No. 874,072.

PATENTED DEC. 17, 1907.

G. J. HOLL.

DISPENSING APPARATUS.

APPLICATION FILED APR. 25, 1906.

2 SHEETS—SHEET 1.

Fig. 6.

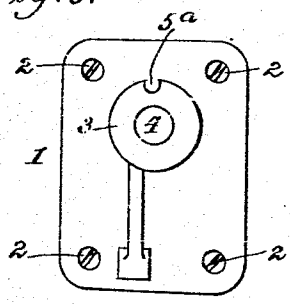


Fig. 1.

Fig. 7

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2 SHEETS—SHEET 2.

Fig. 2.

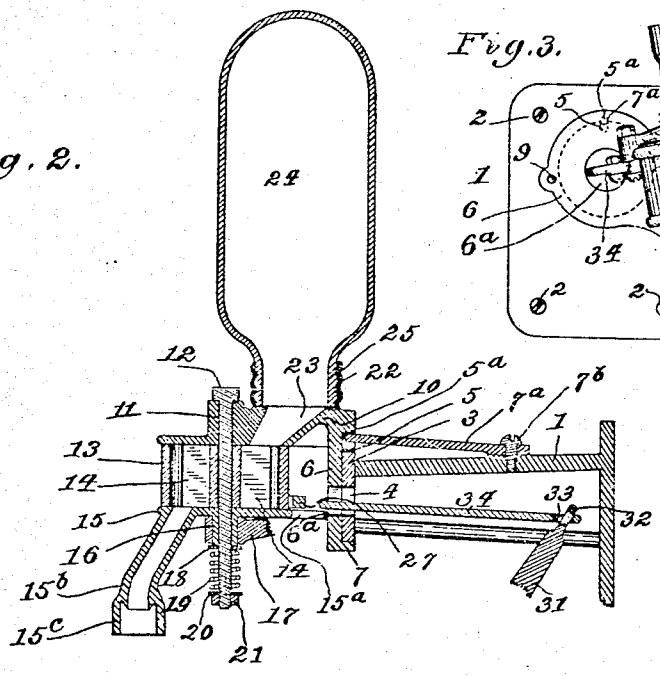


Fig. 3.

Fig. 4.

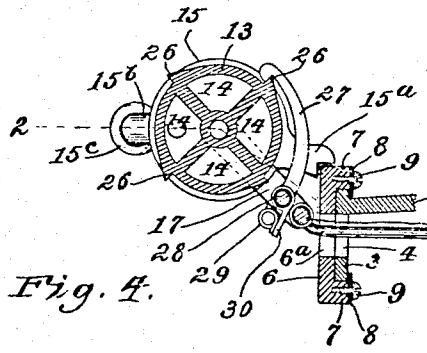
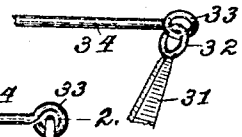


Fig. 5.



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DISPENSING APPARATUS.

No. 874,072. Specification of Letters Patent. Patented Dec. 17, 1907.

Application filed April 25, 1906. Serial No. 313,618.

To all whom it may concern:

Be it known that I, GUSTAVE J. HOLL, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Dispensing Apparatus, of which the following is a specification, reference being had to the accompanying drawing.

My improvement relates particularly to mechanism for dispensing liquids and also solids when the latter are in the form of powder or granules or pellets or similar small masses adapted to run or flow by gravity.

One of the chief uses to which my apparatus is to be put is the dispensing of soap and similar cleansing materials, over or adjacent to a wash-bowl, the apparatus being adapted to discharge small measured quantities from a larger quantity contained in a reservoir, said reservoir being substantially hermetically sealed in order that evaporation may be avoided and in order that the soap if placed into said reservoir in sterilized condition may so remain.

In the accompanying drawings, Figure 1 is a fragmentary side elevation showing my improved apparatus applied to a floor, wall, and wash-stand; Fig. 2 is an upright section of the upper portion of the apparatus shown in Fig. 1, said section being from front to rear on the indirect dotted line, 2—2, of Fig. 4; Fig. 3 is a fragmentary view looking at the front of the apparatus, the measuring mechanism being inverted for the removal and refilling of the reservoir; Fig. 4 is a horizontal section on the line, 4—4, of Fig. 1; Fig. 5 is a detail view of a portion of the bell-crank and the horizontal connecting rod; Fig. 6 is a front view of the wall bracket; Fig. 7 is an upright section on the line 7—7 of Fig. 1, looking in the direction of the arrow.

