R. H. LITTLE.

LIQUID SOAP DISPENSER.

APPLICATION FILED NOV. 28, 1919.

1,370,460.

Patented Mar. 1, 1921.

2 SHEETS—SHEET 1.

Fig. 2.

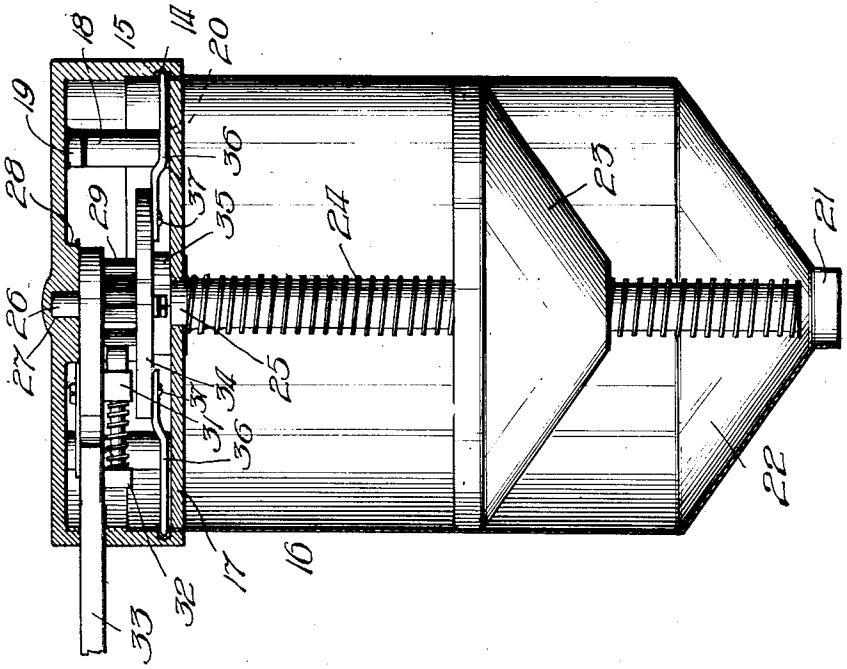
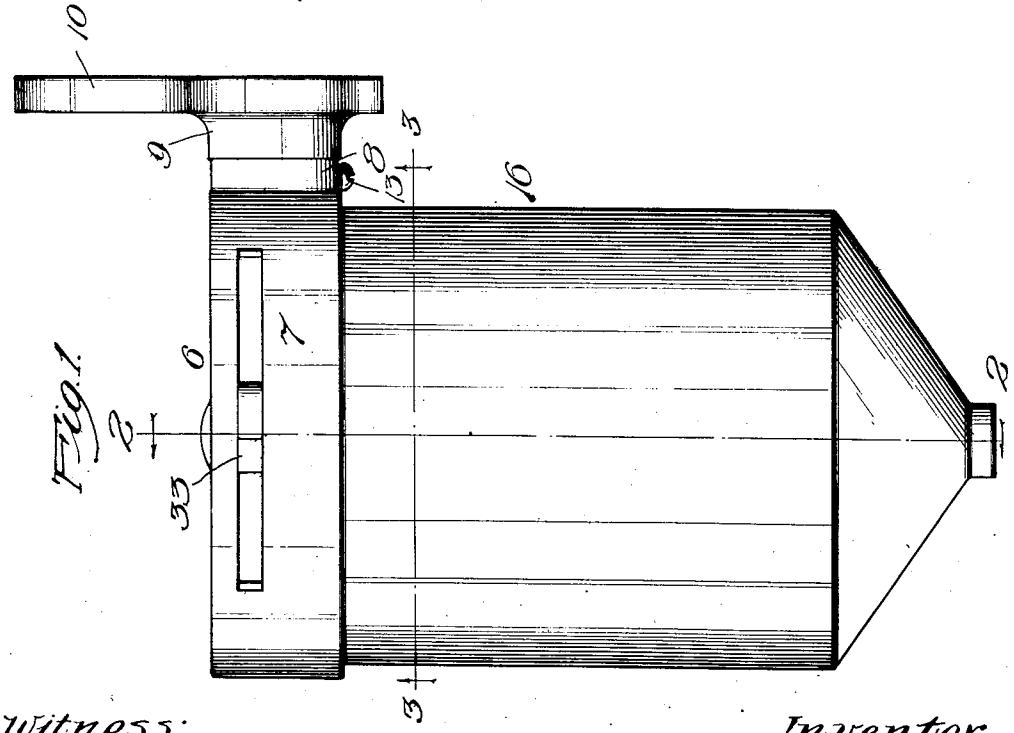


Fig. 1.



