May 2, 1933. J. H. ADDLER 1,906,353

TOWEL CABINET

Filed Sept. 5, 1931 3 Sheets-Sheet 1

Fig. 1

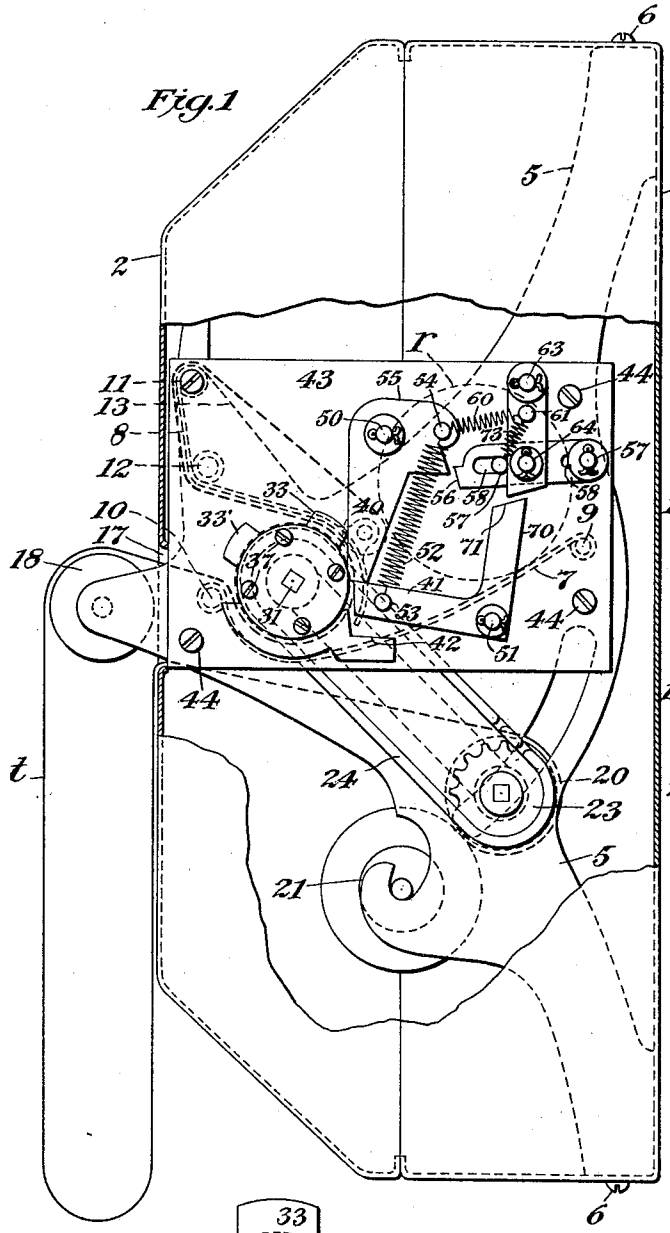


Fig. 2

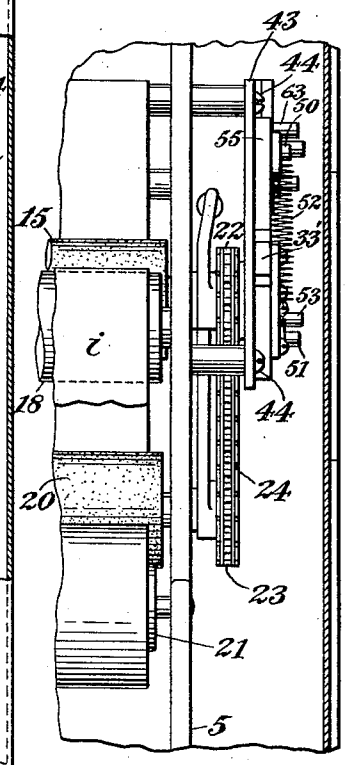
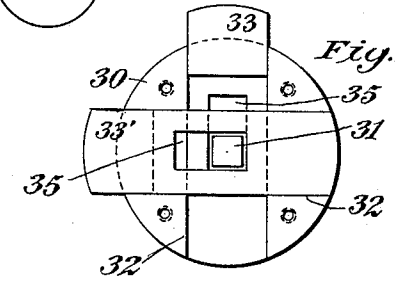


