Aug. 19, 1947. R. G. BIRR 2,425,915

DISPENSING CABINET STRUCTURE

Filed June 20, 1945 2 Sheets-Sheet 1

Fig. 1.

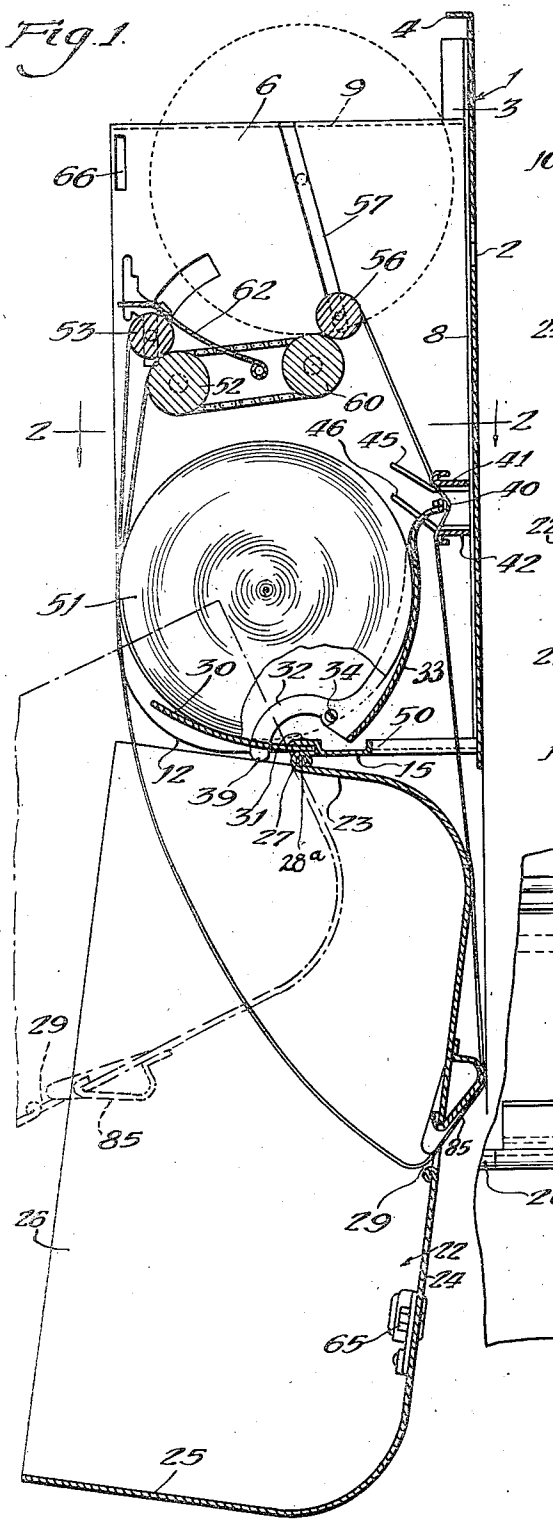


Fig. 2.

