Oct. 16, 1923. 1,470,942

F. M. STEINER

TOWEL CABINET

Filed Jan. 31, 1922 3 Sheets-Sheet 1

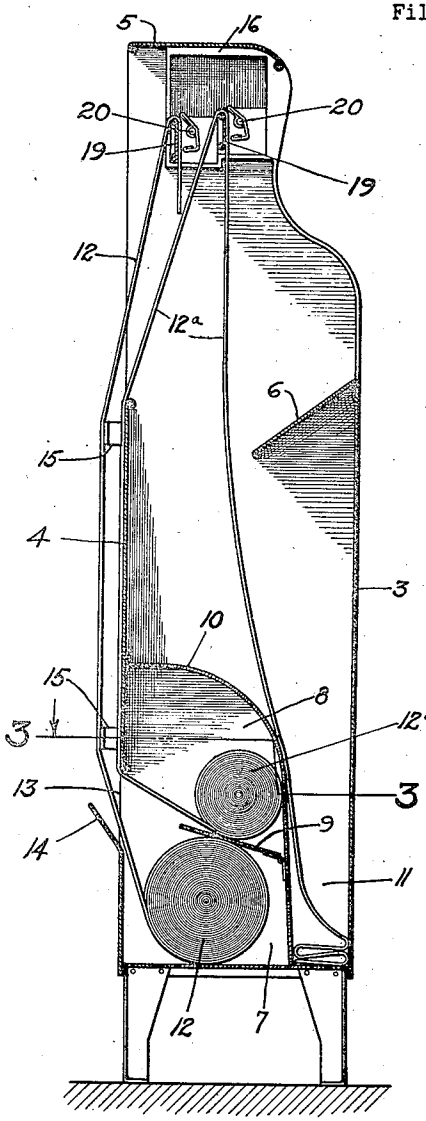


FIG. 2

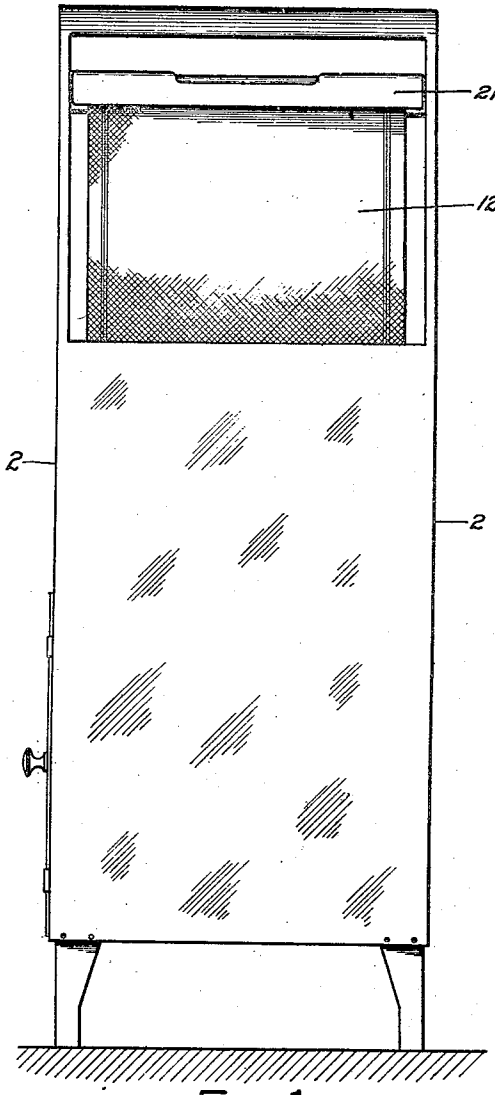


FIG. 1

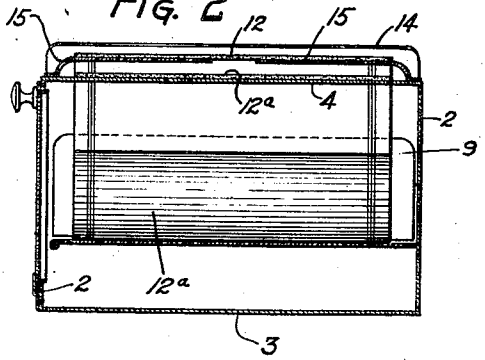