Fig. 11



INVENTOR

Joseph H. Addler

BY HIS ATTORNEY

May 2, 1933. J. H. ADDLER 1,906,353

TOWEL CABINET

Filed Sept. 5, 1931 3 Sheets-Sheet 2

Fig.3

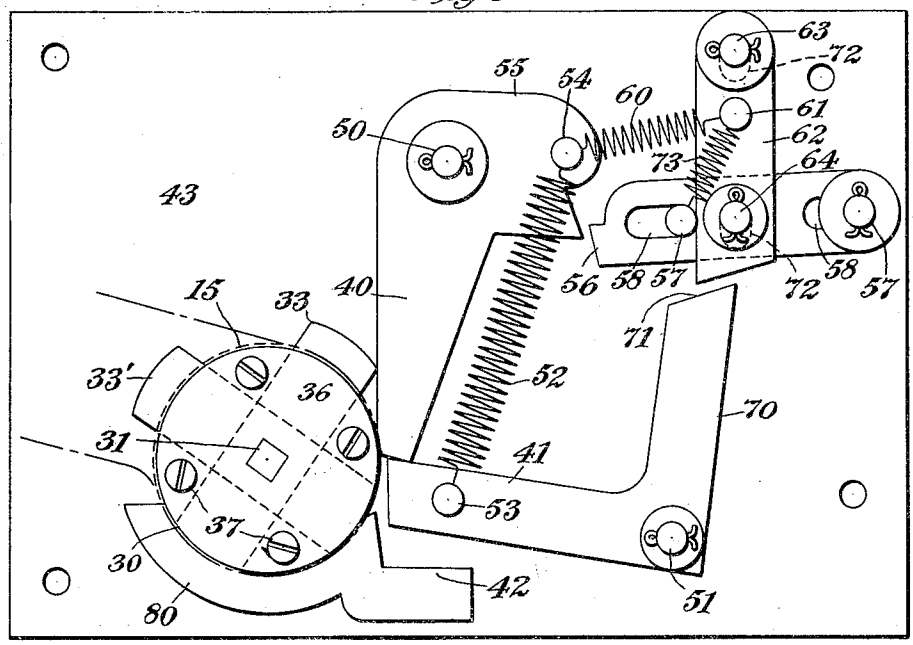
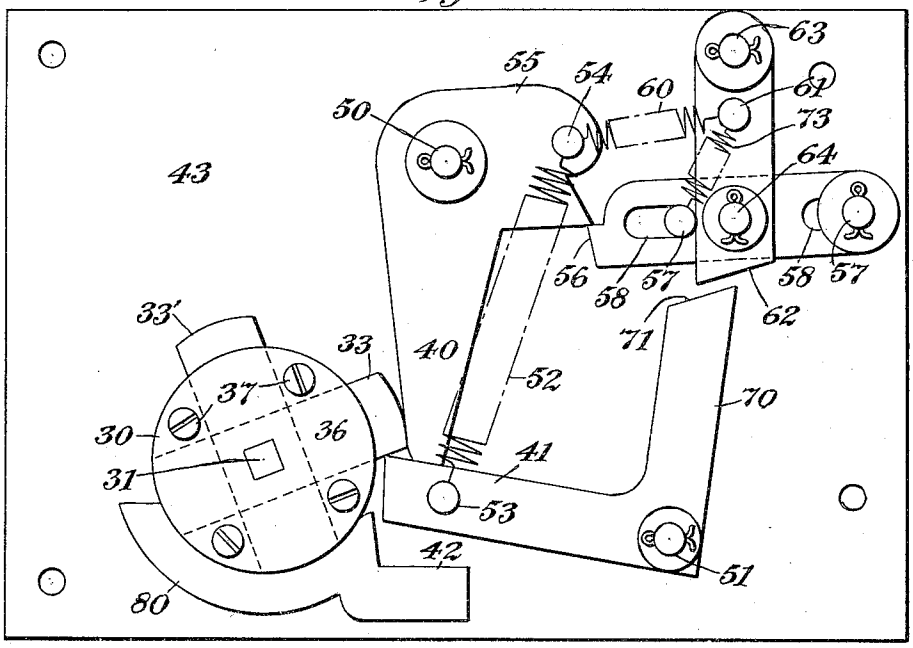


