

June 24, 1930.

L. H. MORIN

1,767,009

DISPENSER FOR PARTICULATE MATERIALS

Filed May 14, 1928

3 Sheets-Sheet 1

Fig. 1.

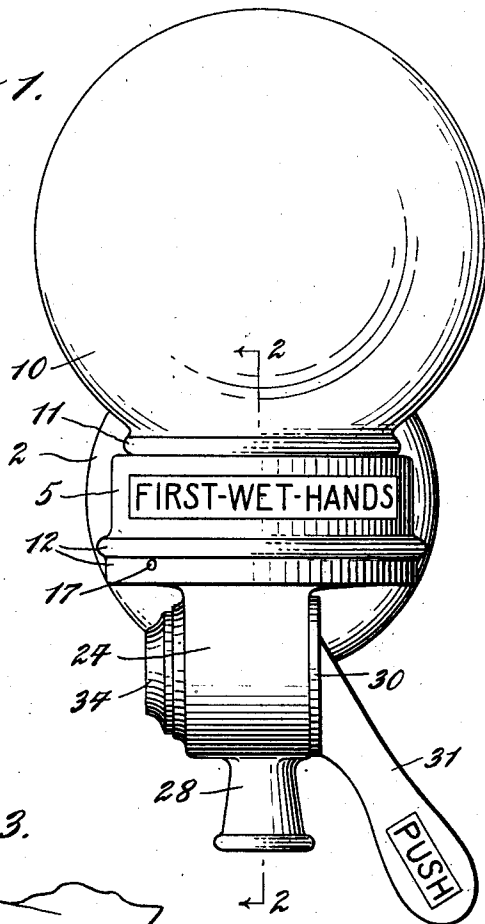


Fig. 8.

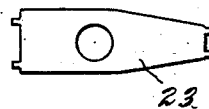


Fig. 3.

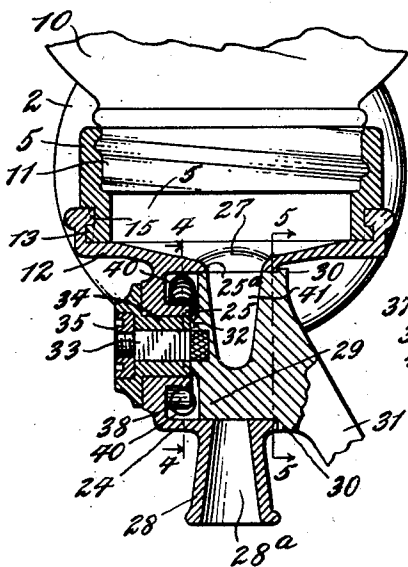


Fig. 4.

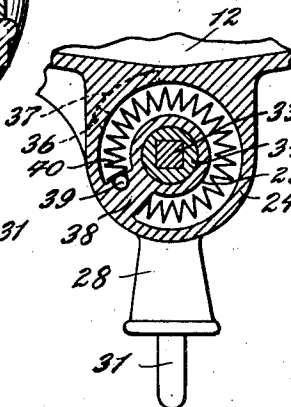
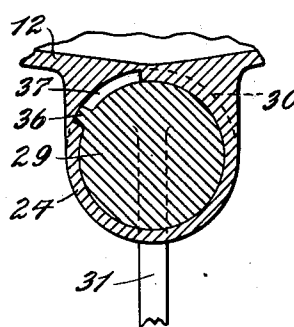


Fig. 5.