FIG. 3

INVENTOR
FRANK M. STEINER
BY Paul & Paul
ATTORNEYS

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TOWEL CABINET

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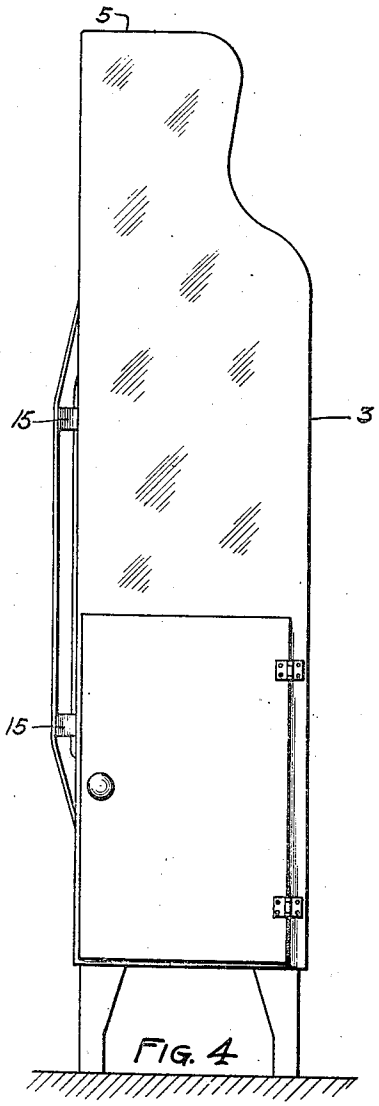


