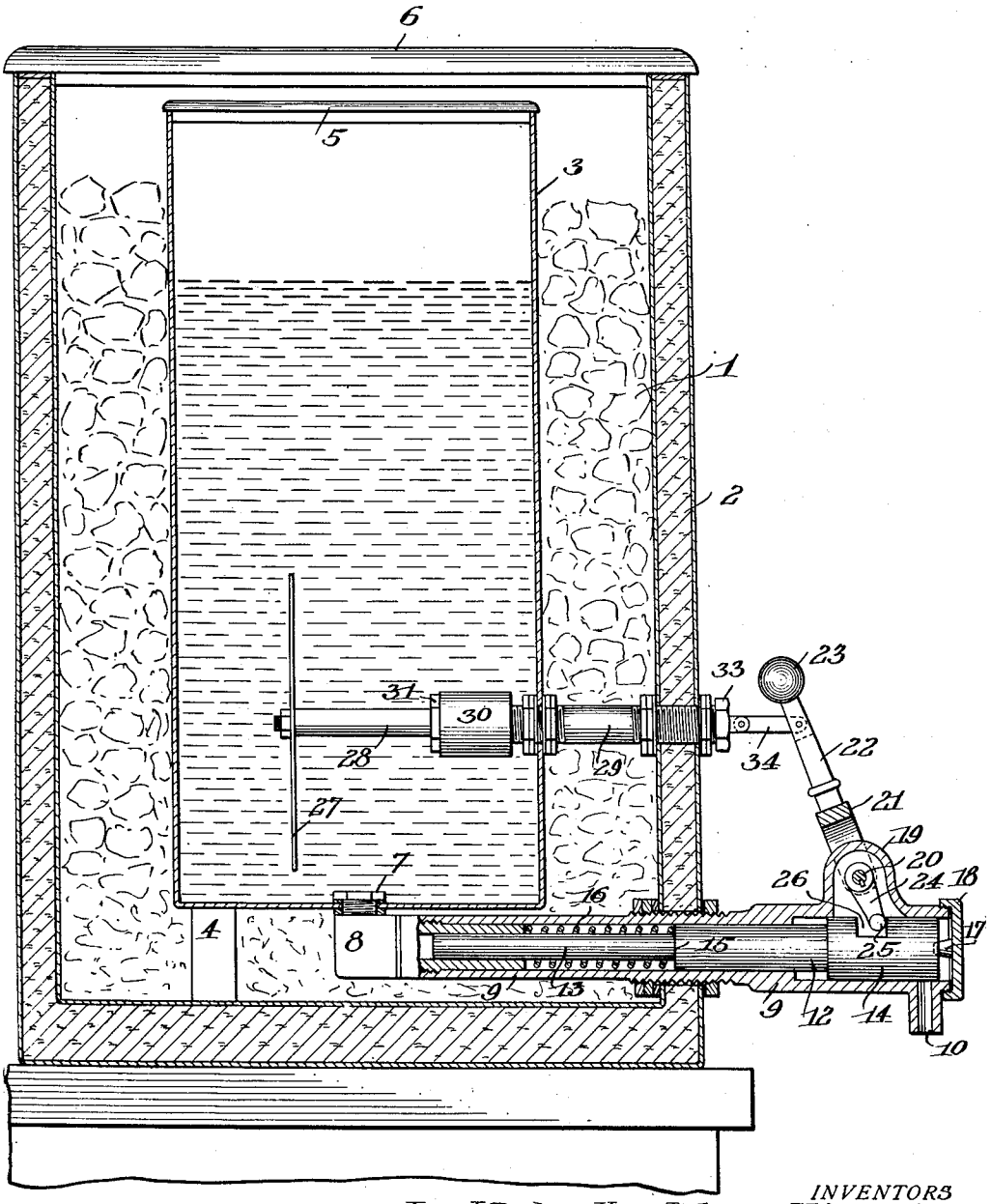
Dec. 27, 1932. L. L. BENHAM ET AL 1,892,547