Referring to said drawings, A is the floor, and B is an upright wall of a room, and C is a wash-bowl attached to said wall.

At a short distance above the wash-bowl is a wall bracket, 1, secured immovably to the wall, B, in any suitable manner, as by means of bolts or screws, 2, extending through said bracket into the wall. To the outer portion of said bracket is applied a circular or disk form head, 3, having an approximately central aperture, 4, and in its upper edge a notch, 5. To the front face of said head is applied a circular plate, 6, having a rearward-directed circumferential flange, 7, fitting closely around the circumferential edge of the head, 3, the rear face of said flange being approximately flush with the rear face of said head. Binding plates, 8, are applied to the rear face of said flange by means of screws, 9, and extended over a portion of the rear face of said head. Thus the circular plate, 6, is held rotatably upon said head, the rotation being on a horizontal axis. The plate, 6, has an aperture, 6^a, located opposite the aperture, 4, in the head, 3.

A notch, 5^a, is formed in the inner face of the flange, 7, opposite the notch, 5; and a spring arm, 7^a, has one end resting in said notches while its other end is secured to the bracket, 1, by means of a screw, 7^b. The spring arm bears outward, but the notch, 5, is deep enough to permit the arm to be pressed wholly into said notch. When said arm is in its normal position it forms a key for locking the circular plate, 6, against rotation on the head, 3. But by depressing said arm, the plate, 6, is released and made free to rotate.

From the upper portion of the circular plate, 6, a reservoir-supporting member, 10, extends horizontally forward. Said plate and said member are preferably integral and the plate may be considered a part of the member. In the forward portion of said member, 10, is an upright aperture, 11, through which projects a bolt, 12. Loosely surrounding said bolt below the bracket is a measuring cylinder, 13, the lower face of said bracket being dressed smooth and even to make a close fit with the upper face of said cylinder. Said cylinder is shown as having four upright chambers, 14, each extending entirely through the cylinder, 13. Below said cylinder, said bolt, 12, is surrounded by a bottom plate, 15, which has a downward directed sleeve, 16, extending through an arm, 17, which arm also surrounds said bolt. And said plate, 15, has a notched lateral extension, 15^a, which bears against the circular plate, 6, to prevent rotation of said plate, 15, on the bolt, 12. Immediately below said sleeve said bolt is surrounded by a washer, 18, adapted to bear against said sleeve, and below said washer an expanding coiled spring, 19, surrounds said bolt and bears against said washer; and below said spring said bolt is surrounded by another washer, 20; and below the last mentioned washer, said bolt is surrounded by a nut, 21, supporting said last mentioned washer. By means of said nut,

Said w[illegible] may be pressed upward so that the bottom plate, 15, is made to bear closely against the lower face of said measuring cylinder. The meeting faces of said cylinder and said bottom plate are to be formed smooth and even so that liquid will not pass between them.

At the front of the bottom plate, 15, is a depending spout, 15[b], with which the chambers, 14, may, one at a time, register. Below the mouth of said spout is a guard, 15[c]. Said guard may be integral with the spout. It does not extend into the path of the discharge from said mouth. Thus the material discharged does not touch said guard and does not become contaminated by any material adhering to the guard. The purpose of the guard is to keep the hands of persons who wash from bearing against and contaminating the mouth of the spout.

At the rear of the bolt, 12, an interiorly-threaded nipple, 22, extends upward; and a passage, 23, extends through the bracket from the interior of said nipple downward into proper position to communicate with the chambers, 14, of the measuring cylinder, 13.

A bottle-form reservoir, 24, having an exteriorly-threaded neck, 25, is threaded into said nipple, 22, in the inverted position.

Upon the perimeter of the measuring cylinder are four equi-distant ratchet teeth, 26, adapted to be engaged by a pawl, 27. Said pawl is hinged upon the arm, 17, by means of an upright screw, 28. An expanding spring, 29, bears against the arm, 17, and an extension, 30, of the pawl, 27, and causes said pawl to normally bear against said measuring cylinder.

To the lower portion of the bracket, 1, is hinged an upright bell-crank, 31, and the upper arm of said bell-crank terminates in a ring, 32, and said ring is coupled with the ring, 33, of a horizontal connecting rod or bar, 34, which extends through the aperture, 4, in the head, 3, and the aperture, 6[a], in the circular plate, 6, and is hinged to the upper face of the arm, 17, by an upright screw, 35.

