My invention relates to improvements in supply cabinets for paper sheets, particularly for interfolded paper sheets, such as towels, paper napkins, toilet paper, etc. Broadly stated, it is my object to overcome the two principal difficulties heretofore encountered in the withdrawal of paper sheets from a cabinet of that class in which the sheets are piled in a superposed relation and withdrawn one at a time, and in which the friction and interfolded engagement of a withdrawing sheet with the next succeeding sheet is utilized to cause a partial withdrawal of the next sheet and its exposure exterior to the cabinet. The more successful cabinets heretofore used for this purpose have been provided with a slot in the central portion of the bottom and owing to the fact that the cabinet must be placed low enough to make it convenient to refill it, the user was obliged to grope for the projecting end or exposed margin of the sheet or else bend over in order to see it. This difficulty is sometimes quite annoying where only one corner of a sheet happens to be slightly exposed, the friction of the preceding sheet having been insufficient to withdraw it to the proper distance. Also in the cabinets as heretofore constructed it is found that there is a limit to the height of the pile of sheets which can be placed in such cabinet and fed successfully through a slot in the bottom, inasmuch as the effectiveness of a withdrawing sheet to bring with it a portion of the succeeding sheet diminishes in proportion to the weight of the package; therefore, the cabinets have been made shallow to prevent overloading them.

This is particularly true of cabinets for paper towels and paper napkins, which are of such large size and weight as to oppose materially the lifting of the stack when the interfolded end of the second sheet of the stack is bent back upon itself and passes toward the slot during the withdrawal of the first or lowest sheet. It will be understood that the starting of the succeeding sheet depends upon the friction of the first sheet thereon and its engagement therewith. Where the succeeding sheets fail to withdraw to a sufficient extent it has, therefore, been necessary heretofore either to increase the friction of the withdrawing sheet or to decrease the weight of the pile and the practice heretofore has been to reduce the height of the pile and thus to reduce its weight.

It is my object to provide a form of cabinet having an inclined bottom provided with a slot in its central portion extending substantially parallel to the upper and lower margins of the bottom, whereby the exposed portion of a sheet will be plainly viewed by a person standing in front of the cabinet and, whereby the projecting end of the sheet may be more readily grasped for the purpose of withdrawal. This overcomes the first of the above mentioned difficulties.

A further object of my invention is to provide a cabinet with an interior support for the pile of paper sheets, the form of which is such that the weight of the pile will be almost wholly sustained along narrow, transversely extending, zones at the respective sides of the slot. In attaining this end, I have provided, in one form of my invention, supporting surfaces which are rounded or cylindrically curved, whereby the sheets are required to bend in order to conform to such surfaces and the pressure of the sheets upon such surface is thus diminished, except at the crown of the curve, whereby greatly reducing the total resistance offered by the supporting surface to the withdrawal of the sheets. I find that while the concentration of the load at the top of the curve or crown of the supporting surface tends to increase the pressure and the friction at the points where the load is so concentrated, the virtual elimination of weight and friction upon the supporting surface at all other points more than offsets the effect of said increase and makes it possible to support a pile of sheets to a depth several times greater than was found practical in cabinets as heretofore constructed for paper towels and paper napkins.

For the purpose of accomplishing the last mentioned objects, I have provided a modified form of my invention in which the weight of the pile will be almost wholly sustained by the central transverse zone of the flat slanting bottom adjacent the slotted opening and in which the virtual elimination of weight and friction upon all other points of the supporting bottom will more than offset the increase at the central zone of the bottom. In the modified construction, this result is reached by arranging flanges at the front and rear of the interior of the cabinet.
net which extend into the pile, projecting between the interfolded sheets to support the weight of a large part of the pile adjacent its outer margins.

5 In the drawings:

Fig. 1 is a sectional view of a supply cabinet for interfolded paper sheets taken on the line 1—1 of Fig. 2.

Fig. 2 is a side elevation of the device with a portion of the bottom broken away showing the interior support for the paper sheets.

