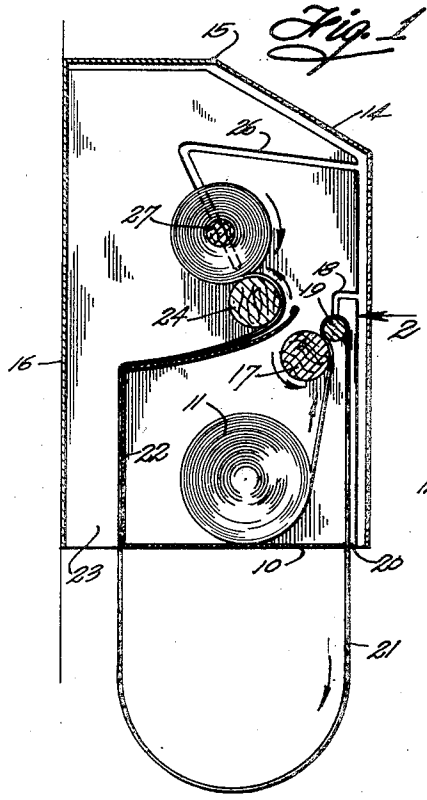
March 7, 1950 L. L. PRICE 2,500,094

RETARDER FOR TOWEL CABINETS

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Fig. 1



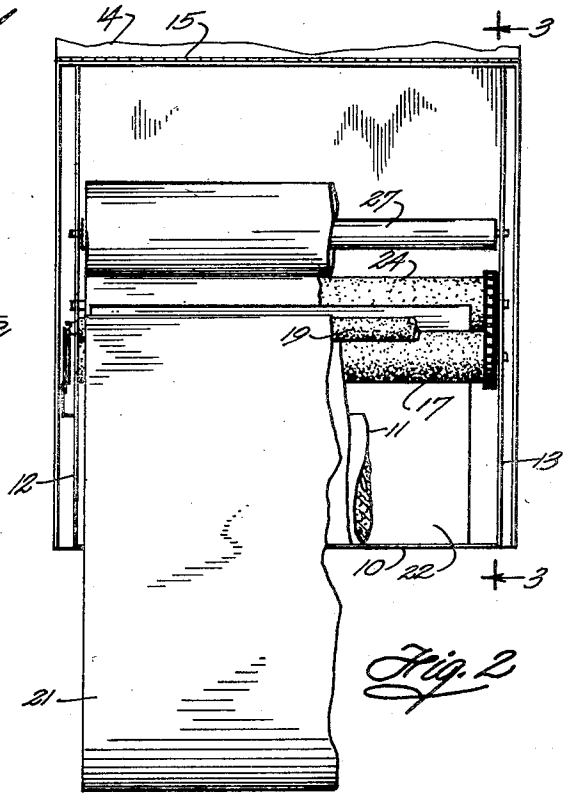
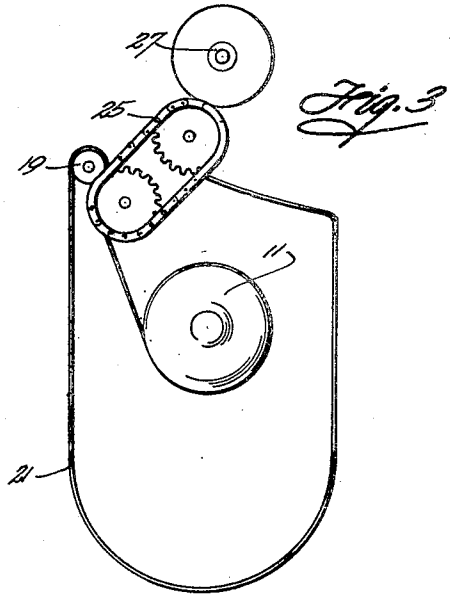