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2 SHEETS—SHEET 2.

Fig. 4.

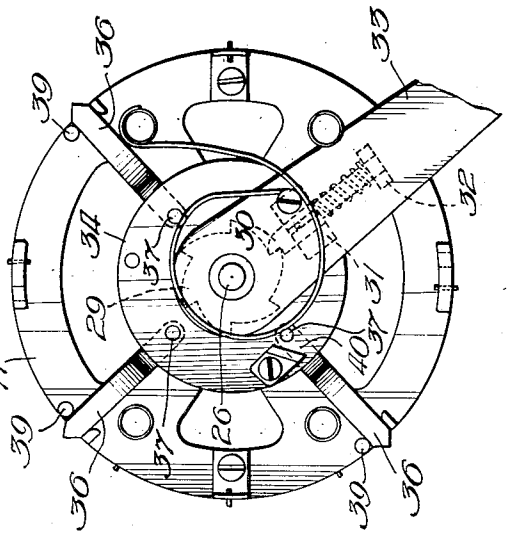


Fig. 5.

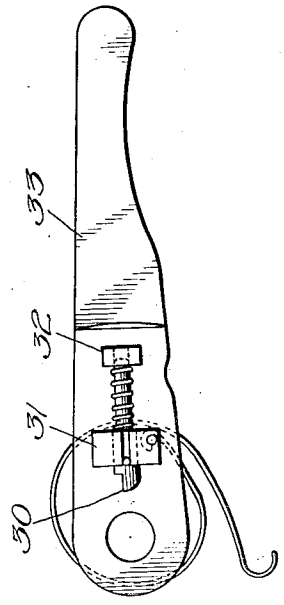
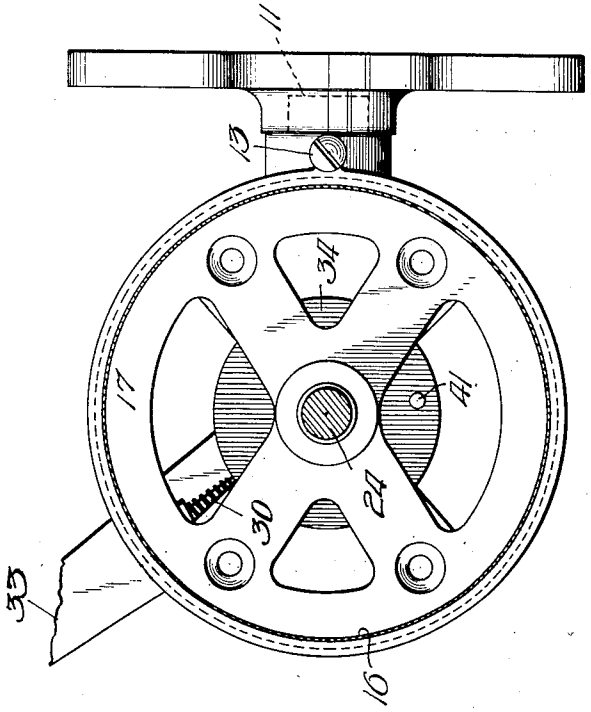


Fig. 3.



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LIQUID-SOAP DISPENSER.

1,370,460. Specification of Letters Patent. Patented Mar. 1, 1921.

Application filed November 28, 1919. Serial No. 341,030.

To all whom it may concern:

Be it known that I, ROBERT H. LITTLE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Liquid-Soap Dispensers, of which the following is a specification.

This invention relates to a liquid soap dispenser designed primarily for use in dispensing measured quantities of soap for lavatory use in factories, printing establishments, or the like; and the primary object of the invention is to so construct the dispenser that with each operation of the handle a predetermined quantity of soap will be forced out of the spout or nozzle.

The device is designed to dispense the soap from an original can, and one of the principal objects of the invention is to so construct the permanent holder with the associated dispensing mechanism that a prepared can of soap can be permanently locked in position and held against removal until the entire content of the can has been ejected, after which, by a continued operation of the feeding lever, the can itself will be torn from the fastening and thereby mutilated in a manner which will prevent its being refilled and used as a dispenser of spurious soap or soap of inferior quality. The device in effect embodies the use of a non-refillable soap container, thus insuring a maintenance of standard quality in the soap dispensed. The invention is so designed as to afford easy and convenient means for the insertion of a filled can of soap which is to be locked in place upon the initial movement of the regular feeding devices.

