

April 3, 1962

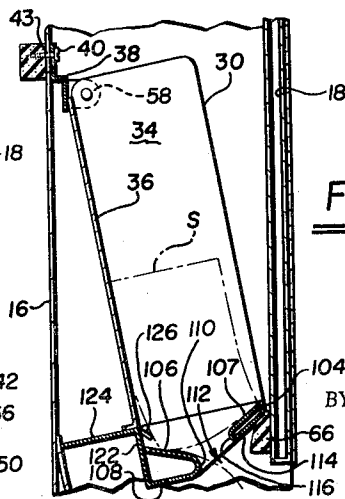
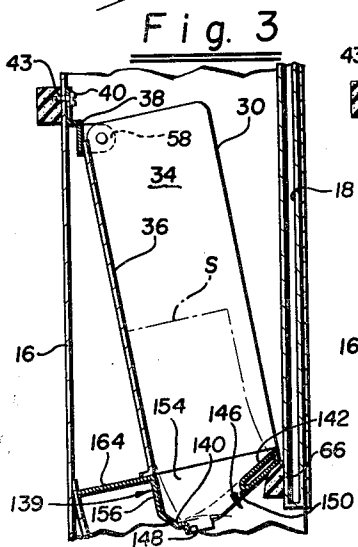
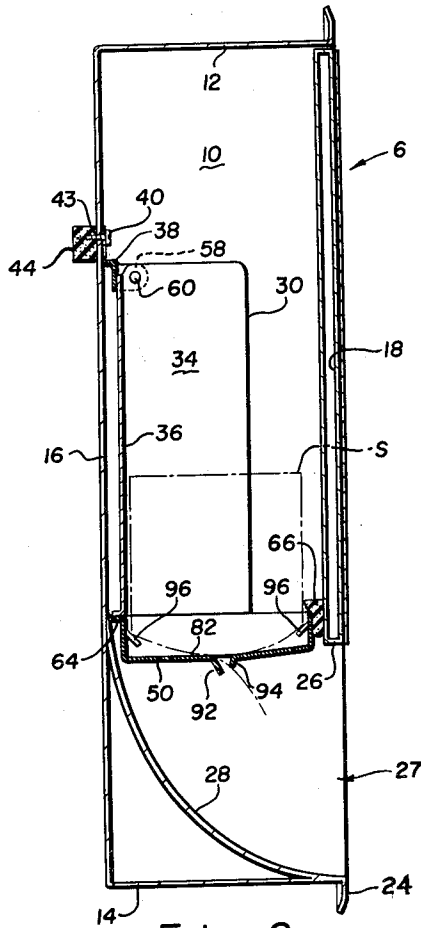
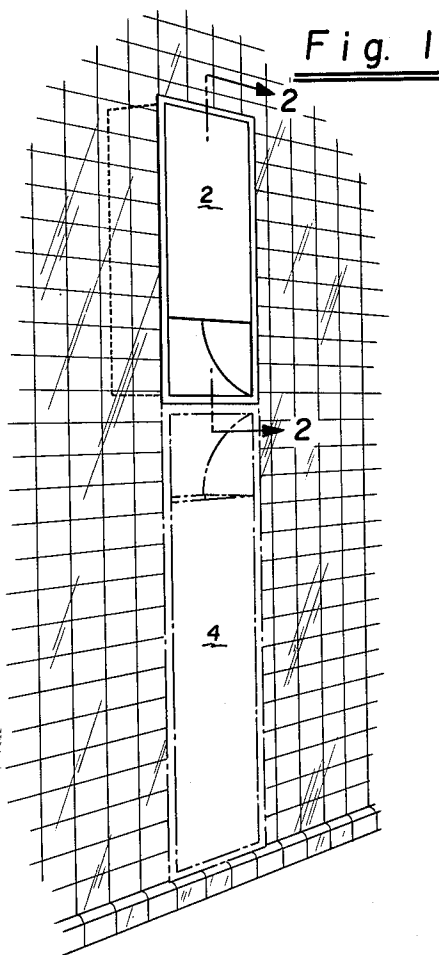
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3,028,047

DISPENSER RECEPTACLE FOR FOLDED SHEETS

Filed March 11, 1958

4 Sheets-Sheet 1



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DISPENSER RECEPTACLE FOR FOLDED SHEETS

