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TOWEL DISPENSING APPARATUS

Original Filed April 8, 1935

FIG. 1

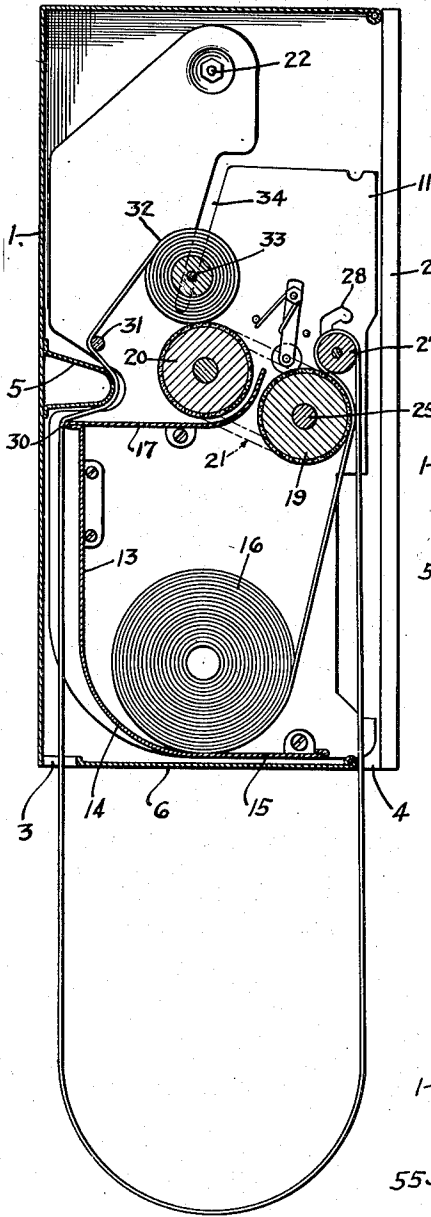


FIG. 2

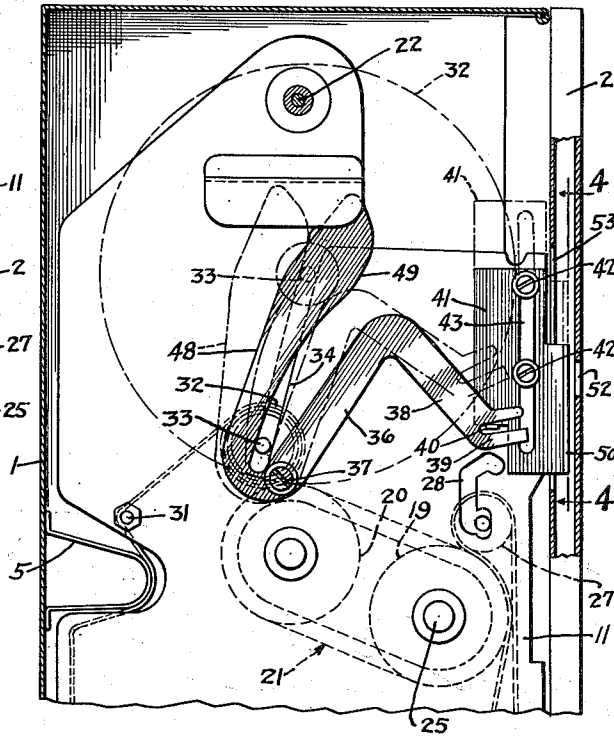


FIG. 4

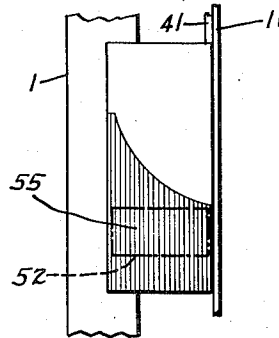
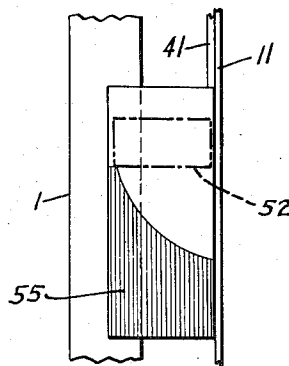


