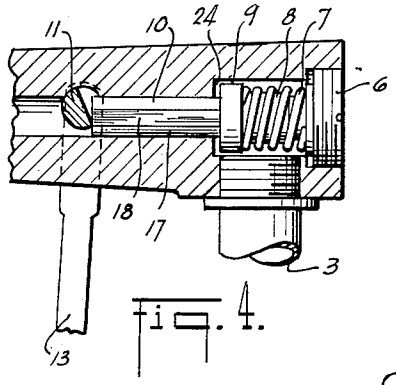


Fig. 4.

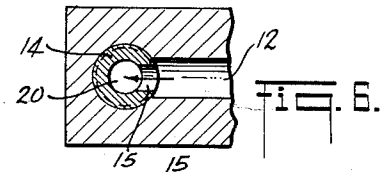


Fig. 6.

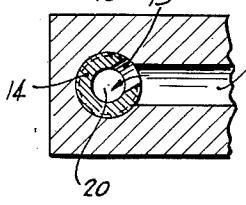


Fig. 7.

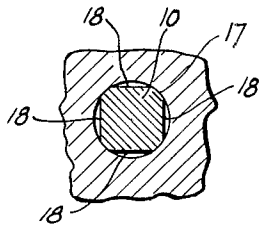


Fig. 8.

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FILLING MECHANISM FOR GLASSES

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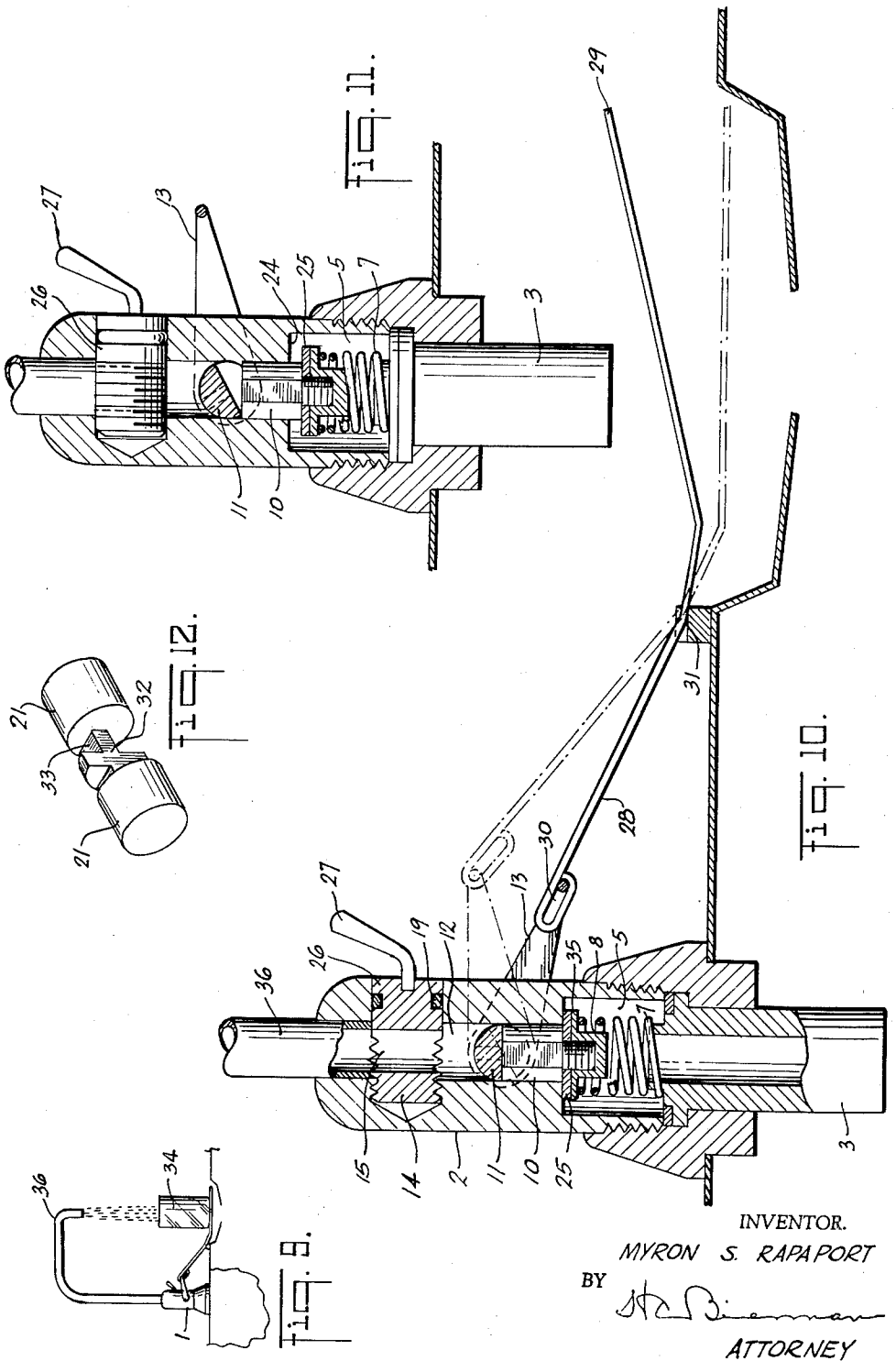


Fig. 10.