BEVERAGE DISPENSER

Filed Jan. 19, 1931 4 Sheets-Sheet 1

Fig. 1



INVENTORS

Leon L. Benham, Harry L. Fergee and Wesley J. Balkwill

BY

Harold S. Stonebraker

their ATTORNEY

Dec. 27, 1932. L. L. BENHAM ET AL 1,892,547

BEVERAGE DISPENSER

Filed Jan. 19, 1931 4 Sheets-Sheet 2

Fig. 2

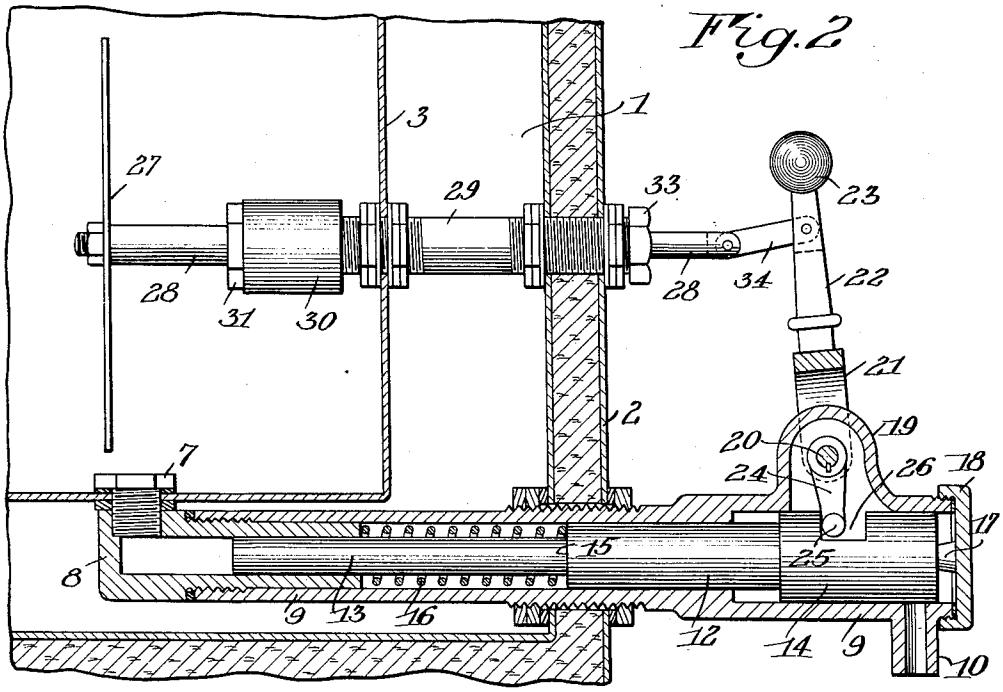
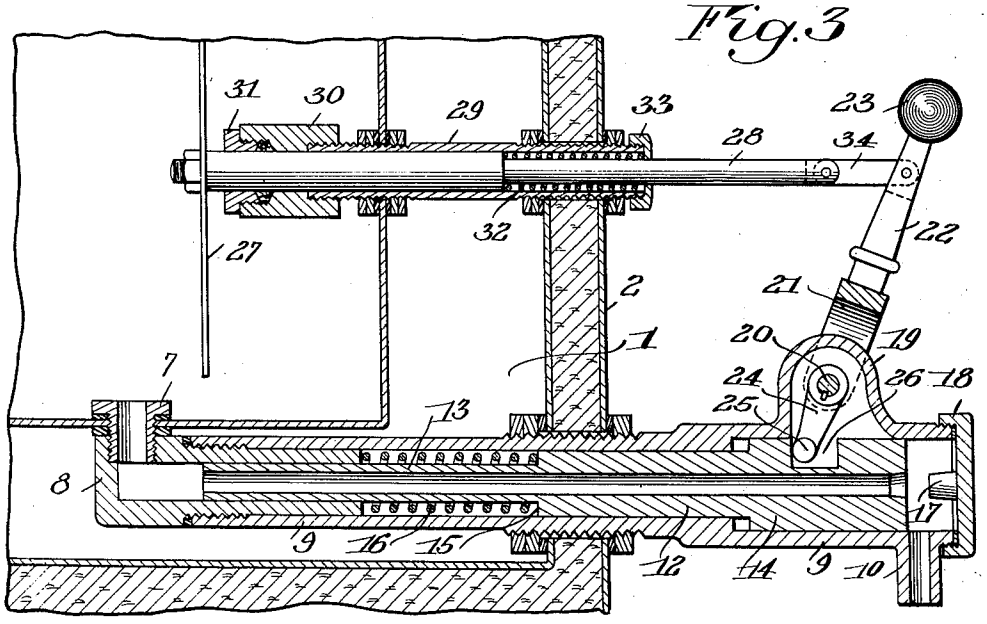


