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P. A. WOOSTER

2,175,141

DISPENSING DEVICE

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Fig. 1.

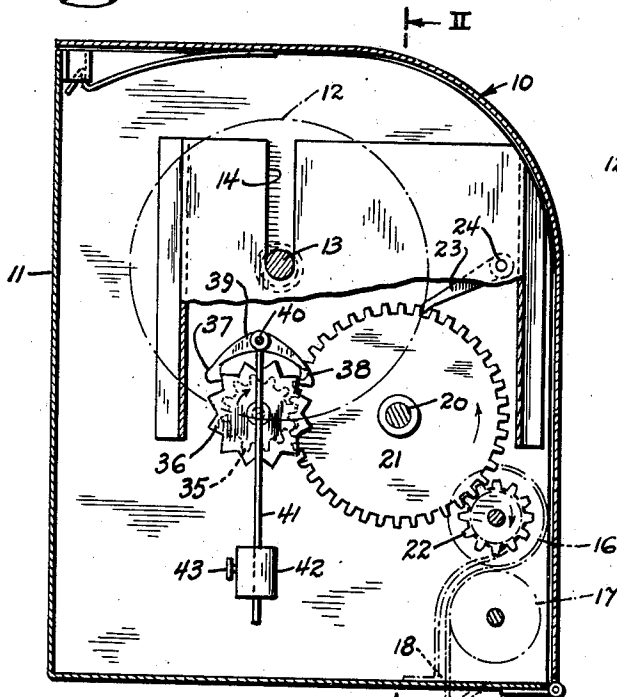


Fig. 2.

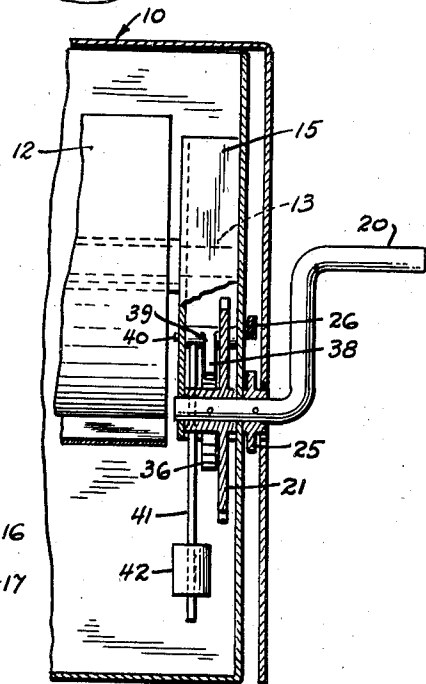
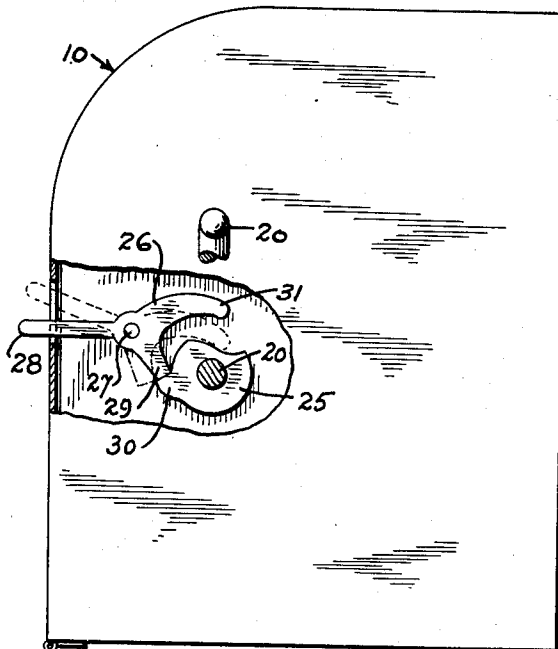


Fig. 3.



INVENTOR.
Philip A. Wooster.

BY

Chas. E. Townsend.
ATTORNEY.

UNITED STATES PATENT OFFICE

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DISPENSING DEVICE

Philip A. Wooster, San Francisco, Calif.