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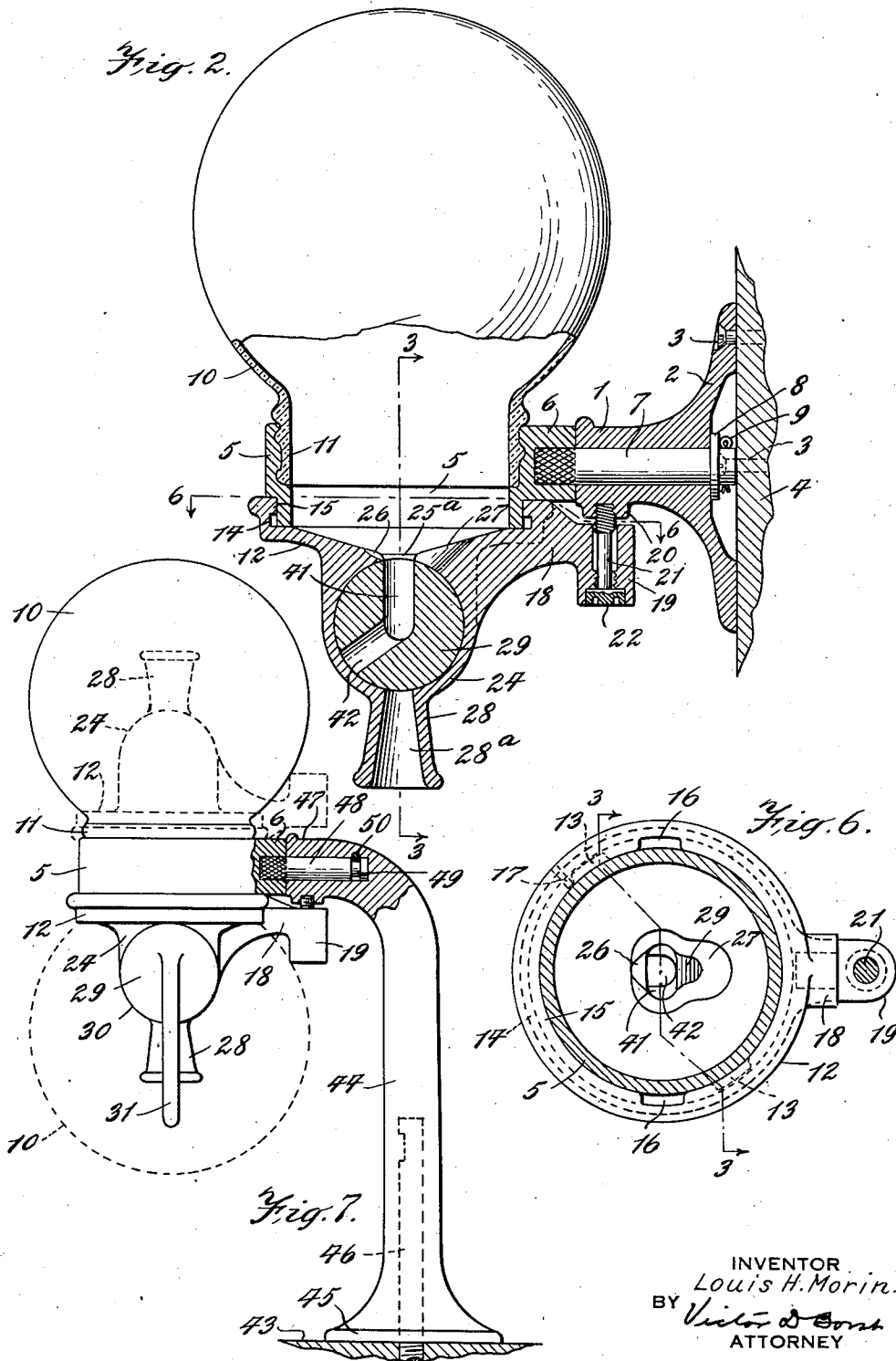
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DISPENSER FOR PARTICULATE MATERIALS

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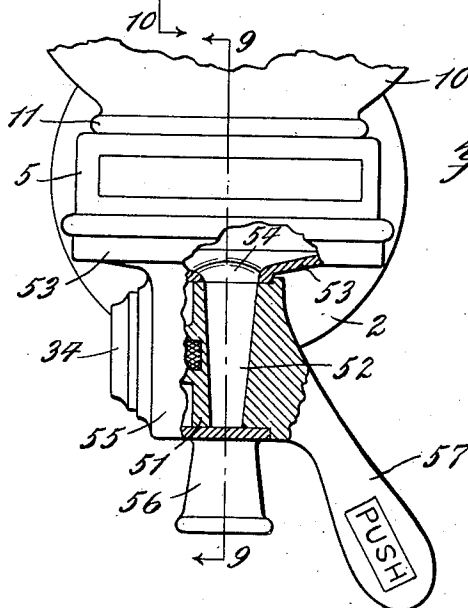
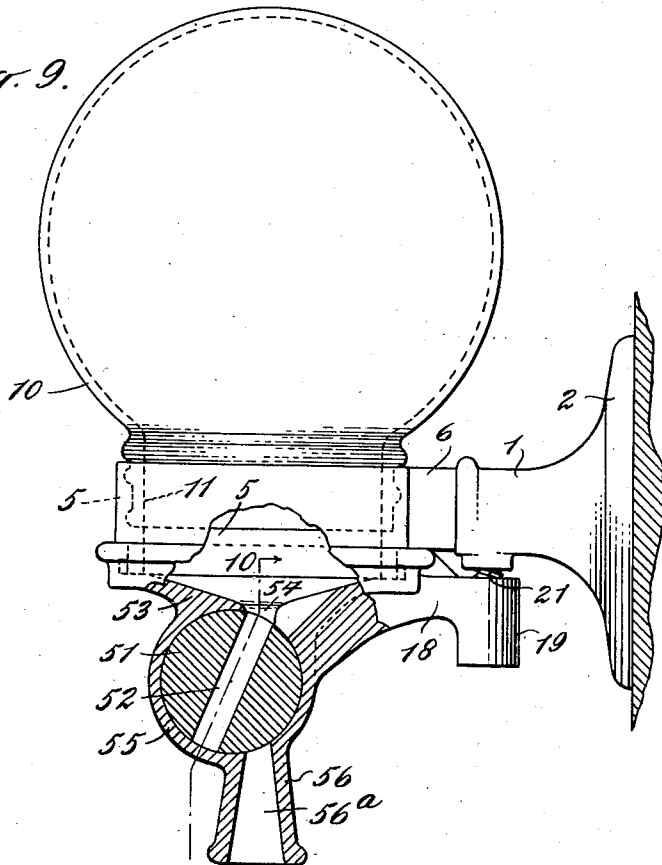
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DISPENSER FOR PARTICULATE MATERIALS

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3 Sheets-Sheet 3

Fig. 9.