Fig. 3



INVENTORS

Leon L. Benham, Harry L. Ferree and Wesley J. Balkwill

BY

Harold E. Stonebraker

their ATTORNEY

Dec. 27, 1932. L. L. BENHAM ET AL 1,892,547

BEVERAGE DISPENSER

Filed Jan. 19, 1931 4 Sheets-Sheet 3

Fig. 6

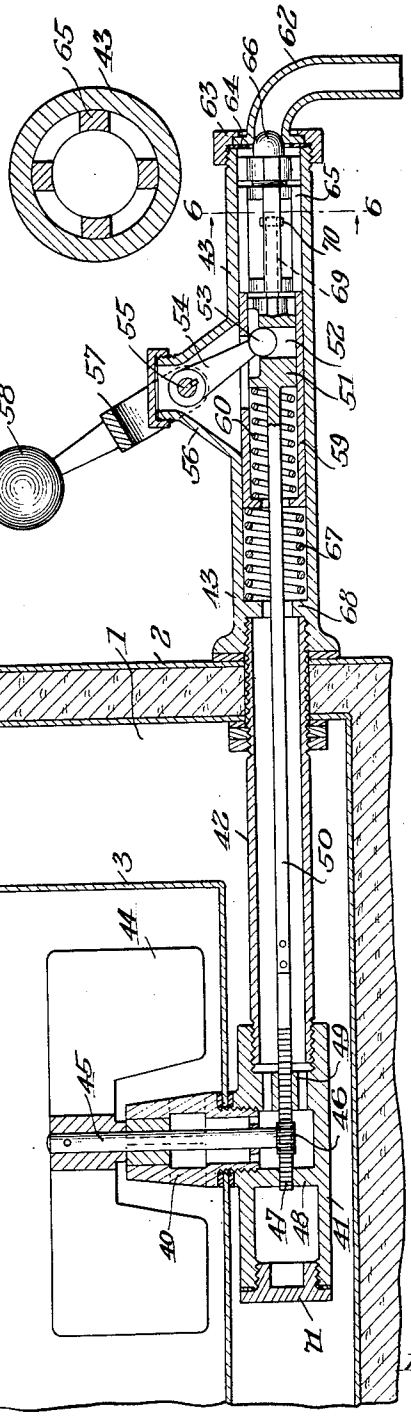
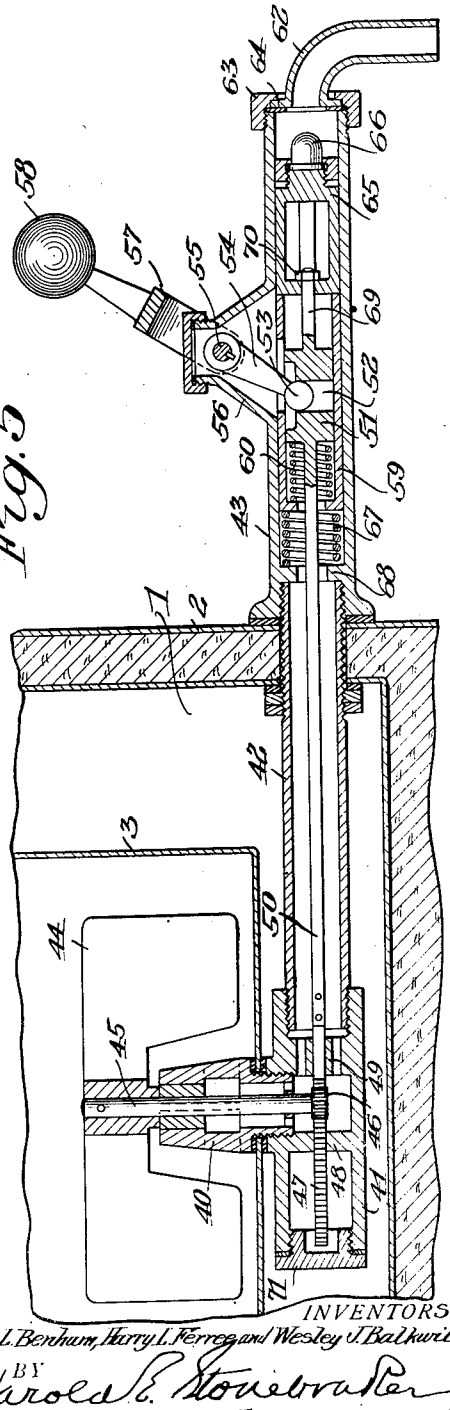