4 Sheets-Sheet 2

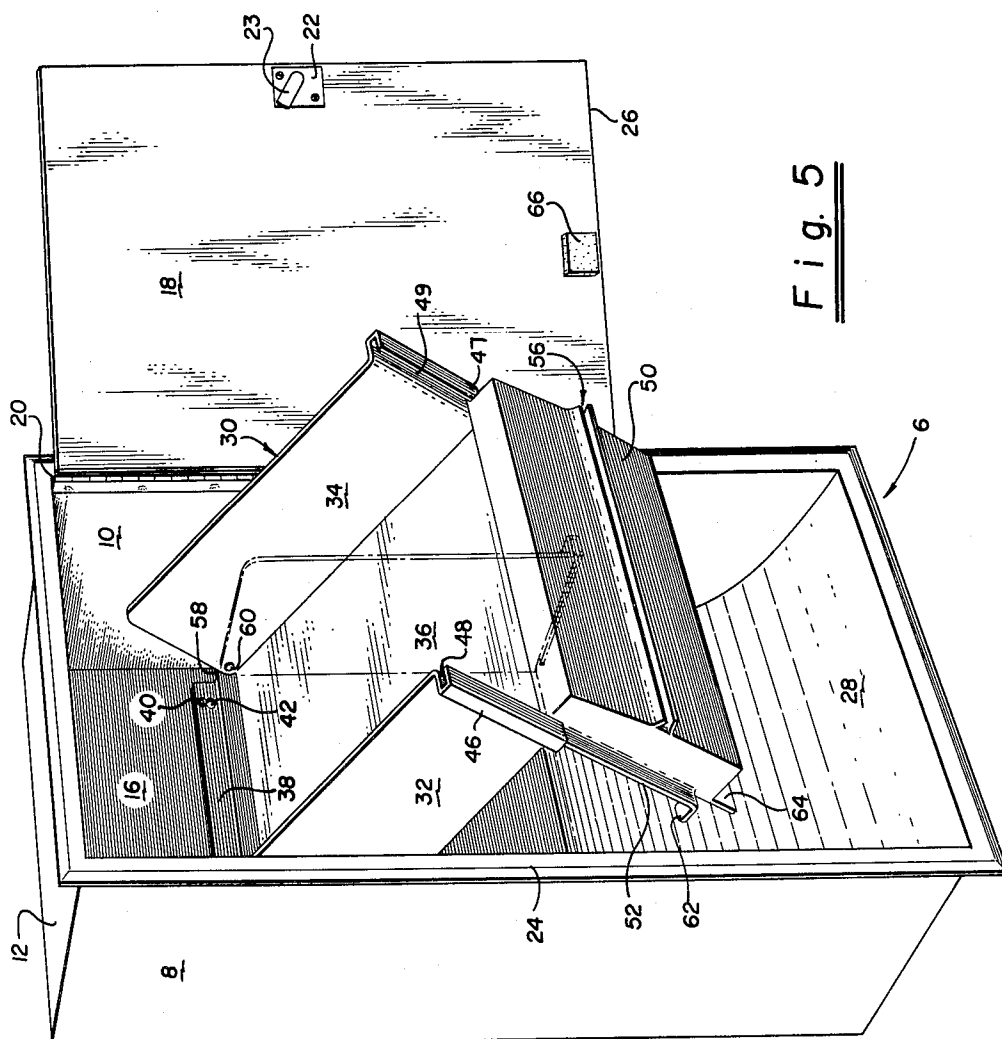


Fig. 5

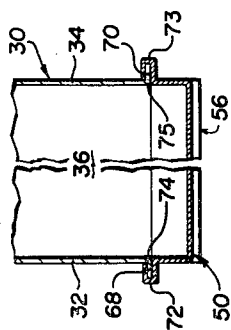


Fig. 6

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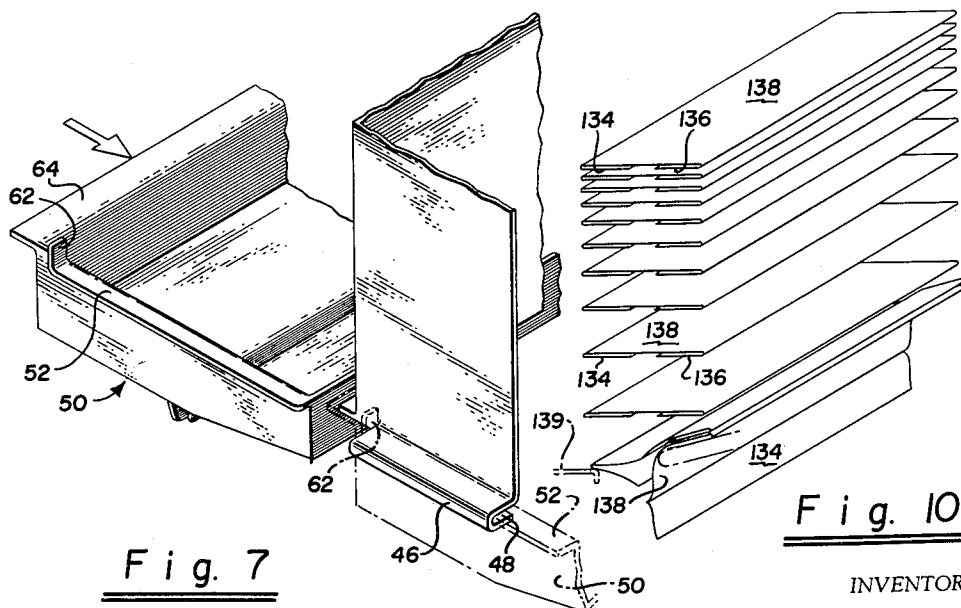
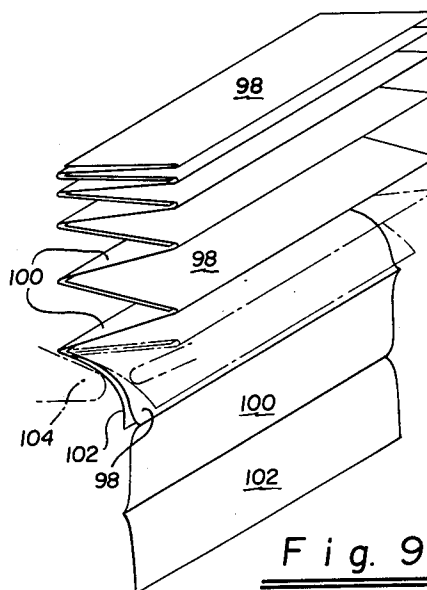
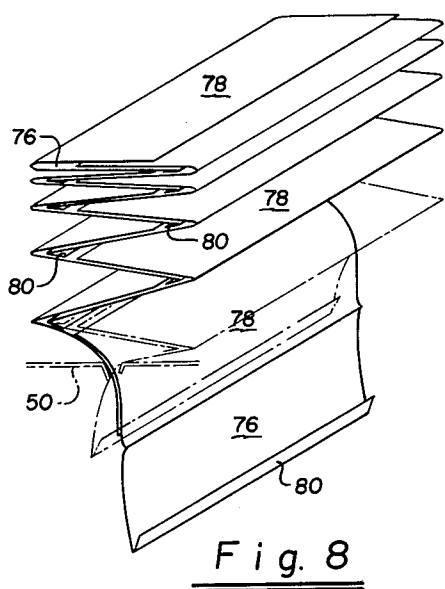
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DISPENSER RECEPTACLE FOR FOLDED SHEETS

Filed March 11, 1958

4 Sheets-Sheet 3



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DISPENSER RECEPTACLE FOR FOLDED SHEETS