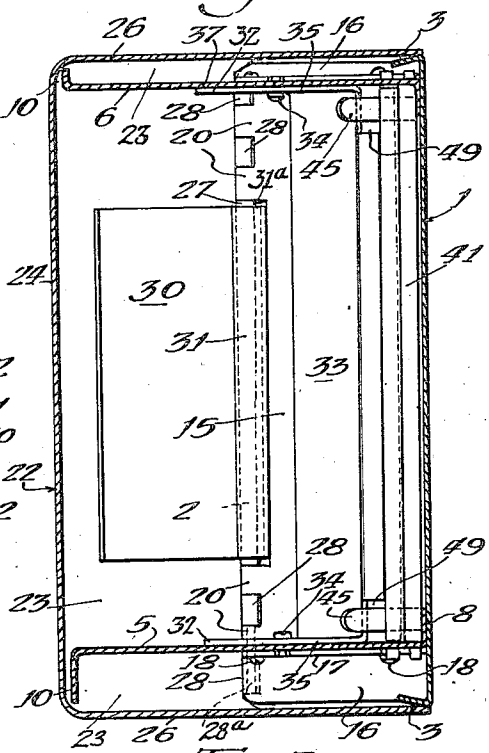
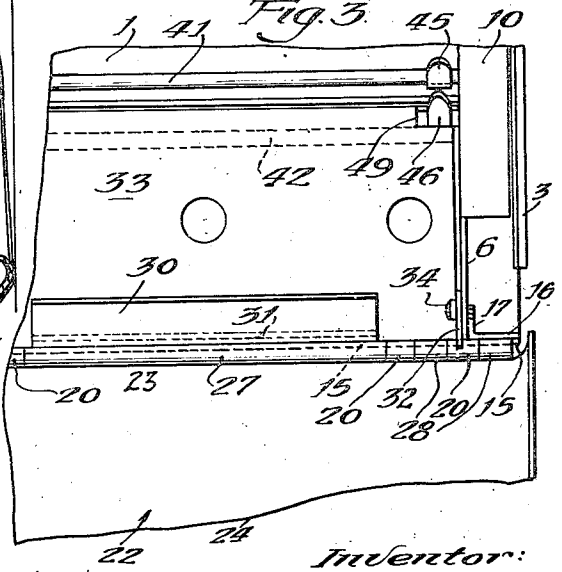


Fig. 3.



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Fig. 6.

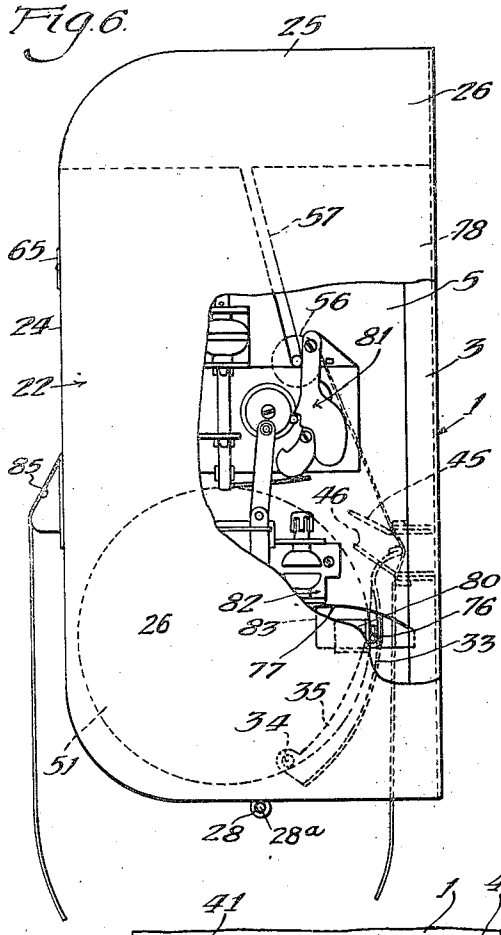
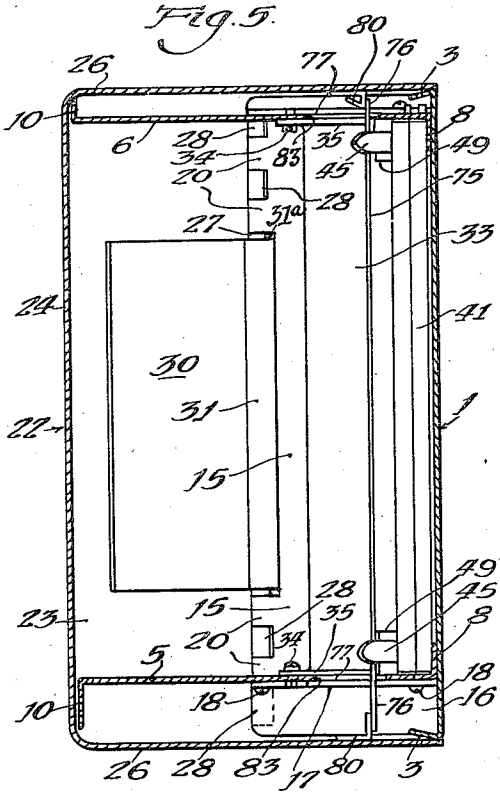


Fig. 5.



