Dec. 28, 1937. M. L. McKENNEY 2,103,687

LIQUID DISPENSING DEVICE

Filed July 9, 1936 2 Sheets-Sheet 1

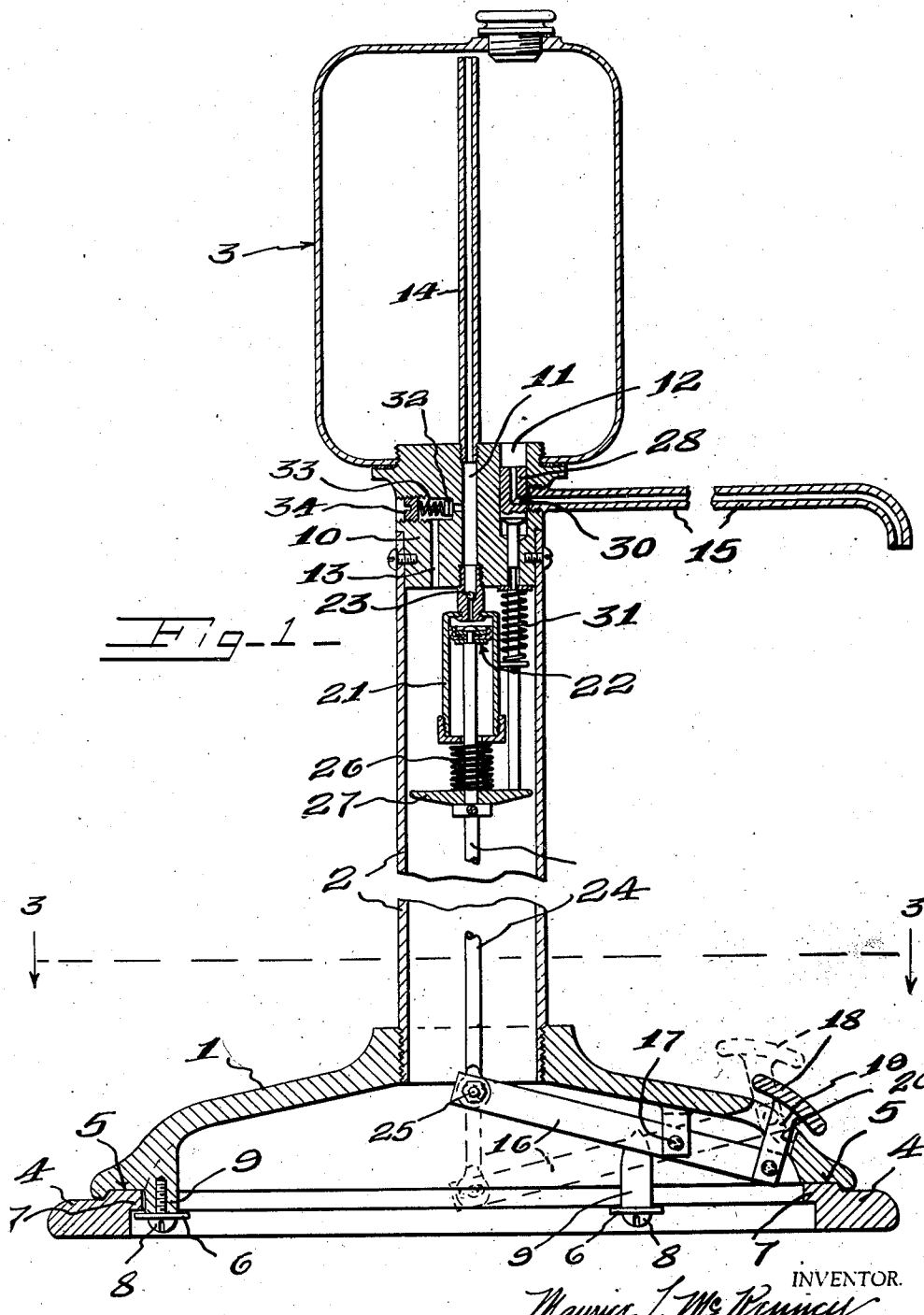


Fig. 1

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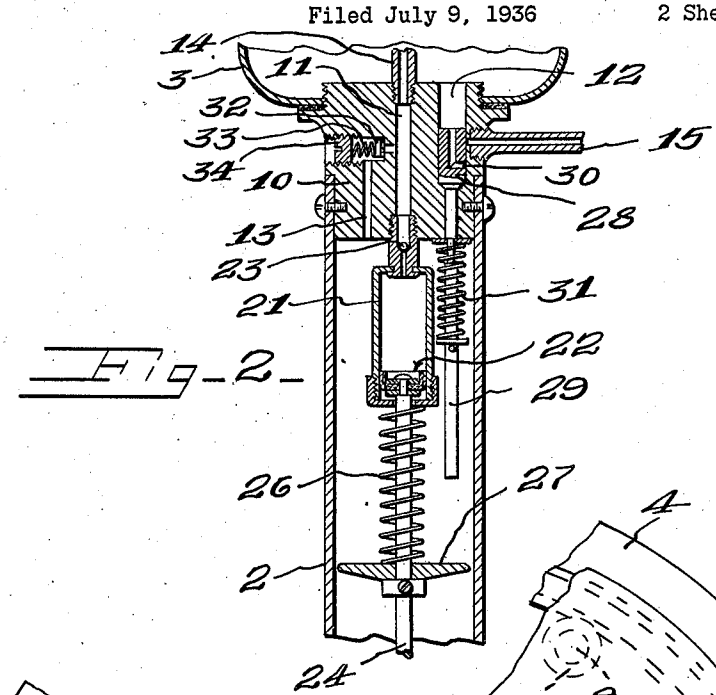