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2 Claims. (Cl. 271—2.3)

The present invention relates to improvements in dispensing devices and particularly to improvements in devices for dispensing such articles as towels, napkins, paper cups, and the like.

Wherever articles are provided for use by the public without charge, the elements of waste and vandalism tend to make the cost of the service prohibitive. For example, paper towels which are dispensed free of charge in public or semi-public washrooms are usually of such size and material that a single towel will, if properly used, serve amply to dry the hands of one person. Many persons, however, draw several towels from the dispenser when they are not actually needed, and oftentimes large quantities of toweling are removed from the dispenser for various other uses for which it is not intended. Similar improper uses are made of toilet paper, paper napkins, paper cups, and other articles intended to be dispensed in limited quantities.

Most dispensing devices, whether they are designed for toweling and other paper or textile materials, or whether they are constructed to dispense soap in liquid form or granular washing powders, are provided with some form of operating member, such as a button which must be pushed, a lever which must be pressed, or a crank which must be rotated to dispense a measured quantity of the commodity. This invention contemplates the use of means for retarding the speed of operation of the operating member on a dispensing device so that an appreciable time period will be required to dispense a properly measured quantity for ordinary use, and improper and wasteful use will therefore be discouraged.

It is the object of the present invention to provide improvements in dispensing apparatus for the purpose of limiting the operation of the apparatus in a manner to discourage wasteful and improper use of the material dispensed.

It is a further object of the invention to provide means cooperating with the actuating member of a dispensing device to retard the speed of operation thereof.

Still further objects and advantages of the invention will be made apparent in the following specification, wherein reference is made to the accompanying drawing in which one form of the invention is exemplified.

In the drawing—

Fig. 1 is a vertical transverse sectional view of a towel-dispensing cabinet embodying my invention;

Fig. 2 is a fragmentary sectional view taken on the line II—II of Fig. 1; and

Fig. 3 is an end elevation of the dispensing cabinet illustrated in Fig. 1, with parts broken away and parts in section to illustrate the construction of a towel-measuring device.

In the accompanying drawing, the invention is illustrated as applied to a well known type of towel cabinet or dispenser, but it will become apparent as the description proceeds that the form of the invention disclosed in the drawing, as well as various modified forms thereof, is adaptable to other classes of dispensing apparatus.

The drawing discloses a towel-dispensing cabinet generally indicated at 10, having a flat back 11 adapted to be secured against the wall in a washroom in a convenient position. A roll 12 of toweling is disposed within the cabinet 10 and supported for rotation, which will enable unwinding of the toweling therefrom, by an axle 13 resting in slots 14 formed in brackets 15 arranged interiorly of the cabinet at opposite sides thereof. A pair of friction rolls are shown at 16 and 17. The toweling from the supply roll 12 is led over the top of the friction roll 16, then back over the top of the friction roll 17, and extends outwardly through a slot 18 formed in the bottom of the cabinet and provided with a serrated tearing edge 19 to facilitate removal of a length of toweling to be used from the main supply after it has been advanced through the slot. A crank 20 (illustrated in Fig. 2) operable from the exterior of the cabinet carries a gear 21 positioned within the cabinet, which meshes with a small gear 22 fixed to one end of the friction roll 16 so as to impart rotation to the friction rolls to advance the toweling through the slot when desired. It is customary to prevent reverse rotation of the crank 20 by ratchet mechanism, such, for example, as a pawl 23 pivoted at 24 and engaging with the teeth of the gear 21 (as illustrated in Fig. 1).

Various types of mechanism are in use for preventing continuous delivery of toweling and to effect dispensing in measured lengths by limiting rotation of the operating member or crank. Such a member is illustrated in Fig. 3, wherein a cam 25 is shown as fixed to the crank 20 for rotation therewith. A lever 26, pivotally supported on a pin 27, has an operating end 28 extending through the face of the cabinet. A tail 29 on this lever engages an ear 30 on the cam 25 normally to prevent rotation of the crank until the lever is moved upwardly to the dotted-line position illustrated in Fig. 3. Upon rotation of the crank to deliver a length of toweling, a nose 31 is engaged by the ear 30 of the cam which rotates with

the crank to throw the lever back to its original position where its tail 29 will again interrupt rotation of the crank upon completion of a single cycle. This feature is designed to measure the
 5 length of toweling dispensed and to some extent to prevent waste. It does not, however, prevent deliberate operation of the dispenser to deliver several towels in rapid succession.

