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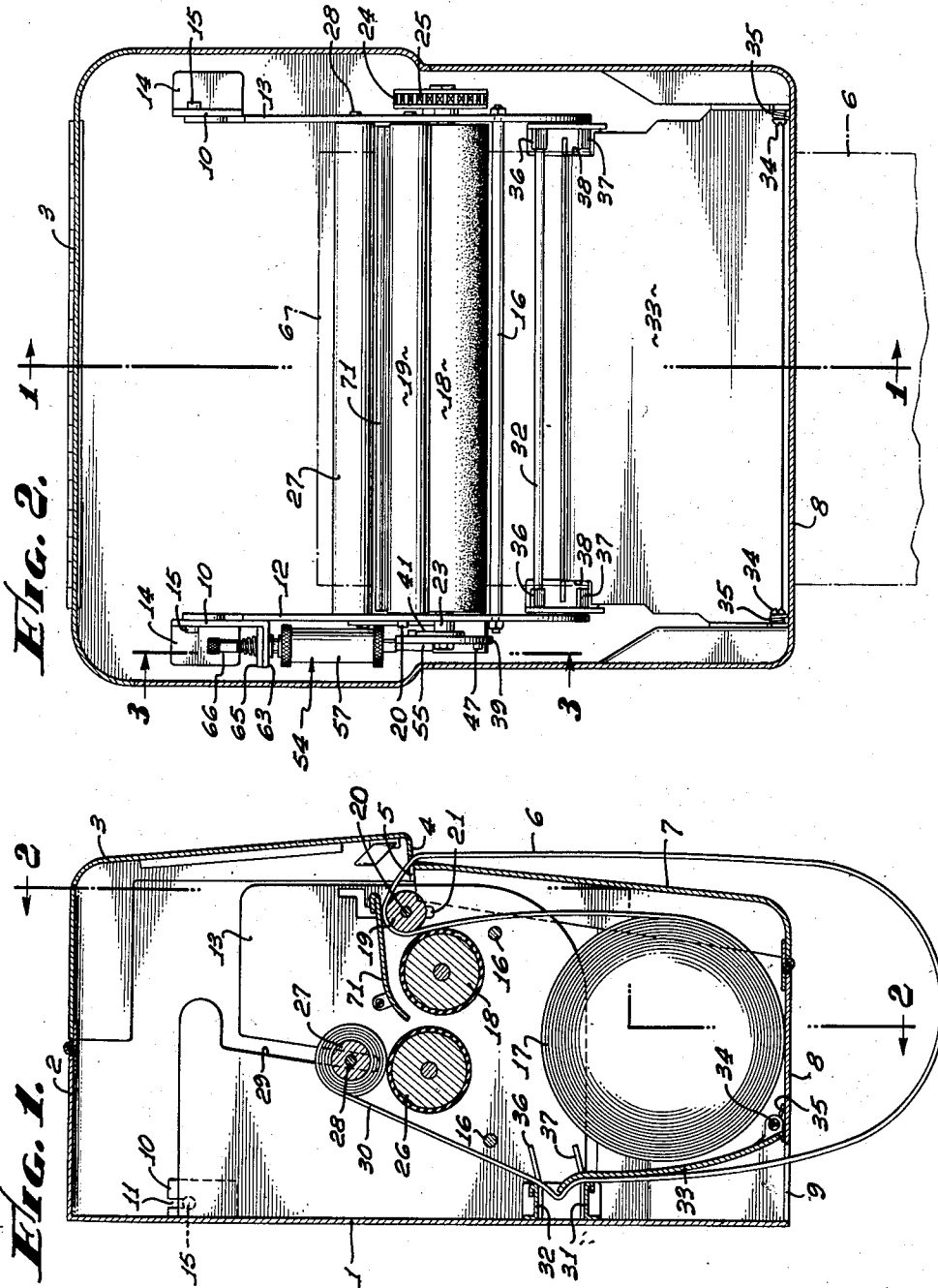
M. TURETZ

2,867,486

INTERMITTENTLY DISPENSING ROLLER TOWEL CABINET

Filed Aug. 16, 1955

2 Sheets-Sheet 1



INVENTOR.