Fig. 3 is a view similar to Fig. 1 of a modified form of a supply cabinet as it appears when used for small interfolded sheets such as toilet paper.

Fig. 4 is a front elevation of a modified form of supply cabinet.

Fig. 5 is an end elevation of the modified form shown in Fig. 4 with one end removed.

Like parts are identified by the same reference characters throughout the several views.

The container 1 is secured to a supporting structure such as partition 2 by screws 3.

The container 1 is made up of side walls 4 and 5, the end walls 6 and 7, and a slanting bottom 8 which may be inclined at any desired angle upwardly toward the front of the container 1, but is preferably disposed approximately at the angle shown in Fig. 1 of the drawing. Upon the top of the container is fitted a cover 9, which is preferably provided at its forward end with an integral flange 5' engaging with the front wall 5.

The cover 9 is hingedly mounted upon the container 1 at 10. A suitable lock is provided as shown at 11 for securing the cover 9 in closed position when the container has been filled with interfolded sheets of paper.

The container 1 is provided upon the inner side of the bottom 8 with supporting members 12 and 13 having reversely curved surfaces. The supporting member 12 has a portion 14 which may be of any desired length extending upwardly and adapted to guide the paper into position when the container 1 is being refilled. The supporting members 12 and 13 have their respective ends 15 and 16 spaced apart and conforming to the opening 17 in the bottom 8 of the container 1. The end walls 6 and 7 have slotted openings 18 and 19 extending upwardly from the opening 17 in the bottom 8.

When it is desired to fill the container 1 with interfolded sheets, the cover 9 is removed from the lock 11 and raised about the hinge 10 to open position. The sheets are then placed upon the supporting members 12 and 13 as shown, the free end 20 of one of the sheets being passed through the opening 17. Slots 18 and 19 perform the usual function of permitting an inspection of the supply of interfolded material, and in addition, they are so disposed with reference to dispensing opening 17 as to facilitate the manipulation of the first sheet therethrough by permitting the direct downward movement through the dispensing opening of a finger or tool engaged with the first sheet. The cover 9 is then locked in closed position.

To remove one of the sheets from the container 1, the projecting end of the sheet is pulled through the opening 17 and the sheet in passing through said opening carries the interfolded end of the next sheet with it, leaving a projecting end of the next sheet to be in turn pulled through the opening 17 when desired.

The supporting members 12 and 13 are each reversely curved and are forwarded adjacent their ends 15 and 16 to include crowned portions 21 and 22, respectively. These crowned portions being disposed longitudinally upon either side of slot or opening 17, tend to comprise the principal support for the interfolded sheets, thereby relieving from pressure those portions of the supporting members 12 and 13 lying beneath the folded or creased margins of the sheets. It is a well known fact that as each sheet is pulled from the bottom of an interfolded stack the end of the succeeding sheet is folded back upon itself, thereby lifting the stack slightly. It will, therefore, be easily seen that when one of the sheets is pulled out it will more readily start the end of the next interfolded sheet on its outward movement due to the reduced pressure and correspondingly reduced friction adjacent the folded margins. While the frictional resistance and pressure at the crowns of the supporting members is greater than it would be at any one point on a flat surface, the desired movement of the interfolded end has started before said end encounters any considerable retarding force.

It is to be understood that the flat bottom 8 of container 1 may be dispensed with and the curved supports 12 and 13 utilized as a bottom.

A modified form of container is shown in Fig. 3 which is adapted for use in dispensing small sheets of interfolded paper, such as toilet paper. The construction of this container is similar to that shown in Figs. 1 and 2 with the exception that the supporting members 12 and 13 of the container 1 are not provided. The modified container 1' has a rear wall 4' (but no front wall), end walls 6', and a slanting bottom 8' which has a centrally disposed opening as shown at 17' and may have any desired angle upwardly and toward the front of the container 1'. It is preferable, however, that the angle of the bottom 8' approximate that shown in the drawings. The container 1' is provided with a cover 9' which extends across the top and downwardly across the front of said container being secured against inadvertent opening by the lock 11'.
A further modified form of container is shown in Figs. 4 and 5. The exterior construction of this container is similar to that shown in Figs. 1 and 2. The interior construction, however, has been modified by dispensing with the supporting members 12 and 13 shown in Figs. 1 and 2, and providing flanges adapted to relieve the margins of the lower sheets of the pile of the weight of the superimposed sheets by engaging and supporting the margins of the superimposed sheets.