From the lower arm of the bell-crank, 31, a connecting rod, 36, extends downward and has its lower end coupled to a treadle, 37, which treadle may be supported in any suitable manner, as by being hinged to a chair, 38, at 39, the relation of the parts being such as that the pedal end of said treadle will be in its elevated position while the pawl, 27, is at the forward limit of its range of movement.

The rearmost chamber of the measuring cylinder, 13, becomes filled by the flow of material downward from the reservoir through the aperture, 11. Each movement of the treadle imparts to the measuring cylinder a quarter rotation; so that the first movement of the pedal moves the rearmost chamber of the cylinder to one of the lateral positions, and the next movement of the treadle brings said aperture to the front so as to register with the discharge spout. The bottom plate covers all of the lower face of the cylinder, excepting the portion at the spout, so that the chambers of the cylinder are prevented from discharging until they register with the spout. Thus, when the apparatus is in practical use, each operation of the treadle causes the contents of one chamber of the cylinder to discharge by gravity through the spout.

When the apparatus is being manufactured, the meeting faces of the reservoir-supporting member, the measuring cylinder, and the bottom plate are made smooth and even so that when they are pressed together, they will fit so closely as to prevent the passage of air. By means of the bolt, nut, and spring whereby said member, cylinder, and bottom plate are held to each other, any wear of said meeting faces may be taken up so as to maintain the close meeting of said faces. In fact this construction is adapted to develop a closer fit of said faces by wear; for the rotation of said cylinder has a grinding effect adapted to cause said meeting faces to conform more closely to each other, and after such grinding, said spring and bolt continue to press said member, cylinder, and bottom plate against each other.

When the material stored in the reservoir becomes exhausted, the free end of the spring arm, 7[a], is pressed downward, whereby the reservoir-supporting member is rendered free to rotate upon the head, 3, of the bracket, 1, until the reservoir is in the approximately inverted position shown in Fig. 3. Then the reservoir is unscrewed from the nipple, 22, and refilled and again screwed into said nipple. Then said supporting member is rotated in the reverse direction until it has assumed its normal position, whereupon the spring arm or key, 7[a], springs outward into the notch, 5[a], whereby said member is again locked.

When the material is being discharged from the chamber registering with the spout, the place of said material in said chamber is taken by air rising through the spout, so that when said chamber moves forward and again becomes covered by the bottom plate it is full of air. And when it again assumes the rearmost position, so as to register with the aperture, 11, the air contained by said chamber rises into the reservoir as the material in the reservoir descends. In this way, the forming of a vacuum in said reservoir is avoided.

I claim as my invention:

1. In a dispensing apparatus, the combination of a wall bracket, a reservoir-supporting member rotatably secured to said wall bracket on a horizontal axis, and a spring arm for locking said supporting member against rotation, substantially as described.

2. In a dispensing apparatus, the combination of a wall bracket having an upright circular head, a reservoir-supporting member having a flanged circular plate bearing against the outer face of said head and surrounding the periphery thereof, and means for holding said plate against said head, and means for engaging said supporting member against rotation, substantially as described.

3. In a dispensing apparatus, the combination of a wall bracket having an upright circular head provided with a peripheral notch, a reservoir-supporting member having a flanged circular plate bearing against the outer face of said head and surrounding the periphery thereof, the interior of said flange having a notch adapted to register with the notch in said head, and a movable key entering said notches, substantially as described.

4. In a dispensing apparatus, the combination of an upright circular head provided with a peripheral notch, a reservoir-supporting member having a flanged circular plate bearing against the outer face of said head and surrounding the periphery thereof, the interior of said flange having a notch adapted to register with the notch in said head, and a spring arm having its free end extending into said notches, substantially as described.

5. In a dispensing apparatus, the combination of a reservoir-supporting member, a reservoir, a chambered measuring cylinder applied to said reservoir-supporting member and in communication with said reservoir, and a non-rotatable bottom plate beneath said cylinder, substantially as described.

6. In a dispensing apparatus, the combination of a reservoir-supporting member, a reservoir, a chambered measuring cylinder applied to said reservoir-supporting member and in communication with said reservoir, a non-rotatable bottom plate beneath said cylinder, and mechanism for rotating said measuring cylinder, substantially as described.