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DISPENSER FOR PARTICULATE MATERIALS

Application filed May 14, 1928. Serial No. 277,628.

This invention relates more particularly to dispensers for substantially desiccated particulate or comminuted materials such as granular soap, flake soap, comminuted soap in the form commonly known as soap powder, and generally similar divided solid materials. The embodiment of the invention shown in the accompanying drawings has been designed for dispensing a measured quantity of soap of the kind or nature above noted. It is obvious that it could be utilized for similarly dispensing other materials composed of powder, granules, particles, flakes, or other small fragments, should occasion arise, either substantially as shown or with suitable slight modifications therein.

One object of the invention is convenience in refilling the container, without liability of breaking a container bowl which may be made of glass or similar material. Other objects of the invention are convenience of use and effectiveness in operation. Other objects of the invention are ease of disassembling for cleaning, strength, durability, simplicity of construction, and convenience and economy of manufacture. Other objects and advantages will hereinafter appear.

According to this invention a normally inverted container bowl may be reversed in position to bring its mouth upward for loading or refilling without removing the bowl and while it still remains securely attached to and supported by a rigidly mounted supporting bracket; also a bottom closure formed by a valve body or housing containing a dispensing valve mechanism may then be opened after the container has been reversed; also a single locking device in common is provided for securely maintaining the dispensing bowl in its normal inverted or dispensing position and at the same time preventing the opening of the housing which forms the bottom closure; also the invention further includes a particular construction of the dispensing mechanism or valve device which forms a measuring device for delivering a predetermined quantity of the material to be dispensed at each manual actuation. The invention further includes various features of construction and combinations of parts as

will appear from the following description.

The slightly variant embodiments of the invention which are shown in the accompanying drawings will now be described and thereafter the invention will be pointed out in claims, reference now being had to the drawings, in which:

Fig. 1 is a front elevation of a soap dispenser embodying the invention;

Fig. 2 (Sheet 2) is a view from the right hand side of Fig. 1, mostly in central vertical section on the line 2—2 of Fig. 1;

Fig. 3 (Sheet 1) is a front view which is a partial central vertical section on the line 3—3 of Fig. 2, and taken in part on the zig-zag line 3—3 of Fig. 6;

Fig. 4 is a view from the left hand side and is a partial vertical section on the line 4—4 of Fig. 3;

Fig. 5 is a similar view in vertical section on the line 5—5 of Fig. 3;

Fig. 6 (Sheet 2) is a horizontal section on the lines 6—6 of Fig. 2;

Fig. 7 is a right hand side elevation partly in central vertical section showing a different form of supporting bracket and also showing in broken lines the reversed position of the container bowl and its adjuncts;

Fig. 8 (Sheet 1) is a view of the flat side of a key in the form of a small spanner wrench to be used in opening the dispenser for refilling and in removing the valve member for cleaning;

Fig. 9 is a side view similar to Fig. 2 but showing a slight modification in the dispensing mechanism and is a partial vertical section on the line 9—9 of Fig. 10; and

Fig. 10 is a front elevation partly in vertical section on the zig-zag line 10—10 of Fig. 9.

The particular construction of the dispenser shown in Figs. 1 to 6 inclusive of the drawings will be first described. A rigid supporting bracket comprises a horizontal tubular bearing-forming stem 1 which projects forwardly and is provided at its rear end with a large hollowed out circular securing flange 2 by which the bracket may be firmly supported by means of screws 3 on any convenient

vertical wall 4. A strong horizontally arranged ring or annulus 5 is provided at the back with a radial boss 6 into which is inset and cast therein the knurled end portion of a strong rearwardly extending horizontal journal stud or shaft 7 which is journaled in the bearing formed by the tubular stem 1. The shaft 7 projects into the hollow space formed by the securing flange 2 and is there anchored against withdrawal from its bearing by means of a shoulder-forming washer 8 and a cotter pin 9.

A wide-mouthed inverted glass container bowl 10 has a large externally screw threaded neck 11 which screws into the upper side of the ring 5 with the inner cylindrical surface of this neck flush and in alignment with the inner cylindrical surface of the lower portion of the ring 5 (Fig. 2), this bowl being shown as globular. The bottom or lower side of the ring 5 is closed by a valve body 12 which may be opened. In the construction shown, this valve body 12 is removably firmly held in place upon the ring 5 by means of a bayonet joint or bayonet slot connection. This connection is formed by means of a pair of diametral lugs 13 on the ring 5 which are received within an internal circumferential groove 14 formed in the valve body beneath an internal upper flange 15, this flange being provided with a pair of diametrically arranged escape slots 16 for the lugs 13 (Fig. 6). The valve body 12 carries a stop pin 17 for one of the lugs 13 which projects from the periphery of the valve body into the groove 14 for limiting the rotative movement of the valve body 12 on the ring 5 when the lugs 13 are engaged in the groove 14 beneath the flange 15 (Fig. 6).

