June 24, 1930. F. M. STEINER ET AL 1,765,505

TOWEL CABINET

Filed July 25, 1928 3 Sheets-Sheet 1

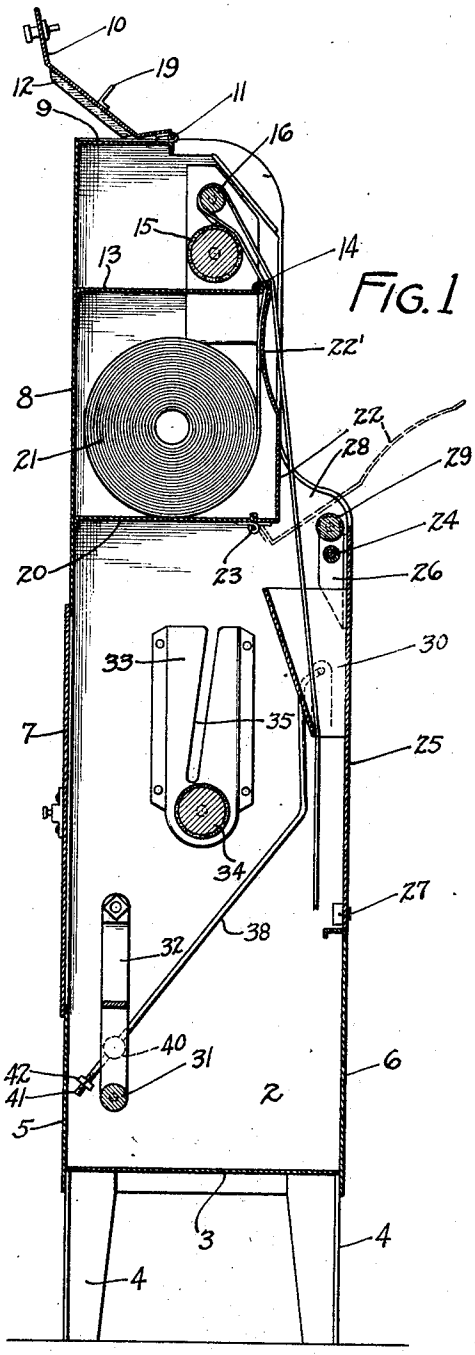


FIG. 1

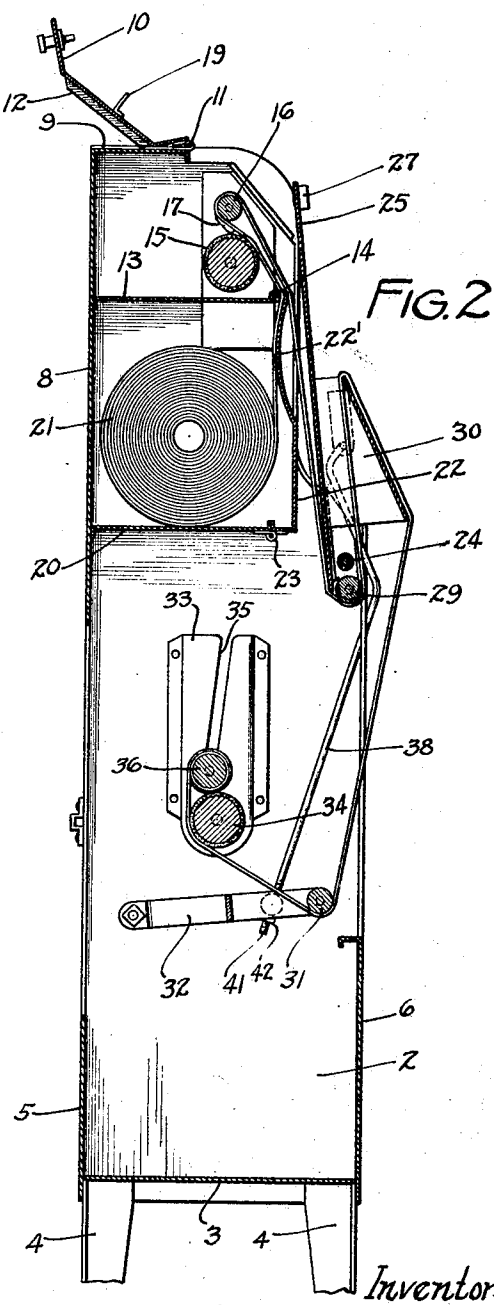


FIG. 2

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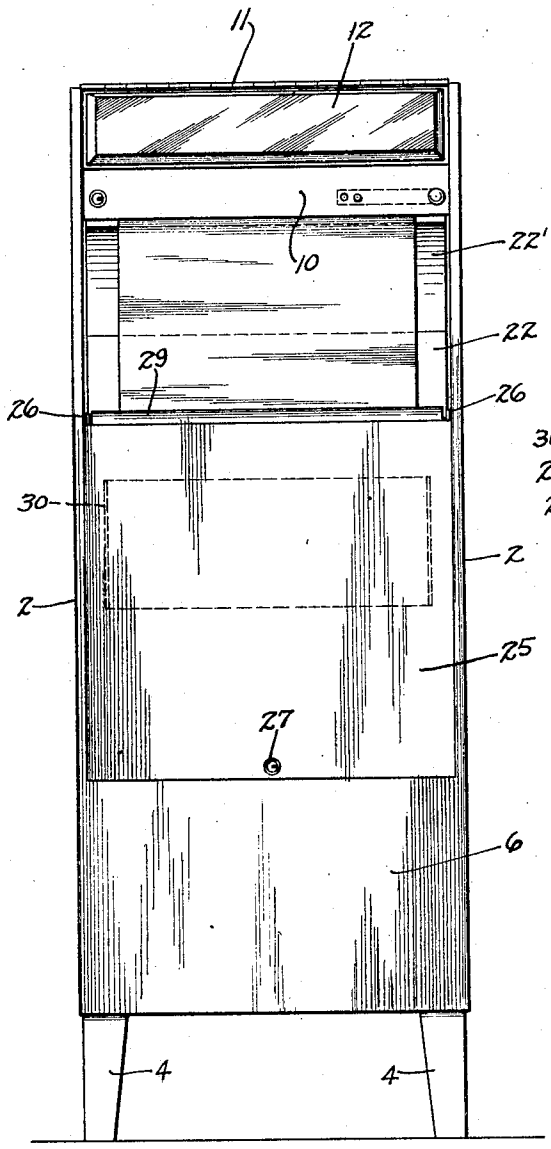


