June 29, 1937. G. A. SHAFFER 2,085,481

INTERFOLDED SHEET DISPENSER

Filed Dec. 8, 1934 2 Sheets-Sheet 1

Fig. 1.

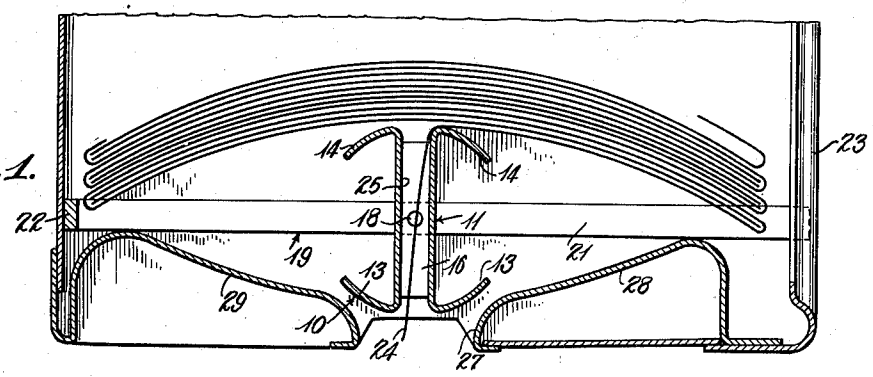


Fig. 2.

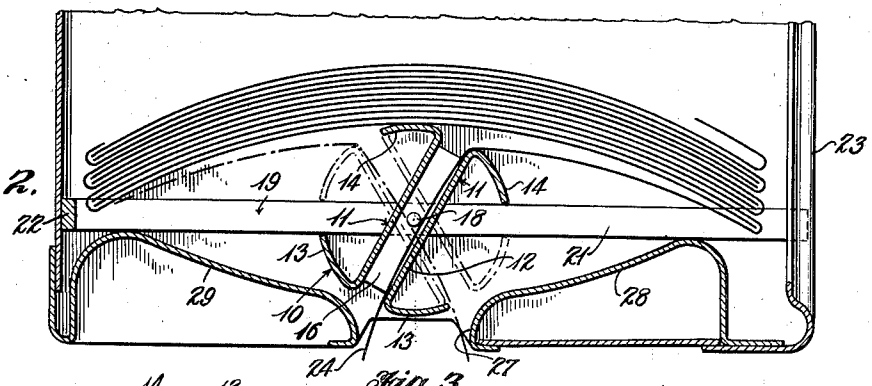
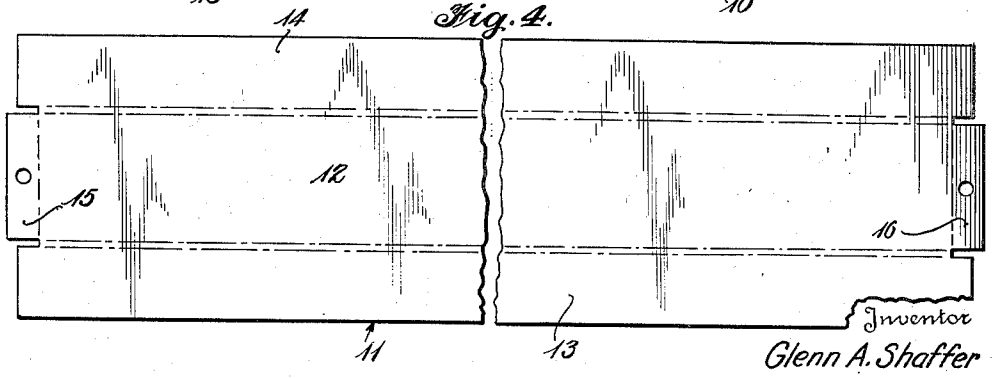


Fig. 3.



Fig. 4.



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Fig. 5.