Filed March 11, 1958

4 Sheets-Sheet 4

Fig. 11

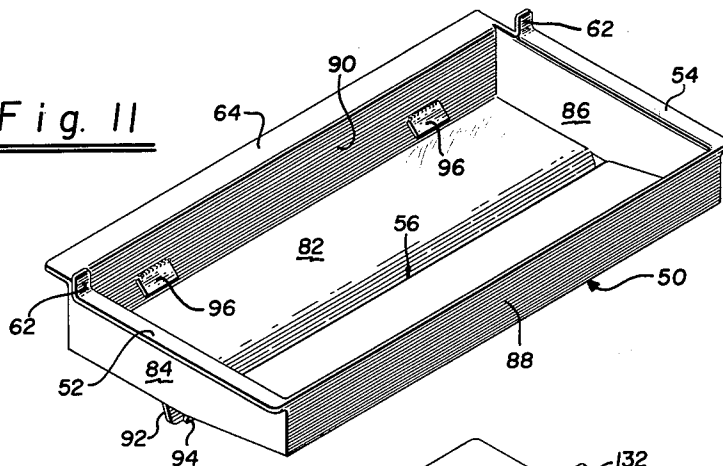


Fig. 12

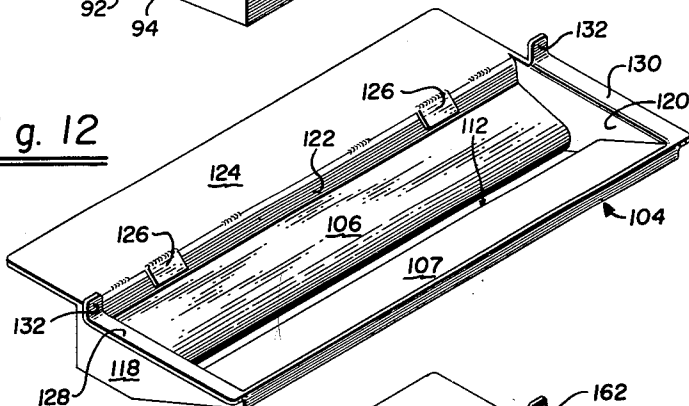
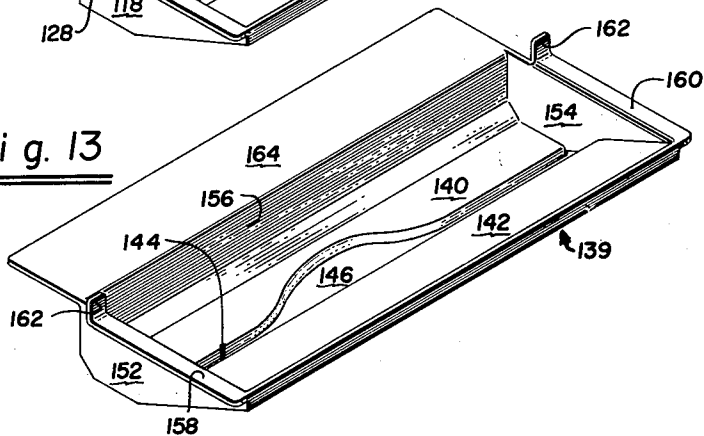


Fig. 13



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DISPENSER RECEPTACLE FOR FOLDED SHEETS
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Filed Mar. 11, 1958, Ser. No. 720,578

8 Claims. (Cl. 221-44)

This invention relates to dispenser receptacles for folded sheets, such as folded paper towels and the like. More particularly this invention relates to a dispenser receptacle which is adapted to dispense folded sheets of various commercially available types and characters and includes interchangeable removable bottom members for the receptacle, each of which is adapted to support a stack of sheets of a predetermined folded type for dispensing from such receptacle.

Dispenser receptacles are commonly found in wash rooms of restaurants, service stations and other industrial or business establishments for dispensing folded paper towels or other folded sheets. Because of the sturdy construction and pleasing appearance of such dispenser receptacles, the purchase cost of such receptacles frequently is quite high.

Presently available dispenser receptacles generally are adapted to dispense only one predetermined type of folded sheet because each type of folded sheet requires a slotted dispenser bottom of a predetermined contour and type to effect proper dispensing of that type of sheet. Therefore, the owner of a business establishment or the like frequently is hesitant in expending an amount of money for a dispenser receptacle from which only one predetermined type of folded sheet may be dispensed. As a result, a purchase of a dispenser receptacle is made, the purchaser thereafter is required to purchase the particular type of folded sheet which the particular dispenser receptacle purchased is adapted to dispense. The dispenser receptacle of the present invention was devised to change such a situation by providing a dispenser receptacle which is adapted to dispense various types of folded sheets.

Accordingly, the objects of the present invention, among others, include the provision of a dispenser receptacle which is adapted to dispense a plurality of folded sheets having various characters of folds therein; the provision of a plurality of bottom adapter members for a dispenser receptacle which may be interchangeably and removably engaged with the receptacle; the provision of a plurality of elements including a dispenser receptacle and interchangeable bottom adapter members useable one at a time with the receptacle, such elements being marketable as a dispenser assembly; the provision of a dispenser receptacle including an adjustable sheet stack receiving bin in which a stack of sheets may be positioned and with which a bottom adapter member may be operatively engaged; the provision of cooperable means for removably engaging a bottom adapter member with a dispenser receptacle; and the provision of means for positioning an adapter member properly relative to a dispenser receptacle.

The above and other objects of the invention will become evident upon reading the following description, reference being taken to the accompanying drawings in which:

FIG. 1 is a schematic view of a dispenser receptacle embodying this invention operatively positioned in a receiving recess in the wall of a washroom or the like;

FIG. 2 is a vertical section on an enlarged scale of the dispenser receptacle taken in the plane of line 2-2 of FIG. 1 and illustrating a bottom adapter member for dispensing single fold sheets positioned therein;

FIG. 3 is a partial vertical section of the dispenser

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receptacle illustrating a bottom adapter member for dispensing C-fold sheets positioned therein;

FIG. 4 is a partial vertical section of the dispenser receptacle illustrating a bottom member for dispensing multi-fold sheets positioned therein;

FIG. 5 is an isometric view of the dispenser receptacle illustrating the manner in which a bottom adapter member is operatively inserted into the receptacle and showing the cooperable means for retaining the bottom member in place;

FIG. 6 is a partial vertical section on a reduced scale showing modified cooperable means for retaining a bottom member in engagement with a dispenser receptacle;

FIG. 7 is an isometric view illustrating the manner in which a bottom member is inserted into a bin of a receptacle and illustrating the stop means provided to limit the distance the bottom member is inserted into such bin;

FIG. 8 is an isometric view of a plurality of single fold sheets illustrating the interfolding of such sheets to provide a stack and showing the manner in which such sheets are dispensed through the slot in an appropriate bottom member;

FIG. 9 is a view similar to FIG. 8 showing a stack of interfolded multi-fold sheets for dispensing through an appropriate bottom member;

FIG. 10 is a view similar to FIGS. 8 and 9 showing C-fold sheets stacked for dispensing through an appropriate bottom member;

FIG. 11 is an isometric view of the bottom member for dispensing single fold sheets;

FIG. 12 is an isometric view of the bottom member for dispensing multi-fold sheets; and

FIG. 13 is an isometric view of a bottom member for dispensing C-fold sheets.

In the paper industry today, several commercially available types of folded paper sheets, such as paper towels, are produced which are generally accepted by the public. Each of the several types of commercially available towels presently requires a particular type of dispenser having a particular type of slotted bottom through which such type of towel may be dispensed. As a result, a business owner who purchases a paper towel dispenser normally is forced to buy the particular character of towel which such dispenser is adapted to dispense and thereafter is wedded to towels of such character.