Fig-2-

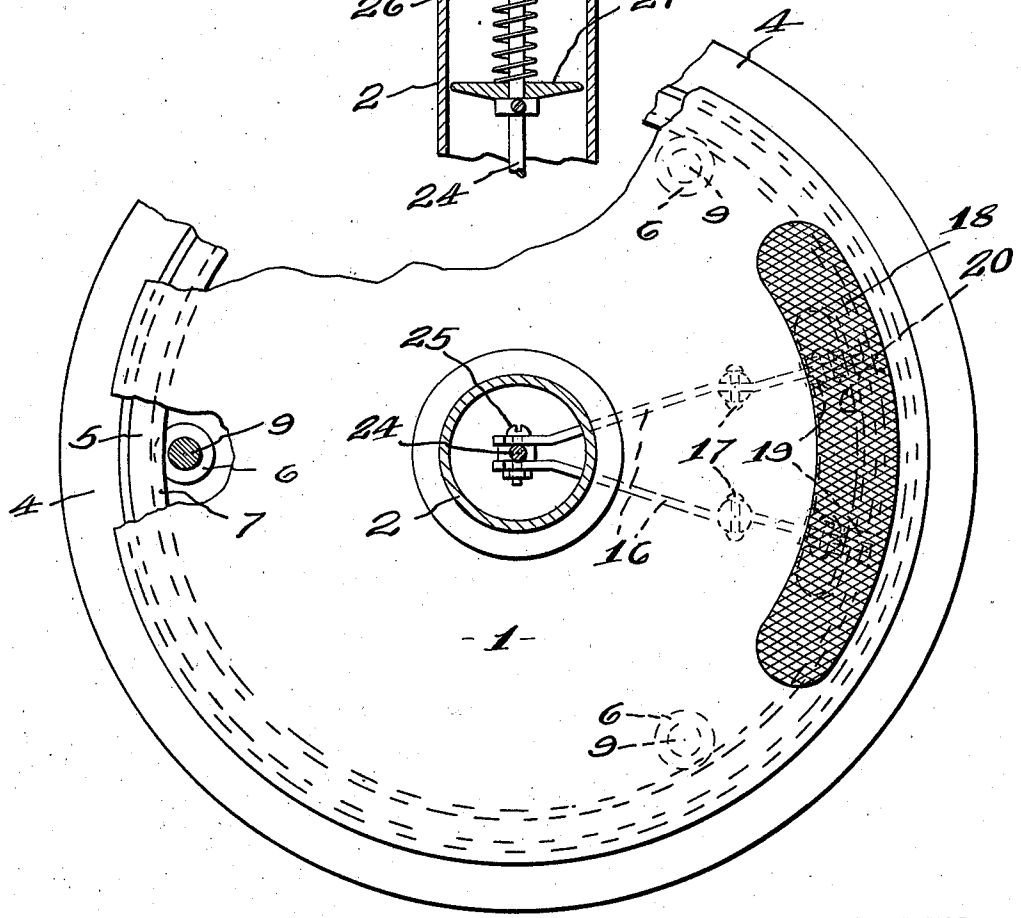


Fig-3-

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LIQUID DISPENSING DEVICE

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11 Claims. (Cl. 221—94)

This invention relates to liquid dispensers and particularly to dispensers for soap in lavatories, wash-rooms, and more particularly where one dispenser serves a plurality of wash-stands, and has for its object a dispenser which is shiftable, as a unit, about an upright axis to carry the nozzle into the most convenient position for the user, together with operating means, as a pedal, operable to force the soap out through the nozzle, which operating means shifts as the nozzle shifts, so as to be in the most convenient position for use by the operator.

It further has for its object a liquid dispenser in which the liquid contents, as soap, is forced out by air pressure having a pressure release valve to prevent building up of excessive pressure within the liquid reservoir.

It further has for its object a liquid dispenser including a suitable stand, a reservoir, a nozzle and discharging mechanism including a pedal, all of which are turnable about an upright axis, as a unit.

Other more specific objects appear throughout the specification.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a vertical sectional view, partly broken away, of one embodiment of my invention showing part of the operating mechanism in operated position.

Figure 2 is a fragmentary vertical sectional view illustrating the position of the parts of the operating mechanism when in their starting position.

Figure 3 is a sectional view taken on line 3—3, Figure 1.

This liquid dispenser comprises a suitable stand mounted to shift about an upright axis, a liquid reservoir, and an outlet nozzle therefor carried by the stand and turnable as a unit therewith, and means operable to force the liquid from the reservoir out through the nozzle including a pedal carried by the stand and turnable, as a unit, therewith.

As here illustrated, the stand includes a suitable base 1 and an upright tubular body 2 at the upper end of which the reservoir 3 is carried.