Fig. 4

Fig. 5



INVENTORS

Leon L. Benham, Harry L. Ferree and Wesley J. Balkwill

BY

Harold E. Stoverbuster

their ATTORNEY

Dec. 27, 1932. L. L. BENHAM ET AL 1,892,547

BEVERAGE DISPENSER

Filed Jan. 19, 1931 4 Sheets-Sheet 4

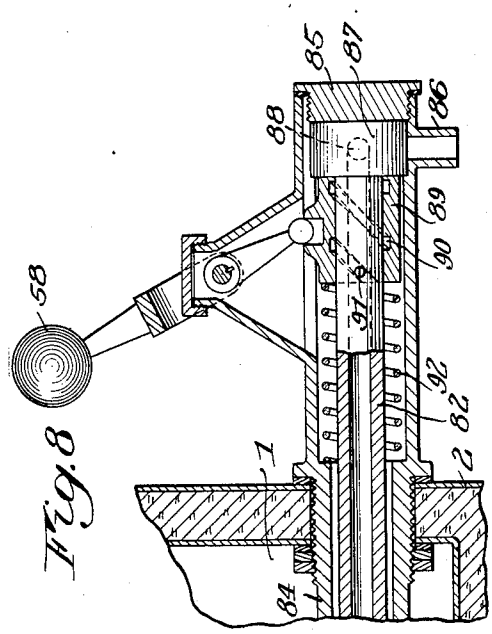


Fig. 8

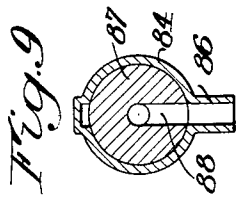


Fig. 9

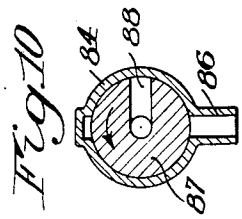


Fig. 10

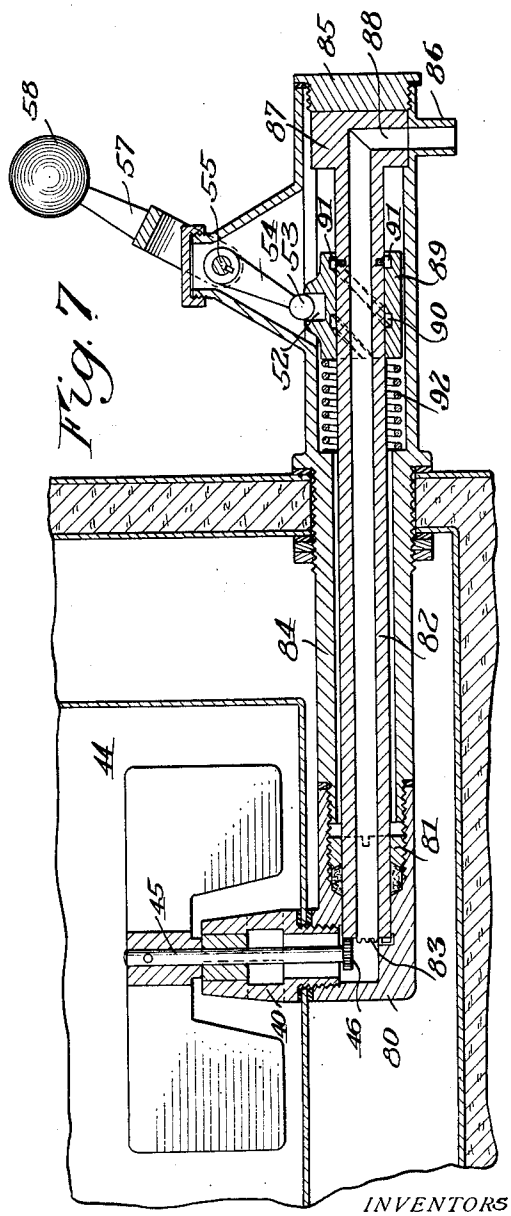


Fig. 7

INVENTORS

Leon L. Benham, Harry L. Ferree and Wesley J. Balkwill

BY

Harold E. Stonebraker

their ATTORNEY

Patented Dec. 27, 1932 1,892,547

UNITED STATES PATENT OFFICE

LEON L. BENHAM, OF IRONDEQUOIT, AND HARRY L. FERREE AND WESLEY J. BALKWILL, OF ROCHESTER, NEW YORK, ASSIGNORS TO RICHARDSON CORPORATION, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK

BEVERAGE DISPENSER

Application filed January 19, 1931. Serial No. 509,600.