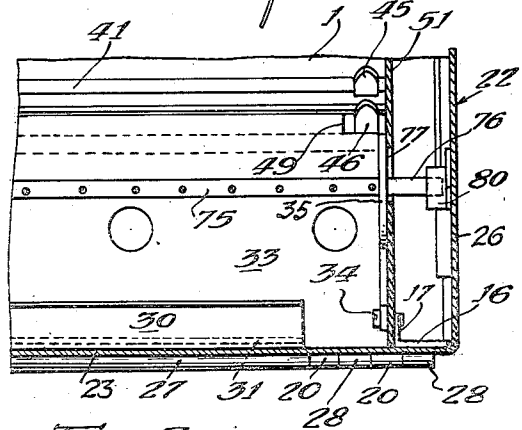


Fig. 7.

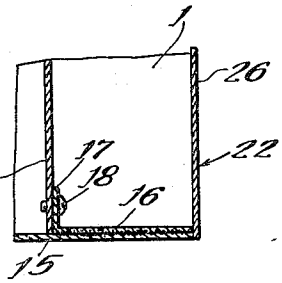


Fig. 4.

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Patented Aug. 19, 1947 2,425,915

UNITED STATES PATENT OFFICE

2,425,915

DISPENSING CABINET STRUCTURE

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Application June 20, 1945, Serial No. 600,621

6 Claims. (Cl. 312—38)

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This invention relates to improvements in cabinets for dispensing sheet materials of various kinds, and provides structures which are cheaper, more easily assembled and disassembled, more efficient in use and more rugged.

In this art there is an increasing and insistent demand for simplification of structure and for reduction in costs of production of and of servicing. Towel service is a gift on the part of company management, and therefore it is important to make the original cost of the cabinet, as well as its upkeep cost, as low as possible, and to so construct the devices that they can be serviced in the least possible time with the least possible throuble. The new structures of the present invention respond to the above demands in high degree.

An object of the invention is to provide a cover which substantially entirely encloses an inner cabinet section and which has five wall portions. Another object is to provide a new method and means for assembling and attaching the cover to the inner section.

Another object is to provide means for assuring an antirattle fit between the sides of the cover and the inner section when the cover is closed, and to provide means for guiding the sides of the cover during closing to obtain that antirattle fit. Another object is to provide a single over-all cover for the cabinet so mounted and constructed as to serve (when open) as means for measuring or forming a loop of toweling, which loop remains accessible below the cabinet when the cover is closed.

The invention is shown applied to a type of cabinet known as a "continuous" cabinet, and in which partition means is provided for separating soiled from clean toweling, including the separation of the roll of clean toweling from that portion of soiled toweling which is moving within the cabinet toward a soiled towel takeup roll. In preliminarily loading a continuous cabinet it is necessary to take a terminal portion of the toweling in the hand and thrust it upwardly through an opening in the bottom of the cabinet, to a position to facilitate its connection with the soiled towel takeup roll, which roll rests by gravity on a soiled towel takeup drive roll.

Another object is therefore to provide a partition and soiled towel smoothing element movable to provide space for facilitating upward introduction of the toweling for connection with the soiled towel roll, and movable to and adapted to be held at another position to prevent introduction of the hand after the cabinet has been

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serviced and the cover locked. It is an object to provide very simple and efficient means for positively holding the partition in its smoothing position after the cabinet is serviced and ready for use.

Another object is to provide for increased bottom area of the bottom of an inner section, forwardly of the smoothing and partitioning means, sufficient for the adequate support of the clean towel roll, while the cover of the cabinet is open, and while the partition is positioned to permit upward introduction of the hand behind it.

Heretofore more complicated and more expensive structures have been used for positively holding the partition and smoothing element in smoothing position, and for moving the partition forwardly to make space for the upward introduction of the hand and the toweling.

The preferred form of the present invention discloses a new and very simple device, cheap to construct and easy to assemble, and not requiring pivotal connections. The above mentioned functions are served by providing an extension for a space-making and smoothing element which is engageable by a part of the cover other than the front wall, as the cover moves to closed position, and which part remains engaged while said cover is closed, and positively holds the partitioning element in its smoothing position.