The base 1 is provided with suitable means by which it can be swivelled or turned about an upright axis and it is here shown and preferably, as mounted on a base ring 4. The base 1, as here shown, is rotatably interlocked with the base ring 4 and rests at 5 on the inner margin of the base ring 4 and is interlocked therewith by members 6, here shown as plates or washers extended under an annular shoulder 7 on the inner side of the base ring 4, and secured to the base 1 by fastening members, as screws 8, extending through the plates or washers 6 into bosses 9 on the inner side of the base 1.

The stand also includes a block or plug 10 in the upper end of the tubular body 2, this being secured in the upper end of the tube 2 in any suitable manner. It is formed with an air passage 11 extending therethrough; also with a valve passage 12 and with a third passage 13. The air passage 11 communicates with the upper portion of the reservoir 3, which is substantially air tight, through a tube 14. The reservoir 3 is mounted directly on the upper end of the plug 10 and as here shown threads thereon.

15 is a nozzle rigidly secured to the plug 10 and having its bore communicating with the valve passage 12. The means operable to force the liquid from the reservoir out through the nozzle includes a compresser or pump device and a pedal 16 which operates to compress the air in the reservoir and force the liquid out through the nozzle 15. This pedal 16 is a lever mounted within the base 1, which is hollow, and is pivoted at 17 thereto. It has a foot plate 18 located on the upper side of the margin of the base 1, the foot plate being connected to the lever through a suitable arm or arms 19 on the under side thereof, which arm or arms extend through a slot or slots 20 in the base 1.

The lever, as shown in Figure 3, is double, the two portions thereof converging toward the center of the tubular body 2. The lever 16 is located below the nozzle 15 and the foot plate extends to opposite sides of the vertical plane of the nozzle 15, in order that the lever may be conveniently operated from either the right hand or left hand side of the puzzle.

