

Sept. 29, 1953

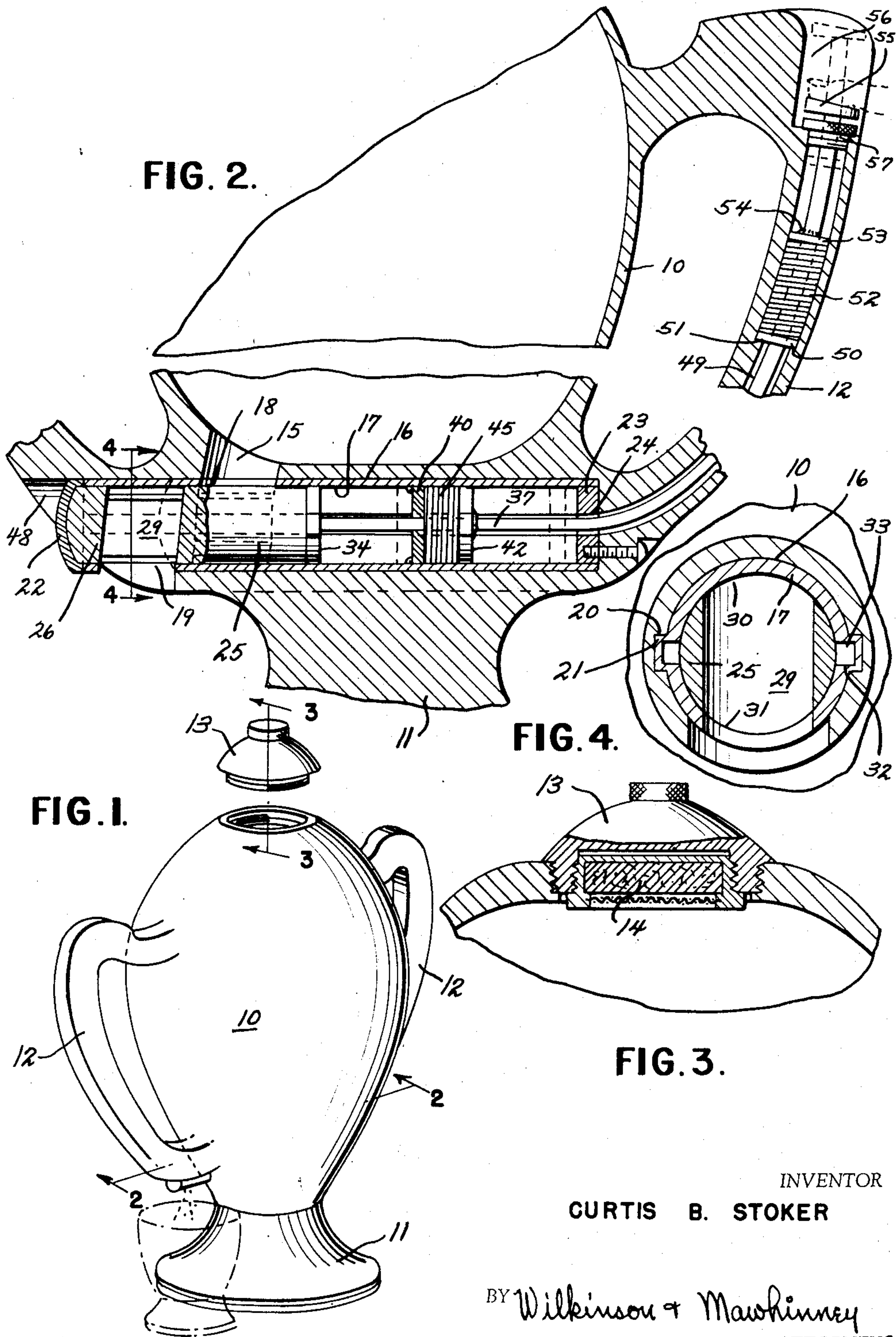
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2,653,734

AUTOMATIC SUGAR BOWL

Filed Aug. 1, 1951

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FIG. 5.