Fig. 11.

Fig. 12.

Fig. 9.

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FILLING MECHANISM FOR GLASSES

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Filed Feb. 12, 1953, Ser. No. 714,864
2 Claims. (Cl. 141—263)

The present invention relates to a dispensing mechanism, more specifically a device for filling glasses capable of being operated by the pressure of the glass.

In the past, devices of this general character have been cumbersome, complex and awkward. As a result, such devices would frequently break down and require servicing and maintenance. However, until the present invention no substantial improvement in these devices has been achieved.

It is among the objects of this invention to provide a water glass filler which is of simple construction and easy to operate.

It is also among the objects of this invention to provide a means for filling glasses of rugged construction and a foolproof design.

It is further among the objects of this invention to provide a means for filling glasses which requires little or no maintenance.

It is still further among the objects of this invention to provide a glass filler wherein the rate of flow of water may be readily and permanently adjusted.

It is still further among the objects of this invention to provide a glass filler which due to its simplicity of construction is of such design as to be attractive and appealing to the eye.

In practicing this invention, there is provided a body having a chamber therein and an inlet pipe communicating therewith. Within said body a passage from the chamber to an outlet is provided and so positioned and dimensioned that a shoulder is formed at one end of said chamber. This shoulder constitutes a valve seat against which a valve closure is adapted to close.

A cam is pivoted in the passage and a cam follower is slidably mounted therein, one end of the follower being secured to the closure and the other end biased against the cam.

The cam by its rotation is adapted to cause the follower to move axially of the passage and to retract the closure from contact with the seat. The cam is actuated by a depending means comprising preferably a pair of depending rods spaced apart horizontally and connected at their lower ends by a curved horizontal member adapted to fit the curvature of the glass to be filled. The depending means when the valve is in the closed position, is at an angle substantially inclined from the vertical and causes rotation of the cam by movement towards the vertical.

Alternately, the cam may be actuated by a lever extending from the body. The lever is pivotally connected to an arm which, in turn, is supported at a point spaced apart from the pivotal connection above referred to. A platform is provided at the extremity of the arm furthest from said lever which, when the valve is closed, projects upward at an angle from the horizontal. The weight of a glass or pitcher to be filled causes the arm to rock about the point at which it is supported and to pivot at the connection with the lever. This moves the lever upwards and hence actuates the cam.

Preferably the cam follower is of substantially rectangular cross-section while the passage is substantially circular. The corners of the rectangular cross-section are slightly rounded and act as guides in bearing against the walls of the passage. The water will flow along the flat sides of the rectangle in the space between the sides and

the inner walls of the passage. The guides steady the cam follower and prevent it from jamming or moving out of alignment with the axis of the passage.

In operation, a glass to be filled is placed against the depending lever, causing it to move towards the inlet pipe. This movement rotates the cam, the surface of which bears against the cam follower, moving axially of the passage away from the cam.

Since the cam follower carries the valve closure, the movement of the follower causes the closure to retract from contact with the valve seat. This permits the flow of water from the inlet pipe through the valve, past the cam and out the spout hole.

The outlet is provided with internal threads into which a nozzle is threaded. The nozzle has a spout hole axially formed therein and also has an opening formed substantially transversely of the spout hole and communicating with the spout hole and the passage. The entire nozzle is adapted to be rotated to cause this opening to move partially out of alignment with the passage and thus provide a control of the maximum flow through the mechanism.

Additionally the nozzle is provided with a groove in its periphery into which an O ring is placed. The ring is of such size that it bears against the walls of the outlet, preventing leakage and also constituting a frictional gripping means to prevent accidental movement of the nozzle from its pre-set position.

In the accompanying drawing constituting a part hereof, and in which like reference characters indicate like parts,

FIG. 1 is a sectional view of the filling mechanism showing the valve in its closed position;

FIG. 2 is an end view of one portion of the mechanism;

FIG. 3 is a section along line 3—3 of FIG. 1;

FIG. 4 is a fragmentary view similar to that of FIG. 1, showing the valve in its open position;

FIG. 5 is an elevation of the nozzle;

FIG. 6 is a section along line 6—6 of FIG. 1, showing the nozzle so positioned as to permit full flow of water;

FIG. 7 is a view similar to FIG. 6 showing the nozzle so positioned as to permit only a partial flow of water;

FIG. 8 is a section along line 8—8 of FIG. 1;

FIG. 9 is a diagrammatic view of one modification of the invention;

FIG. 10 is a view similar to FIG. 1 of the modification shown in FIG. 9;

FIG. 11 is a view similar to FIG. 10 showing the valve in the open position; and

FIG. 12 is a view of a form of cam suitable for use with this invention.

Referring more specifically to the aforementioned figures, there is provided a filling mechanism 1 comprising a body 2 and inlet pipe 3, a passage 12 and an outlet 4. Pipe 3 is threaded into and connects with a chamber 5 which in turn communicates with passage 12. Passage 12 is of a reduced diameter as compared with chamber 5 and hence constitutes a valve seat 24.