The present invention comprises a single dispenser receptacle which may be modified and adapted to dispense numerous types of commercially available paper towels. As a result, the owner of a dispenser receptacle of the present invention is free to purchase and use any one of a number of commercially available towels with the dispenser. Such towels may be purchased from various producers thereby enabling the receptacle owner to deal with the towel producer or retailer who can quote him the best price. Furthermore, the owner of the dispenser receptacle of this invention need not worry about a particular line of towels being discontinued thereby putting an end to the usefulness of his dispenser, because in such a case, the owner can purchase other and different types of towels which also may be dispensed by the receptacle of this invention.

The dispenser receptacle of the present invention may be adapted to dispense a particular type of folded paper sheet merely by providing an appropriate adapter member for the bottom of the dispenser for supporting a stack of such sheets. A few of the commercially available types of folded sheets which may be dispensed by the dispenser of this invention are shown in FIGS. 8 through 10. Such sheets will be more fully described hereinafter.

FIG. 1 shows one desirable installation for a folded towel dispenser of this invention. The dispenser illus-

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trated is adapted to be mounted in a wall recess with its front face substantially flush with the outer wall surface thereby imparting a neat appearance to the installation. While the dispenser of this invention desirably is mounted flush with the wall as shown, it frequently is desirable or expedient to mount or hang a dispenser on the outer surface of a wall and projecting therefrom. The dispenser of this invention also is adapted for such a non-flush installation.

The dispenser receptacle 2 shown in FIG. 1 desirably is installed in conjunction with a used towel waste receptacle 4 which may be positioned in a wall recess below dispenser receptacle 2 or otherwise positioned adjacent the receptacle 2 for receiving waste towels. Waste receptacle 4 may be formed as an integral part of the dispenser receptacle 2, the waste receptacle and towel receptacle in such case providing a unitary assembly, or may be formed as a separate member.

The dispenser receptacle components desirably are formed from an attractive and sturdy sheet material, such as stainless steel, aluminum, painted or enameled sheet steel or the like, which imparts attractive and easy to clean characteristics to the receptacle. Other commercially available materials also may be used to make the receptacle and the various components thereof, the material used being governed by the type of installation intended and similar factors.

Referring to FIG. 5, the dispenser receptacle 2 desirably comprises an outer cabinet 6 which includes opposite side panels or walls 8 and 10, a top 12 and a bottom 14. A rear wall 16 extends transversely between cabinet side walls 8 and 10 and closes the back of the cabinet. The front wall of the cabinet desirably is provided by an access door 18 connected to the inner surface of side wall 10 by a hinge 20. If desired, a mirror may be secured to the outer face of access door 18. A conventional key lock 22 having a rotatable latch 23 operatively engaged therewith is provided on the inner surface of the door 18 for engaging in a slot or the like provided in side wall 8 to hold the door closed and preclude unauthorized entry into the cabinet. As shown in FIG. 2, door 18 desirably is of two-ply hollow construction to impart rigidity thereto.

A peripheral flange 24 extends around the cabinet in the embodiment illustrated and, as shown in the installation of FIG. 1, such flange engages the outer surface of the wall surrounding the recess provided for reception of the cabinet thereby imparting a neat appearance to the installation. If the cabinet is not mounted in a recess in a wall but is merely mounted on a wall and projecting therefrom, peripheral flange 24 may be eliminated if desired or the cabinet 6 may otherwise be modified to present the neatest possible appearance and safest construction.

Hinged door 18, as shown in FIGS. 2 and 5, desirably does not extend the entire distance from the top 12 to the bottom 14 of cabinet 6 but terminates in lower end 26 spaced a substantial distance above the bottom 14 to provide an access opening 27 when door 18 is closed into which the hand of a person may be inserted for withdrawing a towel from the cabinet. Desirably, as shown in FIG. 2, a curved hand guide plate 28 is positioned in the cabinet and extends upwardly from the outer edge of cabinet bottom 14 in a curved path to a position on back wall 16 slightly above the lower end 26 of hinged door 18. Plate 28 extends the full distance between cabinet side walls 8 and 10 and such plate may be secured in the cabinet in any conventional manner, such as by brazing welding, bolting or the like. Curved plate 28 may be formed from any suitable material but desirably is formed from the same material as cabinet 6, thereby imparting a uniformly attractive appearance to the dispenser receptacle.

Adjustably positioned within the cabinet 6 and mounted for swinging movement therein is an open faced

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receptacle bin 30. Desirably such bin comprises opposite side walls or panels 32 and 34 and rear panel 36 which extends transversely between the side panels and is connected thereto, thereby imparting a U-shaped, open faced configuration to the bin. As shown in FIG. 5, rear panel 36 is only slightly smaller in width than rear wall 16 of cabinet 6 while side panels 32 and 34 are of substantially less width than side walls 8 and 10 of cabinet 6. The bottom of bin 30 desirably is open and unrestricted and is provided with means for cooperatively engaging a bottom adapter member of a type to be described upon which a stack of folded sheets may be supported. Bin 30 is of substantially less height than cabinet 6 and desirably is mounted intermediate top 12 and bottom 14 of the cabinet (see FIG. 2).

Bin 30 in the embodiment illustrated is mounted in cabinet 6 by means of a substantially S-shaped mounting bracket 38 (see FIGS. 2-5) secured to cabinet rear wall 16, and extending thereacross. Desirably, bin 30 is swingably mounted to bracket 38 by connecting means described hereinafter. Fastening means, in the form of sheet metal screws 40, are utilized to secure bracket 38 to rear wall 16. Two or more key hole slots 42 are provided in the mounting bracket 38 (FIG. 5) for engaging the bracket with the screws 40, and appropriate holes 43 are provided in rear wall 16 through which the screws project. The cabinet 6 and bin 30 may be detached one from the other if so desired, by disengaging the heads of screws 40 from the keyhole slots 42. A block 44 of sponge rubber or similar material may be mounted on the protruding end of the sheet metal screws to prevent injury to a person handling the cabinet during installation thereof.

If cabinet 6 is to be mounted with rear wall 16 thereof contacting the outer surface of a wall as described previously, other fastening means which do not project beyond rear wall 16 may be used to secure bracket 38 to rear wall 16. In such case, bracket 38 may be riveted, welded, or otherwise secured to rear wall 16. Any conventional fastening means, such as toggle bolts, long screws or the like (not shown) which pass through appropriately formed holes (not shown) in rear wall 16 of the cabinet may be utilized to mount cabinet 6 to a wall or to secure the cabinet in a wall recess provided therefor.