The pedal operates the compresser device or pump for compressing the air in the reservoir 3 and also the valve which normally closes the outlet of liquid through the nozzle 15, and moves into a position to open the nozzle, when the air is compressed in the reservoir 3.

The compresser device includes a cylinder 21 and a plunger or piston 22 movable therein, the cylinder being here shown as supported by the plug 10 beneath the same and within the tubular body 2, and has an outlet communicating with

the air passage 11 of the plug, this outlet having a suitable check valve 23 therein. The plunger or piston 22 has its rod 24 extending through the pedestal to the tubular body 2 into the base 1, where it is connected at 25 to the lever 16. The upward or compressing movement of the plunger 22 is against the action of a returning spring 26 interposed between the lower end of the cylinder 21 and the head 27 on the rod 24.

28 designates the valve in the valve passage 12, this having a stem 29 extending below the plug 10 with its lower end normally spaced apart from the head 27 and arranged to be engaged by the head 27, when the plunger 22 approaches the upper end of its compression stroke in the cylinder 21. The valve 28 has a suitable port 30 therein normally out of register with the bore of the nozzle 15 (Figure 2) and movable into register therewith, (Figure 1), when the pedal is operated to actuate the pump plunger 22 to compress the air in the reservoir 3. The movement of the valve from the position shown in Figure 2 to that shown in Figure 1 is against the action of a suitable returning spring 31.

In order to prevent the building up of excess pressure within the reservoir 3, a pop-off or pressure release valve is provided, this being located so as to be out of reach of curious persons, and it is here shown as carried in the plug 10 to normally close the third passage 13 therein.

32 designates the pop-off or pressure release valve, which is pressed into position by a spring 33, which is adjustable by means of the screw 34 threading into a closed bore in the head.

In operation, the stand is placed in convenient position between or among a plurality of wash basins, where it can be swung by the user at any one wash basin by turning the entire stand about its upright axis. The turning is effected by applying a lateral force to one side or the other of the nozzle. The pedal is then depressed to cause the pump to compress the air in the reservoir 3 and when the air is compressed, the port of the valve 28 comes into alinement with the bore of the nozzle, so that the liquid is projected through the nozzle into the hand of the user.

Owing to the arrangement of the pedal, it is conveniently operated in any angular or radial position of the stand, so that one or more impulses can be given thereto, if necessary, to build up the pressure in the reservoir to a point where the liquid is projected through the nozzle. The pop-off or pressure release valve is set so that if the pedal is violently operated any excess pressure above a predetermined amount will be released through the passage 13 into the tubular body 2.

What I claim is:—

1. In a liquid dispenser, the combination of a stand, means forming a definite vertical axis of rotation for said stand, a reservoir, and a nozzle communicating with the reservoir, the reservoir and nozzle being turnable, as a unit, with the stand, and means operable to force the liquid from the reservoir out through the nozzle including a pedal carried by the stand and turnable therewith.

2. In a liquid dispenser, the combination of a stand, means forming a definite vertical axis of rotation for said stand, a reservoir, and a nozzle communicating therewith carried by the stand, the stand being formed with a hollow base, and means carried by the stand and operable to force a liquid from the reservoir out through the nozzle including a pedal located within the hollow base and having an operating member located on the upper side of the base.

3. In a liquid dispenser, the combination of a stand, means forming a definite vertical axis of rotation for said stand, a reservoir, and a nozzle communicating therewith carried by the stand, the stand being formed with a hollow base, and means carried by the stand and operable to force a liquid from the reservoir out through the nozzle including a pedal located within the hollow base and having an operating member located on the upper side of the base, the pedal being located beneath the nozzle and having foot plate means on opposite sides of the vertical plane of the nozzle.

4. In a liquid dispenser, the combination of a stand including a base and an upright tubular body, and means cooperating with said base and forming a definite vertical axis of rotation for said stand, a substantial air-tight liquid reservoir mounted on the upper end of the tubular body, an air pump mounted in the tubular body and having an outlet communicating with the upper portion of the reservoir, a normally closed valve for the nozzle operable and timed to open position when the air is compressed in the reservoir, and means for operating the pump and the valve.