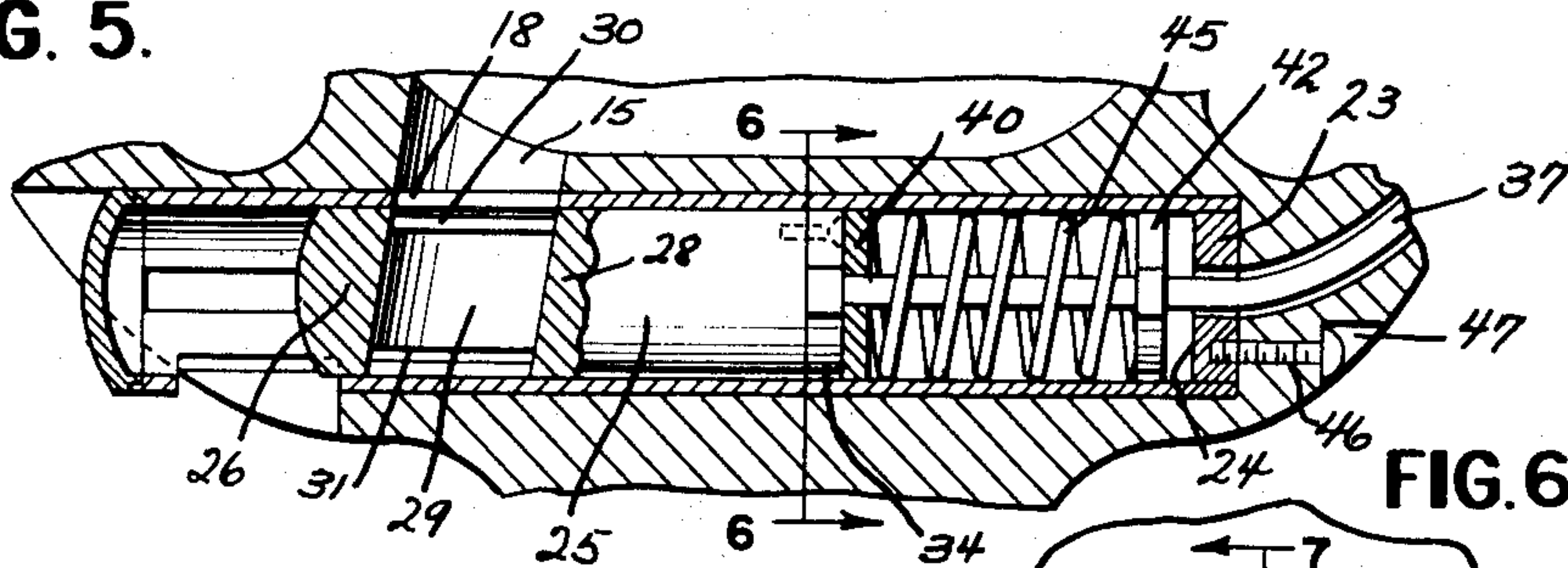


FIG. 6.