Objects, features and advantages of the invention will be further pointed out in the description of the drawings, and in said drawings:

Fig. 1 is a vertical section through the cabinet with the cover open;

Fig. 2 is a plan section on line 2—2 of Fig. 1 with the cover closed;

Fig. 3 is a partial front elevation of the lower part of the cabinet with the cover open;

Fig. 4 is a detail vertical cross-section showing how the bottom of the inner section is attached to the vertical side plates of that section;

Fig. 5 is a plan section similar to Fig. 2 showing a modification in which means on the side walls of the cover hold the partition and smoothing element in smoothing position;

Fig. 6 is a side elevation of the cabinet with its cover closed, but broken away to show part of the stop mechanism and means for holding the smoother partition in smoothing position; and

Fig. 7 is a partial front elevation of the lower part of the cabinet, showing the modified structure of Figs. 5 and 6.

In the drawings the numeral 1 indicates the back plate of the inner section of a cabinet of

the so-called "continuous" type, and this back plate has openings 2 by which the cabinet can be hung on fastening devices provided on a wall.

The back plate is stiffened by three flanges. There are two outturned, forwardly convergent cover-guiding flanges, one on each opposite vertical edge and indicated at 3. The other flange is an inturned horizontal flange 4 at the top edge. The flanges 3 serve the dual purpose of stiffening the plate 1 and as inclined planes adapted to guide and slightly spread the rear portions of the sides of the cover section during its closure. The spreading action on the metal sides puts them under slightly resilient tension and prevents rattle. The top flange 4 is overlapped by the inner surface of the top wall of the cover when the latter is closed.

Rigidly attached as by welding to the back plate, and extending forwardly as best shown in Fig. 2, are two upright plates 5 and 6 which support all of the dispensing mechanism. Each plate has an inturned vertical flange 8 at its rear which is connected as by spot-welding to the inner face of the back plate 1. Each of these upright plates has at its top a horizontal outturned flange 9 and each has at its front edge a vertical outturned flange 10. Each one of these plates has its forward bottom edge curved as at 12, and the bottom of the cover is correspondingly curved to conform to said curved portions.

The bottom of the cabinet is in part formed by a plate indicated at 15 and this plate is secured to the inner section and extends forwardly to a point about half way between the front and the back of the cabinet. The inner section is constituted by the back plate 1, side plates 5 and 6, and bottom plate 15. It is a feature of this invention that the bottom of the cabinet is formed by hinging a bottom of the cover to a bottom of the inner section. This bottom-forming plate 15 is easily attachable and detachable. It is held by means of two angle irons, each of the irons having one flange 16 welded to the top surface of the bottom plate. The other flange 17 is detachably secured by suitable screws 18 to the outer sides of the upright plates 5 and 6. This is a very simple form of connection and permits the bottom 15 with the cover hinged thereto, forming a unit, to be easily connected to the inner section. The bottom plate projects laterally beyond the plates 5 and 6 as best shown in Fig. 2. The forward edge of the bottom plate 15 is rolled to provide tubular hinging elements 20, in this instance four in number, a pair at each side and near the inner sides of the respective plates 5 and 6.

The one-piece cover is generally designated 22 and comprises a bottom wall 23, a front wall 24, a top wall 25, and side walls 26. The bottom wall 23 extends only about half way from front to back of the cabinet and has its inner edge rolled to form five tubular hinging elements which fit between the hinging elements 20 of the bottom plate 15. The hinging elements of the cover comprise an elongated central element indicated at 27 and two pairs of lateral elements indicated at 28 and corresponding to the two pairs of rolled elements 20 of the bottom plate. The hinge is so placed that the cover when open can assume a balanced hanging position directly below the inner section, as best shown in Fig. 1.

It is to be noted that the one-piece downswing cover is pivoted on a stationary bottom-forming wall of the inner section instead of a bottom wall of an outer casing, as is usually the case, and that this bottom-forming wall is removable and forms the support or shelf for the roll of clean toweling. This construction does away with the use of trunnions and brackets as means for pivoting closure elements for the cabinet, and provides a simple construction adapted to be easily assembled.

