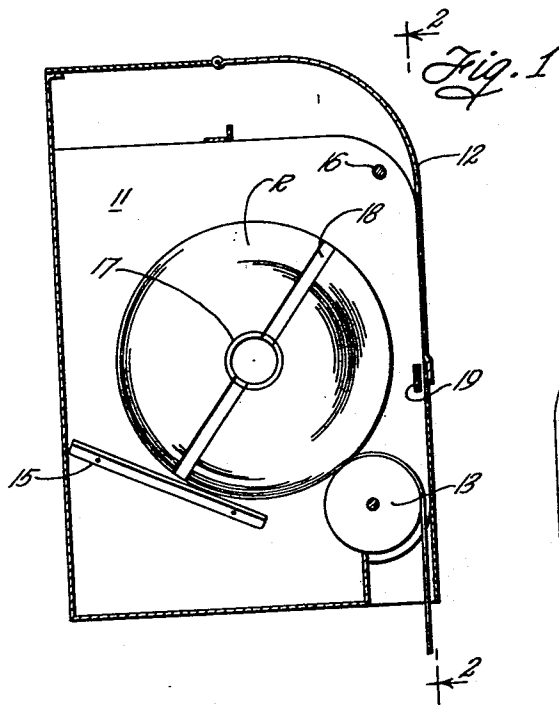
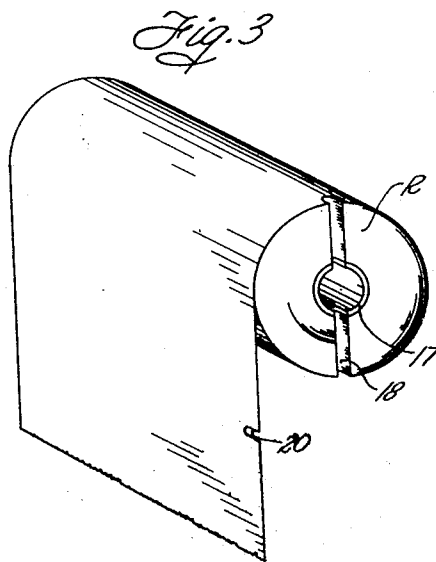
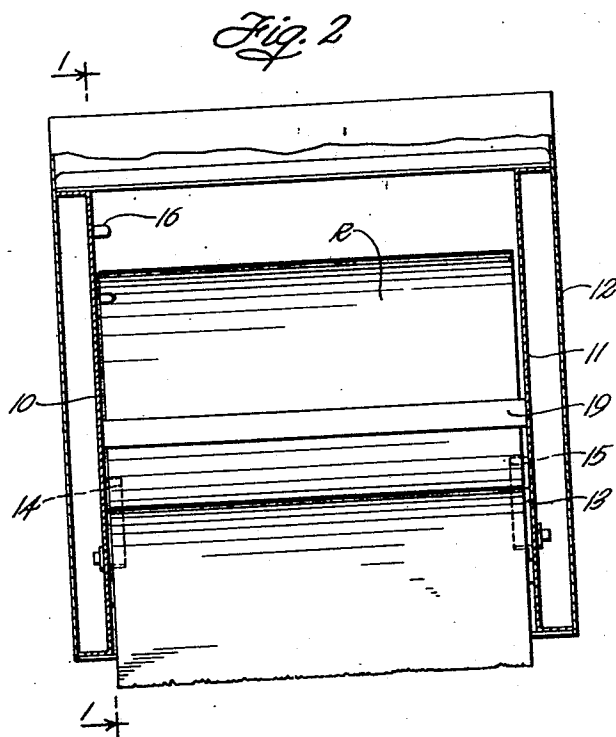


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TOWEL DISPENSER AND SUPPLY ROLL THEREFOR
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TOWEL DISPENSER AND SUPPLY ROLL
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7 Claims. (Cl. 242—55.2)

This invention relates to improvements in towel dispensers. The application may be considered as a continuation in part of our pending application, Serial No. 282,684, filed July 3, 1939, which in turn is a continuation in part of our application, Ser. No. 110,121, filed November 10, 1936.

It has been desired by manufacturers and distributors of paper towel dispensing equipment to provide some means for controlling the type of towelling used for re-filling the towel dispenser manufactured and distributed by them. It has been customary for manufacturers and distributors of the dispensers to supply paper towel dispensers to the users and also to supply re-fill rolls of paper towelling therefor, the re-fill rolls being of a certain standard of quality adopted by the manufacturer or distributor. It not infrequently occurs that the manufacturer or distributor of the dispenser finds that the purchaser or the person acquiring the dispenser for use will procure and use an inferior grade of paper towelling on the dispenser supplied to him with the result that the public on securing the inferior paper towels from the dispenser attributes the inferior quality to the manufacturer or distributor of the dispenser to the latter's injury. It is an object of the present invention to provide a novel combination of a dispenser and a supply roll of paper towelling so constructed that the dispenser will be incapable of receiving a roll of paper towelling which is not specially constructed to fit the dispenser. By the improved combination the use of rolls of paper towelling in the dispenser which is inferior is effectively prevented so that the distributor of the dispenser has a reasonable assurance that towelling of his standard of quality will always be used in his dispenser. Another object of the invention concerns the use of a specially constructed re-fill roll of paper towelling so constructed as to permit its insertion or application to the dispenser and prevent unauthorized use of inferior rolls which has the additional advantage of making visible the quantity of towel remaining on the roll.