In carrying out the invention, a single releasable locking device is provided to prevent the opening of or the disengagement of the bottom closing valve body 12 from the ring 5 and at the same time to prevent rotative movement of the pivoted ring 5 on the bracket stem 1, so that thereby the above described reversible dispenser parts will be maintained in their normal upright position shown in the drawings (Fig. 1 and 2 particularly). In the construction shown, the bottom closure or valve body 12 is provided at the rear thereof with an integral radial arm 18 which carries at its end a small vertically arranged head 19, this head being just beneath the outer or forward end portion of the bearing-forming bracket stem 1. On its lower side the outer end of the bracket stem 1 has a small boss 20 in the lower side of which is provided a screw threaded socket. A screw pin 21, which is freely rotatable in the head 19, is screw threaded at its upper end and screws into this socket in the boss 20 (Fig. 2). This screw pin thus forms a locking bolt. It has a flat head 22 countersunk into the lower side of the arm head 19. This head 22 of the screw

pin has therein a pair of small socket holes as shown in which may be engaged the prongs shown at the smaller end of a key or spanner wrench 23 (Fig. 8) for screwing the pin 21 into or out of the socket in the bracket boss 20.

It will be noted (Fig. 2) that the stem or shank portion of the screw pin 21 is smooth and of reduced diameter while the bore in the head 19 which receives this pin is of reduced diameter and screw threaded in its outer or lower portion only, adjacent to the pin head 22. While this permits the screw pin 21 to be assembled by first screwing it into its bore and afterwards permits it freely to rotate therein, it prevents this pin from dropping out and thus causing inconvenience or becoming lost when it is screwed out of its socket in the bracket boss 20.

When the bowl 10 is to be filled or replenished with the material to be dispensed, the screw pin 21 is first screwed out of or disengaged from the boss 20 of the bracket arm 1. When this is done then the ring 5, together with the bowl 10 carried thereby and also together with the valve body 12 carried thereby, may be turned completely over or vertically reversed so that then the bowl hangs downward and the valve body is at the top. Then the valve body 12 may be rotated to bring its escape slots 16 into alignment with the lugs 13 on the ring 5, whereupon the valve body, together with all of the parts carried thereby, may be lifted off, leaving the bowl 10 with its mouth opening upward through the ring 5, for easy and convenient filling without the necessity of either removing the bowl from the ring 5 or the latter from its supporting bracket arm 1. Obviously, the dispenser may be restored to its normal operating condition shown in the drawings by a reverse series of these operations.

It will be noted that the horizontal axis of the journal stud or shaft 7 intersects the axis of the ring 5 so that a proper balancing of the weight is secured. It may also be noted that the circular peripheral portion of the valve body 12 fits up closely and tightly against the bottom of the ring 5 and that similarly the flange 15 of this valve body fits up against a shoulder formed on the ring 5, so that thereby the valve body 12 forms a tight closure for the lower side or bottom of the ring 5 to prevent the escape of the contents of the container bowl 10. It should also be particularly noted that the above described bayonet slot connection of the valve body 12 to the ring 5 prevents this valve body 12 from falling or dropping off after the screw pin 21 has been released from the bracket arm 1, while this screw pin when it is screwed into the bracket arm firmly clamps and holds the valve body 12 in place and also firmly and rigidly holds the ring 5, together with

all of the parts carried thereby, against any rotative movement or looseness.

The bottom-forming valve body or housing 12 carries all of the operating or dispensing parts by which delivery is effected. The bottom closure formed by this valve body is extended centrally downward and is there formed with a transversely arranged cylindrical shell or housing portion 24 which is freely and fully open at its right hand end while closed at its other end to provide a cylindrical socket. The closing wall of its left hand end has provided through it a bearing which in part is formed by an inwardly projecting central boss 25. The bottom-forming portion 12 of the valve body at its inner or upper side is inclined or slopes downwardly from the ring 5 towards its center and at the center is provided with an inlet aperture or supply opening 25^a into the shell 24 (Figs. 2 and 3). This opening is circumferentially rearwardly enlarged and in part formed by more sharply inclined front and rear inner guide surfaces 26 and 27 respectively of which the front surface 26 is shown as of considerably less extent than the rear surface 27, for a reason which will presently appear. On its lower side, in alignment with the axis of the ring 5 and with the above noted outlet opening in the bottom closure 12, the shell 24 is provided with a downwardly extending somewhat flaring delivery spout 28 of circular cross section which forms a downward diametral outlet aperture or downwardly flaring delivery passage 28^a from the cylindrical shell 24.