Fig.4



INVENTOR

Joseph H. Addler

BY HIS ATTORNEY

May 2, 1933. J. H. ADDLER 1,906,353

TOWEL CABINET

Filed Sept. 5, 1931 3 Sheets-Sheet 3

Fig. 7

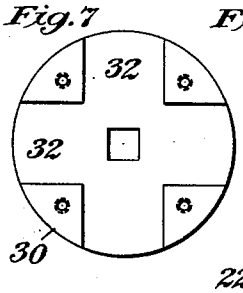


Fig. 8

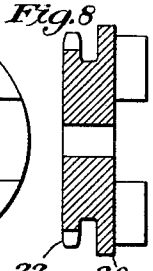


Fig. 5

Fig. 9

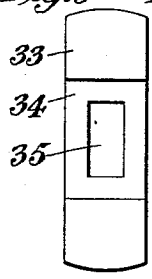


Fig. 10

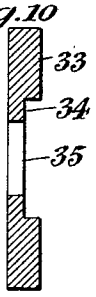


Fig. 6

INVENTOR

Joseph H. Addler

BY HIS ATTORNEY

Patented May 2, 1933 1,906,353

UNITED STATES PATENT OFFICE

JOSEPH H. ADDLER, OF BROOKLYN, NEW YORK, ASSIGNOR TO PULLCLEAN MANUFACTURING CORPORATION, OF BRIDGEPORT, CONNECTICUT, A CORPORATION OF DELAWARE

TOWEL CABINET

Application filed September 5, 1931. Serial No. 561,370.

This invention relates to towel cabinets of the type in which a considerable length of towelling, usually in the form of a roll, is supported within the cabinet and adapted to be drawn therefrom in relatively short lengths as required for individual use. In the use of these cabinets, however, there is a tendency on the part of the users to draw off more towelling for each individual use than is really required and in this way add unnecessarily to the expense of maintaining the cabinet. With this in mind, it has been the main object of my present invention to provide these cabinets with a simple and efficient means, operating automatically, for so controlling the delivery of the towelling that it will be drawn or measured off only in lengths of predetermined size which, for hand or face drying purposes, will be relatively short. This object I attain by the novel construction and arrangement of parts hereinafter described and as illustrated in the accompanying drawings.

Other objects and advantages of the invention will appear and be referred to in the detailed description of the invention which follows.

Referring now to the accompanying drawings—

Fig. 1 is an end elevation of a cabinet equipped with my invention, with the end wall of the casing partly broken away to show the towel controlling mechanism located therein.

Fig. 2 is a front elevation of a part of that end of the cabinet shown in Fig. 1, with the casing broken away.

Figs. 3, 4, 5 and 6, are enlarged views of the towel controlling mechanism shown in Fig. 1, showing the positions of the parts at different times during the operation of the same; this mechanism comprising a housing disc fixedly mounted on one end of the towel feed-controlling roller and carrying slidably mounted stop bolts, and means cooperative with said bolts for stopping rotation of the feed roller at predetermined times and for subsequently releasing the bolts to permit further rotation of the roller.

Fig. 7 is an end face view of the housing disc for carrying the stop bolts with the bolt retaining cap plate removed.

Fig. 8 is a section taken centrally through said disc showing a sprocket wheel on the rear side thereof.

Fig. 9 is a face view of one of the stop bolts removed from the disc.

Fig. 10 is a section taken centrally through said bolt.

Fig. 11 is an end face view of the housing disc as shown in Fig. 7, with the stop bolts in position.

The cabinet proper or casing, which may be of any suitable or desired design, is here shown as comprising a body portion 1, having a hinged door 2 at the front side thereof, through which access may be conveniently had to the interior of the casing for the purpose of placing clean towelling therein, removing soiled towelling therefrom, or for any other desired purpose.