MANUEL TURETZ

BY

Flam and Flam
ATTORNEYS.

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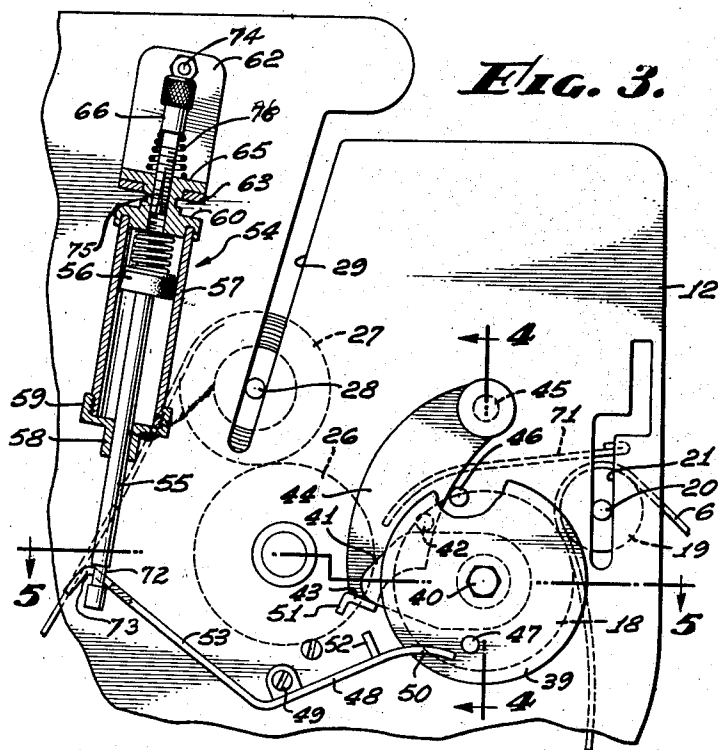


Fig. 3.

Fig. 4.

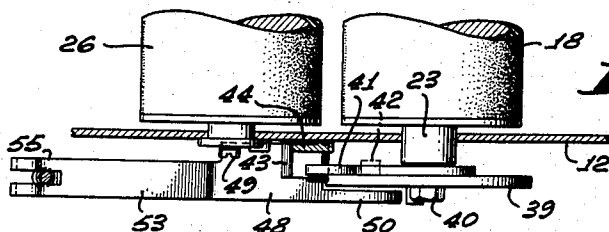
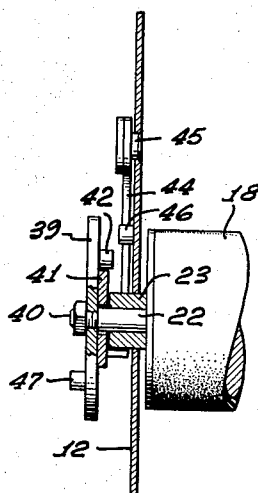


Fig. 5.

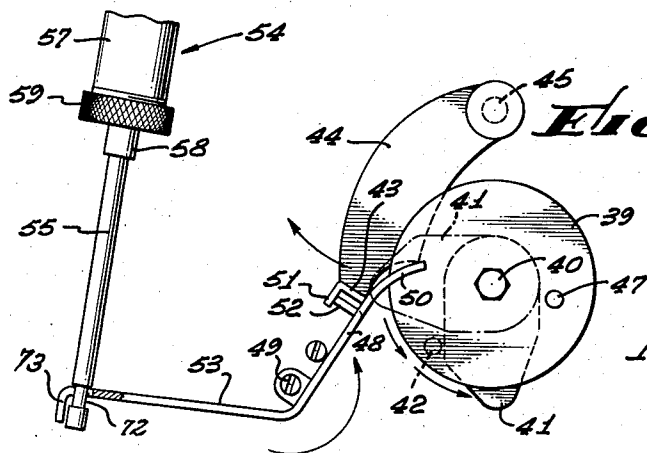


Fig. 6.