A rocking cylindrical valve member or valve plug 29, forming a measuring dispensing valve, fits snugly but rotatably within the socket provided by the shell 24. At its right hand end (Figs. 1 and 3) this valve member has a peripheral flange 30 which fits snugly up against the end of the shell 24. This end of the valve member 29 has formed integrally therewith a handle lever 31 which projects at an inclination downward and towards the right below and not far removed from the lower end of the delivery spout 28 (Fig. 1) and normally substantially in line therewith (Fig. 4). At its inner or left end (Fig. 3) the valve member 29 is centrally provided with a slight boss 32 which terminates in line with the inner end of the tubular boss 25 on the shell 24.

A squared valve stem 33 (Figs. 3 and 4) projects centrally from the left or inner end of the valve member 29 and is shown (Fig. 3) as having a round roughened end portion cast into the valve member 29 as an insert.

An outwardly headed bearing sleeve 34 fits over the square valve stem 33 and within the bearing formed in the end wall of the shell 24 and its boss 25. The outer end of the valve stem 33 is reduced and screw threaded to receive a flat nut 35 which is countersunk flush

into the head of the bearing sleeve 34 (Fig. 3) and this nut is provided with a pair of small socket holes as shown to receive the larger pronged end of the wrench key 23. In the construction shown, the rocking movement of the cylindrical valve member 29 is limited to about 45° by a peripheral lug 36 on this valve member just inward from its outer flange 30 and which works in an arcuate slot 37 provided in a thickened portion of the wall of the shell 24 (Fig. 5), so that the ends of this slot provide stops for the lug 36.

A radial web 38 connects the internal bearing boss 25 with the walls of the cylindrical shell 24 (Figs. 3 and 4). A stud 39 projects from the adjacent inner end of the valve member 29 and is loosely received substantially flush in a notch provided in the clockwise side of the web 38 (Fig. 4), so as to be inserted or withdrawn along with the valve member 29. A helically coiled expansion spring or push spring 40 within the shell 24 at the bottom of the valve-receiving socket surrounds the inner bearing boss 25 and at its opposite ends presses with some initial tension against the opposite sides of the radial web 38, thereby normally maintaining the valve stud 39 seated in its notch in this web. This spring 40 is a return spring for the valve member 29 and it normally holds this valve member at the rotative position thereof shown in the drawings, in which it is rotated to its limit of movement or as far as it will go in a right hand or clockwise direction as viewed from the right side of Figs. 1 and 3 and as appears in Fig. 2, and also as is indicated by the position of the stop lug 36 in Figs. 4 and 5. The valve plug 29 together with its stud 39 may be inserted into or withdrawn from the shell 24 while the spring 40 remains in place in the shell and under its original initial tension.

The cylindrical valve member or valve plug 29 has transversely through it a smooth aperture forming an uninterrupted continuous passageway providing an unobstructed dispensing port which in operation constitutes a measuring pocket. In the construction shown, this port through the valve plug 29 is of bent shape, being made up of two radial parts joined at a circumferential angle at the center of the valve member 29 and comprises an upper radial part or portion 41 and a lower radial part or portion 42 which is at an angle of substantially 45° out of alignment with the upper part 41 (Fig. 2). The upper part 41 is of slotted form along the length of the valve member 29 and tapers gradually downward until it is substantially circular at the center point where it smoothly joins or opens into the lower part 42 (Figs. 2 and 3). The lower part 42 is cylindrical and is of the same diameter as the upper end of the downwardly flaring

outlet aperture 28^a in the delivery spout 28 (Figs. 2 and 3). It will be noted (Figs. 2 and 3) that no shoulder or offset is formed where the port portion 41 joins the portion 42, but only a slight angle, which is rounded as shown, for the free flow of the material without lodging or sticking.

In the normal position of the dispensing valve 29 shown in the drawings the lower or outlet end of the lower port part 42 is closed by the cylindrical wall of the shell 24 (Fig. 2), while the upper or inlet end of the upper port part 41 is open and in register with the supply aperture or feed opening 25^a at the center of the bottom closure 12 (Figs. 2 and 3). The two joined parts 41 and 42 of the port which they form through the cylindrical valve member 29 thus in this position form a material-receiving pocket which is closed at its bottom and open at its top to be filled with the material to be dispensed.

In operation, the handle lever 41 is pushed rearwardly to the limit of its movement, for rocking the valve member 29 to its operated position. In this latter position of the valve member 29, the upper end of the pocket formed by the two joined port parts 41 and 42 will be closed by the cylindrical wall of the shell 24, the upper part 41 then standing at an angle of about 45° while the lower port part 42 will be vertical and open in registering alignment with the outlet aperture 28^a so that when the measured small quantity of the material to be dispensed will drop out of the port or pocket of the valve member 29 through the delivery spout 28 and into the palm of the hand held beneath this spout. It will be obvious, particularly from Fig. 1, that the lever 31 may be conveniently operated or pushed back by the thumb of the right hand while the palm of the same hand is held under the spout 28. As soon as this lever 31 is released the spring 40 will return the dispensing valve 29 together with its handle to its normal position shown in the drawings so that then the pocket-forming port in this valve will again be filled in readiness for the next subsequent operation.