FIG. 5

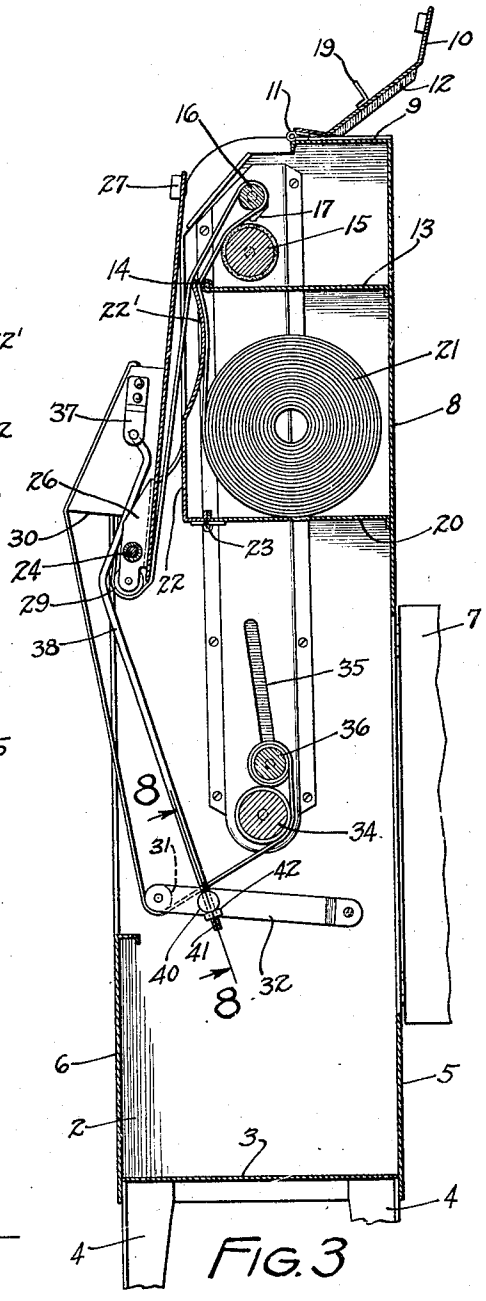


FIG. 3

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TOWEL CABINET

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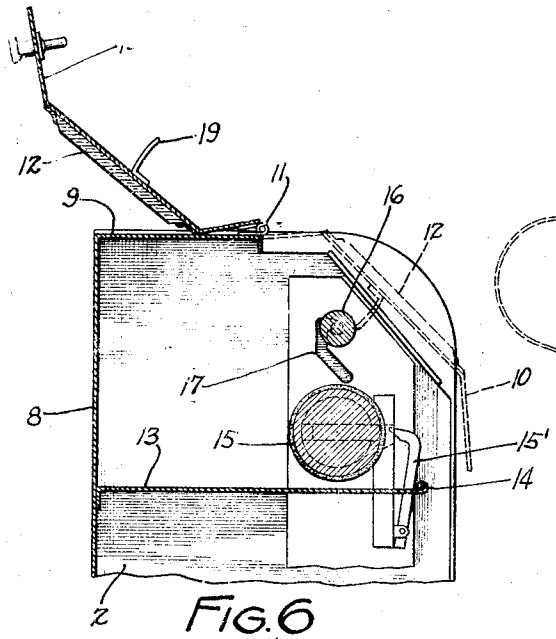