INVENTOR.
MANUEL TURETZ
BY
Flam and Flam
ATTORNEYS.

1

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INTERMITTENTLY DISPENSING ROLLER TOWEL CABINET

Manuel Turetz, Los Angeles, Calif.

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4 Claims. (Cl. 312—38)

This invention relates to towel dispensing cabinets, and more particularly to such cabinets equipped with a time-delay device for delaying successive supplies of unused towel lengths from the supply roll.

It is one of the objects of this invention to provide a device of this character that is simple and inexpensive, and that is reliable in operation.

It is another object of this invention to improve, in general, towel cabinets of this character.

In roller towel cabinets, a takeup roll is usually incorporated, upon which successive lengths of towels are wound. It is customary to provide some means for insuring that the towel is wound on the takeup roll under a slight tension, so as to secure a relatively tightly wound roll. It is another object of this invention to improve, in general, the manner in which this tension is provided.

This invention possesses many other advantages, and has other objects which may be made more clearly apparent from a consideration of one embodiment of the invention. For this purpose, there is shown a form in the drawings accompanying and forming a part of the present specification. This form will now be described in detail, illustrating the general principles of the invention; but it is to be understood that this detailed description is not to be taken in a limiting sense, since the scope of this invention is best defined by the appended claims.

Referring to the drawings:

Figure 1 is a vertical sectional view of a towel cabinet incorporating the invention, and taken along a plane corresponding to line 1—1 of Fig. 2;

Fig. 2 is a sectional view, taken along a plane corresponding to line 2—2 of Fig. 1;

Fig. 3 is an enlarged fragmentary view of the time-delay mechanism, taken along a plane corresponding to line 3—3 of Fig. 2;

Figs. 4 and 5 are fragmentary sectional views taken along planes corresponding to lines 4—4 and 5—5 of Fig. 3; and

Fig. 6 is a view similar to Fig. 3, illustrating one position of the timer mechanism which enables an additional length of toweling to be withdrawn from the cabinet.

In Figs. 1 and 2 the towel cabinet is shown as formed of a main casing member 1 made of sheet metal, plastic or other equivalent material. Adjacent the edge of the upper wall 2 of this casing, an upper cover member 3 is hinged. This upper cover member may be appropriately provided with a front sloping face and a bottom wall 4. An opening 5 of this bottom wall permits the roller towel 6 to be withdrawn from the cabinet.

The lower wall 8 of the cabinet is provided with a hinged cover member 7 which has an upper portion conforming to the lower wall 4 of the cover member 3, and has sides to provide a complete enclosure. An appropriate lock, if desired, may be used to prevent opening of the covers.

The lower wall 8 of the cabinet is provided with an ingress aperture 9 for return of the used towel lengths to the interior of the cabinet.

2

The mechanism by the aid of which the towel is dispensed in substantially uniform lengths through the opening 5 and back into the cabinet through the opening 9, is supported by the aid of two parallel walls 12 and 13.

These walls are detachably supported within the casing 1 by the aid of brackets 10 having feet 14 for attachment to the interior of the casing 1. Each of the walls 12 and 13 is provided with a pin 15 detachably engaging within the slots 11 of the bracket 10. A simple lifting operation can serve to remove the mechanism from the cabinet, if desired.

The walls 12 and 13 are held in spaced apart relationship by the aid of a plurality of tie rods 16.

The toweling 6 is supplied from a supply roll 17 (Fig. 1) resting on the bottom wall 8. Thence the towel is threaded between a measuring roll 18 (Figs. 1, 2, 4 and 5) and a pinch roll 19. The towel then extends above the roll 19. This measuring roll 18 is provided with a roughened exterior surface for gripping the towel. This roughened periphery can be obtained by making the roll 18 of metal and knurling the cylindrical surface; or else, metal may be sprayed upon a smooth surface.