Provided at the bottom of each of the opposite side panels 32 and 34 of bin 30 are means cooperable with other means formed on a bottom adapter member for the cabinet for maintaining such bottom member in operative position in a manner to be described. In one embodiment, the bottom ends of side panels 32 and 34 are reversely bent into U-shaped sections 46 and 47, respectively, thereby providing oppositely facing inwardly opening guide grooves 48 and 49, respectively. As shown in FIG. 5 such U-shaped sections do not restrict the bottom of the bin whereby an unrestricted throat opening is provided adjacent the bin bottom through which towels may be dispensed without interference.

A bottom adapter member 50 for the dispenser receptacle is shown being inserted into the bin 30 in FIGS. 5 and 7 and such bottom member desirably includes means in the form of guide rails 52 and 54 (see FIG. 11) which extend outwardly from opposite ends of the bottom member and which are slidably and removably engageable in the guide grooves 48 and 49 provided adjacent the bottom of receptacle bin 30 to provide a quick detachable connection. Bottom member 50, when operatively positioned in the receptacle, is intended to support a stack of folded sheets thereon. Intermediate the front and rear surfaces of such bottom member, a slot 56 is provided which extends the length of the bottom member between the opposite ends thereof. It is through such slot 56 that individual towels of the stack supported by the bottom member are to be dispensed in the well-known manner.

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Although the bottom adapter member 50 shown being inserted into bin 30 in FIGS. 5 and 7 corresponds to the particular adapter member 50 shown in FIG. 11, it should be understood that the other adapter members illustrated are similarly provided with means cooperable with the bin 30 for maintaining the member in operative position and are inserted into the bin in a similar manner.

To allow adapter member 50 to be inserted and engaged with the bin 30 in the manner shown in FIG. 5 and while the top of the bin remains positioned within the cabinet, means are provided whereby bin 30 is swingably connected to the dispenser receptacle. Mounting bracket 38 is provided at each of its opposite ends with apertured ears 58 which extend substantially parallel to cabinet side walls 8 and 10 toward the front of the cabinet. Ears 58 are positioned to engage the outer surfaces of opposite side panels 32 and 34 of bin 30 adjacent their top rear corners. Appropriate aligned holes are provided in ears 58 and the upper rear corners of the opposite bin side panels. Pivot pins 60 are positioned through such aligned holes for swingably connecting the bin 30 to the mounting bracket ears 58. Bin 30 is pivotable outwardly and upwardly about pins 60 to allow insertion of the guide rails 52 and 54 of bottom member 50 into the guide grooves 48 and 49 of bin 30 from the rear of the bin as shown in FIG. 5.

To preclude inadvertent movement of bottom member 50 entirely through the cooperable guide grooves provided in bin 30 and to automatically position the bottom member in the bin, appropriate stop means are provided to limit the distance which such bottom member may be inserted into the guide grooves. In the embodiment shown, such stop means are in the form of movement limiting ears 62 provided adjacent the rear of each of the opposite guide rails 52 and 54 of the bottom member. Desirably, ears 62 are integral with the guide rails and are bent upwardly therefrom. Ears 62 engage the rear of U-shaped sections 46 and 47 of bin side panels 32 and 34 when the bottom member is fully engaged with the bin (note phantom lines in FIG. 7) and limit the distance the bottom member may be inserted in such grooves thereby automatically positioning the bottom member relative to the bottom throat opening of the bin.

Various towels have various transverse widths when folded and the bottom adapter members are dimensioned accordingly. To insure proper location of bin 30 regardless of the type of towel to be dispensed, spacer means also are provided for properly and automatically positioning the bin 30 within the cabinet 6 when a particular bottom member is engaged therewith for dispensing a particular type of folded towel. Desirably, such spacer means comprises a projecting flange 64 which extends beyond the rear surface of the bottom member and is adapted to engage the rear wall 16 of the cabinet as shown in FIG. 2. The width of flange 64 generally is governed by the configuration of the particular type of folded towel the bottom member is adapted to dispense. Different types of towels require bottom members having spacer flanges of different widths. Desirably, flange 64 extends the full distance across the rear of the bottom member and engages the rear wall 16 of cabinet 6, thereby providing a firm contact between the bottom member 50 and the cabinet to properly position the bin 30 for dispensing towels positioned therein. Under certain conditions, small tabs or projections may be substituted for full width spacer flange 64, if so desired.

Desirably the hinged door 18 forming the front wall of the cabinet is provided adjacent its lower end 26 with a member 66 comprising a block of sponge rubber or the like which engages the front surface of bottom member 50 when the door is closed as shown in FIG. 2. Door 18, when closed, urges flange 64 against cabinet rear wall 16 and maintains the bottom member in operative position and precludes any movement of the bot-

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tom member and bin when individual towels are withdrawn through the slot provided in the bottom member.

FIG. 6 shows a modification of the cooperable means for removably engaging and maintaining a bottom member in operative position adjacent the bottom of a receptacle bin 30. In such modification, the bottom of each of the opposite panels 32 and 34 of bin 30 is provided with outwardly directed flanges providing guide rails 68 and 70. The opposite ends of bottom member 50 in such modification are provided with reversely bent U-shaped sections 72 and 73 which provide inwardly opening guide grooves 74 and 75.

The modified cooperable means illustrated in FIG. 6 is generally a reversal of the cooperable means shown in FIG. 5. However, in such modification, the bottom member is in other respects the same as the bottom member shown in FIG. 5. Such bottom member is maintained in operative position adjacent the bottom of the receptacle by appropriate stop means, such as bent tabs (not shown) provided adjacent the rear of guide rails 68 and 70.

In both of the modifications of the cooperable means shown for operatively positioning a bottom member with a bin, the bottom member is removably engaged with the bottom of the adjustable bin 30. It should be understood, however, that in certain situations it may be desirable to dispense with the bin 30 and to mount the folded sheet supporting bottom member in direct engagement with appropriate means provided on the opposite inner surfaces of side walls 8 and 10 of the receptacle cabinet 6. Such a modification would not depart from the spirit of this invention.

Several types of commercially available folded sheets of the paper towel type and several types of bottom adapter members for dispensing such folded sheets are shown in FIGS. 8 through 13. The towels illustrated in FIGS. 8, 9 and 10 are shown spaced from each other for purposes of clarity but in use a plurality of towels are stacked in contact with each other in the conventional manner. Each of the bottom adapter members is provided with a particular contour or shape which enables it to support and dispense a stack of towels of a predetermined type in that each type of towel requires a particular supporting surface, dispensing slot, and the like.