FIG. 4

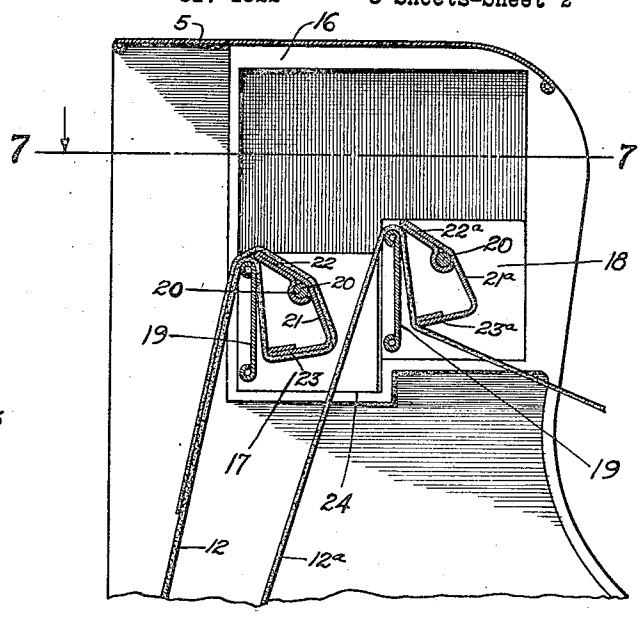


FIG. 5

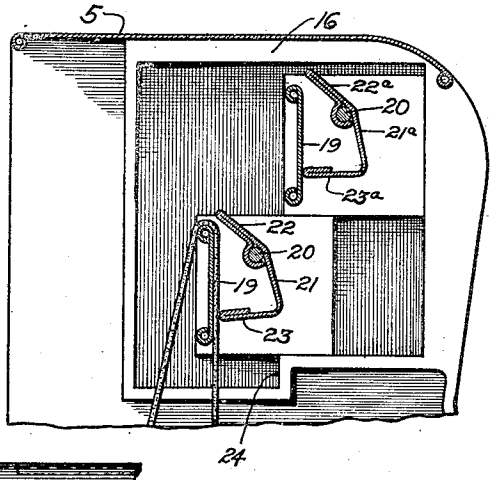


FIG. 6

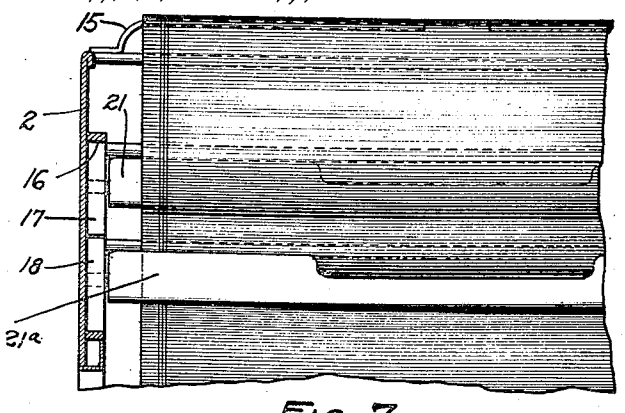


FIG. 7

INVENTOR
FRANK M. STEINER
BY Paul & Paul
ATTORNEYS

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F. M. STEINER

TOWEL CABINET

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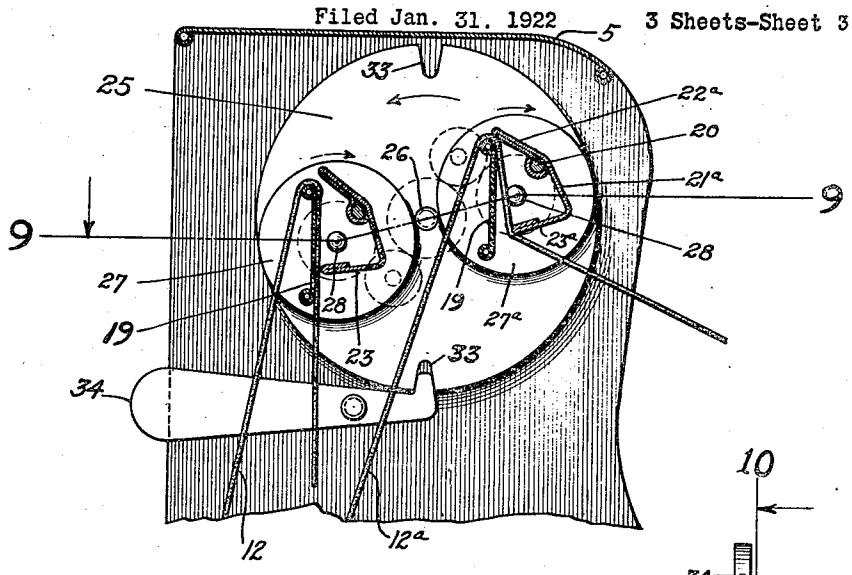


