Nov. 28, 1939. P. A. WOOSTER 2,181,826

DISPENSING DEVICE

Filed June 22, 1936

Fig. 1.

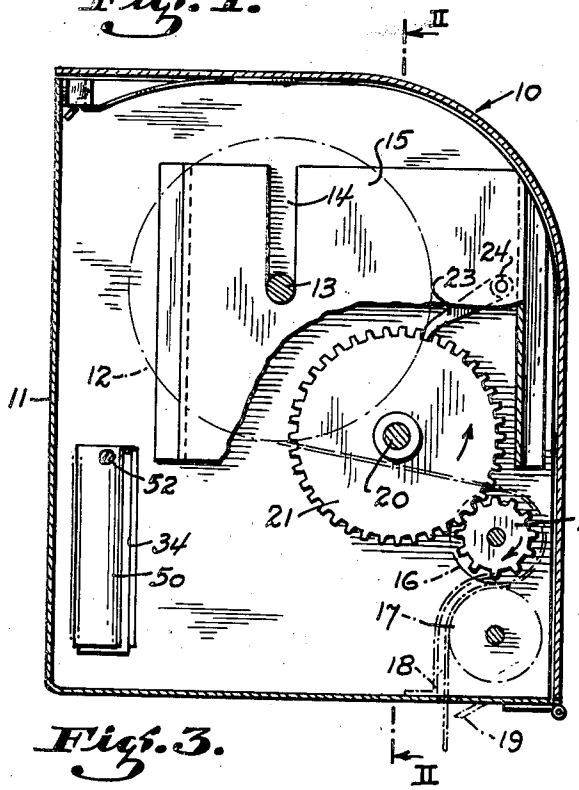


Fig. 2.

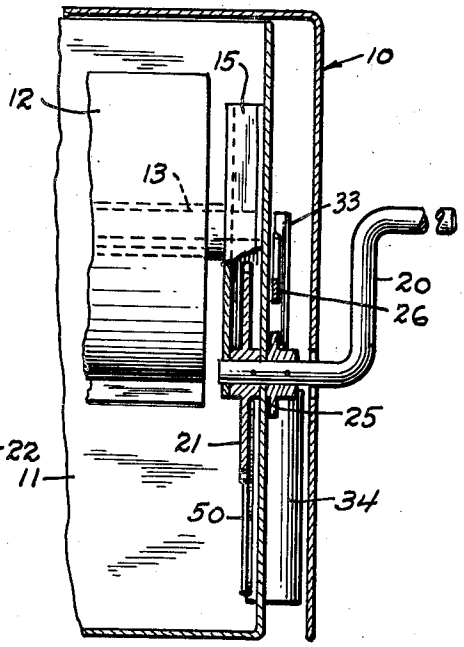


Fig. 3.

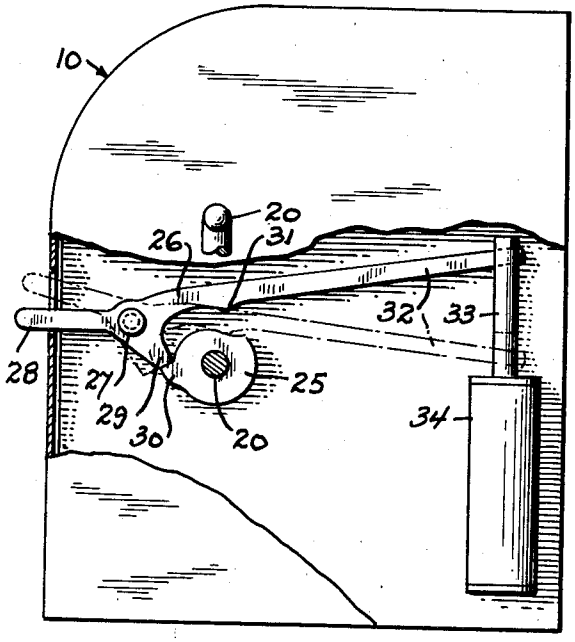


Fig. 4.

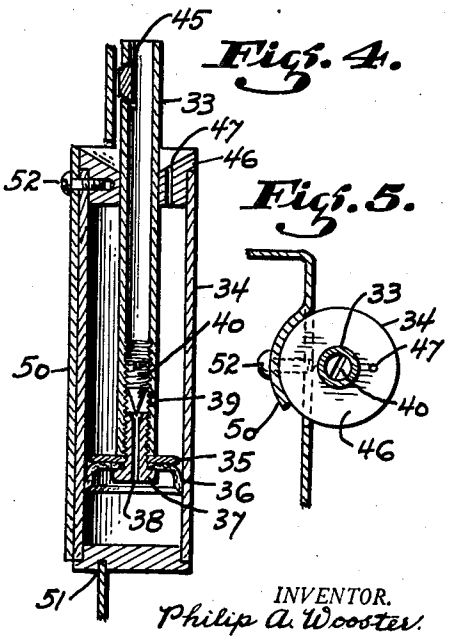


Fig. 5.

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DISPENSING DEVICE

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5 Claims. (Cl. 161—1)

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. Many such devices also employ a lock or latching device which must be released each time that the operating member is to be operated to prevent rapid successive operations thereof. This invention contemplates the use of means for retarding the action of the lock or latch on a dispensing device so that an appreciable time period will be required to release the latch before the operating member may be manipulated, 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 latching member of a dispensing device to retard the speed of operation thereof.