FIG. 3



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TOWEL DISPENSING APPARATUS

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Original application April 8, 1935, Serial No.
15,271. Divided and this application Novem-
ber 1, 1935, Serial No. 47,855

8 Claims. (Cl. 312—38)

This invention relates generally to improve-
ments in apparatus for dispensing toweling ma-
terial, and particularly to a mechanism respon-
sive to changes in the amount of toweling supply
5 for indicating to an attendant that the supply
is exhausted or nearly exhausted. The invention
may be applied to any device in which an element,
associated with the toweling supply, is moved
bodily as a result of dispensing action, or in re-
10 sponse to change in the amount of toweling.

Features of the invention include the operation
of the towel supply indicating means by a bodily
movable means, including a roll properly asso-
ciated with the towel material, or in case of roll
15 toweling, with the clean portion of the toweling,
or with the soiled portion thereof; along with all
details of construction; and along with all broader
ideas of means inherent in the disclosure.

This application is divisional of my copending
20 application Serial Number 15,271 filed April 8,
1935.

Objects, features and advantages of the inven-
tion will be set forth in the description of the
drawing forming a part of this application, and
25 in said drawing

Figure 1 is a central vertical transverse section
taken through the rolls, and supply chamber and
illustrating one type of towel dispensing mecha-
nism with which the present invention is used;

30 Figure 2 is a vertical transverse section of the
upper part of the cabinet taken laterally of the
supply chamber and illustrating the means for
indicating the amount of the towel supply; and

Figures 3 and 4 are detail front views, viewed
35 as from line 4—4 of Figure 2, eliminating the
cabinet door but showing in dot-and-dash lines
the position of the aperture of the door through
which the position of the slide is viewed.

The invention is embodied in a wall type of
40 towel dispensing cabinet but is applicable to any
type of cabinet wherein a bodily movable element
moves as a result of change in the amount of the
supply of toweling material, or wherein a supply
or a takeup roll is used and wherein the shaft of
45 one of these rolls changes position as a result of
increase or decrease in the amount of toweling
on the roll.

Referring to Figure 1, numeral 1 indicates the
outer casing of the cabinet. This casing is pro-
50 vided with the usual door 2 and has in its bottom,
at the rear vertical wall, an elongated slot 3 up-
wardly through which the toweling is drawn to
be connected to a soiled towel roll.

The front edge of the bottom 6 is spaced from
55 the door 2 to form an elongated slot 4 through

which the toweling passes to a point beneath the
cabinet where it is in a position to be grasped
by the user. Attached to the rear wall of the
casing is a bracket 5 which forms part of means
for smoothing out the soiled toweling before it
5 reaches the soiled towel roll.

Within the casing 1 is an element, referred to
herein as a swing housing, and which constitutes
a chamber within which is housed the rolls and
the toweling supply. The housing is formed by
10 two side plates 11 (only one of which is shown)
cross-connected at their lower portions by a plate
having a vertical portion 13, a curved portion 14
and a horizontal portion 15. The latter portion
forms the bottom of the swing chamber or hous-
15 ing, and provides a support for a roll of clean
toweling 16. A second plate 17 extends from the
portion 13 and overlies and is spaced from the
first plate and extends horizontally forwardly, as
shown. The outer end of the plate is curved up-
20 wardly to lie between the feed and takeup rolls
respectively indicated at 19 and 20 both journaled
in the plates 11. It will be understood that in
this type of cabinet, the roll 20 is driven by the
roll 19 by means of a chain and sprocket drive
25 more or less diagrammatically indicated in dotted
lines at 21 in Figure 2. The swing housing is
pivoted by suitable means indicated at 22. It is
understood that after the door 2 of the casing is
opened, the housing can be swung outwardly to
30 facilitate removal of soiled toweling and intro-
duction of fresh toweling, as well as for adjust-
ing the mechanism.