FIG. 6

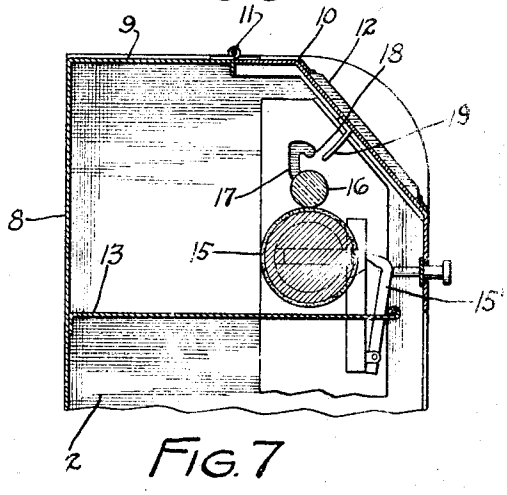


FIG. 7

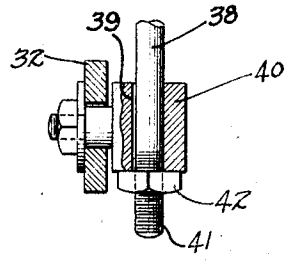


FIG. 8

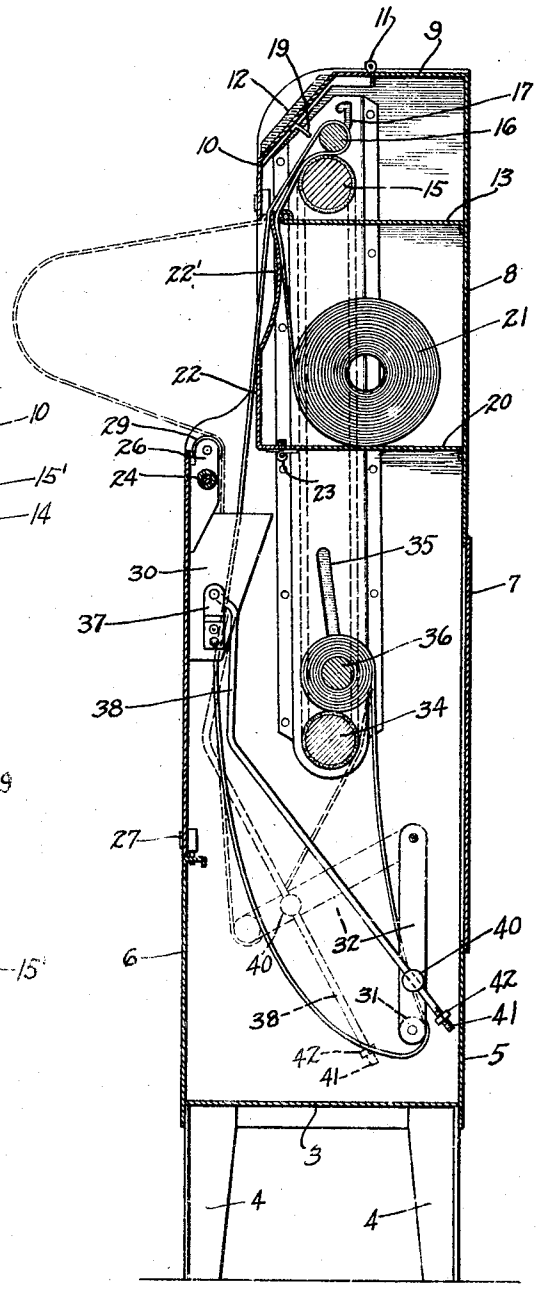


FIG. 4

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UNITED STATES PATENT OFFICE

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TOWEL CABINET

Application filed July 25, 1928. Serial No. 295,224.

Our invention relates to the floor or stand type of cabinet that is adapted to be moved from place to place in the washroom, or wherever the article may be located, and the primary object of this invention is to provide means in the cabinet which will particularly facilitate loading it with clean towel and removing the soiled towel.

A further object is to so arrange the pinch roll so that the pull of the user on the towel to draw it out of the cabinet, will have the effect of making the pinch roll more effective for the purpose for which it is designed.

A further object is to provide means for insuring the placing of the pinch roll in its working position when the cabinet is closed, after putting the supply of clean towel therein.

A further object is to provide a shield or guide for the clean towel to prevent it from wrapping around the take-up feed roll or the soiled towel roll, and which insures the smoothing and straightening of the soiled towel before its delivery to the take-up roll.

A further object is to provide means for lifting or raising the pull-back device, when the cabinet is opened, to a point where the attendant can easily pass the web of towel around it, thus facilitating loading the cabinet, provision being made for allowing the pull-back device to rise and fall freely when the user pulls outwardly on the towel web or releases it.

A further object is to position the soiled towel take-up roll within the cabinet where it can be conveniently reached for removal of the soiled towel from the cabinet.

A further object is to so form the door or gate of the clean towel chamber so that contact therewith, and contamination by the soiled towel web will be prevented. This form of the door does not reduce the space for the clean towel and enables the user to more easily grasp the clean web.