With the foregoing and other objects in view, which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawing for an illustrative embodiment of the invention, wherein:

Figure 1 is a sectional view through a paper towel dispenser illustrating a supply roll of paper towelling in applied or installed position therein;

Fig. 2 is a sectional view taken immediately

behind the front wall of the dispenser or substantially upon the line 2—2 upon Fig. 1; and Fig. 3 is a perspective view of the supply roll of paper towelling.

Referring to the accompanying drawing wherein similar reference characters designate similar parts throughout, the invention is capable of being applied to virtually any type of paper towelling dispenser designed to receive a supply roll of paper towelling. For purposes of illustration however we have shown a dispenser as having spaced end walls 10 and 11 enclosed within a suitable cover 12 and having a measuring roll 13 over which the paper is trained. The measuring roll may or may not be equipped with a stop mechanism or a time delay mechanism for arresting its tread periodically to prevent the towelling to be continuously withdrawn and thus prevent wasteage. Inasmuch as such arresting mechanisms and time delay mechanisms are generally well known in the art, they have not been illustrated herein for their presence or absence is not required insofar as the present invention is concerned. On the opposed faces of the end walls 10 and 11 there are secured supports 14 and 15. These supports preferably incline downwardly and forwardly toward the measuring roll 13 so that the supply roll R of paper towelling will roll downwardly by gravity toward the measuring roll 13. The supports 14 and 15 may be in the form of short sections of angle iron fastened to the opposed faces of the end walls 10 and 11. They serve to support the roll R adjacent its ends presenting only a relatively narrow supporting surface reducing friction as the paper is withdrawn and afford a relatively wide space between them for a purpose hereinafter explained.

On at least one of the walls such as wall 10 there is formed a stud 16 which projects inwardly a distance substantially equal to the width of the roll or support 14. The paper of the roll R is wound on a relatively small core 17 and has one or more transversely extending grooves 18 formed on at least one end. The groove illustrated extends diametrically across the end of the roll and is of such depth that the stud 16 may slide therethrough. The length of the roll R is such that it will snugly pass between the end walls 10 and 11 and rest on the rails 14 and 15. Other structures such as bars or braces 19 may connect the end walls to prevent insertion of the roll R between the end walls except over the stud 16.

The operation and advantages of the above described construction are as follows: The dis-

tributor of the towelling dispenser causes his re-fill rolls to be equipped with the groove 18. When the re-fill rolls are thus equipped they may be slid between the end walls 10 and 11 during which the stud 16 passes through groove 18. If the user of the dispenser attempts to insert into the dispenser an unauthorized roll or an inferior roll that is not equipped with the groove 18, the presence of the stud 16 and adjacent bars or other structure 19 prevents the insertion of the roll. If an attempt is made to introduce a roll having a length smaller than the distance between the end of the stud 16 and wall 11, such roll will be too narrow to rest on the rails 14 and 15 but instead will drop down off at least one of the rails and because of its inclined position the paper therefrom will not feed properly over the measuring roll 13. Another advantage of the present construction is that the presence of the stud 16 and the groove 18 on the re-fill roll prevents the roll being inserted in the machine in an upside down position. It is advantageous in these dispensers to have the free end of the paper drawn off of the bottom of the roll. As the roll rests on the rails and the free end is drawn from between the bottom of the roll and the rails, danger of the roll spinning is effectively prevented consequently it is always desirable to have the roll installed in such a position that the paper will be withdrawn from the bottom of the roll rather than from the top of the roll. The stud and groove 18 make it impossible for the installation of a re-fill roll in an upside down position, requiring it to be installed always so that the paper is withdrawn from the bottom.