Further objects will appear from a detailed description of the invention, which consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings:

Figure 1 is a side elevation of the dispenser as a whole;

Fig. 2 is a longitudinal sectional elevation;

Fig. 3 is a face elevation of the permanently mounted cap or cover showing the interior thereof;

Fig. 4 is a view in reverse relation to Fig. 3, showing the feeding lever, ratchet, locking pins and associated parts; and

Fig. 5 is a detail showing the arrangement of the feeding lever and dog.

The device as a whole comprises a circular holder or cap plate 6 provided with a flange or wall 7 having on one side thereof a boss 8 which registers with a boss 9 formed on a wall bracket 10, or other convenient support for the dispenser. The wall bracket is provided with a threaded stud or pintle 11 which is threaded through the boss 8 within which it is held against removal by a set screw 13 or the like, the arrangement being one which prevents the removal of the dispenser from the bracket save when access is had to the interior.

The side flange or wall 7 is provided near its lower rim with a circumferential groove 14, above which is a shoulder 15, as shown in Fig. 2, which shoulder serves as a stop or abutment for the upper edge of a cylindrical can 16, which, when first inserted, fits snugly within the cap plate and bridges the groove 14, as shown in Fig. 2. Within the flanged cap is an open-work plate 17, which, as shown, is provided with four spacer lugs 18 which register with bosses 19 on the interior face of the cap plate, the parts being united together by screws 20, or the like, which hold the open-work plate 17 in spaced relation with the cap plate and afford space for the location of the operating and locking mechanism.

The soap, in the form of a paste, is forced out through a spout or nozzle 21 in the lower tapered bottom 22 of the can by the action of a conical presser plate 23, through which is threaded a feeding screw 24, provided at its upper end with a plain unthreaded stem 25, which stem is journaled through the plate 17 and terminates in a short pintle 26 rotatably mounted within a recess 27 in a boss 28 formed on the inner face of the cap plate. The smooth stem 25 has keyed or otherwise rigidly secured thereto a ratchet wheel 29 which coöperates with a spring pressed dog 30 carried by inner and outer lugs 31 and 32 depending from the under side of an operating handle 33, which is rotatably mounted upon the upper end of the stem 25 and interposed between the ratchet wheel 29 and the boss 28.

Interposed between the ratchet wheel 29

and the plate 17 is a disk 34 having on its under face a boss 35, which disk and boss are rotatably mounted upon the stem 25, and the disk serves as a mounting for a plurality, preferably four, of outwardly projecting piercing pins 36, each of which is mounted at its inner end on a pivot 37, and is sharpened at its outer end 38 to pierce through the metal of the can when inserted in place, for the purpose of locking the can to the cover plate until the soap has been completely dispensed. The piercing pins are of a length to occupy the projected position shown in Fig. 4 when turned to radial relation with respect to the disk 34, and when moved into radial relation their sharpened outer ends will project outwardly to the degree required to pierce the metal of the can at points overlying the circumferential groove 14, so that the can will be locked against unauthorized removal. The outer end of each of the piercing pins is guided on one side by the adjacent spacer lug 18, and on the opposite side by a guide lug 39, as best shown in Fig. 4.

The operating handle 33 is relied upon to rotate the disk 34 sufficiently to project the locking pins by a contact of the lug 31 with a stop 40 on the face of the disk, so that as the operating handle is initially turned in a feeding direction it will come into engagement with the stop 40 and thereafter move with it the disk 34 sufficiently to insure a locking of the can. With the parts thus locked, the lever may be moved back to initial position to allow the dog 30 to engage the next tooth in the ratchet wheel 29, after which a feeding movement of the operating handle will turn the feeding screw 24 in the proper direction to feed down the presser plate 23, which will be held against rotation by contact with the contents of the can, so that with each feeding movement of the handle a predetermined amount of soap will be ejected, which amount will be commensurate with the number of threads per inch on the feeding screw.

After the contents of the can have been completely ejected, the presser plate will come in contact with the bottom of the can, and thereafter a few extra movements of the handle will serve to tear the can free from the piercing pins 38, thereby mutilating the can to an extent which will prevent its being afterward used by unauthorized persons as a container for a spurious supply of soap. After the can has thus been torn free from the cap plate, access will be had to the operating mechanism and the disk, and in order to retract the piercing pins preparatory to the insertion of a new can of soap, the disk 34 will be rotated back to its initial position by the action of a short stud 41 which outwardly projects from the stud and affords a convenient means for manipulating the same.