FIG. 8

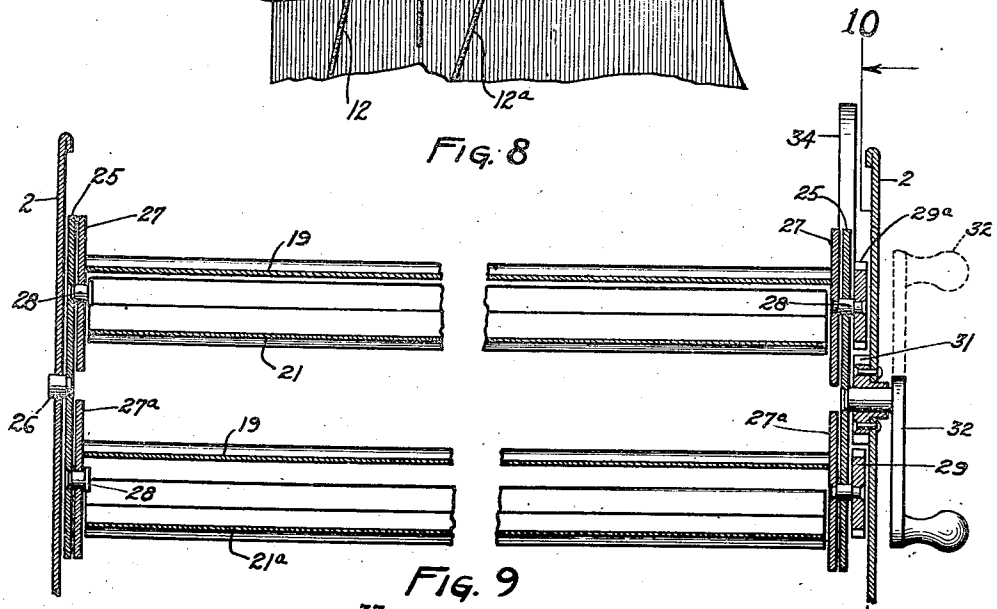


FIG. 9

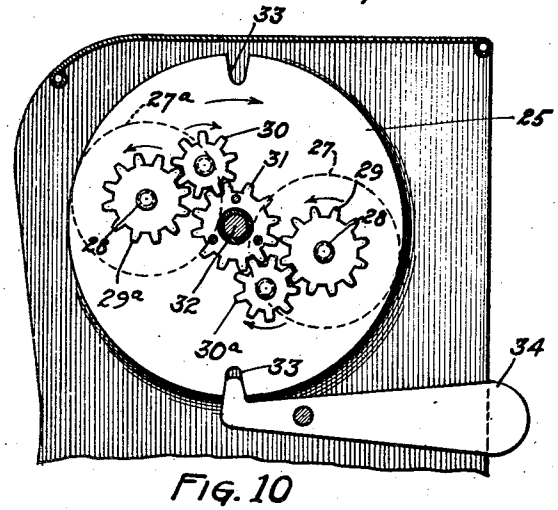


FIG. 10

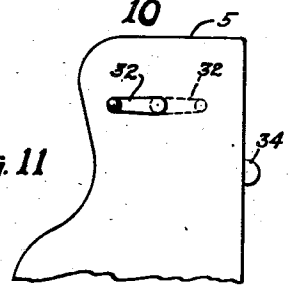


FIG. 11

INVENTOR
FRANK M. STEINER
By Paul Paul
ATTORNEYS

Patented Oct. 16, 1923. 1,470,942

UNITED STATES PATENT OFFICE.

FRANK M. STEINER, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO STEINER SALES COMPANY, OF SALT LAKE CITY, UTAH, A CORPORATION OF UTAH.

TOWEL CABINET.

Application filed January 31, 1922. Serial No. 533,051.

To all whom it may concern:

Be it known that I, FRANK M. STEINER, a citizen of the United States, resident of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Towel Cabinets, of which the following is a specification.

In the use and operation of towel cabinets, it is customary to place them in a building where used and at stated intervals the laundryman will call and remove the soiled towel and substitute therefor the clean one or the janitor may make the change. These calls are sometimes made daily, as for instance in office buildings, hotels, etc., and in other places where the cabinet is not used so frequently the laundryman may often find it necessary to visit the place once or twice a week or every other day, as the use of the towel requires.

In making these rounds with the clean towels and gathering up the soiled ones, the laundryman often finds a quarter or a third of a clean towel unused in the cabinet when he calls—not enough to last until he comes again and too much to waste and pick up with the soiled towels and put into the wash. Obviously, it is not practicable for the laundryman to make a special trip and be present the moment a cabinet is empty to fill or supply a few cabinets with clean towels, and it is a useless expense to take away the roll when a considerable portion of the towel has not been used.

The object, therefore, of my present invention is to provide a cabinet so arranged and equipped that a plurality of towels of the roller or bolt type are provided, one or more being kept in reserve so that when the laundryman calls and finds one towel has been entirely used and the other one only partially, he can supply a clean towel in place of the used one and the cabinet will then be fully equipped to last until he makes his next trip.

In arranging these towels in the cabinet, I make provision to prevent the user from having access to but one towel at a time and when one roll is exhausted, the janitor or other person in charge of the cabinet around the building can easily and quickly make a suitable adjustment and position the second clean towel in place of the one that has been used and the user until that time may reach and use the second one. It is only necessary then for the laundryman when he makes his rounds to put in one roll, which will serve as a reserve to permit continuous use of the cabinet until the man with the clean towel comes around again.