This invention relates to improvements in beverage dispensers, and particularly to that kind of beverage dispenser in which a beverage container is arranged in a refrigerating chamber and is provided with an outlet in its bottom connected with a dispensing faucet. It is also usual in such devices to provide suitable means for agitating the beverage in the container so as to maintain its temperature and composition as nearly uniform throughout its volume as possible.

The principal object of this invention is to provide simple and inexpensive means whereby a single hand operated device is operative to actuate the agitator or actuate the agitator and the faucet.

Another object of the invention is to provide a lost motion connection between the valve member actuating means of a faucet and operatively connecting said actuating means with an agitator in the beverage container so that the actuator may be operated to actuate the agitator independently of the faucet valve member.

Still another object of the invention is to provide a beverage dispenser having a dispenser faucet provided with a slidable valve member resiliently maintained in closed position and means for actuating said valve member having a lost motion connection therewith and operatively connected with an agitator in the beverage container.

To these and other ends, the invention consists in the construction and arrangement of parts that will appear from the following description when read in conjunction with the accompanying drawings, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Fig. 1 is a central vertical section of a beverage dispenser illustrating the application of one possible embodiment of the invention;

Fig. 2 is an enlarged fragmentary view of the same, parts being shown in another position;

Fig. 3 is a similar view, parts being shown in still another position to open the valve, and other parts being sectioned away to illustrate the construction;

Fig. 4 is a vertical central sectional view of a dispenser illustrating a modified form of the invention, parts being broken away to conserve space;

Fig. 5 is a similar view showing the parts moved to open the valve;

Fig. 6 is an enlarged sectional detail view, the section being taken on line 6—6 of Fig. 4 looking in the direction of the arrows at said line;

Fig. 7 is a vertical central sectional view of a dispenser illustrating another modified form of the invention, parts being broken away to conserve space;

Fig. 8 is a similar view showing parts in another position;

Fig. 9 is a section through the valve showing the valve member in open position, as in Fig. 7, and

Fig. 10 is a similar view showing the valve member in closed position.

Similar reference characters refer to the same part in all the figures of the drawings. Referring particularly to Figs. 1 to 3 of the drawings, a beverage dispenser is shown comprising a refrigerating chamber 1 which may be of any suitable form, preferably cylindrical, and constructed with a suitably insulated outer wall 2. Arranged centrally in the refrigerating chamber is a beverage container 3 preferably of the same shape as the refrigerating chamber but of smaller dimensions so that when centrally arranged therein, its side wall is spaced from the outer wall of the refrigerating chamber. The bottom of the beverage container rests on a support 4 in the refrigerating chamber, which serves to space it above the bottom of the chamber. By this arrangement, the bottom and sides of the beverage container are spaced from the bottom and sides of the refrigerating chamber, which spaces may be filled with suitable refrigerating material, such as dry ice. The beverage container is provided with a suitable cover 5 and the refrigerating chamber with a cover 6.

Seated in an opening in the bottom of the beverage container is a thimble 7, the lower

end of which is threaded into one end of an L-shaped coupling 8, which is externally threaded for cooperation with the inner threaded end of a faucet 9, into which the free end of the coupling 8 projects. The faucet 9 projects outwardly through an opening in the wall of the refrigerating chamber and is open at its outer end and adjacent thereto is provided with a downwardly projecting discharge outlet or spout 10. At the point where it passes through the wall 2, the faucet is externally threaded for cooperation with suitable lock nuts whereby the faucet is secured in the wall of the refrigerating chamber. It will be understood that the openings in the bottom of the beverage container and wall of the refrigerating chamber may be sealed with suitable gaskets, as usual in the art.