The container 1' is in the form of a box having a slanting bottom 8''. The container has a cover 9'' at its front and hinged to the bottom at 23. At the interior of the back of the container and secured thereto are provided flanges 24. Within the cover 9'' and secured thereto are flanges 25. The cover 9'' is secured against opening by the lock 26. The bottom 8'' has a centrally disposed transverse slot 17''.

When it is desired to place a pile of interfolded sheets within the container 1'', the lock 26 is released and the cover 9'' allowed to swing about its pivot 23 downwardly and out of the way. The sheets are then placed within the container as far as possible, and in so placing the pile, the flanges 24 are forced into it between the margins of adjacent sheets. Cover 9'' is then closed and secured against opening, and when so closed, the flanges 25 are similarly forced into the pile of interfolded sheets. In placing the pile in the container, the free end of the lower sheet is passed through the opening 17''.

It will be seen, therefore, that the flanges 24 and 25 tend to take part of the weight of the pile at its interfolded ends off of the bottom of the container. The sheets above the flanges will bow downwardly and thus will be supported at their centers from the sheets below. The removal of an interfolded sheet from this container is effected in a manner similar to that which has already been described. The removal of the weight of the pile at its interfolded ends from the bottom of the container allows the end of the next interfolded sheet to turn on its outward movement with greater ease than would be possible if the whole weight of the pile was resting upon it.

As sheets are withdrawn from beneath the flanges, the increasing flexion of the sheets above the flanges will result in the delivery downwardly past the flanges of additional sheets to take the places of those withdrawn.

It will be seen, therefore, that a container for interfolded sheets of paper has been provided which affords easy access to the projecting end of an interfolded sheet, which may be easily refilled when the contents have been removed, and which is secured against inadvertent opening and the contents therein kept in a sanitary condition and free from promiscuous handling.

It will be further seen that a container has been provided which facilitates the easy removal of a sheet of interfolded paper and at the same time ensures the egress of the end of the next interfolded sheet.

It will be further seen that a supply cabinet for paper sheets has been provided with a slotted opening in its bottom, which may be placed at a convenient height for refilling and from which an interfolded sheet may be withdrawn without groping around under the cabinet or stooping down to look under it for the projecting end of an interfolded sheet. It will be understood that it is preferable to place the slot in the bottom of the container in order that the sheets may be pressed toward it by gravity. In a broad sense, however, it is immaterial whether gravity is relied upon or whether a spring pressed plate is used to urge the sheets toward a slot in the front or even the top of the container. In either case, the margins of the most advanced sheet of the interfolded series may be relieved of pressure by the means herein described.

I claim:
1. A supply cabinet for interfolded paper sheets comprising a rear wall, a substantially plane bottom inclined downwardly toward said wall and provided with a slot extending in substantially parallel relation to said wall, and a flange on said wall directed inwardly toward said slot and disposed in close proximity to said bottom, whereby a stack of sheets of interfolded paper supported in the cabinet will have certain sheets supported by the bottom with interfolded margins in contact with the wall, and will have superposed other sheets with their margins supported by the flange to prevent the margins below said flange from wedging between the wall and bottom.

2. A supply cabinet for interfolded paper sheets comprising front and rear walls, a substantially plane bottom inclined downwardly toward the rear wall and provided with a slot extending in substantially parallel relation to said rear wall, and flanges on said front and rear walls directed inwardly toward said slot and disposed in close proximity to said bottom whereby a stack of sheets of interfolded paper supported in the cabinet will have certain sheets supported by the bottom with interfolded margins in contact with the rear wall and will have superposed other sheets with their margins supported by the flanges to prevent the margins below said flanges from wedging between the rear wall and the bottom.

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