The cover has a horizontal slot 29 in its front wall through which the clean toweling passes, to the outside of the cabinet, and the portion of the cover from wall 23 to the slot 29 serves as a loop-measuring device when servicing the cabinet.

Now referring to Figs. 1 and 2. The bottom 15 is provided with a forward central extension indicated at 30. The inner end of this extension 30 overlies the hinge but underlies and is secured to a forward raised portion 31 of the plate 15. The extension overlies the elongated central tubular part 27 of the cover and is about the same length as that tubular part. This forward extension is slightly curved upwardly as shown in Fig. 1 and is adapted to support and prevent forward rolling of the clean towel supply roll. It will be noted that extension plate 30 is so positioned that spaces are provided between its lateral edges and the inner faces of the upright plates 5 and 6. Downwardly into these spaces extend arms 32 which are extensions of a partition element 33 which acts to separate the clean towel supply roll from the soiled toweling which is on its way to the soiled towel takeup roll. The lower ends of these arms 32 are engaged by the inner face of the bottom wall 23 of the cover, when the cover is closed.

This partition 33 is pivoted to each plate 5, 6, as at 34. The plate is provided with lateral stiffening flanges 35. The arms 32 extend forwardly of the hinge and downwardly into the space between the plate 30 and the side walls 5 and 6. The lower ends 39 of these arms 32 are so located that the bottom wall 23 will engage them during closure of the cover and will cause them to hold the partition element 33 against movement away from smoothing position and assuring that its rear smoothing edge 40 will remain in proper relation to companion horizontal smoothing elements 41, 42 suitably secured to the inturned rear flanges of the upright plates 5 and 6, as best shown in Fig. 2. These smoothing bars 41, 42 have at points near the plates 5 and 6 pairs of upwardly slanted extensions 45, 46, and the partition 33 is cut out at 49 to clear the lower extension 46.

The plate 33 can be swung forwardly by introducing the hand upwardly through an opening 50 in the bottom plate 15. Although during the operation of the cabinet the tendency of the clean towel roll is, during dispensing, to be rolled rearwardly against the partition element 33 to hold it in smoothing position, yet this action cannot entirely be depended on to maintain the proper smoothing relation of the elements. Moreover, this action alone would not prevent forced introduction of the hand to a level above the smoothing means. Therefore, positive means is provided to unfailingly hold the smoothing element in smoothing relation. Three sides of this opening are formed by the corresponding sides of the bottom plate, and the fourth side is formed by the back plate 1. The edges of the opening of the plate are flanged as shown in Fig. 1. When the partition 33 is moved forwardly the arms 32 are moved downwardly at points forwardly of the hinge. This movement occurs during servicing of the cabinet.

In servicing the cabinet the cover is swung downwardly to a position below the cabinet, the clean towel roll 51 is placed on the extension 30, the toweling is passed upwardly over the measuring roll 52, thence around the usual pinch roll 53, thence downwardly and into the cover, thence rearwardly through the slotted opening 29, to the rear of the cover, thence upwardly through the opening 50 in the bottom plate 15, then across the smoothing elements 41, 42, and upwardly to the soiled towel takeup roll 56 which has trunnions received by slots 57 in the plates 5 and 6. The takeup roll 56 is driven by the soiled towel takeup drive roll 60. The rolls 52, 60, are of equal diameter and are driven at the same rate by a sprocket chain drive (not shown). The usual pivoted separator plate 62 lies between the soiled toweling on roll 56 and the clean toweling on the pinch roll 53.

Although only partly shown in one of the figures, it will be understood that the device has a suitable stop mechanism arranged on the outside of the plate 5, and it may be of any suitable construction. Since the stop mechanism forms no part of this invention it has not been fully illustrated. The stop mechanism, in part, illustrated in Fig. 6, is like that of my copending application, Serial No. 600,620, filed June 20, 1945.

So far as I am aware it is entirely new to provide a cover which entirely encloses an inner section and which has a slot through which the toweling can be threaded, and new to have such a cover connected to an inner section so as to be capable of assuming a pendent position beneath the inner section and in a manner to utilize the slot as a loop-measuring element and in such manner that after the toweling has been passed through the slot and formed into a loop, the cover can be closed so that the loop is left at the outside of and depending from the bottom of the cabinet.