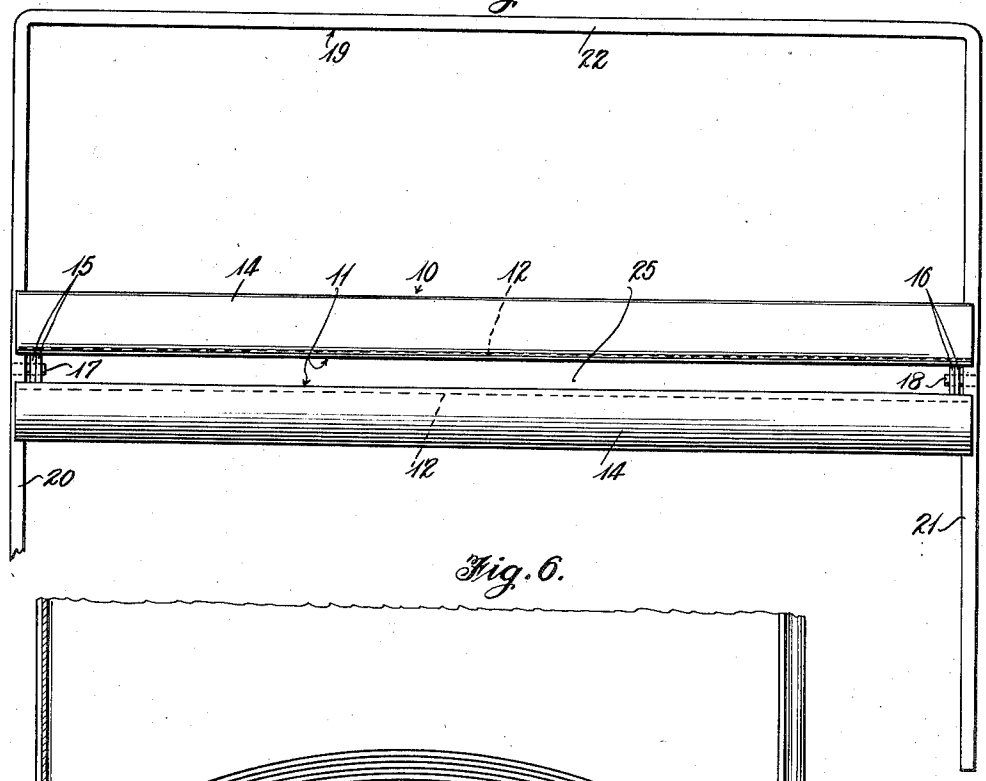


Fig. 6.

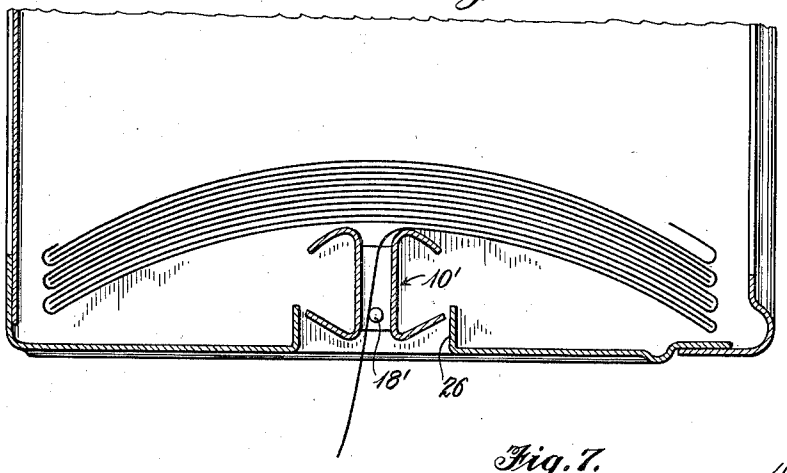


Fig. 8.