It should be noted and will be evident from the drawings, particularly Fig. 2, that in the dispensing operation there is at no time a free opening for the material being dispensed to run out of the container bowl 10 through the angularly joined or communicating port parts 41 and 42 from the container bowl 10 down through the delivery spout 28, since when the valve member 29 is rocked to effect a delivery the upper or inlet end of the port part 41 will be entirely closed by the adjacent portion of the wall of the shell 24 before the lower or outlet end of the lower port part 42 begins to open into the delivery spout 28. Conversely, as the valve member 29 is returned to its normal position by the spring 40, the lower end of

the lower port portion 42 will be entirely closed by the adjacent portion of the wall of the shell 24 before the upper end of the upper port portion 41 begins to open past the adjacent edge of the shell wall. Thus there can be no possibility of any leakage during operation.

The more sharply inclined portions or surfaces 26 and 27 of the inner surface of the bottom closure 12 facilitate the feeding of the material through the supply hole 25^a into the upper portion 41 of the port through the valve member 29. The forward or left hand (Fig. 2) incline 26 is made small and short, not cutting into the supply hole 25^a, thereby to assure the complete closing of the upper end of the port part 41 before the lower end of the port part 42 begins to open, and vice versa. The rear incline 27 may be made larger and longer as shown so as to expose a portion of the cylindrical surface of the valve member 29, so that thereby the rocking valve member agitates the material sufficiently to prevent bridging, caking or clogging thereof.

The construction of the dispenser shown in Fig. 7 is modified or varied from that shown in Figs. 1 to 6 inclusive just described only in the minor respects required to adapt or enable it to be mounted upon a horizontal surface such as the support 43, which may be the top or slab of a washstand or lavatory basin. In this construction, the supporting bracket comprises an upright standard 44 having a base flange 45 and an inserted cast-in securing stud or rod 46 having a downwardly projecting screw threaded portion which may be screwed into or may pass through the slab 43 and be secured in place at the lower side of the slab by means of a nut (not shown).

The upper end portion of the standard 44 turns over forwardly on a curve to form a horizontal tubular bearing stem 47 integral with the standard. The bearing-forming bore of this stem 47 does not extend all of the way through at the back. A journal shaft 48 is rotatable in the bearing formed by the stem 47, the forward knurled end portion of this shaft being cast as an insert into the boss 6 of the ring 5, which thus together with the parts carried thereby is rotatably mounted upon and supported by the bracket stem 47. The inner or rear end portion of this shaft 48 is provided with a circumferential groove 49 in which is engaged an anchor pin 50 which enters the stem 47.

Other parts of the dispenser construction shown in Fig. 7 are the same as in that hereinbefore described in reference to Figs. 1 to 6 inclusive and such of these parts as appear have accordingly been given the same reference numerals. It will be noted of Fig. 7 that the reversed or replenishing position of the ring 5 together with all of the parts car-

ried thereby, including the container bowl 10 and the bottom-forming valve body 12 which closes the lower end of the ring 5, is indicated in broken lines, with the container bowl 10 hanging down and with the bottom-closing valve body 12 at the top, and as not yet removed for the refilling of the bowl.

Figs. 9 and 10 show a slightly variant form or modified construction of the dispensing valve or valve member with corresponding changes in the valve body shell, but in other respects this construction is the same as that hereinbefore described in reference to Figs. 1 to 6 inclusive, and may be the same as that described in reference to Fig. 7. In this modification shown in Figs. 9 and 10 there is shown a cylindrical valve member or valve plug 51 which has through it a straight smooth diametral aperture or passageway providing an unobstructed pocket-forming delivery port 52. This port 52 has two parallel sides while in the direction of the length of the valve member 51 it tapers downwardly so that at its upper entrance end or mouth it is slotted along the length of the valve member while its lower or outlet end is circular, as will be clear from a comparison of Figs. 9 and 10. The normal or closed filling position of the valve member 51 is shown in the drawings.

The bottom-closing valve body 53 which closes the lower end of the ring 5 is provided, as in the first described construction, with a central supply opening or inlet aperture 54, but this valve body 53 has a valve-containing housing or shell 55 which is offset forwardly from the central line or axis of the ring 5 and from the central aperture or supply opening 54, while a delivery spout 56 extends vertically downward from the rear portion of the bottom of this cylindrical shell 55 in central axial alignment with the supply opening 54 and ring 5. In the normal position of the cylindrical valve member 51 shown in the drawings the supply opening 54 opens into the upper end of the port 52, which is in alignment therewith, while the lower or outlet end of this port is closed by the wall of the shell 55. In this normal position of the valve member 51 it will be noted that the diametral straight port 52 through this valve member is disposed at an angle from the vertical of about $22\frac{1}{2}^\circ$ with its lower end spaced forwardly from the outlet aperture 56^a provided by the spout 56.