Other objects of the invention will appear from the following detailed description.

The invention consists generally of various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification,

Figure 1 is a vertical section through a towel cabinet embodying our invention;

Figure 2 is a similar view showing the front door in its open position;

Figure 3 is a similar view looking at the opposite side of the machine and showing the rod connecting the door with the pull-back device, the door being in its open position;

Figure 4 is a similar view showing the door in its closed position, the dotted lines indicating the raised position assumed by the pull-back, when the user grasps the towel for use;

Figure 5 is a front elevation of the cabinet;

Figure 6 is a detail sectional view of the upper portion of the cabinet showing the upper or top door raised for access to the delivery feed roll and pinch roll;

Figure 7 is a detail view showing the pinch roll in its working position; and

Figure 8 is a sectional view on the line 8—8 of Figure 3.

In the drawing, 2 represents the side walls of the cabinet, 3 the floor or bottom having suitable supporting legs 4 and 5, and 6 are rigid front and rear panels joining together the opposite edges of the lower side walls. A door 7 in the back permits access to the lower portion of the cabinet, and a rigid panel 8 closes the upper portion of the cabinet at the rear and is joined to a horizontal top panel 9 which connects the upper rear ends of the side walls. A door 10 is hinged at 11 to the panel 9, and is provided with a forwardly and downwardly inclined portion in which a suitable mirror 12 is mounted. The lower portion of this door terminates opposite a shelf 13, having a rolled forward edge 14. Above this shelf we locate the delivery feed roll 15 and a pinch roll 16 that is adapted to slide in forwardly inclined guides 17 which direct the pinch roll upon the surface of the delivery feed roll. A feed control 15′ is preferably provided to regulate movement of the feed roll 15 and delivery of the clean towel.