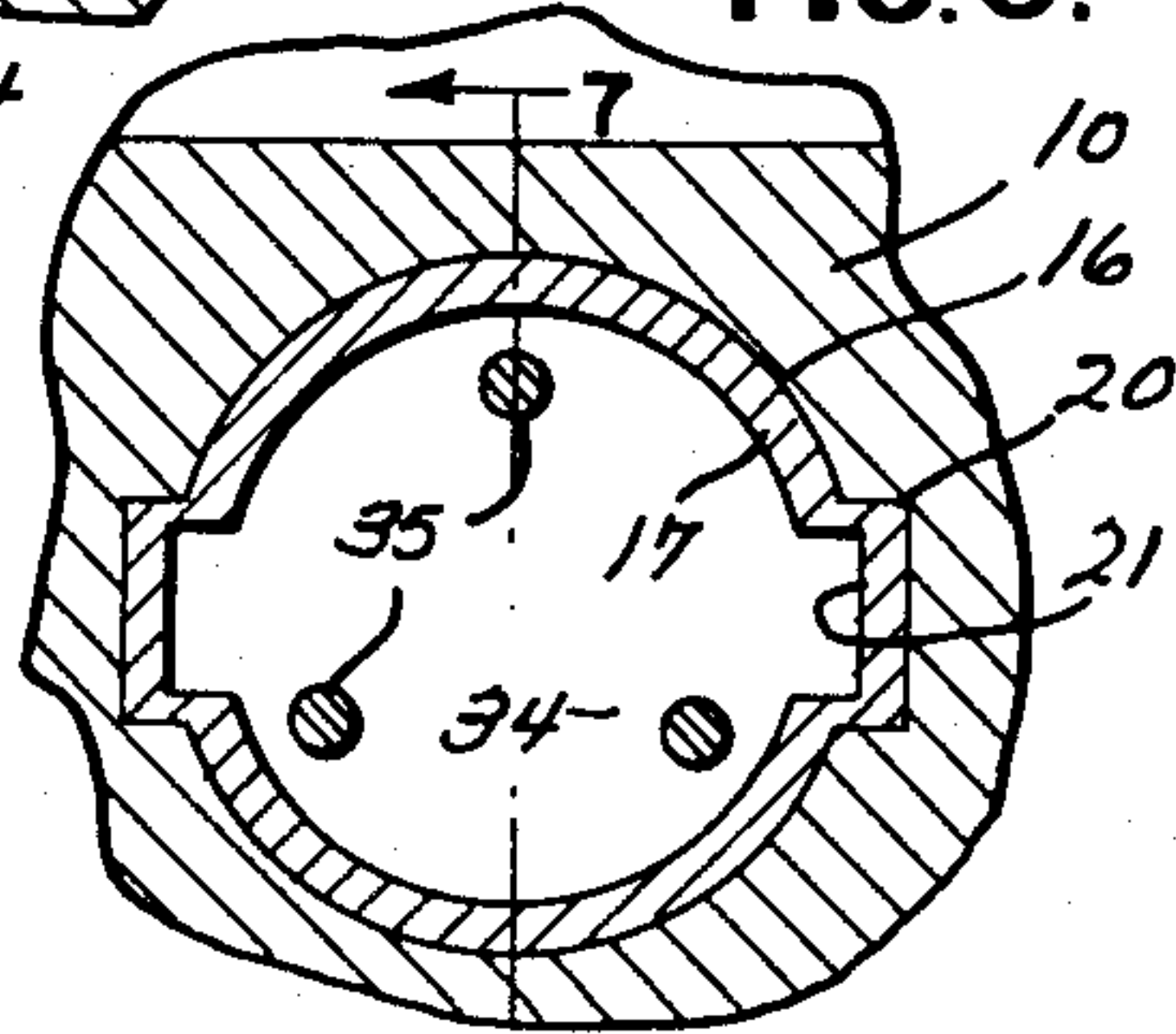


FIG. 8.