This valve member 51 has a limited rocking movement through about 45° , as in the hereinbefore described construction. This operating movement is in a counter-clockwise direction as seen in Fig. 9 and as viewed from the right side of Fig. 10. The valve member 51 is integrally provided with a handle 57 by means of which it may be thus rocked against the tension of the return spring, such as here-

inbefore described. When this valve member 51 is thus rocked the inclination of its pocket-forming delivery port 52 will be reversed so that then it will be disposed at an angle of about $22\frac{1}{2}^\circ$ with its lower end in registration with the upper end of the delivery outlet 56^a provided through the spout 56 and with its upper end then covered by the upper and forward portion of the cylindrical wall of the shell 55, as will be readily understood from an inspection of Fig. 9. Thus a delivery of the measured small quantity of material contained in the port 52 will be made, after which the valve member 51 will be automatically returned by its spring to its normal position shown in the drawings.

In this modified construction shown in Figs. 9 and 10, similarly in this respect to the construction hereinbefore described, at no time during the operation is there a free passageway opened for leakage or for the material to run out of the container bowl 10 through its supply opening 54, the valve port 52 through the valve member 51, and the delivery spout 56. This is prevented by providing a sufficient overlap of the cylindrical shell wall 55 at the upper and lower ends of the valve port 52, as clearly appears in Fig. 9 for the normal position of the valve member 51. Thus at a midway or intermediate position of operation of the valve member 51 this pocket-forming port 52 will be closed at both ends by the cylindrical wall of the shell 55. That is to say, as the valve member 51 is rotated or rocked in a counter-clockwise direction (Fig. 9) in a dispensing operation the lower end of the valve port 51 will not begin to open into the upper end of the delivery spout 56 until the upper end of this valve port has been entirely closed by the upper left hand portion of the wall of the shell 55. Conversely, as this valve member 51 is returned to its normal position by its spring the upper end of the valve port 52 will remain closed by the shell wall and will not begin to open until after the lower end of this valve port has moved entirely free of the outlet 56^a provided by the delivery spout 56 and has been entirely covered or closed by the lower left hand portion of the wall of the shell 55. Thus a definitely and substantially accurate measured quantity of the material being dispensed is delivered at each operation.

In all of the constructions shown and above described all of the larger metal parts may be die-castings of a suitable metal such as zinc. Such parts, in Figs. 1 to 6 inclusive, comprise the supporting bracket having the stem 1 and integral flange 2; the ring 5; the valve body bottom closure 12 together with its integral parts, including the arm 18 having the head 19, the valve shell 24 and spout 28; and the dispensing valve 29 together with its integral

handle 31. Likewise, in Fig. 7, the supporting bracket having the standard 44 together with its integral parts. Likewise also the corresponding parts shown in Figs. 9 and 10, including the dispensing valve 51 together with its integral handle 57, and the valve body 53 together with its integral shell 55 and delivery spout 56.

It is obvious that various modifications may be made in the constructions shown in the drawings and above particularly described, within the principle and scope of the invention as defined in the appended claims.

As a further modification, for example, the bottom closing valve body, instead of having as shown a bayonet slot joint connection to the ring, could be hinged thereto. In such case a simple snap catch could be provided to hold up the valve body when the locking screw pin shown is disengaged from the supporting bracket. Obviously this arrangement is applicable to all of the constructions shown in the drawings.

I claim:

1. In a dispenser, the combination of a rigid supporting bracket having a horizontal bore therein forming a bearing, a normally horizontal ring rigidly carrying a radially projecting journal stud journaled in the said bearing of the bracket, means for holding the journal stud in its bearing while providing for its rotative movement therein, a normally inverted container bowl carried by the ring and opening downward at its mouth into the upper side of the ring, a valve body independent of the container bowl carried by and forming a closure for the lower side of the ring, releasable means for keeping such closure closed, a releasable locking device to have engagement with the valve body closure and the bracket for thereby locking the ring against rotative movement on its journal stud and for locking the valve body closure in its closed position on the ring, and a device suitable for dispensing a measured quantity of a particulate material comprising a manually operable dispensing valve member movably mounted in the valve body closure.

2. The invention defined in claim 1, in which the container bowl has a tubular neck screwed downward into the ring with the ring forming a smooth downward inner continuation of the mouth of the bowl through its neck, and in which the said valve body fits up against and around the said ring and has a removable bayonet joint connection therewith.