Fig. 2

Fig. 3



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RETARDER FOR TOWEL CABINETS

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Fig. 4

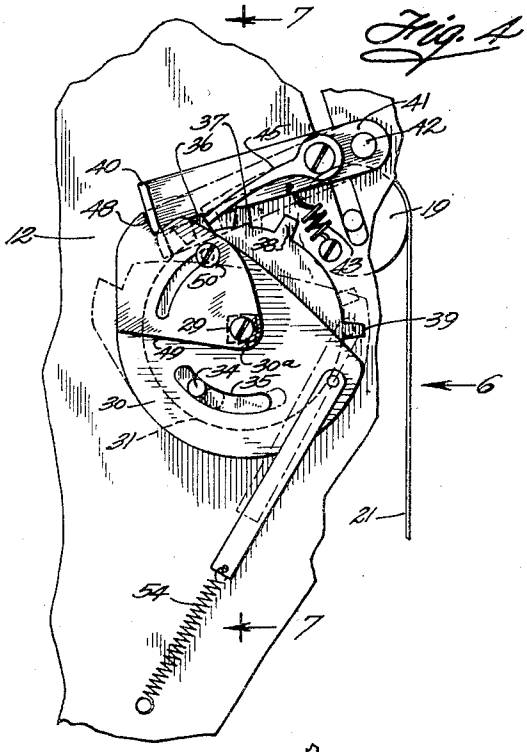


Fig. 5

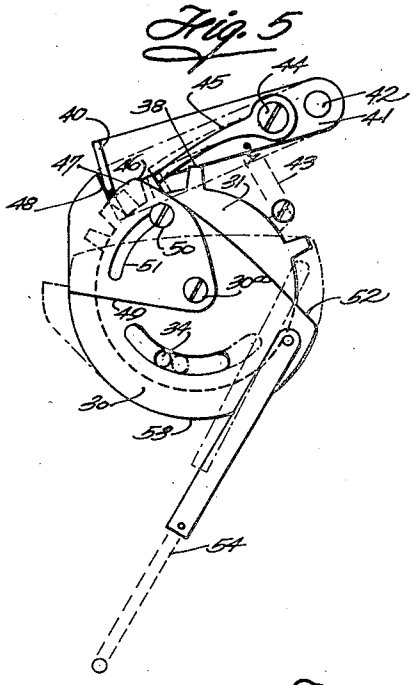


Fig. 6

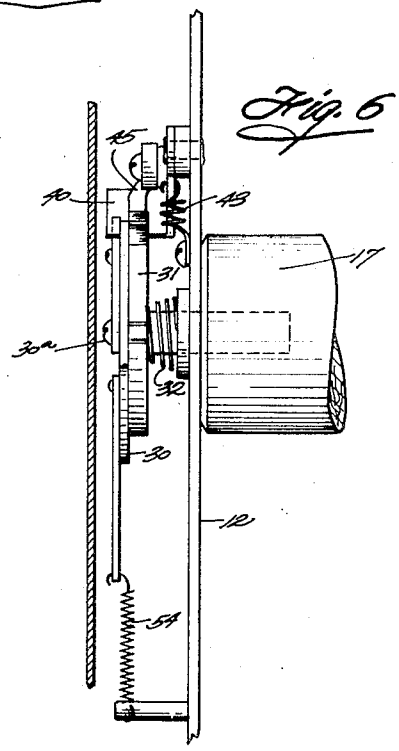
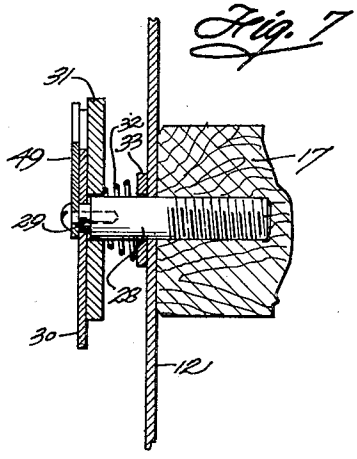