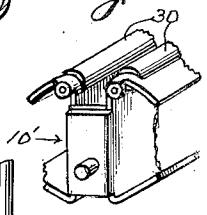
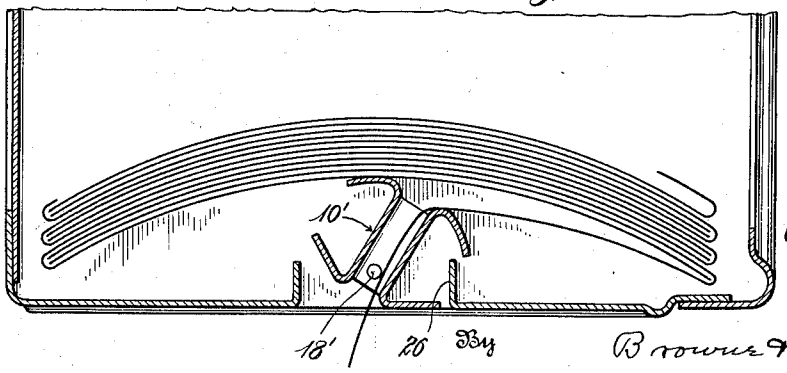


Fig. 7.



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INTERFOLDED SHEET DISPENSER

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Application December 8, 1934, Serial No. 756,685

4 Claims. (Cl. 312—60)

The invention relates to dispensers of the type adapted to dispense interfolded sheets as paper towels or the like, and has as an object the provision of a device that will reduce as much as possible the amount of strain which must be put upon the sheet to withdraw the same from the dispenser.

It is a further object of the invention to provide a device of this class having an oscillatable sheet-supporting element which shifts the support without appreciable lifting of the column of sheets.

It is a further object of the invention to provide a device of this character applicable to existing dispensing cabinets.

Further objects of the invention will appear from the following description when read in connection with the accompanying drawings showing illustrative embodiments of the invention, and wherein:—

Figure 1 is a vertical transverse section through the lower portion of a dispensing cabinet showing one form of the invention;

Fig. 2 is a view similar to Figure 1 showing a movable element in one position occupied while the sheet is being withdrawn and in dotted lines another position thereof;

Fig. 3 is a side elevation as seen from the left in Figure 1 of the device removed from the cabinet;

Fig. 4 is a plan view of a blank for making one member of the movable element;

Fig. 5 is a detail plan view of the structure of Fig. 3, showing the cabinet in section;

Fig. 6 is a section corresponding to Figure 1 showing another form of the invention;

Fig. 7 is a view corresponding to Fig. 2 showing the form of the invention of Fig. 6, and

Fig. 8 is a detail perspective view of still another form of the invention.

The difficulty with the dispensing of paper towels packaged in interfolded style is the strain that must be placed upon the towel in order to remove the same from the cabinet at the same time pulling out the leading edge of the succeeding sheet. The amount of this strain has made it impossible to successfully commercialize towels of soft paper of a type which is in common use as toilet paper.

It is an object of the present invention to provide a dispenser that will make use of such towels possible.

In accordance with the invention an oscillatable element **10** is shown formed of two similar blanks **11** illustrated in plan view in Figure 4. The blank **11** is shown as comprising a central portion **12**, edge portions **13**, **14**, and tab-forming portions **15**, **16**.

To provide the element **10** two members are formed of blanks **11**, the tabs **15**, **16** being bent at right angles to the portion **12** to the position shown in Figure 3 and the margins **13**, **14**, being bent to arcuate form as clearly indicated in Figures 1 and 2. The tabs **15**, **16** are then telescoped together and perforated for pivots **17**, **18**.

In the form of the invention shown in Figures 1 and 2, the pivots **17**, **18** are shown as secured in a U-shaped frame **19** having end portions **20**, **21** and a connecting bar **22** whereby a side of an existing cabinet as **23**, Figures 1 and 2, may be removed and the frame carrying the element **10** may be placed therein to convert the existing cabinet to cause it to operate as in the present invention.

It will be seen that when the sheets are placed in the cabinet, the leading edge of a sheet as **24** may be passed through the delivery passageway **25** between the members of element **10**. With the cabinet thus charged, a pull upon the leading edge **24** of the sheet will cause the element **10** to swing to or toward the position shown in Figure 2 where the sheets will be supported by the margin **14** of one of the members of the element **10** and the portion of the sheet being withdrawn will pull about the rounded surface of the other member. Continuation of the pull will bring the interfolded edge **24** with the sheet being withdrawn down into the passageway and when the sheets being withdrawn come to pull about the portion shown uppermost in Figure 3, the element **10** will be oscillated to or toward the dotted line position of Figure 2, thus shifting the support of the sheet and removing all friction due to the weight of the column of sheets from the sheet being withdrawn. It is important to note that in accordance with the invention practically no lifting of the column of sheets is involved, as the surfaces of the margins **14** are formed in the arc of the circle around the pivots **17**, **18** and one margin is swept under the column of sheets as the other margin sweeps out from under.