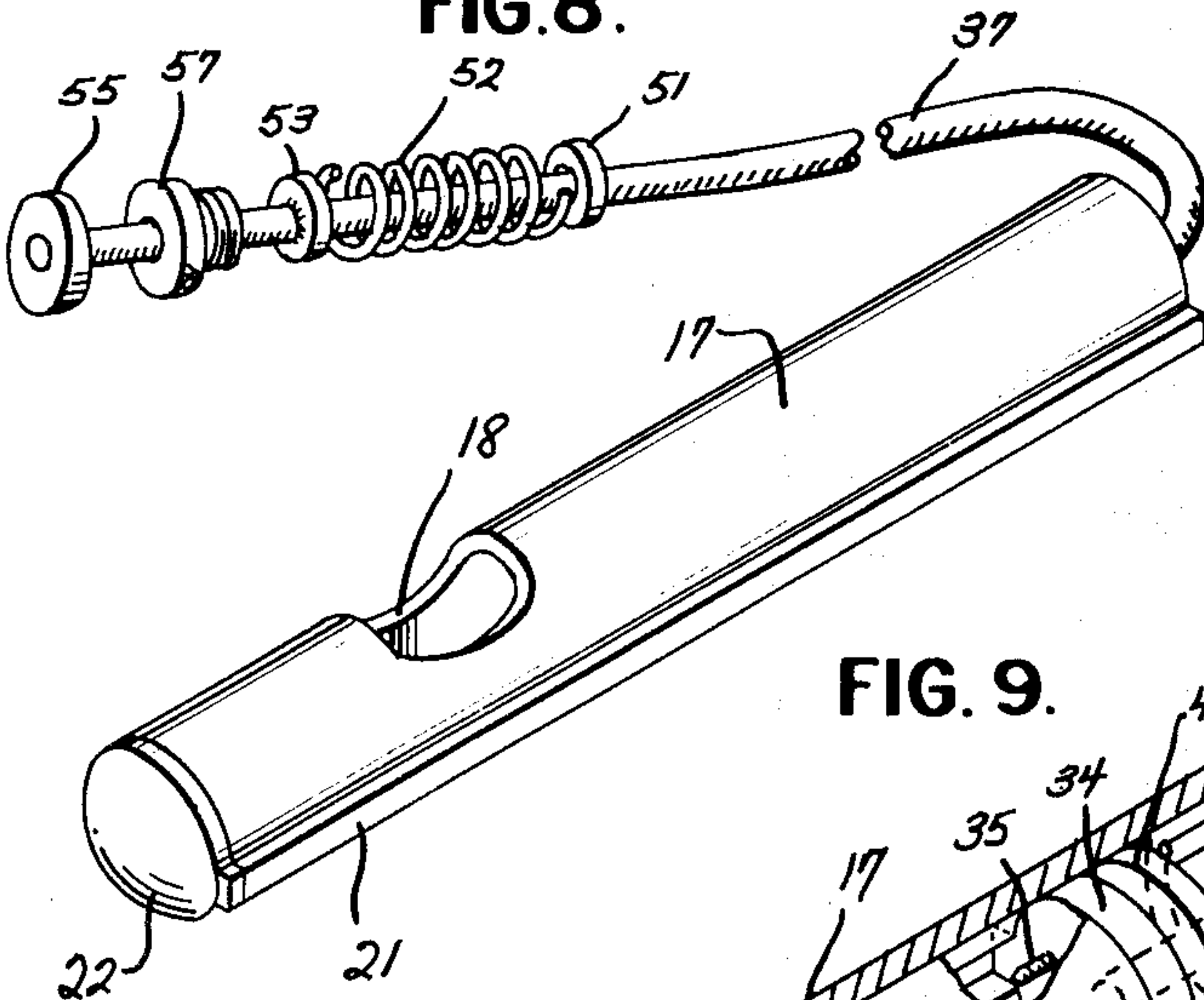


FIG. 9.