The open plate 17 is of slightly less diameter than the inner diameter of the flange or wall 7 to afford a clearance for the insertion of a can, which latter should be recessed at the proper point to afford a clearance for the boss 12 on the inner face of the flange or wall.

It will be observed from the foregoing description that with the can once locked in place it is impossible to remove the same save by mutilation, and it will also be impossible to remove the device as a whole from the wall bracket, since access to the set screw 13 cannot be had save by the removal of the can. The construction is one which fully safeguards the device against unauthorized tampering and at the same time provides means for locking and removal of the can which are operable by the mechanism provided for the dispensing of the soap; and the arrangement is one which insures a complete discharge of the entire contents of the can before the same will be torn free from its fastenings and disengaged from the cap plate. Although designed primarily as a dispenser of soap, the device may obviously be used for the purpose of dispensing other materials.

I claim:

1. A dispenser of the class described, comprising a can, a holder for the can, feeding means for ejecting the contents of the can, and locking means operable by the feeding means for locking the can to the holder, substantially as described.

2. A dispenser of the class described, comprising a can, a holder for the can, feeding means for ejecting the contents of the can, and locking means operable by the feeding means for locking the can to the holder, the feeding means serving to tear the can free from the locking means after the ejecting of the contents, substantially as described.

3. A dispenser of the class described, comprising a can, a holder for the can, a presser plate for ejecting the contents of the can, a feeding screw for feeding the presser plate, means for rotating the feeding screw, and locking devices operable by said rotating means for locking the can to the holder, substantially as described.

4. A dispenser of the class described, comprising a can, a holder for the can, a presser plate for ejecting the contents of the can, a feeding screw for feeding the presser plate, means for rotating the feeding screw, and locking devices operable by said rotating means for locking the can to the holder, the presser plate being designed to tear the can free from the locking means after the ejection of the contents, substantially as described.

5. A dispenser of the class described, comprising a can, a holder into which the rim of the can is entered, a piercing pin adapted to pierce the can and hold the same within the holder, and feeding means adapted initially to project the piercing pin to piercing position and thereafter to progressively eject the contents of the can, substantially as described.

6. A dispenser of the class described, comprising a can, a holder into which the rim of the can is entered, a piercing pin adapted to pierce the can and hold the same within the holder, and feeding means adapted initially to project the piercing pin to piercing position and thereafter to progressively eject the contents of the can and ultimately to tear the can free from the piercing pin, substantially as described.

7. A dispenser of the class described, comprising a can, a holder into which the rim of the can is entered, a plurality of piercing pins, a rotatable member adapted when rotated in the proper direction to project the piercing pins to position to pierce the can, feeding means adapted to initially rotate said member to project the piercing pins and thereafter progressively eject the contents of the can, substantially as described.

8. A dispenser of the class described, comprising a can, a holder into which the rim of the can is entered, a plurality of piercing pins, a rotatable member adapted when rotated in the proper direction to project the piercing pins to position to pierce the can, feeding means adapted to initially rotate said member to project the piercing pins and thereafter progressively eject the contents of the can and ultimately tear the can free from the piercing pins, substantially as described.

9. A dispenser of the class described, comprising a can, a holder into which the rim of the can is entered, a plurality of piercing pins, a rotatable member adapted when rotated in the proper direction to project the piercing pins to position to pierce the can, a feeding screw, a presser plate adapted to be advanced by rotation of the feeding screw, a dog and ratchet for intermittently rotating the feeding screw, and a handle for operating the dog and initially actuating the rotatable member to project the piercing pins to lock the can to the holder, substantially as described.

10. A dispenser of the class described, comprising a can, a holder into which the rim of the can is entered, a plurality of piercing pins, a rotatable member adapted when rotated in the proper direction to project the piercing pins to position to pierce the can, a feeding screw, a presser plate adapted to be advanced by rotation of the feeding screw, a dog and ratchet for intermittently rotating the feeding screw, and a handle for operating the dog and initially actuating the rotatable member to project the piercing pins to lock the can to the holder, the presser plate being designed to ultimately tear the can free from the piercing pins, substantially as described.

ROBERT H. LITTLE.