Jan. 30, 1940. R. C. KETTLES, JR 2,188,660

TOWEL DISPENSING APPARATUS

Filed Aug. 9, 1938

FIG.1.

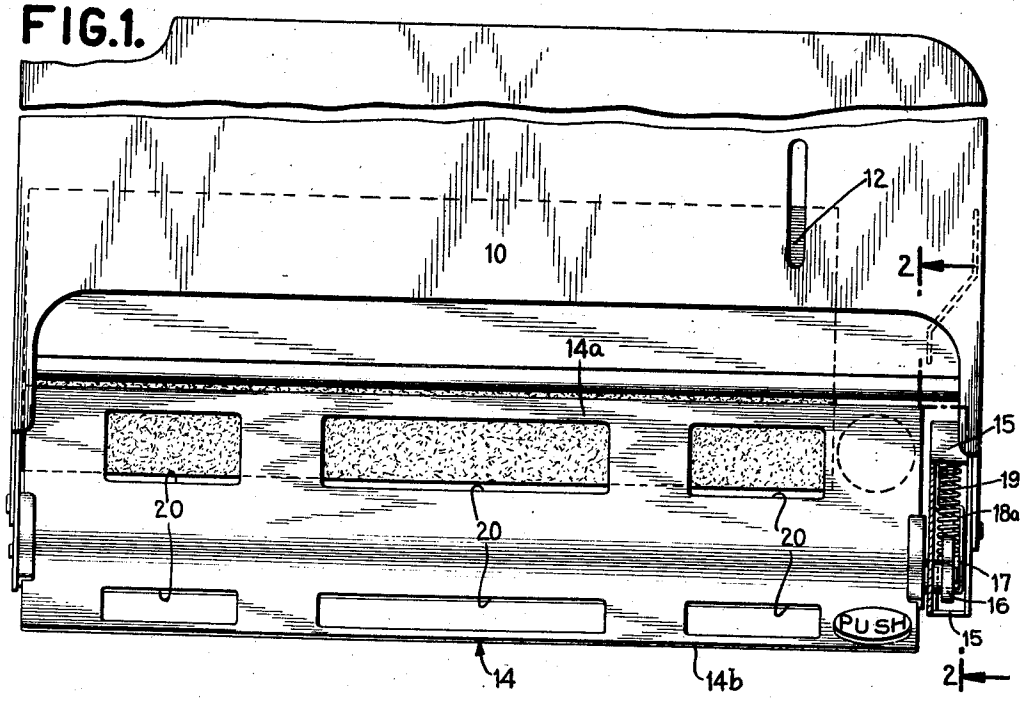


FIG.2.

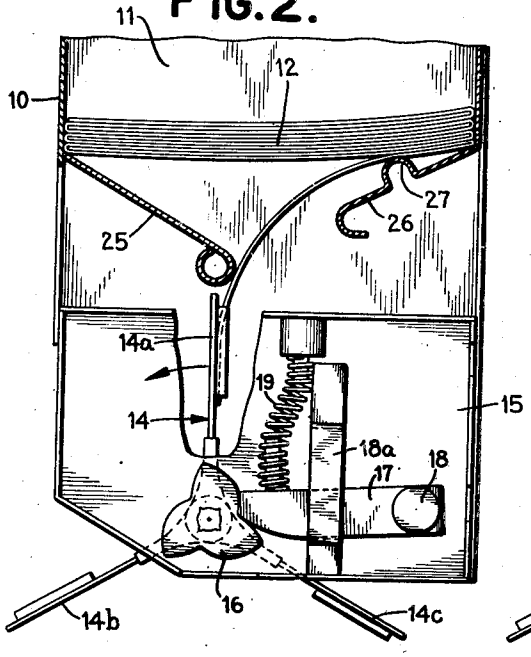
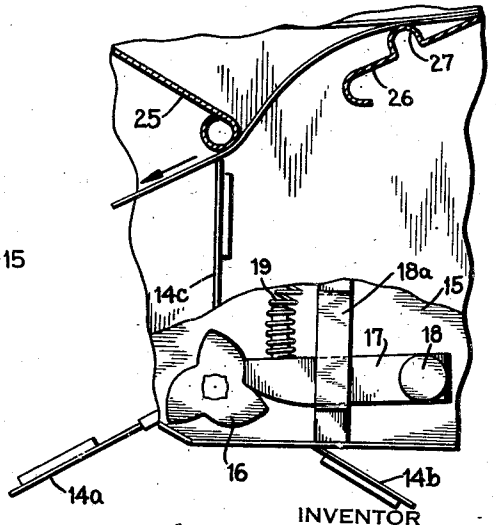


FIG.3.