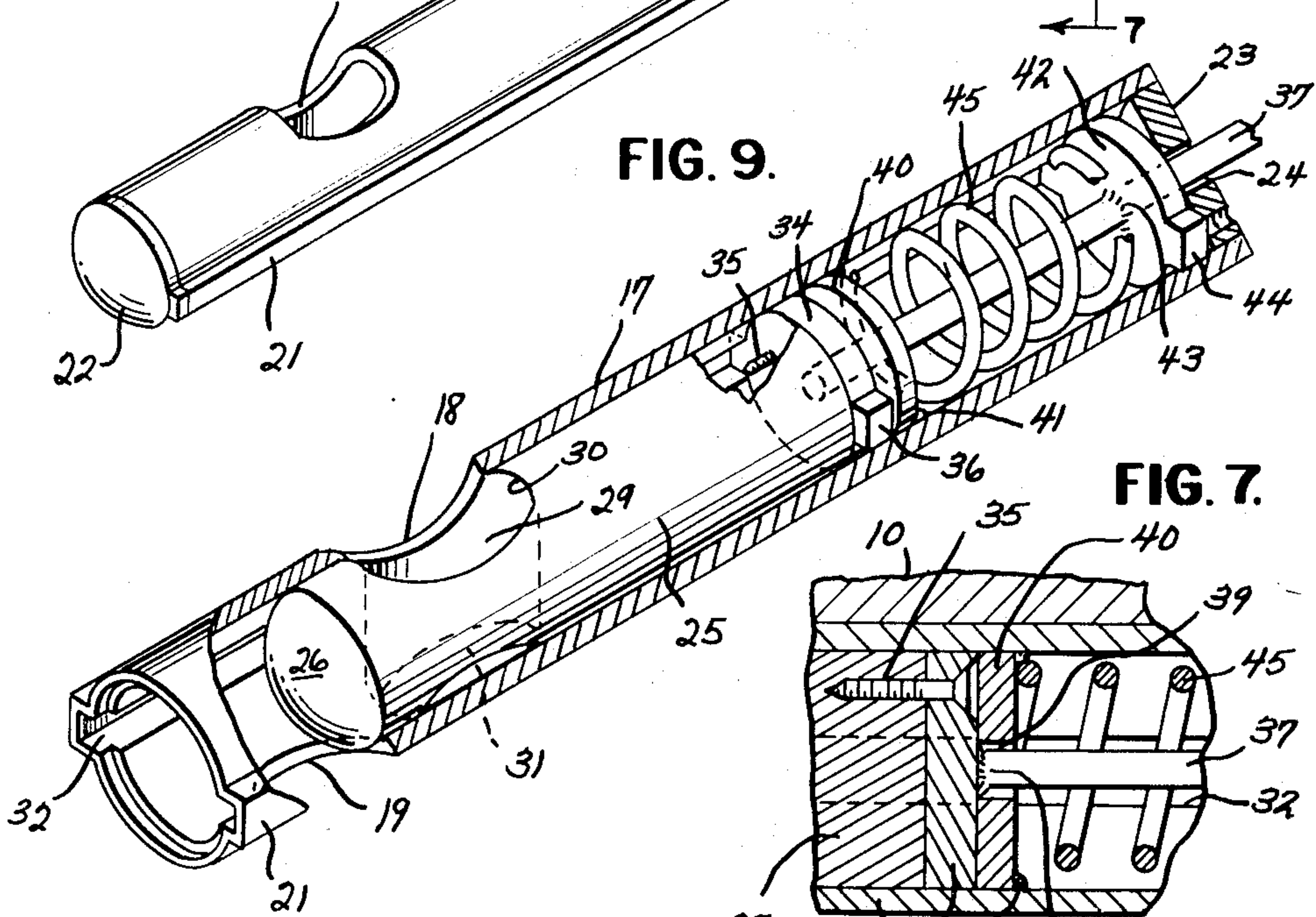
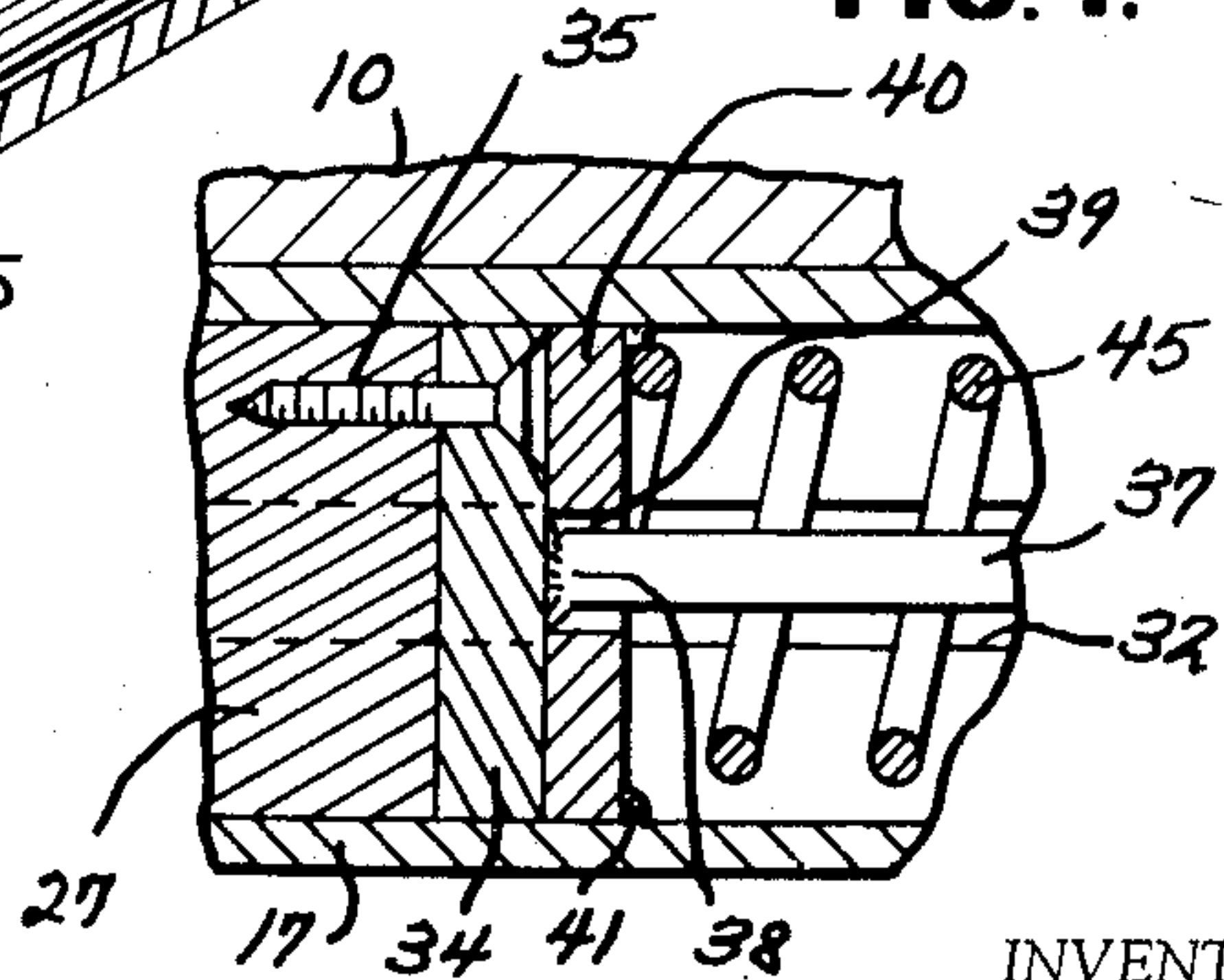