FIG. 8 shows a stack of so-called single fold towels which, as the name implies, comprises a paper sheet including a lower fold 76 and an upper fold 78 which impart a reversely bent single-fold configuration to each sheet. Desirably, one extremity of the lower fold is reversely folded to provide a narrow flap 80 which normally underlies such lower fold. The towels of the stack shown in FIG. 8 are interfolded; that is, the upper fold of each towel is positioned between the lower fold and upper fold of the towel directly thereabove. Such interfolding of the towels results in automatic feeding of a portion of another towel as one towel is withdrawn from the receptacle. Reversely bent flap 80 is of limited size and assists in such automatic feeding in a well known manner.

The bottom adapter member for use in dispensing single fold sheets of the type shown in FIG. 8 is shown in FIG. 11. Such bottom member is designated 50 and corresponds to the bottom member partially described previously during the general description of FIG. 5. FIG. 2 illustrates the bottom adapter member 50 of FIG. 11 operatively positioned in a dispenser receptacle cabinet with a stack S of single fold towels, shown in phantom lines, operatively positioned thereon. Bottom member 50 is contoured to support and dispense single-fold towels and comprises a substantially planar bottom surface 82 which is provided with a narrow elongated slot 56 extending between the opposite ends of the member. Extending substantially upright from bottom surface 82 are opposite end walls 84 and 86, respectively. The aforementioned guide rails 52 and 54 desirably extend outwardly from the upper edge of such side walls 84 and 86.

Bottom member 50 also is provided with front and rear walls 88 and 90 which extend upwardly from bottom surface 82. Side walls 84 and 86 and front and rear walls 88 and 90 impart a shallow generally open-top box or trough-like configuration to bottom member 50. Spacer flange 64 extends from the upper edge of rear wall 90 for the purpose described previously. Slot 56 through which individual towels of the single fold variety are to be dispensed is bordered by substantially parallel downwardly depending flanges 92 and 94 which extend the length of the bottom member 50 and provide relatively smooth surfaces between which individual towels may be withdrawn without tearing.

A plurality of inclined friction decreasing supporting tongues 96 are positioned on both the front wall 88 and rear wall 90 of the bottom member above bottom surface 82. As shown in FIG. 2, the stack of sheets S positioned in the receptacle rests upon the supporting tongues 96 provided. As a result of the weight of the stack of towels being supported, the lower towels of the stack are bent downwardly in a curved configuration and as a result the bottom towel of the stack has only limited contact with the bottom surface 82 of the bottom adapter member 50. Due to limited contact, friction between the lowermost towel of the stack and the bottom adapter member is held to a minimum during withdrawal of such bottom towel thereby minimizing the chance of undesirable tearing of the towel upon withdrawal from the receptacle.

Because of the relatively large transverse dimension or width of the single fold towels, a stack of such towels substantially fills cabinet 6 and the towels extend beyond the front of bin 30. Therefore, the spacer flange 64 of bottom adapter member 50 need be only of limited extent. The towel receptacle bin 30 hangs substantially vertically in cabinet 6 as shown in FIG. 2 and maintains the stack of towels S substantially upright within the cabinet 6. Rubber block 66 mentioned previously engages the front wall 88 of bottom adapter member 50 and maintains the adapter member and the towels stacked thereon in operative position for individual withdrawal from the cabinet.

FIG. 9 illustrates a stack of so-called multi-fold towels positioned for dispensing through the slot of an appropriately formed bottom adapter member. Each of such multi-fold towels comprises a flexible sheet including an upper fold 98, a middle fold 100 and a lower fold 102, all being of substantially equal width, whereby a Z configuration is imparted to the individual sheets. The towels are interfolded to provide a stack by inserting the upper fold 98 of one towel between the lower fold 102 and the middle fold 100 of the towel lying directly thereabove. Such multi-fold sheets are adapted to be dispensed individually through a slot in a dispenser receptacle and upon removal of one sheet through such slot, a fold of the next sheet is automatically withdrawn for subsequent grasping in a well-known manner. A bottom adapter member 104 for dispensing multi-fold towels is shown in FIG. 12 and a stack of such towels operatively positioned in a dispenser receptacle is shown in FIG. 4.

As best shown in FIG. 4, adapter member 104 is contoured to provide a somewhat V-shaped bottom surface comprising opposite downwardly extending bottom sections 106 and 107 upon which the stack of towels may be supported. In the embodiment illustrated, section 106 includes a reversely bent portion 108 which underlies downwardly extending section 106 and provides a rounded edge 110 which forms one side of a towel dispensing slot 112. Opposite bottom section 107 also is reversely bent but to a greater degree than section 106 to provide an underlying portion 114 which provides another rounded edge 116 of the dispenser slot 112.

Extending upwardly and connected to opposite ends of the bottom sections 106 and 107 are opposite end walls

118 and 120 which impart a closed ended, somewhat dish-shaped configuration to the adapter member 104. A rear wall 122 of limited height extends upwardly from the rear of bottom section 106 and a spacer flange 124 extends rearwardly from the top of such wall 122. Generally, no front wall is provided for adapter 104. If desired, towel supporting tongues 126 may be provided on rear wall 122 for decreasing friction between the bottom towel to be withdrawn from the stack and the adapter member in a manner similar to that described previously with reference to the bottom adapter member of FIG. 11.

Guide rails 128 and 130 extend outwardly from the upper edges of opposite side walls 118 and 120 of the adapter member. Stop means in the form of upwardly extending tabs 132 are provided adjacent the rear ends of guide rails 128 and 130 to limit the distance which adapter 104 may be inserted into the guide grooves of bin 30 in the manner described previously.

Because the multi-fold towels are provided with at least three folds, each towel generally is imparted with substantially less width than a single fold towel of the type described previously, and accordingly the width of the bottom surface of adapter 104 is substantially less than the width of the bottom surface of adapter 50 used with single fold towels although the lengths of adapters 50 and 104 between their side walls are the same. As a result, a stack of multi-fold towels has less stability when resting upon a supporting surface than does a stack of single fold towels. To compensate for the decreased towel width, spacer flange 124 of adapter 104 is substantially wider than flange 64 of adapter 50. As a result of the wide flange 124, when adapter 104 is engaged with bin 30, the spacer flange provides an abutment and the bottom of the bin is spaced a substantial distance from the rear wall 16 of cabinet 6 and the bin is thereby inclined relative to the vertical, as shown in FIG. 4. Because of the inclination of bin 30, the stack of towels positioned therein rests against rear panel 36 of the bin. Such stack of towels is thereby maintained in proper operative position and toppling of the stack of sheets in the receptacle is precluded so that individual sheets may be withdrawn from the bottom of the stack.