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TOWEL DISPENSING APPARATUS

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3 Claims. (Cl. 312—60)

The invention relates to a towel dispensing apparatus for dispensing inter-folded towels or inter-folded material. More particularly, the invention has for its object the provision of a dispensing apparatus for paper towels, which will be exceedingly cheap and inexpensive to manufacture and which will be of such construction that it will not be likely to get out of order when in use.

The present invention furthermore has for its object the provision of an improvement and modification of the construction of a dispensing apparatus shown in my previous Patent No. 2,092,168, dated September 7, 1937.

A further object of the present invention resides in the provision of a dispensing device for inter-folded paper towels which will tend to prevent towel wastage by providing a barrier of multi-blade type which may be manually operated by the towel user pushing on one blade to thereupon intermittently rotate the multi-blade barrier and rock one blade away from a position in which it blocks access to a towel edge and to bring the following blade up back of the towel to deflect it to accessible position, which blade then serves as a barrier preventing access to the depending edge of a following towel.

A further object of the present invention resides in the provision of a dispensing device of a type described with blocking means adapted to prevent retrograde movement of the multi-blade barrier, which blocking means also is arranged to impart a certain degree of resistance to the manually induced intermittent rotation of the barrier.

A further object of the present invention is to improve the construction of the dispensing apparatus shown in my Patent No. 2,092,168, and to provide a multi-bladed barrier in lieu of the plate-like barrier of said patent. The multi-bladed barrier is of such form that the barrier itself may be manually manipulated by the towel user. In this way the use of a separate operating push button may be dispensed with.

A further object of the present invention resides in the provision of a supporting shelf for supporting a stack of inter-folded towels, which shelf has a novel configuration which affords a certain amount of resistance to the withdrawal of a towel whereby one by one delivery of the towels is afforded.

A further object of the present invention resides in the provision of an apertured barrier for a towel dispensing apparatus.

Further and other objects of the present invention will be hereinafter set forth in the accompanying specification and claims and shown in the drawing, which shows by way of illustration a preferred embodiment and the principle thereof and what I now consider to be the best mode in which I have contemplated of applying that principle. Other embodiments of the invention employing the same or equivalent principle may be used and structural changes made as desired by those skilled in the art without departing from the present invention and within the spirit of the appended claims.

In the drawing:

Figure 1 shows a front view of a towel dispensing cabinet equipped with my improved dispensing device. In this view certain parts of the housing for the blocking mechanism are broken away to show the interior construction.

Fig. 2 is a detail sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 2 but showing the barrier in a moved position with a leading towel edge accessible for withdrawal.

In more detail in the drawing, the cabinet generally designated 10 may be of any desired construction. For example, it may be of the general form shown in my Patent No. 2,092,168. Such cabinet provides a supply magazine 11 for a stock of inter-folded towels 12. The arrangement of the bottom ledges of the magazine is such that the lowermost towel has its end depending downward in the position shown in Fig. 2 and extending through the towel outlet at the bottom of the magazine.

As is customary with inter-folded towels when one towel is withdrawn, the leading edge of the following towel will be drawn down and ultimately assume the position of the leading edge of the preceding towel, that is, it will have the leading edge extending out through the bottom outlet of the towel magazine.

The bottom ledges of the magazine or supporting shelves for the towel stack are designated 25 and 26 in Figs. 2 and 3. The shelf or bottom ledge 26 is provided with an upstanding transverse beading generally designated 27 in Fig. 2. Such beading upon the back sloping shelf provides a resistance creating ledge whereby there is a certain additional amount of resistance to the slidable withdrawal of one towel over the otherwise smooth sloping bottom of the magazine. This supplemental resistance or drag prevents the following towel from being drawn out too far upon the withdrawal of a preceding towel and materially improves the operation by ensuring one by one towel delivery.

Pivotally mounted at the bottom of the cabinet is a combined barrier and operating member. This member is preferably a spider-shaped member 14 of multi-blade type having radiating blades or fins. The blades are respectively designated 14*a*, 14*b* and 14*c*. The member 14 may be pivoted at one side in the side wall of the cabinet and at the other side it may be pivoted in a housing 15 which with the other wall of the cabinet, is

adapted to house the blocking mechanism which will be hereinafter described.