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

The invention consists generally in 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 front elevation of a towel cabinet embodying my invention,

Figure 2 is a vertical sectional view of the same,

Figure 3 is a sectional view on the line 3—3 of Figure 2,

Figure 4 is a side elevation of the cabinet, showing the door for access to the towel compartments,

Figure 5 is a detail of the towel grippers and carriers therefor, showing their working positions,

Figure 6 is a similar view showing the manner of shifting the gripper carriers to position the reserve towel for use when one has been exhausted,

Figure 7 is a sectional view on the line 7—7 of Figure 5,

Figure 8 is a detail view, showing a modified construction of the grippers and carriers therefor,

Figure 9 is a sectional view on the line 9—9 of Figure 8,

Figure 10 is a sectional view on the line 10—10 of Figure 9,

Figure 11 is a detail view, showing the position of the operating crank.

In the drawing, 2 represents the side walls of the cabinet, 3 an upright forward wall or panel and 4 a corresponding rear wall between which and the top 5 of the cabinet an opening is provided for the feed of the clean towel to the grippers, as will hereinafter appear. The upper portion of the wall 3 has a downwardly and inwardly inclined shelf 6 for directing the soiled towel inwardly and downwardly and above this shelf and between it and the top of the cabinet an opening is provided through which the user may reach and grasp the clean towel and

draw it downwardly until a certain predetermined length has been delivered and then pull it outwardly to a convenient position for use. In the lower part of the cabinet is a clean towel compartment 7 and a second compartment 8 separated from the compartment 7 by a hinged wall or gate 9. A wall 10 divides the clean towel compartment from the interior of the cabinet and from a soiled towel chamber 11 that is formed between the wall 10 and the front panel or wall 3. A roll of clean towel 12 is provided in the compartment 7 and a similar roll 12^a in the compartment 8, the roll 12 resting upon the bottom of the cabinet and the roll 12^a resting upon the shelf 9 and pressing it downwardly upon the roll 12. The friction of said rolls upon the contacting walls serves to resist premature or unnecessary unwinding of the clean towel. The rear wall 4 has an opening 13 through which the loose ends of the rolls 12 and 12^a are conducted, this opening being partially shielded, preferably by a flange 14 at the lower side of the opening.

On the outer side of the rear wall guards 15 are arranged and the loose end of the towel 12 passes outside of these guards and in contact therewith and the corresponding end of the roll 12^a passes between these guards and the wall 4 up to the top of the cabinet. As indicated at A in Figure 3, the guards 15 have gaps or openings therein through which the towel web on the outer side of the guards may be easily and quickly moved to the inner side, or between the guards and the wall 4 of the cabinet. This may be done when the roll 12^a is exhausted, and the janitor moves the roll 12 from the chamber 7 to the chamber 8 and then wishes to support the web of the roll 12^a in the forward gripper where it can be conveniently reached by the user. After this is done, the cabinet is ready for use again, and when the laundry man makes his next trip, he can place a clean roll in the now empty chamber 7 and carry the web up outside the guards to the rear gripper where it will be ready for use as soon as the forward roll is exhausted.