The pinch roll 19 is provided with pintles 20 disposed in elongate slots 21 in the walls 12 and 13. In this way, when the towel 6 is pulled outwardly of the cabinet, the pinch roll 19 is urged downwardly with respect to the slots 21 to pinch the towel between the measuring roll 18 and the pinch roll 19.

The measuring roll 18 has a pintle 22 which passes through appropriate bearing hubs 23 mounted on the walls 12 and 13.

The measuring roll 18 is coupled as by the aid of a sprocket chain 24 and sprocket wheel 25 (Fig. 2) with a rewinding roll 26. This roll is similarly journaled by the aid of the walls 12 and 13. This rewinding roll also has a roughened periphery similar to that of measuring roll 18 which is in engagement with the toweling wound on a takeup roll 27. This takeup roll 27 is provided with pintles 28 engaging in downwardly directed sloping slots 29 located in the walls 12 and 13.

Upon rotation of the roll 18 when withdrawing a length of toweling, the rewind roll 26 is also angularly moved so as to wind the toweling upon the takeup roll 27.

In order to prevent any material reverse movement of the towel 6 after it is released, use is made of a pivoted plate 71 (Fig. 1) engaging the upper portion of the toweling 6 at the pinch roll 19.

Means for maintaining that portion 30 of the towel 6 (Fig. 1) leading to the takeup roll 27 under slight tension are provided. This includes a pair of ribs 31 and 32 attached to the interior of the casing 1 and extending horizontally between the walls 12 and 13. The ends of these ribs 31 and 32 are bent to provide a smooth arcuate edge for engagement by the towel 6. A plate 33 has an arcuate extremity engaging the towel between the two ribs 31 and 32. This plate 33 is pivotally mounted upon the lower wall 8 as by the aid of the posts 34, and is resiliently urged into towel-engaging position by the aid of coiled springs 35 disposed around the posts 34. The plate 33 and the edges of the ribs 31, 32 thus cooperate to place a drag on the towel portion 30.

In order to guide the towel 6 against lateral displacement, a pair of guide members 36 and 37 is mounted on the ribs 32 and 31, respectively, at each side of the mechanism. Furthermore, adjacent the upper edge of the plate 33, slots 38 are provided so as to enable the plate 33 to pass between the ribs 31 and 32 without interference with the guiding members 36 and 37.

Provisions are made for insuring that only a limited length of toweling can be withdrawn at a time and that there be a time delay between successive towel with-

drawals. The mechanism for effecting this function is most clearly illustrated in Figs. 3, 4, 5 and 6.

The measuring roll 18 at its left-hand extremity carries an actuator disk 39 which is disposed to the left of the wall 12. This disk 39 may be attached to the pintle 22 as by the aid of a screw 40.

Freely mounted upon the pintle 22 is an abutment member or arm 41. This abutment member is disposed between the left-hand end of the bearing 23 and the disk 39. This abutment is intended to be urged in a counterclockwise direction by engagement of a pin or follower 42 with one of the sides of the abutment member 41. This pin is carried by the disk 39.

Just prior to the actuation of the dispensing mechanism, the abutment member 41, as illustrated in the inactive position of Fig. 6, hangs by gravity downwardly from the axis of the pintle 22. Now as the roll 18 is moved, the pin 42 engages the left-hand side of the abutment 41, as viewed in Fig. 6, and carries it around to a position where it engages a stop 43, as indicated in the position of Fig. 3. Further movement of the roll 18 is thus prevented, limiting the amount of toweling withdrawn.

This stop 43 is mounted at the end of an arm 44 freely pivoted on a pin 45 mounted on the wall 12. A stop pin 46 (Figs. 3 and 4) limits the downward movement of the arm 44 so as to position the stop 43 in the path of the abutment member 41.