Fig. 7



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RETARDER FOR TOWEL CABINETS

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Fig. 8

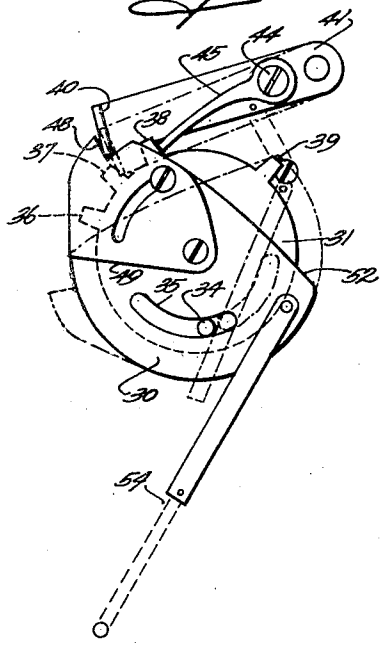


Fig. 9

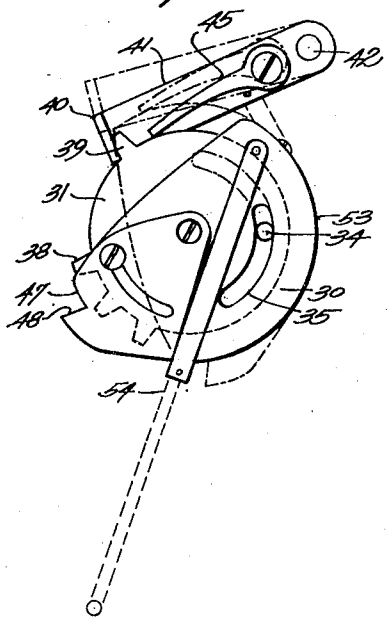
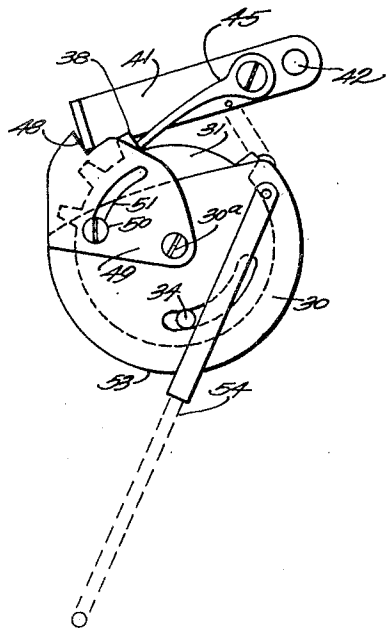


Fig. 10



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Patented Mar. 7, 1950 2,500,094

UNITED STATES PATENT OFFICE

2,500,094

RETARDER FOR TOWEL CABINETS

Laurence L. Price, Los Angeles, Calif.

Application May 24, 1946, Serial No. 672,000

13 Claims. (Cl. 312—38)

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This invention relates to a towel dispensing cabinet.

An object of the invention is to provide an improved means for arresting toweling as it is withdrawn from the cabinet after a predetermined length has been withdrawn to prevent wastage. Heretofore, many different devices of this general character have been provided wherein the toweling has been arrested after a wipe of toweling has been withdrawn which have the arresting means operable by a time-delay mechanism requiring a predetermined length of time to elapse before a succeeding wipe may be withdrawn. Such time-delay mechanisms are usually air controlled such as by vacuum cups, dashpots and the like. They are subject to the objection that they are apt to deteriorate and if they become clogged due to dust or dirt they will not function properly.

An object of the present invention is to provide an improved towel cabinet wherein withdrawal of the toweling is arrested after one wipe has been withdrawn but instead of requiring a predetermined elapse of time to occur before a succeeding wipe can be withdrawn the improved cabinet merely requires a predetermined number of jerks to be applied to the withdrawn wipe to effect a release of the arresting means. The necessity of applying these jerks to the withdrawn wipe to effect a release of the arresting means is sufficient deterrent to prevent wastage of the toweling and as the device embodying the present invention is purely mechanical as distinguished from pneumatic time-delay mechanisms deterioration of parts and danger of plugging or clogging is completely eliminated.

It is therefore another object of the present invention to provide a purely mechanical arresting means for arresting the toweling withdrawn from a towel cabinet which is so designed as to effect a release of the toweling after a predetermined number of jerks and tensions or releases has been applied to the withdrawn length of toweling.

Another object of the invention is to provide a towel cabinet having a measuring roll rotatable as the toweling is withdrawn and which is arrested after a wipe has been withdrawn by a relatively simple mechanism that restricts rotation of the measuring roll to a step-by-step rotation until a predetermined number of jerks has been applied to the toweling after which the measuring roll may freely and continuously rotate until a succeeding wipe has been withdrawn.

Another object of the invention is to provide a

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towel cabinet wherein there is a measuring roll against which the toweling is drawn so as to cause the measuring roll to rotate therewith and to provide a grip roll in association with the measuring roll and so arranged that on applying tension to the toweling the grip roll is urged by the toweling toward the measuring roll to press the toweling against the measuring roll with greater effort and thus prevent slippage of the toweling relative to the measuring roll.

A further object of the invention is to provide a towel cabinet wherein there is a measuring roll rotatable as the toweling is withdrawn and which has a rewind roll driven thereby over which the used toweling passes and against which a windup roll is rotatable adapted to have the toweling wound up thereon by means of the rewind roll so that the toweling will be tightly wound on the windup roll preparatory to its being removed from the cabinet to launder the toweling wound thereon.