After introduction of the roll of clean toweling
16 the end of the toweling is first engaged with
35 the feed or measuring roll 19 which roll is fixed
to a shaft 25 rotatably journaled in the plates 11.
The toweling is then brought around a pinch roll
27, journaled in slots 28 of the plates. The pinch
roll operates by gravity in a well-known manner
40 to press the toweling against the measuring roll
to obtain the proper frictional contact to provide
power for operating the takeup roll through the
sprocket system 21. The toweling is then brought
downwardly through slot 4 and formed into a
45 loop and is then brought upwardly through slot 3
around a towel smoothing edge 30 of the plate 17,
then around the bracket 5, thence around the
smoothing rod 31, to the soiled towel roll 32. The
trunnion-like portions of shaft 33 of the soiled
50 towel roll are suitably guided in slots 34 in
the side plates 11, and the roll rests by gravity
upon and is frictionally driven through the toweling
thereon by the takeup roll 20.

The above described mechanism is not claimed 55

herein per se, but is representative of one structure which includes a roll 33 or equivalent bodily movable element associated with the towel material, and having journaling means capable of motion in a direction perpendicular to its rotative axis, and wherein the journaling means and its motion are utilized for controlling an indicator.

The foregoing constructions may be of any preferred form, the broad gist of this invention being the utilization of the journaling means of an element which is responsive to changes in the towel supply, or which carries that supply, or which carries or takes up soiled toweling. The use of a portion of a shaft or of a trunnion to control the indicator has the advantage that the connection can be made at a point outside of the chamber which houses the mechanism and towel supply.

The journaling means includes shaft 33 or a pair of projecting pins equivalent to the shaft, and this means is held in slots 34 of the plates 11. Thus, the journaling elements can move, in this embodiment, in a direction away from the windup roll 20 as the amount of soiled toweling on the soiled towel roll 32 increases. In the present embodiment, there is also provided upon the outer side of plate 11, of the inner chamber, an operating lever 36 pivotally mounted as at 37 and having a forwardly extending portion 38, the end of which terminates in a bifurcation 39 operably received by a laterally extending lug 40 of an indicator slide 41. This slide is mounted for vertical movement upon the outer side of one plate 11 by means of screws 42 traversing an elongated slot 43 of the slide. At the opposite side of the pivot 37, the lever has an upwardly extending portion 48 having a curved cam surface 49, lying adjacent the slot 34 in which the end portions of the shaft 33 of the soiled towel roll 32 are guided or journaled. As shown in Figure 2, the cam surface 49 overlies the shaft 33 so that as the roll moves upwardly due to increase in the size of the soiled toweling, the upright portion 48 will be slowly moved to the left about the pivot 37 thus elevating the forked terminal 39, whereupon the slide will be correspondingly gradually moved.

The slide 41 is provided with a right-angled portion 50 and this angled portion is provided with suitable indicia which is visible to the attendant through an aperture 52 of the door 2. The door is also slotted as at 53 to allow the forward part of the slide to project therethrough as shown in Figure 2, sufficient clearance being provided to allow free opening and closing of the door.

Figures 3 and 4 illustrate one kind of indicating means including red color which is represented by lines 55. In Figure 3, the position of the sight aperture 52 is indicated by dot-and-dash lines and here the colored portion lies just below the aperture, which position corresponds to a minimum amount of soiled towel on the roll 32, with a corresponding amount of clean toweling in the cabinet. The line defining the upper limit of the color area is curved to facilitate an estimation of the amount of towel supply.

Although the specific construction is claimed, it is understood that the invention is not entirely limited thereto because the indicating slide or other signaling or indicating means may be of different form, one of the important features of the invention being the connection or association of the indicator operating means with the shaft 33.

In the present embodiment, as the roll 32

moves upwardly due to the increase in the diameter of the soiled toweling thereon, the slide 41 moves upwardly. In Figure 4, the slide has moved to a position (which corresponds to the dot-and-dash line position of the slide in Figure 2) indicating that all of the clean toweling has been used, or that substantially all of the soiled toweling is on the roll. The indicating means in this position shows all red through the aperture 52, whereas heretofore red and white areas were visible through the aperture as defined by the aforementioned curved line.