Slidably mounted in the faucet member 9 is a tubular valve member 12, the reduced inner end 13 of which slidably engages the opening in the coupling 8, and at its outer end is provided with an enlargement or head 14 at its outer end arranged in the enlarged outer end of the faucet 9. The reduced portion 13 terminates in a shoulder 15 at its outer end which engages one end of an expansion spring 16 which is coiled about said reduced portion and anchored against the outer end of the coupling 8. This spring 16 operates to resiliently slide the valve member outwardly into engagement with a cooperating valve member 17 projecting inwardly from a cap 18 threaded on the outer end of the faucet 9. The valve member 17 is frustroconical in form and the outer end of the opening through the valve member 12 flares outwardly so that the member 17 fits snugly within said opening and completely seals it and prevents beverage from flowing from the valve member 12 into the discharge nozzle 10. As shown in the drawings, the joints between the inner end of the faucet and the coupling member 8 and between its outer end and the cap 18 may be sealed by means of gaskets, as usual in the art.

Hand operated means are provided for moving the valve member 12 inwardly against the tension of the spring 16 and out of engagement with the cooperating valve member 17, to permit beverage to flow therefrom into the discharge nozzle 10. To this end, the faucet member 9 is provided with a housing 19 in which a rock shaft 20 is mounted. Keyed to the ends of the rock shaft 20 is a yoke 21 having an upwardly projecting shank 22 which carries a finger piece 23 at its upper end. Also keyed to the shaft 20 within the housing 19 is an arm 24 having a laterally projecting lug 25 at its lower end which engages a slot 26 provided in the head 14. From an inspection of the drawings, it will be noted that the slot 26 is wider than the lug 25 so that the fingerpiece 23 has a lost motion connection with the valve member 12, and moves independently thereof while its lug 25 moves from engagement with its front wall, as shown in Fig. 1 to engagement with its rear wall as in Fig. 2, further movement toward the Fig. 3 position being necessary to actuate the valve member.

The shank 22 of the hand operated device is operatively connected with an agitator 27 arranged in the beverage container. The agitator is mounted on the inner end of a push rod 28 slidably mounted in a sleeve 29 projecting through openings in the walls of the beverage container and refrigerating chamber in which it is mounted. To this end, the sleeve 29 is externally threaded at its ends and the threaded portions are arranged in the openings in the walls of the beverage container and refrigerating chamber and receive lock nuts on opposite sides of each of the walls whereby the sleeve is secured therein. If desired, gaskets may be arranged between the lock nuts and opposite sides of the walls for sealing the openings, as usual in the art. Threaded on the inner end of the sleeve 29 is a second sleeve 30 which is provided with an internally threaded recess at its inner end for the reception of a packing engaged by a thimble 31 threaded into the inner end of the sleeve 30, and serves to seal the union between the rod 28 and the inner end of the sleeve 29 in which it slides.

Resilient means are provided for normally projecting the agitator inwardly to the position shown in Fig. 1. Said means comprises a spring 32 coiled about the reduced outer end of the rod 28 and at its inner end engaging a shoulder on the rod. At its outer end, the spring is anchored against the inner side of a cap 33 threaded on the outer end of the sleeve 29. The outer end of the rod 28 is pivoted to one end of a link 34, the other end of which is pivotally connected with the shank 22 of the hand operated valve actuating device.

Normally the parts assume the position shown in Fig. 1 under the action of the springs 16 and 32 with the faucet valve closed and the agitator at its innermost position. When the finger piece 23 is moved outwardly or to the right, as viewed in the drawings, the agitator is also moved outwardly or to the right, during which time the lug 25 swings idly in the slot 26 in the valve member until it engages the rear wall of the slot, as shown in Fig. 2. If the fingerpiece is reciprocated between the Fig. 1 and Fig. 2 positions, the agitator is actuated in the container to agitate the beverage, while the faucet remains closed. If, however, the fingerpiece is moved to the right from the Fig. 2 position, the agitator is moved still farther to the right and the lug 25 engages the rear wall of the slot 26 and moves the valve member 12 to the left, to the position shown in Fig. 3,

to open the valve to permit beverage to flow from the faucet.

Referring now to the modified form of the invention shown in Figs. 4 to 6, a thimble 40 projects through an opening in the bottom of the beverage container 3, and at its lower end is threaded into a hollow coupling member 41 internally threaded at its ends. A tube or sleeve 42 is threaded into the outer or right hand end of the coupling member and projects outwardly through an opening in the wall of the refrigerating chamber 2. The outer end of the tube 42 is externally threaded for the reception of lock nuts which engage the inner wall of the chamber and cooperate with a shoulder on the inner end of a tubular faucet member 43 threaded on its outer end to secure the tube in the wall of the chamber. An agitator 44 is arranged in the beverage container and has a downwardly projecting shaft 45 keyed thereto which has a bearing in the thimble 40 and at its lower end has a pinion 46 secured thereto and arranged in the coupling 41. The agitator is rotatably supported on the thimble 40, and a movable rack 47 engages the pinion 46 for turning the agitator.