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:

Figure 1 is a longitudinal vertical section through the towel cabinet embodying the present invention;

Fig. 2 is a front view in elevation of the same, the cover of the cabinet being shown as having been removed;

Fig. 3 is a sectional view taken substantially upon the line 3—3 upon Fig. 2;

Fig. 4 is a partial view in side elevation illustrating the details of construction of the arresting means in that position wherein rotation of the measuring roll has been completely arrested and the mechanism prepared for the first of its step-by-step movements, the dotted lines indicating the positions of the parts wherein the measuring roll has been arrested and prior to preparing the mechanism for its first step;

Fig. 5 is a view similar to Fig. 4, but illustrating in full lines the positions of the parts after the first step of the step-by-step movement has been completed and after the parts have assumed the position illustrated in dotted lines;

Fig. 6 is an end view in elevation of the parts shown in Fig. 4, and may be regarded as having been taken in the direction of the arrow 6 upon Fig. 4;

Fig. 7 is a sectional view through some of the

parts illustrated in Fig. 4, and taken substantially upon the line 7—7 upon Fig. 4;

Fig. 8 is a view similar to Fig. 5, and illustrating the parts in those positions that are assumed at the completion of the last of the step-by-step movements;

Fig. 9 is a view similar to Fig. 8, and illustrating the positions assumed by the parts in the course of restoring the parts to their initial positions; and

Fig. 10 is a view similar to Fig. 8, but illustrating the manner in which the device may be adjusted to vary the number of steps of the step-by-step movement in order to cause the arresting means to release or in other words, to vary the number of jerks that must be applied to the toweling to release the arresting means for the withdrawal of the further wipe.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout the improved towel cabinet comprises a suitable frame having a bottom 10 adapted to support a supply roll 11 of toweling. At the sides of this frame there are uprights or ends 12 and 13. The frame is usually covered by a cover 14 that may be hinged as at 15 to a back wall 16 by which the cabinet may be mounted on a wall. 17 indicates a measuring roll that is rotatably mounted between the ends 12 and 13. This measuring roll is preferably covered with emery cloth or the equivalent so as to present a relatively high friction surface against which the end of the toweling as it is withdrawn from the supply roll 11 is trained. Above the measuring roll 17 the ends 12 and 13 have angular slots 18 formed therein to receive the trunnions on the ends of a grip roll 19. This grip roll is rotatable and has the toweling trained thereover in passing from the measuring roll 17 to the exit 20. By this arrangement it will be observed that when the hanging portion or loop of the toweling indicated at 21 is pulled or jerked that the tension imposed thereon tends to draw the grip roll 19 downwardly against the measuring roll with greater effort than the mere force of gravity that is normally effective on the grip roll. Consequently, the grip roll serves to press the toweling tightly against the measuring roll 17 to cause the measuring roll to rotate as the toweling is dispensed and to form an accurate measure of the extent to which the toweling is withdrawn.

At the back of the bottom 10 and forwardly of the back wall 16 there is a partition 22 spaced forwardly of the back wall to provide an entrance 23 for soiled toweling. Above this partition which keeps the soiled toweling from contacting the fresh toweling on the supply roll 11 there is a rewind roll 24 that is rotatably mounted between the ends 12 and 13 and which has a chain and sprocket connection 25 with the measuring roll 17 so as to be driven thereby. Near the top of the ends 12 and 13 there are angular slots 26 which receive trunnions on the ends of a windup roll 27 which normally descends by gravity against the rewind roll 24 and is adapted to have the soiled toweling wound up thereon. It will be noted from this construction that as the loop 21 is pulled downwardly the toweling rotates the measuring roll 17 driving the rewind roll 24 which in turn rotates the roll of toweling as it winds up on the windup roll 27. The windup roll may ascend the slot 26 as the quantity of toweling wound thereon increases its diameter.