The means for operating the takeup roll 20 by the measuring roll 19 has only been somewhat diagrammatically indicated in dotted lines in Figure 2. It will, of course, be understood that when the feed roll is operated by a pull on the clean toweling, see Figure 1, the takeup roll is operated and this can be accomplished by any suitable means known to the prior art.

The present invention is applicable either to fabric toweling or to paper toweling in rolls, or to sheet toweling in separate sheets. In the latter instance, the roll 32 and its journaling means will be responsive to change in the amount of toweling material, due to operation of the feeding means, and the indicating means will be controlled by the journaling means.

I claim as my invention:

1. An apparatus for dispensing toweling including a roll having toweling thereon, journaling means for the roll capable of motion in a direction perpendicular to its rotative axis, means responsive to a towel dispensing operation including a rotative part which engages the toweling on the roll to drive the same through the toweling and with reference to which the journaling means moves in response to changes in the amount of toweling, indicating means, and a lever controlled by the journaling means and motion thereof to control the indicating means to indicate changes in the amount of toweling on the roll.

2. An apparatus for dispensing toweling including a roll having toweling thereon, journaling means for the roll capable of motion in a direction perpendicular to its rotative axis, means responsive to a towel dispensing operation including a rotative part which engages the toweling on the roll to drive the same through the toweling and with reference to which the journaling means moves in response to changes in the amount of toweling, an indicating slide, and a lever controlled by the journaling means and motions thereof to control the slide to indicate changes in the amount of toweling on the roll.

3. An apparatus for dispensing toweling material including a roll, journaling means for the roll capable of motion in a direction perpendicular to the axis of the roll, said roll and its journaling means being responsive to a change in the amount of toweling material by movement in the direction aforesaid, indicating means and means controlled by the journaling means to indicate a change in the amount of toweling material, said means including a pivoted bell-crank lever having a cam surface operably engaged by the moving journaling means.

4. A towel dispensing apparatus including a cabinet having an opening an indicator slide opposed to the opening, means within the cabinet manually operable for dispensing toweling including a roll having journals so mounted that they move as a result of change in the diameter of the toweling on the roll, and a bell-crank lever having

one arm controlled directly by the movement of one of said journals, and having the other arm operably connected with the slide.

5. An apparatus for dispensing toweling material including, a roll, journaling means for the roll capable of motion in a direction perpendicular to the roll axis, said roll and its journaling means being responsive to a change in the amount of toweling material by movement in the direction aforesaid, indicating means, and means controlled by the journaling means to cause said indicating means to move in response to change in the amount of toweling.

6. An apparatus for dispensing toweling material including, a roll, journaling means for the roll capable of motion in a direction perpendicular to the roll axis, said roll and its journaling means being responsive to a change in the amount of toweling material by movement in the direction aforesaid, indicating means, and means controlled by the journaling means to cause said indicating means to move in response to change in the amount of toweling, said means including a pivoted lever having one arm movable by the moving journaling means and having the other arm operably engaging the indicating means to move it.

7. An apparatus for dispensing toweling mate-

rial including a roll, journaling means for the roll capable of motion in a direction perpendicular to the axis of the roller, said roll and its journaling means being responsive to a change in the amount of toweling material by movement in the direction aforesaid, a door for said cabinet, having an opening, a slide mounted in the cabinet for translation and disposed for inspection through said opening, and a lever pivoted within the cabinet and having one arm movable by the moving journaling means, and the other connected with the slide to move it.

8. An apparatus for dispensing toweling material including a roll, journaling means for the roll capable of motion in a direction perpendicular to the axis of the roller, said roll and its journaling means being responsive to a change in the amount of toweling material by movement in the direction aforesaid, a door for said cabinet having an opening, a slide mounted in the cabinet for translation and disposed for inspection through the opening, and a lever pivoted within the cabinet and having one arm movable by the moving journaling and the other provided with a fork operably engaged with means on the slide to move the same.

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