The rack 47 is slidably mounted and has bearings 48 and 49 in the coupling member 41. At its outer or right hand end, as viewed in the drawings, it is connected to a rod or plunger 50 arranged in the tube 42 and at its outer end is connected to or formed integral with an actuator 51 having a slot 52 engaged by a lug 53 on an arm 54 keyed to a rock shaft 55. The shaft 55 has bearings in the walls of a housing 56 on the faucet member 43 and has a yoke 57 keyed to its ends and provided with a fingerpiece 58. The actuator 51 is slidably mounted in a sleeve 59 having a restricted rear end through which the rod 50 extends. A spring 60 is coiled about the rod 50 and at its rear end engages the restricted end of the sleeve 59 and at its other end engages the actuator 51 and operates to resiliently slide the actuator outwardly to the right to the normal position shown in Fig. 4. When the fingerpiece is moved to the right from said figure, the actuator 51 moves to the left and with it the rack 47 and rotates the agitator 44.

The member 40 is provided with lateral ports through which the beverage is permitted to flow downwardly into the member 41 from whence it flows outwardly to the right through ports in the bearing member 49 into the tube 42. From the tube 42 it flows into the faucet 43 and thence into the tubular member or sleeve 59 and through ports or openings provided therefor in the member 51 to the discharge nozzle 62 at the outer end of the faucet member. The nozzle 62 is secured to the outer end of the faucet member by means of a collar 63 threaded on the faucet member and engaging a flange 64 on the nozzle whereby it may be clamped against the outer end of the faucet or a gasket arranged thereon.

A valve member 65 is slidably mounted in the outer end of the faucet 43 and has a head member 66 adapted to engage in the opening in the nozzle 62 to prevent the flow of beverage therefrom. The member 65 is of spider formation, as shown in section in Fig. 6, to permit the beverage to flow freely therethrough. Normally the head 66 is seated in the opening in the nozzle 62 under the action of a spring 67 seated against a shoulder 68 provided therefor in the rear end of the faucet and coiled about the rod 50 in the faucet and at its forward end engages the rear end of the sleeve 59 which engages the rear end of the valve member 65. The actuator 51 has a centrally arranged forwardly projecting rod 69 which passes loosely through a centrally arranged opening in the valve member and at its forward end has a nut 70 secured thereto and adapted to move into engagement with the valve member and withdraw it from engagement with the opening in the nozzle, as shown in Fig. 5. The rear or inner end of the coupling 41 is closed by means of a cap 71 threaded therein and engaging its end or a gasket arranged thereon.

Normally the parts assume the position shown in Fig. 4 under the action of the springs 60 and 67, with the valve closed and the fingerpiece 58 in a rearward position. When the fingerpiece is moved forwardly, the actuator 51 is moved rearwardly, causing the rack 47 to turn the agitator, and during this movement the rod 69 moves independently of the valve member until its nut 70 engages the latter when further movement of the fingerpiece moves the valve member to the position shown in Fig. 5 to open the valve. If the fingerpiece is reciprocated to move the nut 70 between the position of Fig. 4 and the point of contact with the valve member, against the tension of the spring 60, the agitator is operated to agitate the beverage while the valve remains closed and no beverage is withdrawn. When, however, the member 50 is moved rearwardly from such position, the valve member is moved against the tension of the spring 67 to open the faucet and permit the beverage to flow therefrom. The spring 67 is relatively stronger than the spring 60 so that the latter may be compressed without entirely relieving the tension of the former from the valve member.

In the modified form shown in Figs. 7 to 10 of the drawings, the construction of the agitator 44 and the thimble or bearing member 40 is similar to that shown in Figs. 4 and 5. An L-shaped coupling 80 is threaded at one end on the lower end of the thimble 40 and has an enlarged opening at its outer end which is internally threaded for the reception of a packing and a bearing member 81 for

the inner end of a tubular valve member 82 having a rack 83 at its inner end which engages the pinion 46 on the agitator. The inner end of a tubular faucet member 84 is also threaded into the coupling 80 and extends outwardly through an opening in the wall of the refrigerating chamber, in which it is mounted in the usual manner. The faucet member is closed at its outer end by means of a plug 85 and has a downwardly projecting discharge nozzle 86. The tubular valve member 82 is rotatably mounted in the faucet member and has an enlargement or head 87 at its outer end which bears against the plug 85. The valve member has a lateral opening 88 in the head adapted to move into and out of registration with the discharge nozzle when the valve member is turned.