7. In a dispensing apparatus, the combination of a reservoir-supporting member, a reservoir, a chambered measuring cylinder applied to said reservoir-supporting member and in communication with said reservoir, a non-rotatable bottom plate beneath said measuring cylinder, and pawl-and-ratchet mechanism for rotating said cylinder, substantially as described.

8. In a dispensing apparatus, the combination of a reservoir-supporting member, a reservoir applied to said member, a chambered measuring cylinder bearing against the lower face of said member, a non-rotatable bottom plate bearing against the lower face of said cylinder, a bolt extending through said member, cylinder, and plate, and mechanism for rotating said cylinder, substantially as described.

9. In a dispensing apparatus, the combination with a reservoir-supporting member having an aperture to communicate with a reservoir, a reservoir applied to said member, a measuring cylinder located beneath said member, a non-rotatable bottom plate located beneath said cylinder, and elastic mechanism for sustaining said bottom plate and measuring cylinder, substantially as described.

10. In a dispensing apparatus, the combination with a reservoir-supporting member having an aperture to communicate with a reservoir, a reservoir applied to said member, a measuring cylinder located beneath said member, a non-rotatable bottom plate located beneath said cylinder, elastic mechanism for sustaining said bottom plate and measuring cylinder, and mechanism for rotating said cylinder, substantially as described.

11. In a dispensing apparatus, the combination with a reservoir-supporting member having an aperture to communicate with a reservoir, a reservoir applied to said member, a measuring cylinder located beneath said member, a non-rotatable bottom plate located beneath said cylinder, elastic mechanism for sustaining said bottom plate and measuring cylinder, and pawl-and-ratchet mechanism for rotating said cylinder, substantially as described.

12. In a dispensing apparatus, the combination with a reservoir-supporting member having an aperture to communicate with a reservoir, a reservoir applied to said member, a measuring cylinder located beneath said member, a bottom plate located beneath said cylinder, a bolt extending downward from said member through said cylinder and bottom plate, and a spring applied to said bolt, substantially as described.

13. In a dispensing apparatus, the combination with a reservoir-supporting member having an aperture to communicate with a reservoir, a reservoir applied to said member, a measuring cylinder located beneath said member, a bottom plate located beneath said cylinder, a bolt extending downward from said member through said cylinder and bottom plate, and a spring and a washer applied to said bolt, substantially as described.

14. In a dispensing apparatus, the combination of a reservoir-supporting member having an aperture to communicate with a reservoir, a reservoir applied to said member, a measuring cylinder located beneath said member, a bottom plate located beneath said cylinder and making lateral engagement with a stationary portion of the apparatus, and elastic mechanism for sustaining said bottom plate and measuring cylinder, substantially as described.

15. In a dispensing apparatus, the combination with a reservoir-supporting member having an aperture to communicate with a

reservoir, a reservoir applied to said member, a measuring cylinder located beneath said cylinder, a bottom plate located beneath said cylinder and making lateral engagement with a stationary portion of the apparatus, a bolt extending downward from said member through said cylinder and bottom plate, and a spring applied to said bolt, substantially as described.

16. In a dispensing apparatus, the combination with a reservoir-supporting member, a reservoir, and a shiftable measuring member, of a non-rotatable bottom plate and a spout supported by said bottom plate, substantially as described.

17. In a dispensing apparatus, the combination with a reservoir-supporting member, a reservoir, and a shiftable measuring member, of a non-rotatable bottom plate and a spout integral with said bottom plate, substantially as described.

18. In a dispensing apparatus, the combination of a wall bracket having an upright, apertured head, a reservoir-supporting member having an apertured plate secured to said head, a measuring cylinder, a reciprocatory bar extending through said apertured head and said apertured plate and in operative relation with said cylinder, and pedal mechanism in operative relation with said reciprocatory bar, substantially as described.

19. In a dispensing apparatus, the combination of a wall bracket, a reservoir-supporting member rotatably secured to said wall bracket on a horizontal axis, a measuring cylinder applied to said supporting member, mechanism for rotating said cylinder, a horizontal bar in operative relation with said last mentioned mechanism, a pedal put into operative relation with said horizontal bar by mechanism including an approximately upright bar coupled to said horizontal bar by means of a joint permitting the partial rotation of said horizontal bar upon its own axis, substantially as described.

In testimony whereof I have signed my name, in presence of two witnesses, this 10th day of July, in the year one thousand nine hundred and five.

GUSTAVE J. HOLL.

Witnesses:
A. Y. BURROWS,
CYRUS KEHR.