A further advantage of the construction resides in the fact that notches formed in the edge of the towelling indicated at 20, see Fig. 3, serve as indicia indicating the amount of towelling remaining on the roll. These dispensers are frequently serviced but it is desirable on being able to ascertain without opening the dispenser whether or not a roll in the machine is practically empty and requires replacement or whether the roll in the machine is practically full. As the paper is wound on a relatively small core 17 it is manifest that the notches 20 near the center of the roll will be closely positioned together whereas the notches 20 which are near the exterior of a complete roll are spaced some distance apart. The person servicing the machine can thus make a reasonably accurate estimate as to how much towelling remains on the roll in the dispenser by observing how close or how far apart adjacent notches 20 are. If adjacent notches 20 are spaced from each other a considerable distance, this will indicate that the roll in the dispenser is practically full. On the other hand if the notches 20 are close together, it will indicate to the person servicing the dispenser that the roll is nearly exhausted and requires re-filling or replacement. From the above described construction it will be appreciated that the present combination effectively prevents the use in the dispenser of an inferior roll of paper which is not equipped with the diametrical groove 18. If the groove is not present and the width of the roll is sufficient to enable its resting on the rails 14 and 15, the roll cannot be inserted. On the other hand, if the roll is made sufficiently short in width to pass between stud 16 and wall 11, it will not rest on the rails and therefore the paper will not be fed properly over the measuring roll 13. The arrangement is also such that it pre-

vents the insertion of a roll in an upside down position and provides a constant indicator as to how much of the roll remains in the dispenser.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined by the appended claims.

We claim:

1. A towel dispenser for a roll of towelling of predetermined axial length having a transverse groove in one end thereof, comprising a pair of spaced supports for the roll adapted to support the roll adjacent its ends, and means adjacent one of the supports capable of passing through the groove for preventing the application of a roll of towelling which is not equipped with the groove unless the roll is too short in axial length to rest upon the supports.

2. A dispensing cabinet having walls defining a chamber for the reception of a supply roll of paper of axial length substantially equal to the distance between the side walls of the chamber, said roll of paper having a diametric slot extending inwardly from one end thereof, a pin in the chamber extending from one side wall partly across the chamber toward the opposite side wall adapted to register with the slot in the roll when the roll is being inserted into the chamber, the arrangement being such that the slot must be registered with and slid along the pin if introduction of the roll into the chamber is to be accomplished, and spaced supports in the chamber upon which the ends of the roll rest after introduction into the chamber, the spacing of the supports being such that a supply roll of less axial length than the distance between the outer end of the pin and the opposite side wall of the chamber is too short to be properly supported by said spaced supports.

3. A dispensing cabinet for sheet material having a chamber for receiving a supply roll of predetermined required axial length, a feed roll in the chamber with which the supply roll must assume a predetermined relation for proper feeding, means in the chamber with which means on the supply roll must cooperate before said supply roll can be introduced into said chamber, and means in the chamber for supporting said roll in said proper feeding relation, said supporting means being so constructed that if the axial length of the supply roll is so reduced as to be capable of introduction into said chamber without the cooperation of said means on the supply roll and on the chamber, the supply roll will not be supported in said proper feeding relation, whereby proper feeding cannot occur.

4. A towel dispenser for a roll of towelling of predetermined axial length having a transverse groove in one end thereof comprising means providing a pair of spaced walls the distance between which is but slightly in excess of the axial length of the roll, a stud on one wall extending toward the other wall capable of passing through the groove, means for supporting the roll between the walls after the roll has been inserted therebetween by passing the groove on the end of the roll over the stud, and means preventing the insertion of the roll between the walls to a position wherein it may be supported by said means except by passing the groove on the end of the roll over the stud.

5. A towel dispenser for a roll of towelling of predetermined axial length having a transverse groove on one end thereof comprising means providing a pair of spaced walls the distance be-

tween which is but slightly in excess of the axial length of the roll, a stud on one wall extending toward the other capable of passing through the groove, a feed roll rotatably mounted between the walls and disposed below the stud, means for supporting the roll between the walls after the roll has been inserted therebetween by passing the groove over the stud, said means being inclined downwardly toward the feed roll so that the roll of towelling will be caused to roll against the feed roll by gravity, and means for preventing the insertion of the roll between the walls to a position wherein it may be supported by said means except by passing the groove over the stud.

6. A dispensing cabinet having a feed roll and a chamber having upright walls spaced in a direction axially of the roll, a pair of narrow supply-roll supports, one on each wall of and within the chamber and adapted to support a supply roll in proper relation with the feed roll only when such supply roll is of an axial length substantially equal to the distance between said walls, and means on the cabinet and on said supply roll

which must cooperate to allow a supply roll of said axial length to assume proper relation within the chamber and with the supports and feed roll, said means being of such nature that if the axial length of a substituted supply roll is sufficiently reduced to avoid such cooperation, such a shortened supply roll will not be properly supported on said supports for proper feeding.

7. A towel dispenser for a roll of towelling of predetermined axial length having a transverse groove in one end thereof comprising a pair of spaced supports for the roll adapted to support the roll adjacent its ends, means adjacent one of the supports capable of passing through the groove for preventing the application of a roll of towelling which is not equipped with the groove unless the roll is too short in axial length to rest upon the supports, and means confining the path of entry of the roll onto the supports preventing its application thereon without having said first-mentioned means pass through said groove.

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