In the upper part of the cabinet I provide a frame 16 in which gripper carriers are mounted. These carriers comprise rectangular end portions 17 and 18, fitting within the frames in the side walls of the cabinet and connected across the cabinet by plates 19 having rounded ends over which the loose ends of the towels are delivered, being carried up through the opening at the rear of the cabinet from the rear wall 4 and the guides 15. The end sections of the carriers are also connected by rods 20 and on these rods towel grippers are mounted, consisting of plates 21 and 21^a pivoted near their middle portion on the rods 20 having flanges 22 and 22^a to engage the loose end of the towel and clamp it against the plate 19, said grippers being provided on the opposite side of their pivots with flanged portions 23 and 23^a at right angles substantially to the plates 21 and 21^a, so that when the user of the towel pulls horizontally thereon to draw it forward, out of the cabinet, the web of toweling engaging a flange 23 or 23^a will tilt on its pivot and clamp the towel against the surface of the guiding plate at the rear of the carrier. Direct downward pull on the loose end of the towel is permitted for a limited distance, governed by the position of the shield 6 and the depth of the opening at the front of the cabinet, but when the limit of this downward pull is reached and the user begins the outward movement to draw the towel to a position for use, then the gripper will perform its function to clamp the towel and positively check the feed thereof at this point, while freely permitting the loose depending portion of the towel to be drawn up through the open front of the cabinet. The frames 16 have offsets 24 in the lower side thereof, adapted to receive either one of the gripper carriers, as shown in Figure 5, the other carrier resting upon the forward portion of the frame between the rear one and the front of the cabinet. This will be the normal using position of the grippers and when so placed, the rear gripper and towel will be concealed by the forward one and it will be impossible for a user to have access to the rear towel and he will therefore continue to draw down on the forward one and pull the loose portion out through the front of the cabinet until the forward towel roll is completely exhausted and is dropped into the soiled towel chamber 11, provided in the bottom of the cabinet. When this has been done, the rear, or reserve towel will be exposed and accessible, and may be drawn down and pulled out by the user in the same manner in which the forward towel was previously drawn. The cabinet may be used, each person drawing on the reserve roll, and the janitor will shift this roll into the other chamber and carry the web nearer to the delivery opening by reversing the position of the grippers, passing the towel web through the openings in guards 15 as heretofore described. Then when the laundry man calls with clean rolls, it will only be necessary to put one in the empty chamber and string the web up to the rear gripper where it will be in position to be grasped and drawn forward by the user when the forward web is exhausted. In this way, the towel users always have a supply of toweling and the web of the reserve roll is at hand to be grasped by the user. The advantage or benefit to the user in having a reserve roll in the cabinet is due to the fact that the web

of such roll is supported where it can be easily reached by the user when the web of the first roll is exhausted. The cabinet is, therefore, usable continuously without break or intermission.

To release the cabinet or to put in a clean towel, the forward gripper carrier is raised to the upper part of the frame 16, as shown in Figure 6, then the rear carrier, with a clean towel, will be raised out of the recess 24 and pushed forward to the position previously occupied by the forward gripper. The empty carrier is then pushed back to the rear of the frame 16 and allowed to drop into the recess 24 ready to receive a clean towel. When the above operation has been completed, the towel 12 in the rear and bottom of the cabinet, instead of passing through the rear gripper, as shown in Figure 6, will then pass through the gripper in the front of the cabinet. The door in the side of the cabinet is then opened and the partially used web 12 in the bottom chamber 7 is removed and a clean roll substituted. The roll 12 is then placed in the upper chamber 8 and the part of the towel passing over the guards 15 is inserted through the openings provided between the ends of said guards at the center of the cabinet, and allowed to bear upon the wall 4. The free end of the clean towel web in the bottom compartment 7 is then pulled out through the opening 13 in the rear of the cabinet and up over the guards 15 and through the empty or rear gripper, ready for use when the towel passing through the forward gripper is again exhausted.

It is necessary to remove the partially used towel from the lower chamber 7 to the upper chamber 8 when putting in a new roll as otherwise it would be necessary to have the towels cross each other, which would not permit pulling them through the grippers, and would, therefore, be impracticable. The soiled towel in the compartment 11 may be removed through the door in the side of the cabinet when a clean or new towel is put in.

When the laundryman calls and finds that one roll has been exhausted and the reserve roll is in use, it will only be necessary for him to remove the soiled towel from the cabinet, substitute the clean roll and the cabinet will be fully equipped to supply the users until he calls again as he makes his regular rounds, no special trip being necessary to equip a cabinet in which all of the toweling has been used or take away a roll which has only been partially used, fearing that it will not last until the next trip. The reserve roll not only insures a continuous supply of clean towel to every user, but eliminates the necessity of substituting the full clean roll for one that has only been partially used on the theory that the partially used roll will not last until the laundryman makes his next trip.