A feature of the present towel dispenser concerns the arresting and release mechanism controlling the measuring roll 17 which consequently controls the movement of the toweling. The details of this mechanism are illustrated in Figs. 4 to 10, inclusive. On the end of the measuring roll 17 adjacent the end 12 there is a trunnion 28 that rotatably extends through the end 12 and which has at its extreme end a squared or polygonal portion 29 over which fits a cam member 30 which is retained thereon such as by a bolt or screw 30a. The cam member is thus keyed or locked on the measuring roll 17 so as to be positively rotated therewith. A toothed member 31 is disposed against the cam member but fits about the cylindrical portion of the trunnion so as to be rotatable relatively thereto. This toothed member is pressed against the cam member by means of a compression spring 32 disposed between the toothed member and a washer 33 that is positioned against the end 12. The frictional engagement between the toothed member 31 and the cam member 30 causes the toothed member to rotate sympathetically with the cam member although it may be held or restrained against rotation therewith. On the toothed member there is a standard 34 that extends outwardly through an arcuate slot 35 in the cam member 30 that limits rotation of the toothed member. The toothed member has a number of teeth thereon indicated at 36, 37, 38, and 39 engageable by the outwardly bent end 40 of a dog 41 that is pivoted as at 42 to the side or end 12. This dog will fall by gravity towards the toothed member but is preferably urged downwardly by means of a small tension spring 43 anchored to the end 12.

On the dog 41 there is pivotally mounted as at 44 an anti-backup pawl 45 which is engageable with the teeth on the toothed member 31 to prevent its reverse rotation. The cam member presents a sloping cam surface at 46 that is engageable with the extension 40 on the dog to lift the dog out of engagement with the teeth and position it on a circumferential surface 47 which is disposed radially from the screws 30a a distance slightly greater than the radial distance of the tops of the teeth 36, 37, 38, and 39 and against a stop 48. The cam surface 46, the circumferential surface 47, and the stop 48 are preferably provided on a sectional part 49 of the cam member which is adjustable about the screw 30a by means of an adjusting screw 50 that extends through an arcuate slot 51 in the section 49 and into the cam member 30. The cam member also provides a cam surface 52 that is engageable with the extension 40 to lift the dog over the tooth 39 and permit it to slide on the peripheral surface 53 of the cam member. A tension spring 54 is secured at one end to the cam member and is anchored to the end wall 12. It is so located that when the cam member and consequently the measuring roll 17 are in any of its arrested positions the spring will urge the cam member and measuring roll to be reversely rotated. However, whenever the measuring roll and cam member have been rotated in a counterclockwise direction a little beyond the position shown in Fig. 9, this tension spring is effective to assist in rotating the measuring roll and cam member in a forward or towel advancing direction through approximately one-half of a revolution.

The operation of the device is substantially as follows: Initially the first tooth 36 on the toothed member is spaced from the cam surface 46 a distance of approximately one tooth so that the extension 40 on the dog can drop into the space

between the first tooth 36 and the cam surface 46. When the loop or hanging portion 21 of the toweling is pulled it causes the measuring roll 17 to be rotated and the cam member 30 to rotate therewith. During this rotation the toothed member 31 rotates sympathetically with the cam member because of its frictional engagement with the cam member. When the space between the first tooth 36 and the cam surface 46 passes beneath the extension 40 on the dog 41 the extension drops into the space arresting further rotation of the toothed member 31 with the cam member. The toothed member is consequently held stationary while the measuring roll and cam member continue to rotate until the stud 34 on the toothed member reaches the end of the slot 35 in the cam member. When the stud reaches the end of the slot in the cam member further rotation of the cam member and consequently of the measuring roll 17 is arrested thus arresting further withdrawal of the toweling. As soon as the tension on the toweling is released the tension of the spring 54 urges the cam member 30 to reversely rotate from the dotted line position shown in Fig. 4 to the full line position shown in this figure. During this reverse rotation reverse movement of the toothed member is prevented or limited by the anti-backup pawl 45 so that although the toothed member is in frictional engagement with the cam member the toothed member is held stationary or substantially so while the cam member reversely rotates relatively therewith. During the reverse rotation of the cam member the cam surface 46 engages the extension 40 and lifts the dog out of engagement with the forward side of tooth 36 and positions it on the circumferential surface 47 against the stop 48. When the dog engages the stop 48 further reverse rotation of the cam member by means of the spring 54 is prevented and the mechanism comes to rest in the full line position shown in Fig. 4, wherein the cam surface 46 just exposes the top of the first tooth 36. If a subsequent tension or jerk is applied to the loop 21 of the toweling this causes the measuring roll 17 to start to turn in a forward direction and causes the cam member 30 to start to turn in a counterclockwise direction as viewed in Fig. 4. During this forward rotation the toothed member 31 rotates sympathetically with the cam member due to the frictional engagement therewith and the extension 40 on the dog merely slides across the circumferential surface 47 and across the top of tooth 36 until it drops into the space between the teeth 36 and 37. This arrests further rotation of the toothed member 31 after the toothed member has progressed the distance of the first tooth 36. The measuring roll and cam member 30 continue their rotation under the influence of the jerk until they occupy a position as shown in dotted lines in Fig. 5, wherein the stud 34 has again reached the end of the slot 35 to arrest rotation of the cam member and measuring roll 17 with relation to the toothed member 31. As soon as the tension of the jerk on the toweling 21 is released spring 54 again becomes effective to return or reversely rotate the cam member 30 and the measuring roll 17 moving the cam member into the full line position shown in Fig. 5 wherein the cam surface 46 has lifted the extension on the dog from its position on the forward side of the tooth 37 and positioned it on the circumferential surface 47 against the stop 48. During such reverse movement of the cam member the toothed member is held against reverse rotation by the anti-back-up pawl 45. In this position the cam surface 46 is just exposing the top of tooth 37.