Rotatably mounted transversely of passage 12 is cam 11 which bears against cam follower 10. Cam follower 10 is preferably of rectangular cross-section, having guides 17 and flats 18.

On cam follower 10 is mounted valve closure 9 comprising a cup-shaped member with a washer placed therein. This washer is adapted to bear against the valve seat and effect the closure of the valve. Cam follower 10 is biased in the closed position as shown in FIG. 1 by spring 7 which bears against valve closure 9 which, in turn, bears against cam follower 10.

Affixed to cam 11 by screws 22—23 is depending lever 13 which as shown in FIG. 1 is positioned at a substantial incline to the vertical when the valve is in its closed posi-

tion. As shown in FIG. 4, when the valve is in its open position, lever 13 is substantially closer to true vertical.

As shown in FIGURE 10, cam 11 may be actuated by lever 13 which is pivotally attached to arm 28 at slot 30. Pivot support 31 is positioned between slot 30 and platform 29. When valve 1 is in its closed position, platform 29 is at an angle to the horizontal. The phantom portion of FIGURE 10 shows the actuating linkage in the open position.

The flow of water is controlled by nozzle 14 threaded into the outlet, nozzle 14 being provided with opening 15 and spout hole 20. Opening 15 interconnects passage 12 and spout hole 20.

In the modification described in FIGURES 9–12, nozzle 14 is provided with a single transverse opening 15 which interconnects passage 12 and tap 36.

One form of cam 11 is shown in FIGURE 12. The cam face 32 is provided with cut away portions 33 which permit the flow of water past cam 11. This permits the positioning of cam 11 entirely within passage 12, as shown in FIGURES 10 and 11. Alternately, cam face 32 may be flat without any cut away portions 33. In this case, the cam must be positioned at least partly out of passage 12 to permit water to flow as shown in FIGURES 1 and 4.

As can be seen in FIGS. 5, 6 and 7, opening 15 may be so positioned as to permit only a partial flow of water into glass 34.

In operation, a glass is pressed against depending lever 13, causing cam 11 to rotate in a counter-clockwise direction as shown in FIGS. 1 and 4. This in turn causes cam follower 10 and consequently valve closure 9 to move away from valve seat 24 against the pressure spring 7. This permits water to flow through inlet pipe 3, chamber 5, into passage 12 and outlet 4.

In the modification described in FIGURES 10 and 11, the device is actuated by the weight of glass 34 or a similar vessel on platform 29. This causes arm 28 to pivot about pivot support 31 moving slot 30 and lever 13 to the position shown in phantom outline in FIGURE 10.

Referring more specifically to FIG. 8, cam follower 10 being substantially rectangular in cross-section and bearing against the walls of passage 12 at guides 17 will permit water to flow between flats 18 and the walls of passage 12.

Referring more specifically to FIGS. 6 and 7, the water then flows from passage 12 through opening 15 and exits through spout hole 20. If the flow of water is too great, it is necessary only to rotate nozzle 14 to a position such as that shown in FIG. 7 where opening 15 is partially out of alignment with passage 12. This will serve to regulate the flow of water as desired.

As can be seen in the modification described in FIGURES 10 and 11, the water flows from passage 12 through opening 15 and exits through tap 36. The rate of flow is controlled in a manner similar to that already described in the preceding paragraph.

Nozzle 14 is also provided with a notch 16 adapted to receive O ring 19 which bears against the walls of outlet 4. This provides not only the desired seal to prevent leakage but also produces friction necessary to prevent accidental rotation of nozzle 14.

While only two embodiments have been specifically described, nevertheless changes such as would be apparent to one skilled in the art may be made without departing from the scope and spirit thereof and this invention is to be broadly construed and not to be limited except by the character of the claims appended hereto.

I claim:

1. A dispensing mechanism comprising a body having a chamber therein, an inlet pipe communicating with said chamber, a passage of greater length than that of said chamber and extending from said chamber to an outlet, said passage being of lesser diameter than said chamber and forming a shoulder with said chamber, said passage being coaxial with said chamber, said shoulder constituting a valve seat, a cam pivoted in said passage, a valve closure in said chamber cooperating with said seat, a cam follower slidably mounted in said passage, on end of said follower being secured to said closure and the other end biased against said cam, said follower being of angular cross-section and contacting the walls of said passage at spaced areas throughout its length, the axis of said cam being transverse to and passing through the axis of said passage, a lever extending from said body, an arm pivotally connected to said lever at a first point and supported at a second point intermediate its length and spaced from said first point and at a lower level than said first point, said arm at the end remote from said first point being provided with a platform adapted to carry a vessel, said arm being actuated by the weight of said vessel on said remote end of said platform, whereby said cam causes said follower to move axially of said passage and to retract said closure from contact with said seat.

2. A dispensing mechanism according to claim 1 wherein said second point is at a level below said platform when no vessel is held thereon, and said second point is above said platform when said vessel is held thereon.

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