Located within the casing adjacent its opposite ends are a pair of frame or bracket plates for the support of certain parts of the towel controlling mechanism to be presently described. Only one of these bracket plates, indicated at 5, is here shown, the same being secured in position by suitable fastening means, such as the bolts 6. The opposite bracket plate (not shown) is of like construction and similarly fastened in position.

Within the upper part of the casing is a suitable towel support, here shown as comprising two plates 7 and 8, the plate 7 being connected at its opposite ends with cross-rods 9 and 10 mounted in the end frame brackets, and the plate 8 being connected at one end with a cross-rod 11, from which it extends downwardly in front of a second cross-rod 12 and from thence rearwardly to a point adjacent the plate 7, as best shown in Fig. 1, the adjacent portions of the plates 7 and 8 forming a trough-like structure in which the roll r of clean towelling is loosely supported. The cross-rods 11 and 12 about which the plate 8 is passed at its front end are mounted at their opposite ends in a pair of arms or extensions 13 of the frame brackets 5. The particular construction and arrangement of these parts constituting the support

for the roll of towelling, however, forms no part of the present invention and therefore will not be further described in detail herein.

When a roll of towelling is placed in its support, the leading end of the towelling *t* is led from the roll forwardly and upwardly over the rod 11, thence downwardly in front of the rod 12, thence backwardly and around a roller 15, and from this forwardly again over the guide rod 10 and out through an opening 17 in the front wall of the casing to and over a guide roller 18, which latter is journalled in extensions of the frame brackets which project through the opening 17 in the casing to support the roller 18 at the front side thereof. From this guide roller 18, the towel depends in loop form, as shown in Fig. 1, in convenient position for use, the towel at the rear side of the loop passing backwardly through the opening to a take-up or rewinding device of usual construction, comprising a pair of rollers 20 and 21 between which the towel is passed and about one of which the towel is re-wound; this take-up device being operated from the roller 15 through the medium of a pair of sprocket wheels 22 and 23 attached to the rollers 15 and 20 respectively, and engaged by a connecting sprocket chain 24.

As hereinbefore referred to, it is the object of the present invention to provide a simple and effective means for automatically controlling the feed or delivery of the clean towelling whereby its withdrawal from the cabinet will be in predetermined lengths. This I accomplish by the provision of means for automatically stopping the roller 15 once upon each rotation thereof and thereby stopping the outward feeding or withdrawal of the towel; it being understood that the friction between the towel and the roller is such as to prevent movement of the towel independently of the roller under ordinary pulling strains such as exerted in the normal use of the cabinet. In the present case such friction is increased by sanding the towel engaging surface of the roller 15.

The means for stopping rotation of the roller 15 as referred to comprises a housing block or disc 30 fixedly mounted on the outer squared end of the shaft 31 of said roller for rotation therewith, which block as here shown is provided with two transversely arranged bores or slide-ways 32, 32 crossing each other at right angles and having slidably mounted therein two bolts 33, 33′, which are adapted to be successively operated by means hereinafter described to alternately project their opposite ends beyond the periphery of the housing block into position for engagement with a stop device located in the path thereof. In order that both bolts may operate in the same plane whereby their projecting ends will move in the same path for engagement with the stop device, they are cut away on their inner overlapping faces, as at 34, of a length sufficient to permit of the necessary longitudinal movement of each relatively to the other in being shifted to and from their projected position for engagement with the stop device. These bolts are also provided with central longitudinal openings 35 to receive therethrough the squared end of the roller shaft 31, which latter engages the end walls of said openings to limit the longitudinal sliding movement of the bolts within their bores in the housing block. As a means for conveniently placing the bolts within the housing block or removing the same therefrom, the housing block is provided with a face plate 36 removably held in position by fastening screws 37.

By the use of two stop bolts successively operated to alternately project their opposite ends beyond the periphery of the housing block for engagement with the stop device, the feed roller will be stopped four times during each rotation and so limit the amount of towelling drawn out at each operation to very short lengths. This results in a very economic use of towelling for the reason that the user, although able to obtain any desired length of towel by repeated pulls on the same, usually stops when a required length has been withdrawn rather than repeat unnecessary withdrawal operations.