If, while the mechanism is in the full line position shown in Fig. 5, a second jerk is applied to the toweling 21, the measuring roll 17 and cam member 30 are rotated causing the toothed member 31 to rotate sympathetically therewith until the dog drops into the space between teeth 37 and 38 thus occupying the dotted line position shown in Fig. 8. The toothed member then has its forward rotation arrested while the roll and cam member continue a short distance until the stud 34 reaches the end of slot 35, thus arresting rotation of the cam member and measuring roll 17 a second time. When the tension of the jerk on the toweling is again released spring 54 again reversely rotates the cam member 30 and the cam surface 46 lifts the dog and positions it on top of the circumferential surface 47 against the stop 48 so that the mechanism assumes the position shown in full lines on Fig. 8. This clears the entire mechanism for the withdrawal of a succeeding wipe of toweling so that if the toweling is subsequently pulled the measuring roll 17 rotates and the cam member and toothed member rotates therewith. During such rotation the extension 40 on the dog merely slides off of the peripheral surface 47 and across the top of tooth 38 and slides on the edge of the toothed member until the tooth 39 is encountered. When the tooth 39 is encountered the dog on engagement with this tooth momentarily arrests rotation of the toothed member as is illustrated in Fig. 9, until the cam surface 52 on the cam member engages the extension 40 and lifts the dog so as to free the tooth 39. Rotation of the measuring roll 17 and of the cam member and of the toothed member 31 then continue with the dog merely sliding on the peripheral surface 53 on the cam member. The momentary arresting of the toothed member 31 by the temporary engagement of the dog with the tooth 39 is effective to restore the toothed member to its initial position with relation to the cam member wherein the tooth 36 is slightly spaced from the cam surface 46. The mechanism is thus prepared for a new cycle of operation at the completion of a revolution of the measuring roll 17. At the completion of such revolution which measures one complete wipe of the toweling the dog extension 40 rides up over the top of stop 48 and descends into the space between tooth 36 and cam surface 46 to start a new cycle of operation as above described.

It will be observed that with the apparatus as above described that the user on having pulled out one wipe of toweling leaves the mechanism in the position illustrated in Fig. 4. A subsequent user desiring a new wipe of toweling applies a jerk or tension to the loop 21 the first jerk shifting the apparatus from the position shown in Fig. 4 to the position shown in Fig. 5. A second jerk or tension on the toweling shifts the apparatus from the position shown in Fig. 5 to the position shown in Fig. 8. The third pull on the toweling is effective to withdraw the succeeding wipe and return the apparatus to the position shown in Fig. 4. Thus insofar as the user is concerned in order to withdraw a succeeding wipe of toweling two distinct jerks and a pull are required. These jerks while they may be applied in close succession and without involving any particular time delay offer a sufficient deterrent to prevent wastage of toweling. However, as the mechanism is en-

tirely mechanical there is no danger of deterioration of its parts and problems of plugging or clogging are not presented.

In some instances, it may be desired to vary or decrease the number of jerks required to withdraw a succeeding wipe of toweling and to this end the cam surfaces **46**, **47**, and **48** are preferably formed on the segment **49** which is rotatably adjusted with relation to the cam member **30**. Thus by circumferentially adjusting the segment **49** into a position as shown in Fig. 10, the entire device may be rendered inoperative to enable continuous withdrawal of toweling and if the segment is adjusted to any intermediate position the tooth **36** may be completely concealed thereby or the tooth **36** and **37** may be concealed thereby. If the teeth **36** and **37** may be concealed and only the tooth **38** is exposed to be operative the operation would be such as to arrest rotation of the measuring roll **17** at the completion of a wipe and upon release of tension on the toweling the parts would assume the position shown in Fig. 10, wherein a subsequently applied pull to the toweling would enable the immediate withdrawal of a succeeding wipe without having to progressively clear the dog from the teeth **36** and **37**. In this manner the mechanism can be adjusted to require any number of jerks to be applied to the toweling between succeeding wipes.