3. In a dispenser, the combination of a container for a particulate material having a bottom which includes a valve body providing a horizontal cylindrical socket which is fully open at one of its ends and has an axial bore through its other end forming a bearing together with an inwardly projecting

central boss and a radial abutment web connecting this bearing boss with the wall of the cylindrical socket, a cylindrical rocking valve plug in the said socket and forming the only closure for the outer otherwise open end of the latter, a journal for the inner end of the valve plug carried thereby and pivoted in the said bearing at the inner end of the socket, a releasable locking device engageable with the said journal providing for but normally preventing the withdrawal of the valve plug from its socket, the said valve plug having through it an unobstructed dispensing port forming together with the socket a measuring pocket, stop means to limit the rocking movement of the valve plug, a helically coiled compression spring circularly arranged in the arcuate space in the shell surrounding its said inner boss at the inner end of the valve plug with both ends of the spring normally pressing under initial tension against the opposite sides of the said abutment web in the shell, a stud projecting from the adjacent end of the valve plug to be engaged by one end of the spring for urging the valve plug towards its filling position and the adjacent side of the abutment web having therein a recess too small to receive the end of the spring but in which the said stud is normally maintained by the spring so that thereby when the valve plug is removed the pin will be withdrawn while the spring will be maintained under its initial tension by the said abutment web, and a handle on the outer end of the valve plug for operating the latter from its filling to its delivery position against the tension of its said return spring.

4. The invention defined in claim 3, in which the said journal for the inner end of the valve plug comprises a non-circular stem projecting axially from the valve plug, an outwardly headed bearing sleeve fitting over the said stem and against the inner end of the valve plug, and in which the said releasable locking device comprises a member countersunk from the outer side into the head of the bearing sleeve and having screw threaded engagement with the outer end portion of the said stem on the valve plug.

5. In a dispenser, a measuring dispensing valve comprising a horizontally arranged cylindrical valve body shell having an upper peripheral inlet aperture and a lower peripheral outlet aperture, a horizontally arranged cylindrical relatively rocking valve plug in the shell having through it transversely to its axis an aperture forming an uninterrupted continuous passageway providing an unobstructed port having an upper inlet end in control of the inlet aperture and a lower outlet end in control of the outlet aperture, said apertures and the ends of said port being relatively circumferentially disposed so that when the upper end of the port

is open to the inlet aperture the lower end of the port will be closed by the shell and when the lower end of the port is open to the outlet aperture the upper end of the port will be closed by the shell so that thereby said port together with the shell forms a measuring pocket for a substantially dry particulate material, stop means to limit the rocking of the valve plug, a return spring urging the valve plug to its filling position, and an operating handle in the form of a lever on one end of the valve plug; said valve plug being removable from one end of the shell which is closed by the handle end of such plug only and said return spring being a helically coiled compression spring circumferentially arranged circularly within the shell at the other end of the valve plug in such manner as to be held in place and guided by the plug and the shell, in combination with an abutment within the shell against which both ends of the spring normally press under initial tension, a stud projecting from the adjacent end of the valve plug, the abutment having therein a notch in which the stud is normally maintained by the spring so as to provide for the withdrawal of the pin away from the spring when the valve plug is removed, and disengageable means for maintaining the valve plug in the shell.

6. In a dispenser for a particulate material, the combination of a horizontally arranged cylindrical valve body shell having an upper peripheral inlet aperture and a lower peripheral outlet aperture, a rocking valve plug to fit in the shell having through it transversely to its axis a continuous unobstructed dispensing port having an upper inlet end in control of the inlet aperture in the shell and a lower outlet end in control of the outlet aperture in the shell, stop means to limit the rocking movement of the valve plug, a return spring urging the valve plug in one direction of its rocking movement, an operating handle connected to the valve plug, the upper end of the said dispensing port being extended in elongated slotted form along the length of the valve plug and tapering gradually downward, and a depending delivery spout having a downwardly flaring delivery passage forming a downward continuation of the said outlet aperture in the shell.

7. In a dispenser, the combination of a shell forming a valve body, a rocking valve plug to fit in the shell, stop means to limit the rocking movement of the valve plug, the said valve plug being removable from one end of the shell, means for retaining the valve plug in the shell, a helically coiled compression spring circumferentially arranged circularly within the shell at the other end of the valve plug, an abutment within the shell against which both ends of the spring normally press under initial tension,

a stud projecting from the adjacent end of the valve plug, the abutment having therein a notch in which the stud is normally maintained by the spring so as to provide for the withdrawal of the pin away from the spring when the valve plug is removed, and an operating handle on one end of the valve plug.

8. In a dispenser, the combination of a shell forming a valve body, a valve plug fitting in the shell, an axial bearing being provided in one end of the shell to extend from the inside to the outside of the shell, a non-circular stem projecting axially from the valve plug outward through the said bearing, an outwardly headed sleeve journaled in the bearing and fitting over the said stem to have rotative movement with the valve plug, and retaining means for holding the said bearing sleeve and the valve plug in place comprising a member having screw threaded engagement with the outer end portion of the said stem on the valve plug and engaging with the said bearing sleeve.

In witness whereof, I hereunto subscribe my signature.

LOUIS H. MORIN.