A third type of commercially available folded towel which may be dispensed by the receptacle of this invention is shown in FIG. 10 and the bottom member for dispensing such a towel is shown in FIG. 13. The towel shown in FIG. 10 is generally referred to as a C-fold towel in that opposite margins 134 and 136 of each towel are folded inwardly to underlie an upper section or fold 138 of the towel, thereby imparting a C-shaped configuration to the towel. C-fold towels of the type illustrated generally are not interfolded as are the two towel modifications described previously, but each C-fold towel in the stack merely rests and is supported by the towel lying beneath it. To remove the bottom towel from the stack, the user inserts his hand into an enlarged slot provided in the bottom of the dispenser receptacle and grasps one of the underlying folded margins 134 or 136 of the towel.

A bottom member 139 adapted to dispense C-fold towels is shown in FIG. 13 and comprises a bottom surface including opposite sections 140 and 142 which are spaced from each other thereby providing towel dispensing slot 144 therebetween. Desirably, section 140 is provided with a curved cutout portion 146 which provides an enlarged recess into which a portion of a hand may be inserted for grasping the bottom towel of the stack.

Desirably, the opposite edges of slot 144 are formed to preclude tearing of the sheets upon withdrawal from the dispenser and to protect the hand of the user when inserted into the bottom of the receptacle. Section 140 is provided with a downwardly extending rounded flange 148 and section 142 is reversely bent upon itself to provide a rounded edge 150, as shown in FIG. 3. The upper

surfaces of sections 140 and 142 generally lie in the same plane and present a substantially flat surface upon which the stack of towels S may rest. However, as shown in FIG. 3, section 140 of adapter 139 is positioned lower than front section 142 so that the towels are inclined to the horizontal to facilitate grasping the rear towel folded margin for removal of the towel.

Connected at opposite ends of the section 140 and 142 are upwardly extending side walls 152 and 154 spaced apart the same distance as the side walls of adapters 50 and 104. A rear wall 156 extends upwardly from the rear of section 140 between side walls 152 and 154 and such side walls and rear wall thereby impart a dished configuration to the bottom adapter member 139. A front wall normally is not provided in an adapter member for C-fold towels.

Guide rails 158 and 160 extend outwardly from the upper edges of side walls 152 and 154 for a purpose described previously and stop means in the form of tabs 162 are provided adjacent the rear of such guide rails. A spacer flange 164 extends rearwardly from the upper edge of rear wall 156 of the bottom adapter member and functions to position bin 30 of the receptacle inclined to the vertical as shown in FIG. 3.

The C-fold towels as shown in FIG. 10 are of relatively narrow width compared to single fold towels and to impart stability to the stack of towels and to preclude toppling of such stack within the receptacle, bin 30 is inclined as illustrated to insure that the stack of towels S rests upon the front face of rear panel 36 of bin 30, whereby the stack is maintained in operative position within the receptacle. Friction reducing tongues of the type described previously generally are not utilized with the bottom adapter member used for dispensing C-fold towels.

From the foregoing, it should be understood that various types of folded sheets may be dispensed from the receptacle of this invention merely by removing one stack supporting bottom adapter member from engagement with the receptacle and substituting therefore an appropriately contoured bottom member of a different type. The various types of folded towels shown generally are not suited to be dispensed through bottom members other than the particular type of bottom member described and illustrated for use therewith. Such a condition exists because the towels, as described previously, have different dimensions, are provided with different types of folds and the like. Each of the bottom members, however, is provided with a contour which is shaped in accordance with the particular character of fold in the towels of the stack which is to be positioned and supported on such bottom member whereby each bottom member is adapted to dispense individual towels of a given character.

To insert a bottom adapter member of a predetermined type into engagement with the receptacle, it merely is necessary to swing the open faced bin 30 outwardly and upwardly about pivot pins 60 to the position shown in FIG. 5 while the top of the bin remains mounted within the cabinet. When in such position, the guide grooves 48 and 49 provided on bin 30 are easily accessible for reception of the guide rails provided on the selected bottom member. Such guide rails may be slidably engaged in such guide grooves by moving the bottom member toward the front of the bin (in the direction of the arrow shown in FIG. 7). When the stop tabs on the guide rails engage the rear of V-shaped members 46 and 47 of the bin, the bottom member is properly positioned and the bin may be pivoted downwardly until the spacer flange of the bottom member engages the rear wall of the cabinet 6. A stack of towels may then be positioned on the bottom member and the door 18 closed and locked to maintain the bottom member in operative position.

Although several types of folded towels and several types of bottom adapter members have been described herein, other types of folded towels may similarly be dis-

pensed from the receptacle by providing appropriately contoured bottom members therefor.

A dispenser assembly, comprising a receptacle cabinet of the type described, and a plurality of interchangeable bottom members each of which is adapted to be engaged within the cabinet, may be marketed as a unit so that the purchaser of the assembly has all the required components which will allow him to dispense several types of folded sheets from a single dispenser.

Although the dispenser receptacle has been described as usable for dispensing folded sheets of the paper towel type, similar dispensers could be provided to dispense other types of folded or non-folded sheets formed from paper or other suitable materials.

The foregoing description is illustrative of one embodiment of a desirable dispenser receptacle but other modifications may become apparent to a person skilled in the art without departing from the spirit of this invention, and the same should be interpreted in light of the appended claims.

I claim:

1. A dispenser receptacle for dispensing a stack of folded flexible sheets comprising a cabinet having opposite side walls, a rear wall and an access door providing a front wall; an open-faced multi-position bin member; means interconnecting the bin and the cabinet adjacent the top of the bin and mounting the bin for movement from a position within the cabinet to a position where the bottom of the bin is outside the cabinet while the top of the bin remains mounted within the cabinet, said bin comprising opposite side panels and a rear panel extending between said side panels and connected thereto; a slotted stack supporting bottom member engaged with said bin, individual sheets of such stack being removable through the slot in said bottom member, the contour of said bottom member being shaped in accordance with the particular character of fold in the sheets of such stack to enable withdrawing of individual sheets of the stack; co-operable means on said bin member and said bottom member for removably supporting said bottom member on said bin member, said co-operable means comprising a pair of straight grooves provided on one of said members and a pair of guide rails provided on the other of said members, said grooves facing inwardly and said guide rails extending outwardly whereby said guide rails are received in said grooves and whereby bottom members of varying contour readily may be slidably interchanged in accordance with the character of fold of the sheets to be dispensed by said receptacle while the bin is still connected to the cabinet, and stop means on said bottom member to limit the distance said guide rails enter said grooves.