From the above-described construction it will be appreciated that the operating parts of the control mechanism are of relatively simple construction and may be easily assembled and incorporated in a towel cabinet. If desired dog **41** and the springs **43** and **54** may all be mounted on a plate attached to the side **12** rather than attached to the side **12** themselves so as to make the entire mechanism readily applicable to towel cabinets now in use.

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, the combination of rotary means rotatable as the toweling is withdrawn, means for arresting rotation of the rotary means and thereafter allowing it to advance with only step-by-step motion, under the influence of succeeding applications of tension to the withdrawn toweling and its release for a predetermined number of steps and thereafter allowing the rotary means to rotate continuously until subsequently arrested after a succeeding length of toweling has been withdrawn, and means for varying the number of steps of step-by-step motion that are required before the rotary means is released for continuous rotation.

2. In a towel dispenser, the combination of rotary means rotatable as the toweling is dispensed, means including a first stop urged into stop engaging position and a second stop and a third stop, said second named means arresting the rotary means after engagement of the first stop with the second stop to prevent continued withdrawal of toweling, means operable on release of tension upon the withdrawn toweling for reversely rotating the rotary means to move the first stop out of arresting position and render the second stop incapable of being engaged, said first stop being engageable with the third stop upon application of tension to the withdrawn toweling to arrest the rotary means and prohibiting a full length of toweling from being withdrawn, said reversing means being operable on release of tension on the withdrawn toweling to reverse the rotation of the rotary means to move the first stop out of arresting position, whereby upon application of tension to the toweling a full length of toweling can be withdrawn from the towel dispenser.

3. In a towel dispenser, the combination of rotary means rotatable as the toweling is dispensed, delaying means for arresting advancing rotation of the rotary means after a full length of toweling has been withdrawn from the towel dispenser including a plurality of stops engageable in turn with a main stop, and means for releasing the main stop from each of the plurality of stops in turn synchronously with repeated jerks on the withdrawn toweling to enable a succeeding full length of toweling to be withdrawn after the main stop has been released from the last of the plurality of stops.

4. In a towel dispenser, the combination of rotary means rotatable as the toweling is dispensed, delaying means for arresting advancing rotation of the rotary means after a full length of toweling has been withdrawn from the towel dispenser including a plurality of stops engageable in turn with a main stop, and means for releasing the main stop from each of the plurality of stops in turn synchronously with repeated jerks on the withdrawn toweling to enable a succeeding full length of toweling to be withdrawn after the main stop has been released from the last of the plurality of stops, said releasing means reversing the rotary means between jerks to bring the rotary means back to approximately the same position.

5. In a towel dispenser, the combination of rotary means rotatable as the toweling is dispensed, delaying means for arresting advancing rotation of the rotary means after a full length of toweling has been withdrawn from the towel dispenser, said delaying means having a plurality of arresting positions, and means for reversely rotating the rotary means upon release of tension on the withdrawn toweling to release the arresting means at each of its plurality of arresting positions, whereby when the rotary means has been released from its last arresting position, a full length of toweling may be withdrawn from the dispenser.

6. In a towel dispenser, the combination of rotary means rotatable as the toweling is dispensed, means for arresting advancing rotation of the rotary means after a full length of toweling has been withdrawn from the towel dispenser, said arresting means having a plurality of arresting positions to consecutively arrest the rotary means upon consecutive oscillations of the rotary means, means urging the rotary means to reversely rotate when arrested in any of the arresting positions to release the rotary means from the arresting means, the oscillations of the rotary means being furnished by repeated jerks on the withdrawn toweling, each jerk being followed by a reverse rotation of the rotary means, whereby when the rotary means has been released from the last arresting position, a succeeding full length of toweling may be withdrawn.

7. In a towel dispenser, the combination of rotary means rotatable as the toweling is dispensed, a series of stops, means for engaging the stops in turn, said engaging means capable of stopping the rotary means when engaged with any of the stops, means for disengaging the engaging means from a single of the stops on each release of tension on the toweling, engagement

of the engaging means with the first stop causing the arresting of the rotary means after a full length of toweling has been withdrawn, said rotary means being adapted when the last stop has been disengaged from the engaging means to be rotated whereby a succeeding full length of toweling may be withdrawn from the dispenser.