FIG. 7.



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## UNITED STATES PATENT OFFICE

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## AUTOMATIC SUGAR BOWL

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4 Claims. (Cl. 222—324)

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The present invention relates to improvements in an automatic sugar bowl and has for an object to provide equipment associated with a sugar container for dispensing the sugar in an automatic manner and in quantities which may be measured.

Another object of the invention is to provide a compact unitary dispensing device incorporated in the lower portion of the sugar bowl for controlling the delivery of the sugar crystals to a suitable receptacle which may be placed beneath a delivery opening of the device.

A further object of the invention is to provide an improved dispensing device for sugar bowls which will avoid waste of the sugar and promote economy and sanitation in the use of the device in that the sugar does not come in contact with the hands of the operator and hence the general health of users of the device and consumers of the sugar is promoted which is important in dispensing sugar in restaurants and institutions.

A still further object of the invention is to provide a dispensing device which is unique in operation and in which the parts are not exposed but are concealed so that the device does not detract from the appearance of the sugar bowl on the table.

A still further object of the invention is to provide an improved automatic sugar bowl in which duplex springs angularly related to one another operate upon portions of a bendable thrust rod for the purpose of locally shifting such rod in one direction with complete avoidance of any binding of the rod in negotiating its curved path of movement.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein the symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a perspective view of an automatic sugar bowl constructed in accordance with the present invention with the cover shown removed and elevated above the top of the bowl with a receptacle shown in dotted lines for receiving sugar dispensed by the bowl.

Figure 2 is a vertical section taken on an enlarged scale on the line 2—2 of Figure 1 and showing the parts in a sugar delivery position.

Figure 3 is a fragmentary vertical section taken on an enlarged scale on the line 3—3 of Figure 1, but with the cover in place.

Figure 4 is a transverse vertical section taken on the line 4—4 of Figure 2.

Figure 5 is a fragmentary vertical section similar to Figure 2 but with the parts in a sugar receiving position.

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Figure 6 is a vertical transverse section taken on the line 6—6 in Figure 5 and somewhat magnified.

Figure 7 is a longitudinal fragmentary section taken on the line 7—7 of Figure 6.

Figure 8 is a perspective view of the dispensing unit apart from the sugar bowl, and

Figure 9 is an enlarged fragmentary perspective view, with parts broken away and parts shown in section and with the parts shown in sugar receiving position.

Referring more particularly to the drawings, 10 designates a sugar bowl of desired configuration forming a container for sugar, said body or container being supported upon a base 11 and preferably having two handles 12 at diametrically opposite sides thereof.

A screw or other cover or cap 13 removably encloses the container, and such cap is preferably constructed to receive a screw threaded or other removable cartridge or unit 14 containing silica gel or some other material having high moisture absorptive qualities whereby the sugar crystals in the bowl or container may be maintained in a dry condition for free flowing to the bottom outlet opening 15.