A further object of the invention is to provide means in connection with the latching member of a dispensing device to prevent the latch being held in a released position to permit continuous actuation of the operating member and uninterrupted dispensing of the commodity contained in the device.

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;

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;

Fig. 4 is an enlarged sectional view of the dashpot illustrated in Fig. 3, showing details of construction thereof; and

Fig. 5 is a plan view of the dashpot.

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 mecha-

nism, 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 latch 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 latch lever engages an ear 30 on the cam 25 normally to prevent rotation of the crank until the lever is moved downwardly 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 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 which may be accomplished by exerting continuous upward pressure on the latch lever 28 and at the same time rapidly rotating the crank 20.

In order to prevent such improper operation, the present invention provides means for retarding the upward or unlatching movement of the lever 28. Referring to Fig. 3, the lever 26 is illustrated as having an extension or arm 32 which leads rearwardly of the cabinet and which engages with the piston rod 33 of a dashpot 34. The dashpot is constructed to retard the downward movement of the arm 32 and therefore retard the upward or unlatching movement of the operating end 28 of the latch lever 26, but to permit free return movement of the latch lever when the cam ear 30 engages the nose 31.

The construction of the dashpot 34 is shown in Figs. 4 and 5. It consists of the usual cylinder which may contain a suitable non-volatile liquid or which may operate with air only, if desired. The piston rod 33 carries a piston 35 faced by a cup leather 36 and held in place by a cap screw 37 threaded into the end of the piston rod which is of hollow construction. The cap screw is drilled to provide an orifice 38 which permits bleeding of the fluid in the dashpot from the area below the piston into the hollow piston rod and through a port 39 into the area above the piston. A needle valve 40 is also threaded into the interior of the rod 33 and may be adjusted with a long narrow screw driver through the open top of the rod to vary the opening of the orifice 38 and thus regulate the time and pressure necessary to depress the piston by means of the latch lever. Upon upward movement of the piston, the cup leather 36 permits the fluid to escape to the lower end of the dashpot with comparative ease and speed. The diameter of the piston member 35 may be reduced or it may be notched around its periphery to increase the freedom of the return flow of the fluid.

In order to connect the arm 32 with the upper end of the piston rod 33, the rod is provided with an undercut notch 45 and the arm is shaped to slide within this notch where it will be retained against lateral displacement by the undercut edges of the notch.

The head of the dashpot, which is illustrated at 46, is provided with one or more vent openings, as illustrated at 47, and its top is sloped inwardly toward the piston rod 33 so that any fluid which might possibly be carried out through the head on the surface of the rod will drain back into the interior of the dashpot.

In order to secure the entire dashpot assembly into the wall of the casing by which it is supported, the wall is punched out over a rectangular area to provide a curved plate 50 (see Figs. 4 and 5) to conform to the outer cylindrical surface of the dashpot. The bottom of the dashpot is grooved at 51 to embrace the straight edge of the casing below the punched-away portion and a screw 52 passes through the curved portion 50 and into the head of the dashpot to retain it in place. The screw 52 also serves to secure the head 46 in place at the upper end of the dashpot cylinder so that removal of the single screw will enable the dashpot to be removed and disassembled for servicing or repairs.

The curved plate 50, which is pressed out of the wall of the casing to receive the dashpot, provides a recess of such a depth that when the dashpot is received by it the undercut slot 45 in the piston rod aligns with the lever 32 which is parallel and closely adjacent to the casing wall.

With the invention described above, an appreciable period of time will be consumed in operating the latch lever which permits dispensing of a towel. This delay, the extent of which may be regulated by adjustment of the needle valve in the dashpot, should be sufficient to discourage wasteful use of the toweling and will effectively prevent the continuous dispensing heretofore practised by exerting upward pressure on the latch lever while the dispensing crank is being rotated.

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 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-delay locking mechanism has 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 prior to the dispensing operation, and this encourages thorough use of each towel because of the delay involved before the actual operation of dispensing the next towel, no matter 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 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 and desire to secure by Letters Patent of the United States is—

1. In a dispensing device, the combination of an operating member to effect dispensing of an article, a manually releasable latch normally preventing operation of the operating member, means for returning the latch to normal position upon operation of the operating member, and means to limit the speed of the releasing movement of said latch.

2. In a dispensing device including a latch normally preventing a dispensing operation and

releasable to permit a dispensing operation, a manually actuated pivoted lever for releasing said latch, and a dashpot having a piston connected with said lever to retard the releasing movement thereof.

3. In a dispensing device including a latch normally preventing a dispensing operation and releasable to permit a dispensing operation, a pivoted lever for releasing said latch, and a dashpot having a piston connected with said lever to retard the releasing movement thereof, and means to adjust the operation of the dashpot to vary the time required to operate the lever under a given pressure.

4. In a dispensing cabinet, an operating member to effect dispensing of an article, a latch normally preventing operation of said member, means operable from the exterior of the cabinet to release said latch, and retarding means connected with the releasing means to limit the speed at which it may be operated.

5. In a dispensing cabinet having an operating member to effect dispensing of an article and a latch normally preventing operation thereof, a latch releasing member operable by manual pressure, and retarding mechanism associated with said releasing member whereby the latch may be released only upon pressure being applied to the releasing member for a predetermined period of time.

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