8. In a towel dispenser, the combination of means for arresting the withdrawal of toweling after a length thereof has been withdrawn, means for rendering the arresting means inoperative upon release of tension on the withdrawn toweling while drawing a fraction of a length of toweling back into the dispenser, said arresting means being capable of arresting the withdrawal of toweling several times if accompanied by applications of tension on the toweling and preceded by the release of tension on the toweling and said second named means being capable of releasing the arresting means after each arrest if accompanied by a release of tension on the toweling, said arresting means during the several arresting movements allowing only a fraction of a length of toweling to be withdrawn, said arresting means permitting a full length of toweling to be withdrawn after the several arrests have been made.

9. In a towel dispenser, the combination of rotary means rotatable as the toweling is dispensed, means for arresting rotation of the rotary means to prevent continued withdrawal of the toweling, means for releasing the arresting means upon release of tension on the toweling and reversely rotating the rotary means, said arresting means again arresting the rotary means upon the application of tension to the withdrawn toweling allowing only a fraction of a length of toweling to be withdrawn, the third named means again releasing the arresting means upon release of tension on the toweling and reversely rotating the rotary means, said arresting means capable of arresting the rotary means a plurality of times while limiting the total toweling withdrawn to a fraction of a length of the toweling, said third named means capable of releasing the arresting means after each arrest upon release of tension upon the toweling, whereby when the last arrest is released, a succeeding length of toweling can be withdrawn.

10. In a towel dispenser, the combination of rotary means rotatable as the toweling is dispensed, delaying means for arresting advancing rotation of the rotary means after a full length of toweling has been withdrawn from the towel dispenser, said delaying means having a plurality of arresting positions for the rotary means so that the rotary means must be released from the plurality of arresting positions before a succeeding full length of toweling can be withdrawn, and means for reversely rotating the rotary means upon release of tension on the withdrawn toweling, said last named means operating to release the rotary means from a single arresting position at each application of tension and release of tension on the withdrawn toweling, whereby when sufficient applications of tension and releases of tension have occurred so as to release the rotary means from its last arrested position, a succeeding full length of toweling may be withdrawn from the dispenser.

11. In a towel dispenser, the combination of a measuring roll rotatable as the toweling is dispensed, a cam member rotatable therewith, a toothed member so associated with the cam member as to be urged to be moved therewith even though said toothed member and the cam member are relatively rotatable within limits, a dog engageable with the teeth of the toothed member to restrain its rotation and consequently the rotation of the cam member and roll after the limited relative movement of the cam member relative to the toothed member has been exhausted means for preventing reverse rotation of the toothed member, means normally urging the cam member and roll to reversely rotate when the toothed member has its forward movement arrested, said cam member presenting a cam surface arranged to cause the dog to advance a tooth on the toothed member when the cam member is reversely rotated relative to the toothed member.

12. In a towel dispenser, the combination of a measuring roll rotatable as the toweling is dispensed, a cam member rotatable therewith, a toothed member so associated with the cam member as to be urged to be moved therewith even though said toothed member and the cam member are relatively rotatable within limits, a dog engageable with the teeth of the toothed member to restrain its rotation and consequently the rotation of the cam member and roll after the limited relative movement of the cam member relative to the toothed member has been exhausted, means for preventing reverse rotation of the toothed member, means normally urging the cam member and roll to reversely rotate when the toothed member has its forward movement arrested, said cam member presenting a cam surface arranged to cause the dog to advance a tooth on the toothed member when the cam member is reversely rotated relative to the toothed member, and means for restoring the toothed member to its initial position relative to the cam member.

13. In a towel dispenser, the combination of a measuring roll rotatable as the toweling is dispensed, a cam member rotatable therewith, a toothed member so associated with the cam member as to be urged to be moved therewith even though said toothed member and the cam member are relatively rotatable within limits, a dog engageable with the teeth of the toothed member to restrain its rotation and consequently the rotation of the cam member and roll after the limited relative movement of the cam member relative to the toothed member has been exhausted, means for preventing reverse rotation of the toothed member, means normally urging the cam member and roll to reversely rotate when the toothed member has its forward movement arrested, said cam member presenting a cam surface arranged to cause the dog to advance a tooth on the toothed member when the cam member is reversely rotated relative to the toothed member, a portion of the cam member being rotatably adjustable to vary the position of initial engagement between the dog and the toothed member.

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