May 17, 1949. L. L. PRICE 2,470,186

CONTROL MEANS FOR TOWEL CABINETS

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Fig. 1

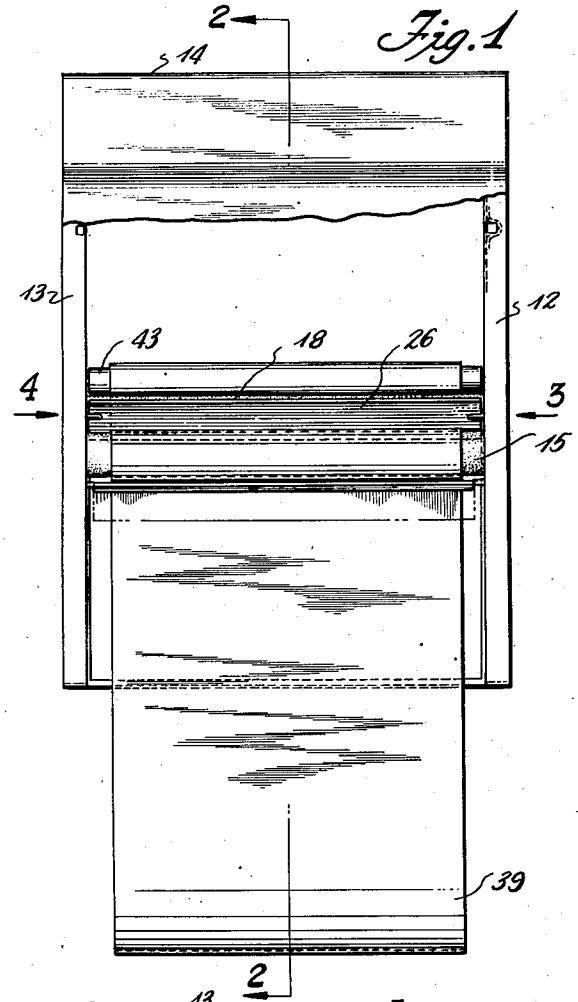
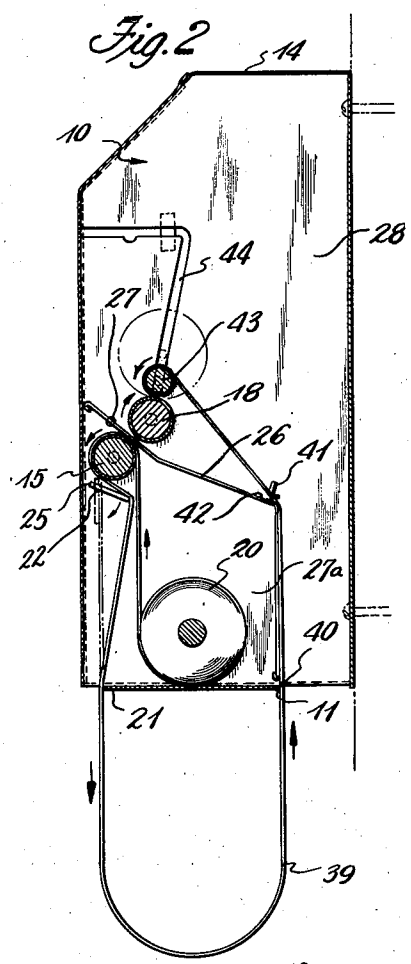


Fig. 2



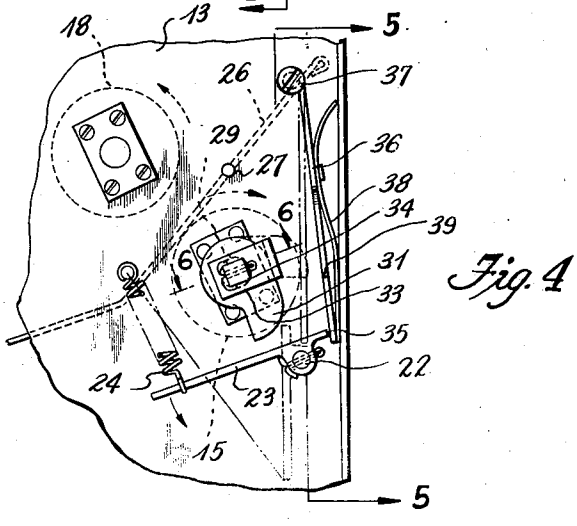


Fig. 4

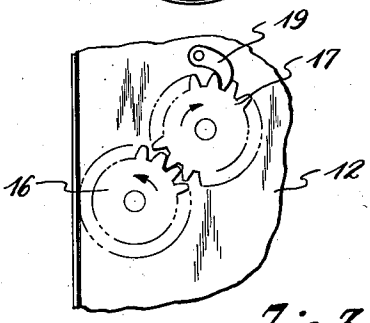


Fig. 3

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CONTROL MEANS FOR TOWEL CABINETS