When a length of towel is drawn outwardly from the cabinet, thereby causing rotation of the engaged roller 15 and connected housing block 30, the projected end of one of the stop bolts, that indicated at 33 in Fig. 3, will be first brought into engagement with a releasing device 40, to be presently described, and move this out of its path, and thereafter, in its continued movement will be brought into engagement with the movable member 41 of a stop device, as shown in Fig. 4, and move this downwardly into engagement with a fixed abutment 42, as shown in Fig. 5, whereupon the parts including the feed roller 15 will be brought to a stop and so limit the further withdrawal of the towel until the bolt has been disengaged or released from the stop member 41.

The releasing and stop devices with their associated parts may be supported in any suitable way, but the same as here shown are mounted upon a plate or casting 43 secured to the adjacent bracket plate 5 by suitable fastening means, such as the screws 44. As shown in Fig. 2, this plate 43 is held in spaced relation to the bracket 5 to permit of the location therebetween of the sprocket 22, carried at the rear side of the housing disc, and said plate is provided with an opening 45 in which the housing block is freely supported with its outer end projecting forward of the outer face of the plate 43 to permit of the operation of the stopping bolts at such point, as shown.

The releasing device 40 is pivotally mounted at 50 on the plate 43 with its lower free end positioned in the path of movement of the projecting ends of the stop bolts, and the stop member 41 is also pivotally mounted on the plate 43 at 51 with its free end extending horizontally beneath the lower end of the device 40 and also in the path of movement of the projecting ends of the stop bolts. The device 40, as here shown, is yieldingly held in a normal position with its lower end in contact with the periphery of the housing disc 30, and the free end of the stop member 41 is yieldingly held in a normal position in contact with the lower end of the device 40, by means of a coiled spring 52 connecting at one end with a pin 53 on the member 41 and at its opposite end with a pin 54 on an arm 55 of the device 40, as shown in Fig. 3. The free end of the member 41 when in such position of contact with the device 40 is positioned slightly above the fixed abutment 42, as shown in Fig. 3, for a purpose to be presently described.

When the device 40 is moved against the pressure of the spring 52 by the engagement therewith of the end of one of the stop bolts, it is engaged and held, when at the limit of its backward movement, by a latch 56, as shown in Fig. 4. This latch 56 is slidably mounted on the plate 43 by means of two pins 57, 57 engaging the same through elongated openings 58, 58 therein, and the same is yieldingly held in normal position for latching engagement with the arm 55 of the device 40 by means of a coiled spring 60 connecting at one end with the pin 54 and at its opposite end with a pin 61 on a lever arm 62, which latter is mounted adjacent its upper end on a pivot 63 and adjacent its lower end connected with the slide latch 56 by a pivot pin 64. With the latch 56 thus mounted, it will be understood that when the device 40 is swung backward on its pivot by an engaging stop bolt, its arm 55 will be swung backwardly and upwardly past the adjacent end of the latch, from its unlatched position shown in Fig. 3 to its latched position shown in Fig. 4, during which movement the latch engaging end of said arm engages the front end of the latch and moves the latter backwardly until the arm has risen above the latch as in Fig. 4, following which the latch will be advanced by the spring 60 to latching position beneath said arm.

Following such latching of the releasing device in its retracted position, the engaging end of the bolt in its continued movement engages the now exposed end of the stop member 41, as shown in Fig. 4, and swings it on its pivot and against the pressure of the spring 52 until brought into contact with the fixed abutment 42, as shown in Fig. 5, whereupon further rotation of the towel feed roller 15 will be stopped.

The stop member 41 is provided with an elbow arm or extension 70 having its end in juxtaposition to the lower end of the lever arm 62 and formed with an inclined or cam surface 71 for lifting engagement with the latter. When the stop member 41 is rocked downward by the engaging stop bolt as described, the upper end of its arm 70 is thereby swung from the position shown in Fig. 4, to that shown in Fig. 5, during which movement it lifts the arm 62 and moves to a position in engagement with the front side of the latter; the lifting of the lever 62 being permitted by means of vertically elongated slots 72 through which it is engaged by the pins 63 and 64, and the quick lowering of the lever into engagement with the rear side of the arm 71 following the said forward swing of the lever being effected by means of a spring 73 connecting at one end with the pin 61 on said lever and at its opposite end with the fixed pin 57.