Notches 18 are provided at the upper ends of these guides to receive the pinch roll spindles in loading the cabinet, and the door 10 is preferably provided with lugs 19 which are so positioned that when the door is closed, these lugs will contact with the pinch roll and dislodge it from the notches 18 so that it will drop into the inclined guides by gravity, and when the user exerts a pull on the towel, the pinch roll will be drawn against the delivery roll and prevent slippage of the towel web between them. When the pinch roll is mounted in vertical guides there is a little tendency when pulling on the towel, to move the pinch roll away from the feed roll. When this happens, the towel web will slip without operating the feed roll and the loop of towel becomes longer and soon the cabinet is inoperative. By using the inclined guides, the pinch roll is held against the delivery roll by the pull of the user, and movement of the feed roll is insured under all conditions.

The hinged top door, as shown in the drawing, extends below the pinch roll and positively prevents the user of the cabinet from pulling upwardly on the towel web and thereby raising the pinch roll out of its working position with respect to the feed roll. This hinged door of course will be provided with a suitable lock so that access cannot be had to the pinch roll and feed roll except by a duly authorized person. Below the shelf 13 we provide a similar shelf or support 20 whereon the supply of clean towel 21 is placed. The space between the shelves 13 and 20 forms the clean towel chamber or compartment. 22 is a gate or door hinged at 23 to the shelf 20 and adapted to swing upwardly and close the opening in the front of the clean towel chamber. The upper edge of this door, as shown plainly in Figure 4, is above the lower edge of the door 10, and consequently when the door 10 is locked it will be impossible for anyone to open the door 22 and have access to the clean towel. The upper portion of the door 22 terminates adjacent the rolled edge 14 of the shelf 13 and the web of clean towel is stretched upwardly between the shelf and the door 22 and passed around the pinch roll 16 and from thence depends in front of the door 22 where it may be grasped by the user of the cabinet. This door 22 preferably has a concave upper portion 22′ which separates the face of the door from the downwardly extending towel web and makes it more convenient for the user to grasp the web to use the towel. This concave portion also prevents the door from becoming contaminated by contact with the soiled web. The clean web slides upwardly to the pinch roll on the inner rounded face of this concave section.

The cabinet below the clean towel chamber is preferably of greater depth than above this chamber, and the forward side walls are connected by a rod 24 on which a swinging door 25, provided with brackets 26, is pivoted. The lower edge of this door meets the upper edge of the panel 6 and is provided with a suitable locking device 27 which may be in the form of a spring actuated bolt and socket therefor, or, if preferred, it may be in the form of a suitable lock to be opened by a key. Between the upper portion of the door 25 and the forward edge of the shelf 20 a transverse gap or opening 28 is formed through which the soiled towel passes into the lower portion of the cabinet, and preferably an anti-friction roll 29 is mounted on the brackets 26 for contact with this soiled web. A shelf or guard 30 is mounted on the inner face of the door 25, and is open at the top and bottom and is preferably hopper-shaped with one of its walls converging towards the door 25, and through this shield the depending web of towel is inserted and from thence passes under the roll 31 of a pivoted pull-back device 32 that is mounted on the side walls of the cabinet in the lower portion thereof.

Brackets 33 are secured to the side walls of the cabinet below the clean towel chamber, and a take-up feed roll 34 has bearings in the lower portion of these brackets and, as indicated by dotted lines in Figure 4, has a driving connection with the delivery feed roll 15 so that when this delivery feed roll is revolved by the user pulling on the towel web, the take-up feed roll will be correspondingly operated. Downwardly and rearwardly inclined guides 35 are provided in the brackets 33, and in these guides a soiled towel take-up roll 36 is adapted to slide. The soiled web after passing under the roll 31 is wrapped around the roll 36, and contact of the convolutions of this web with the take-up feed roll will revolve the roll 36 and wind the towel web thereon synchronously with the unwinding of the clean web from the towel supply.