The only possible drop of the sheets as the support shifts is the amount of space between the arc of the circle of oscillation and a cord connecting the outermost surfaces of the passageway **25**. The passageway between the members comprising element **10** may be made as small as desirable and the possible amount of drop can be thus reduced.

In the form of the invention shown in Figures

6 and 7, an element closely approaching the element **10** of Figure 1 is shown at **10'**, which element is made up of blanks closely similar to the blank **11** shown in Figure 4. As shown this form of the invention is pivoted in fixed position in a cabinet and is useful where the cabinet is to be originally constructed with the invention applied thereto.

As shown in Figures 6 and 7, the pivot **18'** is placed near the lower portion of the element **10'**, thus reducing the over-all height of the element since there is no necessity for support of a frame for subsequent insertion of the device of the invention. Therefore the pivots can be placed closely adjacent the delivery opening **26** of the cabinet itself, whereas it will be seen that the delivery opening **27** of the form of cabinet of Figure 1 and the shape of the bottom members **28, 29** of this cabinet, which is an existing form of cabinet, necessitates the placing of the oscillatable element more remote from the delivery opening **27** in said cabinet.

It is desirable that the lower edge of the oscillating element **10** or **10'** be placed in the vicinity of the delivery opening **26** or **27** in order to properly guide the paper as it is withdrawn.

The operation of the form of Figures 6 and 7 will be clear from the description given of that of the first described form of the invention.

In Figure 8 is shown a form of the invention which may be utilized with either that of Figures 1 to 5 or 6 and 7. As there shown the sheet contacting portions of the oscillating element are provided with rollers **30**.

Minor changes may be made in the physical embodiments of the invention within the scope of the appended claims without departing from the spirit thereof.

I claim:

1. An interfolded-sheet dispenser comprising, in combination: a casing having a delivery opening, a pair of spaced members providing a sheet delivery opening therebetween and supporting sheets in said casing clear of the bottom thereof; said members mounted in said casing in sheet-supporting position for movement in directions substantially transversely only of a vertical plane through said opening; means interconnecting said members to move each into sheet-supporting position without lifting of the sheets as the other thereof is moved out of sheet-supporting position by pull upon a sheet being withdrawn.

2. An interfolded-sheet dispenser comprising, in combination: a casing having a delivery opening; a pair of spaced interconnected members each mounted above said opening to oscillate on a horizontal axis and providing a sheet delivery passage therebetween; sheet-supporting means carried by the upper portion of each of said members to support sheets in arcuate position in the casing substantially clear of the bottom thereof, said members moved alternately in opposite directions in an arc tangential to said sheets along the lower surface of the lowermost sheet about the axis of its supporting member, each member moved about its axis by said interconnection to said supporting position as the other is moved by pull upon a sheet incident to its removal.

3. An interfolded-sheet dispenser comprising, in combination: a casing having a delivery opening; an element pivotally mounted in said casing on a horizontal axis to oscillate above said opening; said element comprising rigidly connected spaced members providing a sheet delivery passage therebetween; the upper margins of said members formed in arcs of a circle struck from said axis to extend in opposite directions from the opening of said passage, to provide sheet-supporting surfaces; pull upon an interfolded sheet during its withdrawal causing oscillation of said element to sweep said surfaces into and out of sheet supporting position in alternation.

4. An interfolded-sheet dispenser comprising, in combination: a casing having a delivery opening; a sheet supporting element pivotally mounted in said casing above said opening; said element comprising spaced plates providing a delivery passage therebetween; end walls for said passage connected at their edges to the end edges of said plates; said end walls mounted on pivots in the casing; the upper margins of said plates extending outwardly from said passage upon arcs centered at said pivotal axis.

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