5. In a liquid dispenser, the combination of a stand including a base and an upright tubular body, a liquid reservoir mounted on the upper end of the tubular body, a nozzle for communication with the lower portion of said reservoir, an air pump mounted in the tubular body and having an outlet communicating with the upper portion of the reservoir, a normally closed valve between the reservoir and the nozzle operable and timed to open position when the air is compressed in the reservoir, means for operating the pump and the valve, and a pressure release valve communicating with the outlet of the pump independently of the nozzle for relieving excessive pressure in the upper portion of the reservoir.

6. In a liquid dispenser, the combination of a stand including a base and an upright tubular body, a liquid reservoir mounted on the upper end of the tubular body, an air pump mounted in the tubular body and having an outlet communicating with the upper portion of the reservoir, a normally closed valve for the nozzle operable and timed to open position when the air is compressed in the reservoir, means for operating the pump and the valve, and a pressure release valve communicating with the outlet of the pump independently of the nozzle for relieving the excessive pressure in the upper portion of the reservoir, the release valve discharging downwardly into the interior of the tubular body.

7. In a liquid dispenser, the combination of a stand, means forming a definite vertical axis of rotation for said stand, a reservoir and a nozzle communicating therewith carried by the stand, the stand being formed with a hollow base and means carried by the stand and operable to force a liquid from the reservoir out through the nozzle including a pedal located within the hollow base and having a foot plate located on the upper side of the hollow base, the pedal being located beneath the nozzle and the foot plate being elongated circumferentially of the base and extending on opposite sides of the vertical plane of the nozzle.

8. In a liquid dispenser, the combination of a stand including a base and a tubular upright body

having a plug in its upper end formed with a valve passage and with an air passage, an air-tight liquid reservoir mounted on the upper end of the plug, a pump supported by the plug and located in the tubular body and communicating with the reservoir through the air passage, the pump including a movable member, a valve mounted in the valve passage normally closing the nozzle and movable into position to establish communication between the reservoir and the nozzle when the pump is actuated to compress the air in the reservoir, and means for actuating the movable member of the pump and the valve.

9. In a liquid dispenser, the combination of a stand including a base and a tubular upright body having a plug in its upper end formed with a valve passage and with an air passage, an air-tight liquid reservoir mounted on the upper end of the plug, a pump supported by the plug and located in the tubular body and communicating with the reservoir through the air passage, the pump including a movable member, a valve mounted in the valve passage normally closing the nozzle and movable into position to establish communication between the reservoir and the nozzle when the pump is actuated to compress the air in the reservoir, and means for actuating the movable member of the pump and the valve including a pedal located in the base and having a foot plate on the upper side of the base.

10. In a liquid dispenser, the combination of a stand including a base and a tubular upright body having a plug in its upper end formed with a valve passage and with an air passage, an air-tight liquid reservoir mounted on the upper end of the plug, a pump supported by the plug and located in the tubular body and communicating with the reservoir through the air passage and including a movable member, a valve mounted in the valve passage normally closing the nozzle and movable into position to establish communication between the reservoir and the nozzle when the pump is actuated to compress the air in the reservoir, and means for actuating the movable member of the pump and the valve including a pedal located in the base and having a foot plate on the upper side of the base, said stand being mounted to turn about an upright axis.

11. In a liquid dispenser, the combination of a stand including a base and a tubular upright body having a plug in its upper end formed with a valve passage and with an air passage, an air-tight liquid reservoir mounted on the upper end of the plug, a pump mounted in the tubular body and communicating with the reservoir through the air passage and including a movable member, a valve in the valve passage normally closing the nozzle and movable into position to establish communication between the reservoir and the nozzle when the pump is actuated to compress the air in the reservoir, means for actuating the movable member of the pump and the valve including a pedal located in the base and having a foot plate on the upper side of the base, the plug also having a third passage communicating with the air passage and opening into the interior of the tubular body and a pressure release valve in the third passage.

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