Following the contact of the pivoted stop member 41 with the fixed abutment 42, and the described positioning of the parts 56 and 70, as shown in Fig. 5, the user of the cabinet will then cease pulling on the towel, whereupon the member 41 will rise under the pulling action of the spring 52 and so rock its arm 70 backwardly to thereby swing the engaging end of the lever 62 in the same direction and so retract the connected latch 56 sufficiently to release the engaged arm 55 of the bolt releasing device 40 and thereby permit the latter to be swung forward under the action of the spring 52 and disengage the stop bolt from the member 41, as shown in Fig. 6, following which the feed roller is free to permit the withdrawal of a further length of towel. The several parts constituting the feed roller automatic stopping and releasing mechanism as thus far described have now been returned to their normal position and are ready to again operate in the manner described.

As before described, the stop bolts are slidably mounted in the housing disc 30. Because of this, when the projecting end of one of the bolts comes into contact with the spring-held releasing device 40 as shown in Fig. 3, it becomes necessary to maintain the bolt with its end in projected position while pressing the releasing device 40 backward against the pressure of the spring 52 to its position of engagement by the latch 56. This I accomplish by providing a segmental abutment 80 fixedly mounted on the plate 43 and having a surface concentric with the housing disc at the lower side thereof which is so positioned as to engage, upon the further turning of the feed roller, that end of the bolt which has last been released from the stop member, as shown in Fig. 3, and positively maintain the opposite end of the same in its projected position until it has made substan-

tially a one-half revolution and effected the retraction of the releasing device to its position of latched engagement by the latch 56. Following this, the projected end of the bolt in its further movement, as before described, engages the exposed end of the stop member 41 and moves it into contact with the stop abutment 42. During such further movement of the bolt its opposite or housed end is carried somewhat above or beyond the adjacent end of the abutment 80 whereby it is free to permit of the stop releasing movement of the bolt under the action of the releasing device 40 as before described.

Having thus set forth one practical embodiment of my invention, I wish it to be understood that the same may be more or less materially modified as to the construction, arrangement and operation of parts without departure from the spirit of the invention as defined in the following claims.

What I claim is:

1. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, a slidably mounted bolt carried by the roller for engagement with the stop member, a spring-actuated bolt releasing device normally positioned in the path of the projected bolt to be retracted thereby and energize its spring, a latch for holding the releasing device in retracted position, means holding the bolt in projected position while retracting the releasing device to latched position and thereafter releasing same, and means for operating the latch to release the bolt releasing device and permit actuation of the latter.

2. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, a slidably mounted bolt carried by the roller for engagement with the stop member, a spring-actuated bolt releasing device normally positioned in the path of the projected bolt to be retracted thereby and energize its spring, a latch for holding the releasing device in retracted position, means holding the bolt in projected position while retracting the releasing device to latched position and thereafter releasing same, and automatic means operating the latch to release the bolt releasing device and permit actuation of the latter.

3. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, a slidably mounted bolt carried by the roller for engagement with the stop member, a spring-actuated bolt releasing device normally positioned in the path of the projected bolt to be retracted thereby and energize its spring, a latch for holding the releasing device in retracted position, a fixed abutment engaging and holding the bolt in projected position while retracting the releasing device to latched position and thereafter releasing same, and means for operating the latch to release the bolt releasing device and permit actuation of the latter.

4. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, a slidably mounted bolt carried by the roller for engagement with the stop member, a spring-actuated bolt releasing device normally positioned in the path of the projected bolt to be retracted thereby and energize its spring, a latch for holding the releasing device in retracted position, a fixed segmental abutment having a surface concentric with that of the feed-controlling roller for engaging one end of the bolt and holding its opposite end in projected position while retracting the releasing device to latched position and thereafter releasing same, and means for operating the latch to release the bolt releasing device and permit actuation of the latter.

5. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, a slidably mounted bolt carried by the roller for engagement with the stop member, a spring-actuated bolt releasing device normally positioned in the path of the projected bolt to be retracted thereby and energize its spring, a spring-actuated latch automatically movable into holding engagement with the releasing device upon retraction of the latter, means holding the bolt in projected position while retracting the releasing device to latched position and thereafter releasing same, and means for operating the latch to release the bolt releasing device and permit actuation of the latter.

6. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, a slidably mounted bolt carried by the roller for engagement with the stop member, a spring-actuated bolt releasing device normally positioned in the path of the projected bolt to be retracted thereby and energize its spring, a spring-actuated latch automatically movable into holding engagement with the releasing device upon retraction of the latter, means holding the bolt in projected position while retracting the releasing device to latched position and thereafter releasing same, and automatic means operative upon cessation of pull on the towel to disengage the latch from the releasing device to permit actuation of the latter by its spring.

7. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a movable stop member, a fixed abutment for engagement with said stop member to hold it in predetermined stopping position, means yieldingly holding the stop member in a normal position in advance of

said abutment, a slidably mounted bolt carried by the roller for engaging with the stop member and moving it into contact with said abutment, a spring-actuated releasing device normally positioned in the path of the projected bolt end to be retracted thereby and energize its spring, a latch for holding the releasing device in retracted position with its actuating spring energized, means holding the bolt in projected position while retracting the releasing device to latched position and thereafter releasing the same, and automatic means including the stop member operative upon cessation of pull on the towel to disengage the latch from the releasing device to permit actuation of the latter by its spring.

8. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a movable stop member, a fixed abutment for engagement with said stop member to hold it in predetermined stopping position, means yieldingly holding the stop member in a normal position in advance of said abutment, a slidably mounted bolt carried by the roller for engaging with the stop member and moving it into contact with said abutment, a spring-actuated releasing device normally positioned in the path of the projected bolt end to be retracted thereby and energize its spring, a latch for holding the releasing device in retracted position with its actuating spring energized, means holding the bolt in projected position while retracting the releasing device to latched position and thereafter releasing the same, and operative connections between the stop member and the latch for automatically effecting release of the latter upon cessation of pull on the towel.

9. In a towel cabinet, the combination of a towel-feed-controlling roller having bolt supporting means, a movable stop member, a fixed abutment for engagement with said stop member to hold it in predetermined stopping position, means yieldingly holding the stop member in a normal position in advance of said abutment, a slidably mounted bolt carried by the roller for engaging with the stop member and moving it into contact with said abutment, a spring-actuated releasing device normally positioned in the path of the projected bolt end to be retracted thereby and energize its spring, a latch for holding the releasing device in retracted position with its actuating spring energized, and means holding the bolt in projected position while retracting the releasing device to latched position and thereafter releasing the same, the said stop member being automatically movable to normal position upon cessation of pull on the towel and having an arm effective upon such movement to disengage the latch from the releasing device to permit actuation of the latter by its spring.

10. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, two slidably mounted bolts carried by the roller for movement crosswise of each other, and means for causing said bolts to successively project at one end into position for engagement with the stop member.

11. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, two slidably mounted bolts carried by the roller for movement in the same plane and crosswise of each other, and means for causing said bolts to successively project at one end into position for engagement with the stop member.

12. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, two slidably mounted bolts carried by the roller for movement crosswise of each other, means for causing said bolts to successively project at one end into position for engagement with the stop member, and means for successively releasing the bolts from the stop member.

13. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, two slidably mounted bolts carried by the roller for movement in the same plane and crosswise of each other, means for causing said bolts to successively project at one end into position for engagement with the stop member, and means for successively releasing the bolts from the stop member.

14. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, two slidably mounted bolts carried by the roller for movement crosswise of each other, and automatic means causing said bolts to successively project at one end into position for engagement with the stop member.

15. In a towel cabinet, the combination of a towel feed-controlling roller having bolt supporting means, a stop member, two slidably mounted bolts carried by the roller for movement in the same plane and crosswise of each other, automatic means causing said bolts to sucessively project at one end into position for engagement with the stop member, and automatic means successively releasing the bolts from said stop member.

In testimony whereof I affix my signature.

JOSEPH H. ADDLER.