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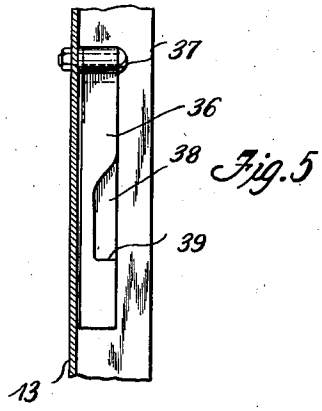


Fig. 5

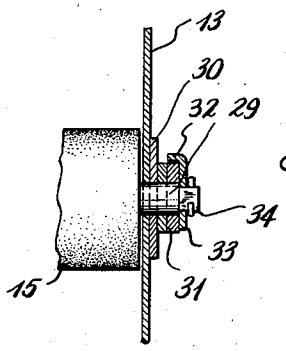


Fig. 6

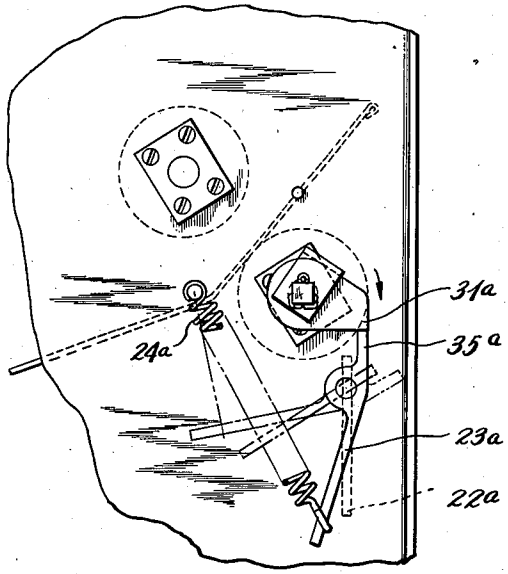


Fig. 7

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CONTROL MEANS FOR TOWEL CABINETS

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3 Claims. (Cl. 312—38)

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This invention relates to improvements in towel dispensers.

A primary object of the invention is to provide an improved towel dispenser wherein there is a roll over which toweling from a supply roll or source of supply is trained and which is caused to rotate as the toweling is withdrawn from the dispenser, and to provide a novel arresting means for temporarily arresting rotation of the roll to prevent the toweling from being continuously withdrawn from the supply.

More specifically, an object of the invention is to provide a dispenser wherein there is a roll over which toweling from a source of supply is trained and which is caused to rotate as the toweling is withdrawn and to provide a tilt bar adjacent the roll adapted to be tilted when the portion of the toweling that leaves the roll is placed under tension, and to provide means operable by the tilt bar for arresting rotation of the roll, the said means being so arranged as to automatically clear when the tension of the toweling is released so that even though a subsequent tension is immediately applied to the toweling to operate the tilt bar the roll will not have its rotation arrested until it has turned and dispensed a predetermined length of toweling.

A further object of the invention is to provide a towel dispenser wherein there is a roll over which the toweling is trained and which is caused to rotate by the toweling as it is withdrawn and which is so designed that the toweling is urged into firm engagement with the roll over a substantial area around its circumference as to prevent slippage of the towel with respect to the roll both for measuring purposes and maintaining the length of the loop of toweling that is suspended below the dispenser.

Another object of the invention is to provide a dispenser wherein there is a roll over which the toweling is trained and which is turned as the toweling is withdrawn and to provide a mangle in association with the roll for pressing the toweling against it and which mangle provides a convenient movable partition dividing the cabinet into two compartments one of which is adapted to receive clean toweling and the other of which is adapted to receive soiled toweling for rewinding purposes.