The door 25, as shown plainly in Figure 2, is adapted to swing upwardly to the position indicated by full lines in that figure to allow access to the lower portion of the cabinet, and, in so doing, the towel web is engaged by the inclined wall of the shield 30 and the pull-back is raised as indicated in Figure 2. The shield 30 operates as a guide for the towel in loading, and prevents it from wrapping around the take-up feed roll or becoming twisted or misplaced on the soiled towel roll. It has the function of a straightening means for the soiled towel to insure the latter being rolled up smoothly on the soiled towel roll. When the door 25 is in the position shown in Figure 2, the web of towel will be drawn upwardly as indicated, and any folded or twisted portion

can be easily straightened and smoothed on the inclined surface of the shield so that as the web of towel enters the cabinet and contacts with the take-up feed roll, it will lie perfectly flat and be drawn into the cabinet under the pull-back roll 31 without becoming wrinkled or twisted.

The shield 30 has a bracket 37 thereon and a rod 38 has one end pivotally connected with said bracket and its opposite end slidable in a socket 39 provided in a stud 40 on the pull-back 32. The rod preferably has a threaded end 41 adapted to receive an adjusting nut 42, by means of which the effective length of the rod is easily obtained and, when the door 25 is opened, the pull-back device will be raised and will be held in its raised position during the loading operation. Without this rod, the pull-back device would hang in a vertical position when the soiled towel has been removed from the cabinet, and it would be necessary for the attendant to raise the pull-back and hold it in its raised position while he was stretching the towel web under it to the take-up roll. The use of the rod 38, however, insures the raising of this pull-back when the front door is opened to a position where the attendant can easily and quickly place the towel web under the pull-back roll. When the door is closed, the pull-back device drops by gravity and the pivotal sliding connection of the rod therewith allows the pull-back to swing freely up and down while the cabinet is being used. This rod need not necessarily be connected to the swinging front door, as it may be attached to some other moving part of the cabinet that is actuated preparatory to removing the soiled towel and placing a clean supply therein.

This cabinet is adapted particularly for a supply of fifty yardds of towel, either light or heavy fabric. The opening of the door at the top exposes the delivery feed roll and pinch roll and allows ready access to the clean towel chamber which before the opening of this door was securely sealed. The concave section of the door of the clean towel chamber allows the user to conveniently grasp the web and prevents the soiled portion of the towel from contacting with and contaminating the outer face of the chamber door. Upon opening the lower door 25, access may conveniently be had to the take-up feed roll and the soiled towel roll, and the pull-back device will be automatically raised and held in its raised position while the attendant is placing the clean towel in the cabinet. Before opening this front door the attendant will let the loose clean web drow down through the guide or shield 30, as indicated in Figure 1, and then when the door 25 is opened, this web will be stretched and straightened over the wall of the shield as shown in Figure 2, and thus the delivery of the smooth, unwrinkled web to the soiled towel roll will be insured.

The concave surface 22′ provided on the front wall 22 has the dual function of spacing the towel web from the wall to permit the user to more readily grasp the towel web and also by thus spacing the towel web therefrom the latter, when soiled, will not engage and contaminate the front wall.

We claim as our invention:

1. A towel cabinet having a support for a supply of clean towel, a delivery feed roll mounted in the cabinet, a take-up feed roll in the cabinet operatively connected with said delivery feed roll, a take up roll on which the soiled towel may be wound, a door having its upper portion pivoted in the front of the cabinet, a guide having a wall supported on said door within the cabinet and open at the top and bottom and through which guide the web of towel may be passed, whereby said door when raised to an open position, will fold said web across the upper and lower portion of said wall, thereby straightening and smoothing the web for delivery to said take up roll.

2. A towel cabinet having a support for a supply of clean towel, a soiled towel roll whereon the web of soiled towel may be wound, a guide in which the web of towel may depend, said guide being adapted to be inverted, thereby stretching and tensioning the towel web on said wall, for the purpose specified.

3. A towel cabinet having a chamber for a supply of clean towel and a soiled towel roll whereon the web of soiled towel may be wound, a swinging door for the front of said cabinet having a movement to an inverted position, a guide mounted on said door and having an inner wall converging towards said door and through which guide the web of towel may depend, and having a wall with which the web may contact, thereby drawing or stretching the towel web on said converging wall, across the upper and lower edges of said wall when said door is inverted, for the purpose specified.