2. The dispenser receptacle of claim 1 wherein said bottom member includes spacing means of predetermined size contacting said rear wall of said cabinet and properly positioning said bin in said cabinet in a predetermined position depending upon the particular character of the sheets supported in said bin when said bottom member is engaged therewith.

3. A dispenser arrangement for stacked folded sheets comprising a cabinet, a bin for receiving a stack of such folded sheets and allowing them to feed downwardly, means interconnecting the bin and the cabinet adjacent the top of the bin and mounting the bin for swinging movement from a position within the cabinet to a position at which the bottom of the bin is outside the cabinet while the top of the bin remains mounted within the cabinet, an open top trough-like stack supporting bottom member, a slotted bottom panel connected to said bottom member through which sheets folded in a predetermined manner can be removed, and means providing a detachable connection between the bottom of the bin and the bottom member whereby when the bin and bottom member are swung outwardly of the cabinet the bottom member can be removed from the bin while the bin is still

connected to the cabinet and a different bottom member can be substituted therefor for supporting sheets folded in a different predetermined manner.

4. A dispenser arrangement for stacked folded sheets comprising a cabinet having opposite side walls and a movable front wall which can be opened and closed, a bin for receiving a stack of such folded sheets and allowing them to feed downwardly, means interconnecting the bin and the cabinet adjacent the top of the bin and mounting the bin for swinging movement from a position within the cabinet to a position at which the bottom of the bin is outside the cabinet when the cabinet front is open and while the top of the bin remains mounted within the cabinet, an open top trough-like stack supporting bottom member, a slotted bottom panel connected to said bottom member through which sheets folded in a predetermined manner can be removed, means providing a detachable connection between the bottom of the bin and the bottom member whereby when the bin and bottom member are swung outwardly of the cabinet the bottom member can be removed while the bin is still connected to the cabinet and a different bottom member can be substituted therefor for supporting sheets folded in a different predetermined manner, and spacing means on said bottom member of predetermined size for engaging a wall of the cabinet to position the bin and bottom member in predetermined dispensing relationship in said cabinet.

5. A dispenser arrangement for stacked folded sheets comprising a cabinet, a bin having a bottom for receiving a stack of such folded sheets and allowing them to feed downwardly, means adjacent the top of said bin for mounting the bin in the cabinet for swinging movement from a position within the cabinet to a position at which the bottom of the bin is accessible outside the cabinet while the top of the bin remains mounted within the cabinet, an open top trough-like stack supporting bottom member, a slotted bottom panel connected to said bottom member through which sheets folded in a predetermined manner can be removed, and a detachable connection between the bottom of the bin and the bottom member enabling the bottom member to be removed from the bin while the bin is still connected to the cabinet.

6. A dispenser arrangement for stacked folded sheets comprising a cabinet, a bin having a bottom for receiving a stack of such folded sheets and allowing them to feed downwardly, means adjacent the top of said bin for mounting the bin in the cabinet for swinging movement from a position within the cabinet to a position at which the bottom of the bin is accessible outside the cabinet while the top of the bin remains mounted within the cabinet, an open top trough-like stack supporting bottom member, a slotted bottom panel connected to said bottom member through which sheets folded in a predetermined manner can be removed, a guide and rail detachable connection between the bottom of the bin and the bottom member enabling the bottom member to be slidably removed in a direction transverse to the bin while the bin is still connected to the cabinet, and rearwardly extending spacing means on said bottom member for positioning the bin and bottom member in predetermined dispensing relationship within the cabinet.

7. A dispenser assembly for various types of stacked folded sheets comprising a cabinet, a bin having a bottom

for receiving a stack of such folded sheets and allowing them to feed downwardly, means adjacent the top of the bin for mounting the bin in the cabinet for swinging movement from a position within the cabinet to a position at which the bottom of the bin is outside the cabinet while the top of the bin remains mounted within the cabinet, a plurality of interchangeable open top trough-like stack supporting bottom members, a slotted bottom panel connected to each bottom member of a contour shaped in accordance with the particular character of fold in a stack of such sheets for removal of sheets through such slot, and means on each bottom member and on the bottom of the bin for providing a detachable connection between the bin and a selected bottom member to allow interchanging of bottom members in accordance with the type of fold in a selected stack of sheets while the bin is still connected to said cabinet.

8. A dispenser assembly for various types of stacked folded sheets comprising a cabinet, a bin having a bottom for receiving a stack of such folded sheets and allowing them to feed downwardly, means adjacent the top of the bin for mounting the bin in the cabinet for swinging movement from a position within the cabinet to a position at which the bottom of the bin is outside the cabinet while the top of the bin remains mounted within the cabinet, a plurality of interchangeable open top trough-like stack supporting bottom members, a slotted bottom panel connected to each bottom member of a contour shaped in accordance with the particular character of fold in a stack of such sheets for removal of sheets through such slot, means on each bottom member and on the bottom of the bin for providing a detachable connection between the bin and a selected bottom member to allow interchanging of bottom members in accordance with the type of fold in a selected stack of sheets while the bin is still connected to the cabinet, and rearwardly extending spacing means on each bottom member to position the bin and such selected bottom member in predetermined dispensing relationship within the cabinet.

References Cited in the file of this patent

UNITED STATES PATENTS

599,821	Adkins	Mar. 1, 1898
804,110	Favorite et al.	Nov. 7, 1905
930,619	Russell	Aug. 10, 1909
1,331,990	Grover	Feb. 24, 1920
1,362,449	Teall	Dec. 14, 1920
1,649,273	Wilson	Nov. 15, 1927
1,681,840	Carlson	Aug. 21, 1928
1,697,654	Jantzen	Jan. 1, 1929
1,753,357	Wood et al.	Apr. 8, 1930
1,783,149	Jantzen	Nov. 25, 1930
1,889,875	Parker	Dec. 6, 1932
2,074,664	Mitchell	Mar. 23, 1937
2,082,765	Krueger	June 1, 1937
2,253,742	West et al.	Aug. 26, 1941
2,256,020	Engel	Sept. 16, 1941
2,435,104	Solomon	Jan. 27, 1948
2,522,909	Wadanoli	Sept. 19, 1950

FOREIGN PATENTS

616,487	France	Feb. 2, 1927
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