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 drawings for an illustrative embodiment of the invention, wherein:

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Figure 1 is a view in front elevation of the improved towel dispenser, the front cover therefor being illustrated as having been removed;

Fig. 2 is a sectional view taken substantially upon the line 2—2 upon Fig. 1;

Fig. 3 is a partial view in side elevation illustrating a detail of construction and may be regarded as having been taken in the direction of the arrow 3 upon Fig. 1;

Fig. 4 is a partial view in side elevation illustrating another detail of construction and may be regarded as having been taken in the direction of the arrow 4 upon Fig. 1;

Fig. 5 is a sectional view taken substantially upon the line 5—5 upon Fig. 4;

Fig. 6 is a section across the end of the measuring roll of the dispenser and taken substantially upon the line 6—6 upon Fig. 4; and

Fig. 7 is a view similar to Fig. 4, but illustrating a modified form of construction that may be employed.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the improved towel dispenser comprises a suitable frame generally indicated at 10 having a bottom 11, sides 12 and 13, and a top 14. The sides 12 and 13 are preferably flanged outwardly at their forward edges and a cover, not shown, is applied thereover which is equipped with sides extending rearwardly and covering the mechanism disposed outwardly of the sides 12 and 13. A measuring roll 15 extends transversely across the frame adjacent the forward side thereof and has its ends rotatably mounted in the sides. This measuring roll on one end thereof is equipped with a pinion 16 which meshes with a pinion 17 of the same size that is mounted on the end of a roll 18. An anti-backup pawl 19 is engageable with the pinion 17 to prevent reverse rotation of the rolls 15 and 18. Both rolls are preferably covered with a friction material such as for example sandpaper or emery cloth.

20 indicates a supply roll of clean toweling which is trained over the roll 15 and down to the forward edge 21 of the bottom 11. A tilt bar 22 is pivotally mounted between the sides 12 and 13 adjacent the underside of the roll 15. This tilt bar is located between the forward side of the roll 15 and the edge 21 of the bottom 11 and normally occupies the full-line position shown in Fig. 2, wherein it bends the reach or length of toweling between the roll 15 and the edge 21. At one end thereof the tilt bar has secured thereto an arm 23 that is urged upwardly by a coil tension spring 24 anchored to the side

13. The tension spring 24 normally maintains the tilt bar in the full-line position shown in Fig. 2, but whenever a tension is applied to the toweling to pull it downwardly from the roll 15 the bent portion of the reach of toweling straightens as indicated by dotted lines on Fig. 2, and swings the tilt bar into the dotted-line position shown. In the dotted line or tilted position the upper edge 25 of the tilt bar swings upwardly into engagement with the toweling and serves to press or pinch it against the underside of the roll 15.

A mangle 26 is pivotally mounted as at 27 between the sides 12 and 13 and extends downwardly and rearwardly between the rolls 15 and 18 terminating adjacent the bottom 11, thus forming a partition that effectively divides the interior of the cabinet or frame into two compartments 27a and 28. The weight of this mangle being disposed rearwardly of the pivot 27 causes the mangle to swing downwardly in a clockwise direction as viewed in Fig. 2 to engage the toweling and press it against the upper side of the roll 15. In this manner it will be observed that the toweling is pressed firmly against the measuring roll by the mangle and is in engagement with the measuring roll for approximately one-half of its circumference. When a tension is applied to the toweling to withdraw toweling from the dispenser the tilt bar 22 on being turned into the dotted-line position has its upper edge swung into engagement with the toweling on the underside of the roll and consequently, in view of the large surface contact between the toweling and the roll and the spaced points where the toweling is urged into engagement with the roll by the mangle and the edge 25 respectively slippage of the toweling with respect to the roll is effectively prevented.

Means is provided for arresting rotation of the roll 15 after the roll has rotated a predetermined amount to permit a predetermined length of clean toweling to be withdrawn. To this end the trunnion 29 on that end of the roll which extends through the sides 13 is equipped with washers or spacers 30 and a dog 31 which is freely rotatable thereon between limits provided by the inwardly bent lip 32 on a cap 33. The cap 33 is slipped onto the squared or non-circular portion 34 of the trunnion so as to be rotatable therewith. The dog 31 when engaged by the lip 32 will be caused to rotate with the roll 15 but when permitted to do so this dog may rotate relatively to the roll and advance itself with respect to the lip 32. The upper end of the arm 23 indicated at 35 is engageable with a locking bar 36 pivoted as at 37 to the side 13 and urged rearwardly by means of a spring 38 engageable with the forward flange on the side 13. This locking bar provides a shoulder 39 that is adapted to be moved into the path of the dog 31. In the normal position of the tilt bar 22 illustrated in full-lines in Fig. 2, the arm 23 is in a position wherein its upper end presses the locking bar 36 forwardly against the action of the spring 38 and out of the path of the dog 31. However, when tension is applied to the toweling to tilt the tilt bar 22, arm 23 swings into the dotted-line position shown in Fig. 4, allowing spring 38 to move the locking bar rearwardly so that its shoulder 39 is in the path of the dog. Consequently on pulling toweling from the cabinet the tilt bar not only cooperates with the mangle in causing the toweling to firmly engage the measuring roll to prevent slippage but it also releases the locking bar 36 to interpose its shoulder 39 in the path of the dog. Rotation