4. In a towel cabinet, a pull-back device adapted to draw a web of soiled towel within the cabinet, a rod having a pivotal sliding connection with said pull-back, and means for actuating said rod to raise said pull-back to a position convenient to engage a towel web therewith.

5. A towel cabinet having a soiled towel chamber and a pull-back device therein to draw the used towel web into the cabinet, a door in the front of the cabinet adapted to be raised to expose the soiled towel chamber, and a rod pivotally connected with said door and having a sliding pivotal connection with said pull-back device whereby, when said door is raised, said pull-back device will be

moved to a position for conveniently engaging the towel web therewith.

6. A towel cabinet having a towel web pull-back device therein adapted to engage a soiled towel web, a door in the front of the cabinet adapted to be opened to expose the soiled towel chamber, said door having means thereon for raising a towel web and said pull-back device through pull of the web thereon, when said door is opened, and means adapted to hold said pull-back device in its raised position upon the removal of a supporting towel web, for the purpose specified.

7. A towel cabinet having a towel web pull-back device therein, a door in the front of the cabinet adapted to be raised to expose a soiled towel chamber, said door having means thereon for raising a towel web and said pull-back device, when said door is opened, and means adapted to hold said pull-back device in its raised position, upon the removal of the supporting towel web, said holding means comprising a rod having a pivotal connection with said door and a sliding pivotal connection with said pull-back device.

8. A towel cabinet comprising a clean towel chamber including a front wall over which the clean towel web may be passed, a feed roll in the cabinet, said cabinet having an opening in the upper portion of said chamber through which the towel may be passed to said feed roll and said front wall having a concave surface for spacing the towel web therefrom.

9. A towel cabinet comprising a clean towel chamber having a door over which the clean towel web may be passed, a feed roll in said cabinet, said cabinet having an opening through which the towel web may be passed to said feed roll, take-up means for the soiled towel and said door having a recess therein for convenience of the user in grasping the towel for holding and guiding a clean towel web out of contact therewith.

10. A towel cabinet comprising an upper section and a chamber below the same and also having an intermediate compartment provided with upper and lower walls between which the supply of clean towel may be placed, the front of said cabinet having an opening and a door adapted to swing outwardly through said opening to allow access to the clean towel supply, the upper portion of said door when in its closed position being adjacent the forward portion of said upper wall and between which door and said upper wall the web of clean towel may be stretched, a feed roll mounted in said cabinet above said upper wall and over which the web of towel may depend in front of said door and in the rear of said opening for delivery to said chamber, and said door having a concave portion forming a recess between the door and towel web whereby the towel user may conveniently grasp the web and contamination of the surface of the door through contact with a soiled portion of the web is prevented.

11. A towel cabinet having a support for a supply of clean towel, a delivery feed roll mounted in said cabinet, the front of said cabinet having an opening through which access may be had to a web of clean towel that may depend from said feed roll, a take up roll mounted in the lower portion of said cabinet and whereon the soiled towel may be wound, a door pivoted in the front of the cabinet and having a substantially hopper shaped guard on its inner face through which the web of towel may depend, a roll carried by said door for contact with the towel, said door being adapted to swing to an inverted position and said guard having a wall for engagement with the towel web, whereby the web may be conveniently stretched and straightened for delivery to said take up roll.

12. A towel cabinet having a support for a supply of clean towel, a delivery feed roll mounted in said cabinet, the front of said cabinet having an opening through which access may be had to a towel supply, said cabinet having guides formed therein extending downwardly and terminating near said feed roll, the upper portion of said guides having notches forming seats therein, a pinch roll adapted to slide in said guides and be placed in said notches when the attendant is filling the cabinet, the relative position of said feed roll and pinch roll being such that a web of towel may be stretched between them to depend from said feed roll in position for use, a door in the top of said cabinet adapted to be lifted to expose said feed roll and pinch roll, said door having lugs thereon in position to engage said pinch roll when the door is closed and automatically eject it from its seat in said notches, for the purpose specified.

In witness whereof, we have hereunto set our hands this 21st day of July, 1928.

FRANK M. STEINER.
AXEL H. ANDERSON.