In servicing the cabinet the cover can be opened to assume a horizontal position, then the forward end of the toweling can be threaded downwardly through the toweling slot, and then the cover can be brought upwardly to allow the operator's hand to be thrust upwardly through the bottom opening of the cabinet to carry the toweling past the smoothing means and position it to be attached to the soiled towel takeup roll. After connection to the takeup roll the cover is lowered to dependent position and the toweling drawn taut to measure the loop and then the cover is closed. During closing the slot will ride along the toweling in an arcuate path (leaving the loop pendent below the cabinet) to assume the proper position in relation to the pinch rolls when the cover is fully closed.

The cover is provided with a suitable lockable latch means generally indicated at 65. The latching elements engage suitable openings 66 in the plates 5 and 6. Thus, the cover can be locked in closed position.

In Figs. 5, 6 and 7 is illustrated a modification of the structure for holding the smoothing and space-making element 33 in smoothing position. In other respects the cabinet structure is the same as in the first form. In this second form the arms 32 previously described are omitted, and on the front of the element 33 is arranged a bar 75. This bar projects laterally of the element 33 at both ends as shown at 76, see Fig. 5. These extensions 76 pass through openings 77 of the upright plates 5 and 6 and the sides 78 of the cover are provided with angle irons 80, one flange of

each of which engages a corresponding projection 76 to positively hold the element 33 in smoothing position.

A suitable stop mechanism is generally indicated by the numeral 81 and a lower portion of the stop mechanism indicated at 82 lies just forwardly of the opening 77, as best shown in Fig. 6. The forward edges or walls 83 of the openings 77 form stops with which the projections 76 engage to limit forward motion of the element 33 when it is moved by hand. Thus, the openings 77 have a double function.

The cover 21 is provided below its slot with an element providing an outwardly, downwardly inclined surface 85 from which the toweling hangs spaced from the front of the cabinet as shown. By reference to Fig. 1 it will be noted that when the cover is in its lower position and when measuring the loop the toweling will extend from this inclined portion upwardly to the smoothing device. It is seen also by Fig. 1 that after the loop is formed the cover can be moved to closed position, leaving the loop hanging freely below the cabinet.

In both forms of the smoother-holding device, means on the cover is utilized to secure the partition plate 33 at smoothing position and at a position to prevent introduction of the hand to a level above the smoothing means. In one form the single inner surface of the curved bottom of the cover engages lever arms of the partition. In the other form projections on the vertical side walls of the cover engage lateral projections of the partition for this purpose. In no form are slides used, nor are there any pivoted control elements.

An important structure of this invention relates to the structure of the bottom of the inner section and the particular means by which a single-piece cover is hinged to the bottom. This structure is unique and it has structural advantages, and is simple, cheap, easily made, and easily assembled. I believe myself the first to provide a sealed bottom for the cabinet, one-half of which is formed by a fixed part of an inner section and the other half of which is formed by the bottom wall of a swingable single-piece cover to form a total bottom wall for the cabinet. This bottom and hinging structure for the cover has a unique relation to a clean and soiled towel separator or partition which cooperates to smooth soiled toweling, and which is held in its smoothing position, by means of the cover when said cover is closed. By half-and-half formation of a cabinet bottom, respectively by parts of the inner section and outer cover, it is possible to utilize the outer edge of the bottom of the inner section and the inner edge of the bottom of the cover to form a hinge by simple rolling of the metal sheet material of which they are formed.

I believe it entirely new to have the bottom of an inner section provided on its forward edge with tubular hinging members and then to have the area of that bottom increased by means of a plate which overlies and extends forwardly of the tubular hinging members. I believe it also new to pivot a soiled towel smoothing member on an axis which lies intermediately of tubular hinge-forming members and of an opening through which the soiled towel is thrust during servicing. I believe it also new to releasably secure to an inner section, a bottom and cover structure as a unit, and to have the fastening accessible when the cover is open.

In the new cabinet construction herein the cover has a long vertical dimension and the rear

portions of its sides are not cross-connected at the bottom. Means is provided to guide the free sides of the cover during its closing motion, and this means acts to steady and reenforce the rear portions of the cover after closure.