The lower portion of the body 10 is formed with a horizontal recess 16 into which a dispensing unit is removably introduced. An outer stationary tube 17 is a part of this unit, such tube having an upper port 18 registering with the outlet 15, and a lower discharge port 19 displaced axially of the tube 17.

The body 10 is provided with longitudinally extending channels 20 at the sides of the recess 16 to receive ribs 21 on the outer tube 17 to prevent rotation of the tube 17. The outer end of the tube 17 is closed by an imperforate head 22 while the inner end of such tube is closed by an inner head 23 having a perforation 24.

The plunger 25 is mounted to reciprocate in the tube 17. This plunger may be of suitable construction. For instance, it may have an outer head 26, an inner head 27 and a partition or wall 28 defining with the outer head 26 a measuring or dispensing chamber 29 open at its top and bottom portions as indicated at 30 and 31. The opening 30 is adapted to register with the outlet 15 and port 18, while the lower opening 31 registers in the outer position of the plunger with the bottom port 19.

Channels 32 may be formed in the ribs 21 to receive ribs 33 on the plunger 25 to avoid rotation of the plunger within the tube 17.

The inner end of the plunger 25 may be connected to a thrust head 34 as by screws 35 or other fastenings. As shown in Figure 9, the thrust head 34 is equipped with peripherally extending lugs or ribs 36 slidable in the channels 32 to prevent rotation of such thrust head 34.



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A bendable thrust rod 37 is affixed to the thrust head 34 as by welding 38 or the like. The thrust rod 37 slides through an aperture 39 in a fixed abutment 40 secured as by welding 41 to the outer tube 17. A disc 42 is slidably mounted in the outer tube 17 in spaced relation to the abutment 40, such disc 42 being affixed to the thrust rod 37 as by the welding 43 or otherwise. Lugs or ribs 44 on the slidable disc 42 are disposed in the channels 32 to avoid rotation of the disc 42. A coil spring 45 is wound in an appropriate number of convolutions about the thrust rod 37 between the stationary abutment 40 and the slidable disc 42, such spring helix being housed within the outer tube or casing 17.

All of these parts are mounted in the tube or casing 17 and constitute a unitary device which may be removably held in the recess 16 as by a screw 46, the head of which is protected within a countersunk notch 47 of the body 10. At the opposite end, the recess 16 is open at 48 through the side wall of the body 10 to permit of the insertion and removal of the dispensing unit. This open mouth 48 is preferably arranged at the base of one handle 12 at the point where the handle merges with the body 10.

The opposite handle 12 is hollow or provided with a channel 49, which channel communicates at its lower end with the inner end of the recess 16 in alignment with the aperture 24 in the inner tube head 23. The thrust rod 37 is slidable through this aperture 24, and in the channel 49 of the handle, such channel being curved in conformity with the curvature of the handle, the thrust rod 37 being of bendable or flexible material accommodating itself readily to the curvature of the handle.

In the channel 49 near the upper portion of the handle is a shoulder 50 against which engages a stationary abutment head 51 through which the rod 37 freely slides. The lower end of a spring helix 52 engages against the abutment head 51, while the upper end of such spring is engaged by a slidable disc 53 welded or otherwise fastened to the thrust rod 37 as indicated at 54.

The upper end of the thrust rod 37 is provided with a button or finger piece 55 mounted in a recess 56 at the upper end of the handle, which recess is open at its top and outer side for the accommodation of a finger or thumb of the operator in engaging and depressing the button 55. The upper end of the channel 49 may be removably closed by a screw plug 57 through which the thrust rod 37 slides.

In operation, the two springs 45 and 52 tend to shift the plunger 25 to the position shown in Figures 5 and 9 in which the measuring or dispensing chamber 29 is in position to receive a supply of the sugar crystals from the container. In this position the bottom opening 31 of the chamber 29 is closed by the lower blank wall of the outer tube 17.

Whenever a charge of sugar is required, the channeled handle 12 is grasped with the thumb in engagement with the operating button 55, the thumb being employed to depress the button from the dotted line position in Figure 2 to the full line position causing the thrust rod 37 to compress the springs 45 and 52 and to shift the plunger 25 to the position of Figure 2 where the measuring or dispensing chamber 29 now registers with the bottom outlet port 19. As shown in Figure 1, a receptacle in dotted lines is indicated below the discharge port 19 for receiving the supply of sugar. By repetitive operation of the button 55,

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as many charges of sugar as desired may be delivered to the receptacle. Inasmuch as the chamber 29 may be pre-selected to contain a desired volume, the amount of sugar delivered to the receptacle may be nicely regulated and determined.