of the roll 15 may continue until lip 32 has picked up the dog 31 and caused it to rotate into a position wherein it engages the shoulder 39. In this position further rotation of the roll is stopped. If the tension on the toweling is released spring 24 returns the arm 23 and the tilting bar 22 to their full-line positions causing the upper end 35 to swing the locking bar 36 out of the path of the dog. As soon as the locking bar is moved out of the path of the dog the dog may then freely turn by gravity with respect to the trunnion 29 and swing downwardly into approximately the position shown in full lines on Fig. 4, thus advancing automatically with relation to the lip 32. This clears the locking mechanism so that even though the towel should again be immediately pulled turning the tilt bar 22, the arm 23 and returning the locking bar 36 to locking position, the shoulder 39 will not have been returned to the position beneath the dog due to the fact that the dog has advanced from this position when released under the influence of gravity. As the roll 15 again starts to turn the dog is picked up by the lip 32 and is turned with the roll 15 until it ultimately reengages the shoulder 39 on the locking bar.

The toweling after leaving the edge 21 is formed in a loop 39 and is drawn up through the bottom of the frame adjacent the rear edge 40 of the bottom 11. On the back of the mangle there is secured a bar or angle iron 41 which cooperates with the mangle to provide a guide slot 42 through which the toweling is trained and the toweling is then brought upwardly over the roll 18 and wound upon a suitable core 43 having trunnions slidable in slots 44 formed in the sides 12 and 13. Rotation of the measuring roll 15 causes the roll 18 to rotate at the same speed through the drive afforded by the pinions 16 and 17. The core or windup roll 43 rests against the upper surface of roll 18 by gravity and the toweling is caused to automatically wind up on this windup roll. The windup roll is withdrawn from the cabinet when the toweling is completely wound thereon by passing its trunnions through the forward ends of the horizontal portions of the slots 44.

It will be readily observed that whenever the supply roll 20 need be replenished that this roll may be readily inserted into the compartment 27 through the open front of the frame. Threading of the soiled end of the toweling through the compartment 28 is also easily accomplished in that this compartment is readily accessible above the rolls 15 and 18. The large contact area between the toweling and the roll 15 assures against slippage and that the length of the loop 39 will remain constant.

The modification illustrated in Fig. 7 is substantially the same as that previously described and consequently corresponding parts have been identified with the suffix *a*. Therein the tilt bar 22a has the arm 23a secured thereto so as to be movable therewith. This arm is urged in a clockwise direction by the spring 24a. In this form of construction the upper end 35a is directly interposed in the path of the dog 31a when the tilt bar is tilted by applying tension to the toweling. In other words in this form of construction instead of releasing a locking bar to move into the path of the dog the arm on the tilt bar itself moves directly into the path. When the tension on the toweling is released spring 24a swings the arm so that its upper end 35 is swung out of the path of the dog 31 and the dog consequently

swings downwardly by gravity so as to clear the arresting mechanism and permit rotation of the roll even though a subsequent tension on the towel returns **35***a* to the path of the dog.

It will be appreciated from the above-described construction that the improved towel dispenser is of relatively simple and durable construction. Assurance is made that the toweling will not slip with respect to the measuring roll and the arresting means is operable by the application of tension to the toweling. The arresting means although simple in construction is highly effective and durable.

While springs **24**, **24***a*, and **38** are preferably employed it will be readily understood that weights or the equivalent may be utilized to yieldably urge their respective parts to their normal positions. Also, if desired, the dogs **31** and **31***a* may be spring-actuated instead of gravity-actuated.

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

I claim:

1. In a towel dispenser, a measuring roll over which toweling is trained from a supply, a mangle normally pressing the toweling against one side of the roll, a tilt bar movable by applying tension to the toweling for pressing the toweling against another side of the roll, and means for arresting rotation of the roll.

2. In a towel dispenser, a measuring roll over which toweling is trained from a supply, a mangle normally pressing the toweling against one side of the roll, a tilt bar movable by applying tension to the toweling for pressing the toweling against another side of the roll, and means for arresting rotation of the roll after a predetermined amount of rotation thereof.

3. In a towel dispenser, a measuring roll over which toweling is trained from a supply, a mangle normally pressing the toweling against one side of the roll, a tilt bar movable by applying tension to the toweling for pressing the toweling against another side of the roll, and means for arresting rotation of the roll operable by the tilt bar.

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