In Figure 8 I have shown a modified construction, which consists in providing a pair of discs 25, centrally pivoted at 26 in the side walls of the cabinet and supporting a pair of carriers 27 and 27^a pivoted at 28 on the discs 25 and provided at one end with pinions 29 and 29^a which mesh respectively with idle pinions 30 and 30^a, also mounted on said discs and in engagement with the gear 31 that is secured to a side wall of the cabinet concentric with the axis of the disc 25. A crank 32 has a bearing in the gear 31 and is connected with the adjacent disc 25 for revolving the discs and the gripper carriers to change their relative position in the cabinet. It will be noted in Figure 8 that the discs revolve in one direction and the grippers in the opposite direction, such change in the direction of movement of the grippers being effected through the position of the idle pinions 30 and 30^a meshing respectively with the gears of the grippers and with the gear 31. The gripper plates correspond to those heretofore described and I will designate them by the same reference numeral, the rotation of the grippers during the turning of the discs being for the purpose of adjusting them to their different working positions. One of the discs is provided with peripheral notches 33 which are engaged by a gravity dog 34 that is tripped by the operator to allow the discs to be rotated and will engage one of the notches and lock the discs with each half revolution thereof.

The manner of using this style of gripper is substantially the same as heretofore described. The towels will be one in front of the other, the rear one concealed by the forward one and when the forward roll has been entirely used, the rear carrier with the towel therein can be conveniently reached by the user and drawn down for the predetermined feed and then pulled out to its using position, and the janitor when he puts in the reserve, can reverse the position of the grippers.

I claim as my invention:

1. A towel cabinet comprising a casing, a plurality of clean towel rolls therein having vertically arranged webs one in front of the other, means for delivering the clean web of toweling to the user, said delivering means being mounted to prevent access of the user to the second towel until the first one has been used.

2. A towel holder and main and reserve towel bolts therein, said holder having a delivery opening in its upper portion and a soiled towel chamber below said delivery opening, a delivering means in the upper portion of said holder adjacent said opening and whereto the loose end of the web of

said reserve towel extends from its bolt to be grasped by the towel user, said loose end of said reserve towel web being normally shielded from a towel user by the main towel until said main towel is exhausted.

3. A towel cabinet comprising a casing, clean towel rolls arranged in the lower part of said casing and having the webs of clean toweling guided upwardly to the top of said casing, grippers mounted in the upper part of said casing for grasping and holding the towel, said grippers being mounted one in front of the other, the forward towel being grasped and drawn out by the user and the position of said grippers being reversed to present the rear towel for use when the forward towel roll has been exhausted.

4. A towel cabinet comprising a casing, clean towel rolls mounted therein, grippers and carriers therefor mounted in said casing, one gripper carried in front of the other one and having means for gripping the webs of the towels, said casing having guides for said gripper carriers and said carriers being reversible in said guides to present the second towel to a position for use when the first towel roll has been exhausted.

5. A towel cabinet comprising a casing, a plurality of clean towel rolls arranged therein, gripper carriers and grippers therefor mounted in the upper portion of said casing, said gripper carriers having end sections rectangular in form and said casing having guides for said end sections wherein they are adapted to slide, said grippers being arranged normally one in front of the other and the grippers therefor clamping the webs of clean toweling, said grippers being adapted to slide in said guides and be reversed therein to present the rear towel to the user when the forward towel roll is exhausted.

6. A towel cabinet comprising a casing, towel rolls in the lower portion thereof, towel grippers arranged in the upper portion of said casing, said casing having an opening near said grippers through which the user may reach and grasp the towel, the towels being arranged one in front of the other between the gripper and the roll and the rear towel being concealed and inaccessible until the front towel has been used.

7. A towel cabinet comprising a casing having an opening in the upper forward portion thereof and an inwardly and downwardly inclined shelf near the lower end of said opening, a towel roll mounted in said casing, a towel gripper mounted above and near said opening and adapted to clamp the web of clean toweling, said gripper allowing a direct downward pull on the towel and said shelf checking the downward movement of the hands of the user when a predetermined length of towel has been drawn out and directing the soiled towel into the casing, and said gripper operating to check the feed of the towel when a forward and outward pull is exerted thereon.

8. A towel cabinet comprising a casing, gripper carriers mounted in guides in the upper portion of said casing and pivoted towel grippers mounted in said carriers, said guides having a recess in their lower portions adapted to receive either one of said carriers, the other carrier in its using position being in front of and above the level of the carrier in said recess main and reserve towels having their webs engaged by said grippers, and said carriers being adapted for reversal in said guideways when the towel roll in the forward carrier has been exhausted.