Another advantage in providing a single-piece cover for the cabinet is that when it is fully opened all mechanism carried on the outer lateral sides of the upright plates of the inner section is exposed to view and accessible while the cabinet is hanging on the wall, in other words, can be made more accessible without taking the cabinet off of the wall.

I believe myself the first (in a towel cabinet of the continuous type) to pivotally attach a bottom wall of a cover, which also has side, front and top walls, to the bottom wall of an inner section, and the first to utilize an inner surface of said cover other than its front or top surfaces to positively hold a portion of a towel-smoothing means in smoothing relation when the cover is closed.

It will be noted that the part **31** is integral with the bottom plate **15** and that its bending up as shown in Fig. 1 provides an elongated central recess **31***a* for the reception of the long tubular part **27** of the cover. The elongated tubular part **27** on the bottom wall of the cover stiffens and reenforces this wall. On the other hand, the elongated extension **31** with the element **30** acts to stiffen the forward edge of bottom plate **15**. The pintle is indicated at **28***a*, and after insertion its ends are suitably peened over to prevent axial disengagement.

What I claim is:

1. A towel cabinet having a soiled towel takeup roll, means for smoothing the soiled toweling as it approaches the takeup roll including a pivoted member which separates the clean towel supply from the soiled toweling being smoothed and against a part of which the soiled towel drags, said means being movable toward and away from the soiled toweling and having an extension, and said cabinet having a hinged cover and having front, side and bottom walls, and means on a wall of the cover other than its front wall for engaging the extension when the cover is closed, and adapted to hold said member in smoothing position.

2. A towel cabinet adapted to dispense laundered fabric material including, an inner section having upright plates on which the dispensing mechanism is mounted, means disposed between the plates for smoothing the soiled toweling, including a part pivoted to said plates, an outer cover section having front, side, and bottom walls, and having its bottom wall hinged to a bottom wall of the inner section, and means on said pivoted part adapted to be engaged by an inner surface of said cover other than that of its front or top wall to positively hold said pivoted part in smoothing position.

3. A towel cabinet adapted to dispense laundered fabric material including, an inner section having upright plates on which the dispensing mechanism is mounted, means disposed between the plates for smoothing the soiled toweling, including a part pivoted to said plates, an outer cover section having a bottom wall hinged to a bottom wall of the inner section, and means on said pivoted part adapted to be engaged by the inner surface of the bottom wall of said cover when the cover is closed to positively hold said pivoted part in smoothing position.

4. A towel cabinet adapted to dispense laundered fabric material including, an inner section having upright plates on which the dispensing mechanism is mounted, means disposed between the plates for smoothing the soiled toweling, including a part pivoted to said plates and having projections passing through openings in the plates, and an outer cover section having bottom and side walls, and hinged by its bottom wall to a bottom wall of the inner section, the side walls of said cover section having means which engage said projections of said pivoted part when the cover is closed to positively hold said pivoted part in smoothing position.

5. A device of the class described comprising, a back plate, a pair of upright plates attached by their rear ends to and extending forwardly from the back plate, a bottom member secured to the upright plates, said bottom member having on its forward edge two series of tubular hinge-forming elements, a portion of the bottom which lies intermediately of said series of tubular elements being at a level above its top surface, an extension secured to the bottom and lying at a level between said intermediate portion and said tubular elements and extending forwardly of said elements, and a cover hinged to said tubular elements of said bottom and adapted to entirely enclose said upright plates.

6. A device of the class described comprising, a back plate, a pair of upright plates attached by the rear ends to and extending forwardly from the back plate, a bottom member and means detachably securing it to the upright plates, said bottom having on its forward edge a series of tubular hinge-forming elements, a central extension secured to and extending forwardly of said tubular elements, a smoothing element pivoted between said side plates and cooperating with means on the back wall to smooth toweling, said upright plates having openings therein and said smoothing element having extensions passing outwardly through said openings, and a cover hinged to said tubular members of the bottom adapted to entirely enclose said upright plates and having means on its side walls adapted to engage said extensions of said smoothing member, to hold the member in smoothing position when the cover is closed.

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