The disposition of the spider-shaped member 14 across the bottom of the cabinet is such with respect to the towel outlet that one blade such as 14a (Fig. 2) normally assumes a position in front of the leading edge of a towel depending through the outlet and effectively blocks manual access thereto. When a user desires to gain access to such towel such user presses downwardly and inwardly upon another blade such as 14b. To apprise the user of the manner of manipulation of the dispensing device each of the blades may carry on its face a suitable legend such as "Push" or "Push here" (see Fig. 1). Upon pushing downwardly and inwardly upon blade 14b intermittent rotary motion is imparted to the member 14. Blade 14a is thereupon displaced forwardly in the direction of the arrow (Fig. 2), moving away from the towel edge and rendering such towel edge accessible. The following blade 14c also moves in an anti-clockwise direction, finally assuming the position shown in Fig. 3. In such position the blade 14c gets in back of towel edge and deflects the towel edge somewhat forwardly, rendering it easily accessible for manual withdrawal. The towel may be then drawn out by the user and upon the drawing out of one towel the leading edge of the following towel will extend down back of the barrier (i. e. the relation of the new towel will be that shown in Fig. 2). Operations may now be repeated.

In order to prevent undesired free spinning of the spider-shaped member and to block its retrograde motion and to compel intermittent forward rotation in one direction only under a certain degree of resistance, I provide a blocking means which will now be described. The shaft or right hand pivot of the spider-shaped member 14 extends through the wall of the housing 15 and has secured thereto a spider-shaped heart-shaped cam member 16. Cooperating with this cam member is a pawl 17 preferably pivoted on the wall of the housing at 18 and guided by a bracket 18a. Between the pawl and the top of the housing is a compression spring 19. The pin provided on the pawl and the spring mounted on the housing prevent dislodgement of the compression spring. Upon manual actuation of the carrier the pawl 17 is cammed up against the tension of the spring. This camming action first imposes some resistance or drag against the motion of the barrier. After the point or nose of the pawl passes the point of one load of the heart-shaped cam the pressure of the pawl induced by the compression spring tends to drive the barrier forward to the next position. Accordingly, the user of the device must actuate the barrier manually part of the way against the tension of the pawl spring and thereafter movement of the barrier is automatic under the action of the stored power in the pawl spring. By reference to Fig. 3, it will be seen that the tip or nose of the pawl is somewhat above the center line through pawl pivoted 18 and the axis of the spider-shaped heart cam and the spider-shaped barrier member. With the parts in this relation the pawl is adapted to block retrograde (clockwise) motion of the spider-shaped barrier.

The foregoing construction affords an extremely simple and inexpensive towel dispensing apparatus which will discourage towel wastage, which will compel the user to manually shift the intermittently rotatable barrier every time it is necessary to gain access to a towel. The use of separate push buttons is obviated. A minimum number of operating parts are required and the construction is durable and not likely to get out of order when in use.

While I have shown a blocking mechanism within a housing 15 at one end of the barrier, it is obvious that such blocking mechanism may be duplicated at the other end of the barrier. However, such duplication is generally unnecessary since one blocking mechanism is sufficient to provide the required control over the operations of the multi-blade barrier.

As shown in Fig. 2, the barrier element is provided with a plurality of apertures designated 20. Such apertures afford means whereby the depending end of a towel may be seen through the barrier and permit inspection of advertising matter or indicia which may be provided on each of the towels.

While I have shown a three-bladed type of multi-bladed barrier, my invention is not limited to any particular number of blades on the barrier. Less or more than three blades may be provided by making corresponding changes in the related structure which will be self-evident to those skilled in the art.

I claim:

1. In an inter-folded towel dispensing apparatus a cabinet providing a supply magazine with an outlet at the bottom through which towels may be successively withdrawn and including in combination therewith a multi-bladed spider-shaped member having a plurality of radiating blades pivotally mounted in the cabinet below the towel outlet and mounted for intermittent rotary motion, one of the blades of said member being disposed to normally block manual access to a towel depending through the outlet, said blade upon intermittent rotary motion of said member, produced by manual action upon another blade, being displaceable to a position rendering said towel edge accessible for manual withdrawal and a further blade upon intermittent rotary motion with the spider-shaped member adapted to deflect said towel edge forwardly and thereupon serving as a barrier preventing access to the leading edge of a following towel, and blocking means cooperating with the spider-shaped member to compel intermittent motion in one direction only.

2. The invention according to claim 1, wherein the blocking means comprises a spider-shaped heart cam member which is secured to the spider-shaped multi-bladed member, said blocking means further comprising a spring pressed pawl cooperating with the spider-shaped cam member to afford resistance to forward intermittent rotary motion and for preventing retrograde motion of the multi-bladed member.

3. The invention according to claim 1, wherein the blocking means comprises a spider-shaped heart cam member connected to the spider-shaped multi-bladed member, said blocking means further comprising a pawl cooperating with the cam member and pivotally mounted in such relation that the nose of the pawl is disposed away from a center line through the pawl pivot and the axis of the spider-shaped heart cam member for preventing retrograde motion of the multi-bladed member.

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