After a short interval, the arm 44 is moved in a clockwise direction so as to move the stop 43 into its inactive position as shown in Fig. 6.

The stop 43 has a depending arm 51 adapted to be engaged by the extremity of a projection 52 mounted on a lever 48. This lever 48 is pivotally mounted on a post 49 supported on the wall 12.

The other arm 53 of the lever 48 is adapted to be operated by a dashpot structure 54 in such manner that the dashpot structure, after a limited time interval, moves the lever 48 in a counterclockwise direction to urge or bias the stop 43 to the inactive position of Fig. 6. After this occurs, a succeeding operation of the dispensing mechanism can be performed.

In order to set the dashpot mechanism and to return the stop 43 to its active position for cooperation with the abutment member 41, use is made of a pin 47 mounted on the disk 39. This pin 47 is in advance of the pin 42, as shown in Fig. 6, and operates upon the arcuate extension 50 of the arm 48, to move it to the position of Fig. 3. This occurs before the arrival of the abutment member 41 to the stopped position of Fig. 3.

The clockwise movement of the lever 48 by this means serves to set the dashpot mechanism 54 to the position indicated in Fig. 3. This dashpot mechanism, in a well understood manner, slowly returns the lever 48 to the position of Fig. 6. The period of return of the lever 48 determines the period that must elapse before the abutment member 41 is released to make it possible to perform another dispensing operation.

The dashpot mechanism 54 may be of any conventional type. It includes a stem 55 having a reduced portion 72 that can be coupled to the lever arm 53 by being passed into a slot 73 in the end of the arm. The extremity of the arm is bent downwardly to prevent accidental removal of the stem. The diameter of the stem being greater than that of portion 72, the stem can exert a force in either direction on arm 53.

Stem 55 carries the piston 56 movable in a dashpot cylinder 57. The stem 55 is guided by the boss 58 mounted on the cylinder cover 59.

At its other extremity the cylinder 57 carries an end wall 60.

For supporting the cylinder 57, a bracket 62 is provided having an arm 63 slotted to engage the lower surface of a flange 65 mounted on the cylinder 57. This bracket is freely pivotally mounted on wall 12 by aid of pivot 74 (Fig. 3).

The wall 60 also carries an adjustable threaded member 66. This stem has a tapered groove port 75 cooperating to form an adjustable opening between it and the upper surface of flange 65. A conical spring 76 is disposed around member 66 releasably to hold the member 66 in adjusted position.

Since the operation of such dashpot is well understood, further description thereof is unnecessary.

As shown most clearly in Fig. 5, the extension 50 of the arm 48 is arranged so as to approach quite closely the outer surface of the actuating disk 39.

The inventor claims:

1. In an intermittent web feeding device, a rotary mechanism adapted to be rotated by advance of said web thereover, an abutment member mounted on said mechanism for swingable movement relative thereto, an abutment follower member carried by said mechanism for rotation therewith and positioned on said mechanism to engage said abutment member when said abutment member is restrained against rotation in the direction of rotation of said mechanism, a stop member movable between a first position in the path of said abutment member and a second position free of said path, means normally biasing said stop member into said second position, means carried by said mechanism for overcoming said biasing means during rotation of said mechanism and causing said stop member to move into said first position, and means for time delaying the return of said stop member to said second position by said biasing means, whereby the rotation of said mechanism is arrested by engagement of said abutment member by said abutment follower member when said stop means is in said first position and is engaged by said abutment member.

2. In a device as set forth in claim 1, said biasing means and said time delaying means comprising a dashpot.

3. In a device as set forth in claim 1, said rotary mechanism including a roller carried by an axle for rotation therewith, and a plate carried by the axle at one end thereof for rotation therewith, said abutment member being mounted on said axle adjacent a surface of said plate for free swingable movement relative to said axle and plate, and said abutment follower being a projection from said surface of said plate.

4. In a device as set forth in claim 1, the mounting of said abutment for swingable movement being on the rotational axis of said rotary mechanism.

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