In order to prevent such improper operation,
 10 the present invention provides means for limiting the speed of the operation of the operating member which, in the form illustrated, is the crank 20. There are many well known speed-governing devices that may be adapted to this
 15 purpose, such, for example, as a dashpot, or a fluid pump with a restricted by-pass, or a governor-actuated friction brake.

The speed-retarding mechanism disclosed in the drawing for the purpose of illustrating one
 20 form which the invention may assume is of the anchor escapement type. Referring to Fig. 1, the gear 21, which forms a part of the towel-advancing mechanism, is illustrated as meshing with a gear 35, to the face of which is se-
 25 cured a scape wheel 36. The scape wheel 36 has the usual peripheral teeth which, upon rotation of the wheel 36, engage alternately with two pallets 37 and 38 of an anchor 39, which is pivoted for rocking movement about a pin 40 and
 30 which carries a pendulum rod 41 with a weight or bob 42 disposed at its lower end. Upon rotation of the crank 20, the gear 21 is rotated (as heretofore described) and imparts rotary movement to the gear 35 carrying the scape wheel 36.
 35 Rotation of the scape wheel is limited in the manner well known to escapement movements by the pallets on the anchor 39, which effect swinging of the pendulum. As the normal oscillation period of the pendulum is inversely pro-
 40 portional to the distance between the pivot 40 and the bob 42, the rate of rotation of the scape wheel 36 may be varied by adjustment of the bob 42 along the pendulum rod 41. The bob is slidably mounted on the rod 41 and a set screw
 45 43 is provided to secure it in any position of adjustment thereon.

Thus with the form of the invention illustrated in the drawing, the speed at which the crank
 50 20 may be rotated and at which a given length of toweling may be advanced from the cabinet is limited by the escapement movement just described, and the maximum speed may be varied by adjustment of the escapement movement. The governing device or escapement movement

should be so adjusted that at least a few seconds are required to advance a desired length of toweling. As a very short period of time is required to dry the hands upon a single towel, this
 5 retarding of the speed of the dispensing operation will discourage wasteful use of the toweling as it will be quicker and more to the advantage of the user to use a single towel thoroughly than to discard the towel before it is completely used and
 10 withdraw a second towel from the dispenser.

The present invention is an improvement over existing devices which employ a time delay mechanism to prevent dispensing operations in rapid succession, but do not limit or retard the
 15 speed of the dispensing operation. With the time delay mechanism it is possible for a user to dispense a towel and partially use it and then, after the time delayed locking mechanism has
 20 operated, another towel may be dispensed without delay, thus encouraging its unnecessary and wasteful use. On the contrary, with the structure described above, the period of delay begins
 25 when the dispensing operation is commenced and this encourages thorough use of each towel because of the delay involved in the actual operation of dispensing the next towel, no matter
 30 when the operation is commenced.

While certain features of the invention are more or less specifically described above, it is to be understood that the invention is not intended
 35 to be limited by the present disclosure but that various changes may be made in the construction and arrangement of its several parts within the scope of the appended claims.

Having described my invention, what I claim
 40 and desire to secure by Letters Patent is—

1. In a device for dispensing towels, a dispensing mechanism, a manually rotatable operating member for operating said mechanism to
 45 dispense toweling, and a speed retarding mechanism interposed between the dispensing mechanism and the said rotatable member whereby toweling will be dispensed only upon continued
 50 manual rotation of the operating member in opposition to the action of the speed retarding mechanism.

2. In a device for dispensing toweling and the like, dispensing mechanism, a manually rotatable crank for operating the dispensing mechanism,
 55 and a speed retarding mechanism associated with the crank whereby toweling may be dispensed only by manual operation of the crank against the retarding action of said mechanism.

PHILIP A. WOOSTER.