When the button 55 is depressed, the thrust rod 37 is shifted downwardly in the channel 49 and forwardly in the tube 17 carrying with it the slidable discs 53 and 42. At the same time, the abutments 51 and 40 remain stationary so that the springs 52 and 45 are compressed. When the button 55 is subsequently released, the springs 45, 52 will expand to the positions of Figures 5, 8 and 9, thus restoring the plunger 25 to the inner or sugar receiving position.

Although I have disclosed herein the best form of the invention known to me at this time, I reserve the right to all such modifications and changes as may come within the scope of the following claims.

What I claim is:

1. An automatic sugar bowl comprising a container for sugar having a bottom outlet and a recess communicating with the outlet, a hollow handle forming a continuation of the recess, a tube in the recess having a top port registering with the outlet and a bottom discharge port axially displaced from the top port, a plunger slidably mounted in the tube having a measuring chamber open at top and bottom movable between said ports for receiving and discharging sugar, a thrust rod fixed at one end to said plunger and slidable through said tube and hollow handle, means to manually move said thrust rod in one direction to move said plunger to a sugar discharging position, a spring in said tube and operatively connected to said thrust rod adjacent one end thereof so as to exert a pushing force on said thrust rod to move it in the opposite direction to move the plunger to its sugar receiving portion, and a second spring in said handle and operatively connected to said thrust rod adjacent the opposite end thereof so as to exert a pulling force on said thrust rod to move it in said opposite direction.

2. An automatic sugar bowl comprising a container for sugar having a bottom outlet and a recess communicating with the outlet, said recess having a discharge outlet axially displaced from said bottom outlet, a handle having a channel therethrough forming a continuation of the recess, said handle and channel being curved and having a bend therein, a plunger slidably mounted in the recess having a measuring chamber open at top and bottom movable between said outlets for receiving and discharging sugar, a bendable thrust rod fixed at one end to said plunger and slidable through said recess and said channel, means to move said thrust rod in one direction to move said plunger to a sugar discharging position, resilient means in said recess at one side of the bend in said channel for moving said thrust rod in the opposite direction to move the plunger to a sugar receiving position, and resilient means in said channel at the opposite side of the bend in the channel for moving said thrust rod in said opposite direction.

3. An automatic sugar bowl comprising a container for sugar having a bottom outlet and a recess communicating with the outlet, a hollow handle forming a continuation of the recess, a tube in the recess having a top port registering with the outlet and a bottom discharge port axially displaced from the top port, a plunger slidably mounted in the tube having a measuring



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chamber open at top and bottom movable between said port for receiving and discharging sugar, a thrust rod fixed at one end to said plunger and slidable through said tube and hollow handle, an abutment fixed in the tube, a disc in the tube fixed to said rod in spaced relation to said abutment, a spring embracing said rod within the tube and having its opposite ends engaging said abutment and disc, an abutment head fixed in said hollow handle, a member in said hollow handle fixed to said rod in spaced relation to said head, and a spring embracing said rod within the hollow handle and having its opposite ends engaging said head and member.

4. An automatic sugar bowl comprising a container for sugar having a bottom outlet and a recess communicating with the outlet, said recess being substantially circular in cross section, and a unitary dispensing device fitted in said recess comprising a fixed tube having a top port registering with the outlet and a bottom discharge port offset laterally from the top port, a plunger slidably mounted in the tube having a measuring chamber open at top and bottom movable be-

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tween said ports for receiving and discharging sugar, means for biasing said plunger to a sugar receiving position, means to manually move said plunger to a sugar discharging position, said tube and plunger being substantially circular in cross section, angularly spaced apart ribs on the outer surface of said tube, the walls of said recess having channels for receiving said ribs to prevent rotation of said tube, angularly spaced apart ribs on the outer surface of said plunger, said tube having channels on its inner surface for receiving the ribs on said plunger to prevent rotation of the plunger, said recess at one end opening through one side of the container, and means for retaining the dispensing device in said recess.

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