Slidably mounted in the faucet member on the valve member is an actuator 89 adapted to be operated by a fingerpiece 58, in all respects like that shown in Figs. 4 and 5. The actuator is provided internally with a spiral worm 90 which engages one or more lugs 91 arranged on the periphery of the valve member. A spring 92 is arranged in the faucet member and engages a shoulder provided therefor at one end and at its other end engages the actuator 89 and tends to resiliently move it to its outermost position shown in Fig. 8.

Normally the parts occupy the position shown in Figs. 8 and 10, in which the opening 88 occupies a position out of register with the opening in the discharge nozzle and the actuator is at its outermost position. When the fingerpiece is swung outwardly from said position, the actuator slides inwardly and turns the valve member in the direction indicated by the arrow in said Fig. 10 and rotates the agitator. It will be noted that approximately three-fourths of a revolution of the valve member is required to move the opening 88 into registration with the discharge nozzle, during which time the agitator is actuated. If the movement of the fingerpiece is stopped before the opening 88 registers with the discharge nozzle, it may be operated to actuate the agitator without discharging beverage from the faucet.

Although only three of the many possible embodiments of the invention are shown and described herein, it will be understood that this application is intended to cover such changes or modifications as come within the spirit of the invention or scope of the following claims.

We claim:

1. A beverage dispenser comprising a beverage container, an agitator movable in the beverage container, a dispensing faucet having a discharge opening and connected with said beverage container, a valve member movable in said faucet for opening and closing said discharge opening, resilient means for moving the valve member to close the discharge opening, a hand operated member operatively connected with said valve member and having a limited movement independently thereof, and means positively connecting said hand operated member with said agitator.

2. A beverage dispenser comprising a beverage container, an agitator movable in the beverage container, a dispensing faucet having a discharge opening connected with said beverage container, a tubular valve member movable longitudinally in said faucet, a cooperating fixed valve member, resilient means for moving the movable valve member into engagement with the fixed valve member, a hand actuated device movable independently of the movable valve member into engagement therewith to move it against the action of said resilient means to open the valve, and means operatively connecting said hand actuated device with said agitator.

3. A beverage dispenser comprising a beverage container, an agitator in said beverage container, a rod slidably mounted in the walls of said beverage container and refrigerating chamber on which said agitator is carried, resilient means for moving said rod in one direction, a manually operated pivoted device operatively connected with the outer end of said rod for moving it in the other direction, a dispensing faucet connected with the bottom of said beverage container, a movable valve member for closing said faucet, and a lost motion connection between said valve member and manually operated device.

4. A beverage dispenser comprising a beverage container, an agitator revolubly mounted in said beverage container, a dispensing faucet connected with said beverage container and having a discharge opening, a valve member movable in said faucet for closing said discharge opening, an actuator movable in said faucet for rotating said agitator, a lost motion connection between said actuator and valve member whereby the actuator is movable independently of the valve member to rotate the agitator and into engagement with the valve member to open the valve, and a hand operated device for operating the actuator.

5. A beverage dispenser comprising a refrigerating chamber, a beverage container therein, an agitator revolubly mounted in said beverage container, a dispensing faucet connected with said beverage container and having a discharge opening, a valve member movable in said faucet for closing said discharge opening, a gear on said agitator, a rack operatively engaging said gear, means for moving the rack to turn the agitator, and means connecting said moving means with said valve member whereby it is movable independently of the valve member to rotate

the agitator while the valve is closed and into engagement with the valve member to open the valve.

6. A beverage dispenser comprising a beverage container, an agitator movable in the beverage container, a faucet for dispensing beverage from the container, hand operated means movable independently of the faucet but operable to open the same, and means positively connecting said hand operated means with the agitator whereby the agitator is operated by any movement of the hand operated means.

In witness whereof, we have hereunto signed our names.

LEON L. BENHAM.
HARRY L. FERREE.
WESLEY J. BALKWILL.