9. A towel cabinet comprising a casing, a clean towel compartment in the lower portion of said casing, a soiled towel compartment also in the lower portion of said casing, said clean towel compartment being adapted to receive a plurality of towels arranged one above the other therein and the rear of said casing having guides for the webs of clean towel, grippers mounted in the upper portion of said casing wherein the webs of clean towel are held, one in front of the other, and the upper forward portion of said casing having an opening through which the user may reach and grasp the web of clean towel.

10. A towel cabinet comprising a casing, main and reserve towels therein, gripper carriers mounted therein, said carriers comprising end sections movable in guides in said casing and plates between said sections over which the webs of clean towel pass, and angular grippers having flanges for pressing said webs against said plates and end portions for engagement by the loose web of the towel for clamping it against said plate when a downward outward pull is exterted on the towel.

11. A towel cabinet comprising a casing having an opening in its upper forward portion, and a receptacle for the soiled towel, said casing being adapted to contain a plurality of clean towel webs, supporting and delivering means for each of said webs provided in said casing in the rear of said opening, the webs of clean towel being extended one in front of the other to said supporting and delivering means, one delivering means being adjacent to said opening to permit the user to conveniently grasp the clean towel, the other delivering means being more remote from said opening but accessible when the towel web of said first delivering means has been used.

12. A towel holder and a main and a reserve towel web therein, said holder having a delivery opening in its upper portion and a soiled towel chamber below said delivery opening, a delivering means for the main

towel web mounted in the upper portion of said holder adjacent to said opening, a supporting means for the reserve towel web in the rear of said holder, said main towel web normally depending in front of said reserve towel web, said reserve towel web becoming accessible to the user when the main web is exhausted, said holder having means for limiting downward delivery of the forward towel web and for guiding the soiled towel into its chamber.

13. A towel holder having chambers in its lower portion for main and reserve towel webs, and a delivery opening in its upper portion, supports for said main and reserve webs in the upper portion of said holder in the rear of said opening, said webs being stretched upwardly one in the rear of the other from their chambers to their respective supports, the support for said main web delivering it to said opening, and said main web normally concealing said reserve web from the user until said main web is exhausted, and said holder having a soiled towel chamber beneath its supporting and delivering means wherein the soiled towel falls when released by the user.

14. A towel cabinet having a normally closed top and a towel delivery opening in its upper front wall and a soiled towel receiving chamber below said opening, said cabinet also having clean towel compartments and main and reserve towels therein, a towel delivery device in the upper part of said cabinet adjacent said opening, and whereto the web of said main towel is stretched for delivery to the user, a support for the web of reserve towel in the rear of said delivery device, the web of reserve towel being stretched to said support in the rear of said main web and becoming ready for use when said main web is exhausted.

15. A towel cabinet having a closed top and a towel delivery opening in its upper front wall below said closed top, and a soiled towel receiving chamber below said delivery opening, said cabinet also having a clean towel chamber and a clean towel therein, a towel delivery device in the upper part of said cabinet adjacent said opening above said clean towel chamber, and to which delivery device the web of clean towel is stretched for delivery to the user, the free end of the clean towel depending from said delivery device between it and said opening in position to be grasped and pulled by the user, said delivery device being so positioned with respect to said opening and said soiled towel chamber that the soiled towel will fall loosely through said opening into said chamber when released by the user.

16. A towel cabinet having a closed top and a towel delivery opening in its upper front wall, and a soiled towel receiving chamber, said cabinet also having a clean towel chamber and a clean towel therein, a towel delivery device in the upper part of said cabinet adjacent said opening above said clean towel chamber, and to which delivery device the web of clean towel is stretched for delivery to the user, the free end of the clean towel depending from said delivery device between it and said opening in position to be grasped and pulled by the user, and a wall below said delivery opening adapted to serve as a stop to limit downward movement of the arms of the user and also as a guide to direct the towel when released to said soiled towel receiving chamber.

In witness whereof, I have hereunto set my hand this 25th day of January, 1922.

FRANK M. STEINER.