





# UNITED STATES PATENT OFFICE.

DANIEL F. FRIEDHEIM, OF NEW YORK, N. Y.

## COLLAPSIBLE BOX.

No. 846,788.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed December 13, 1906. Serial No. 347,579.

*To all whom it may concern:*

Be it known that I, DANIEL F. FRIEDHEIM, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Collapsible Boxes, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a perspective view of the box with the cover in position, the cover being partly broken away; Fig. 2, a perspective view of the box with the cover removed; Fig. 3, a perspective view of the box partly collapsed; Fig. 4, a similar view of the box completely collapsed, and Fig. 5 a detail vertical sectional view on the line V V of Fig. 2.

One of the objects of the invention is to provide a collapsible box with permanent locking means, whereby said box may be held in its extended or open position while being filled.

A further object of the invention is to so construct the box that it may be collapsed to its smallest extent, provision being made for the locking devices which hold it in its extended position, so that said devices will not interfere with the close folding of the box.

Referring to the various parts by numerals, 1 designates the bottom of the box, which is preferably rectangular, 2 the solid or unfolded ends thereof, and 3 the collapsible sides. The sides and ends are connected to each other at the corners of the box and to the bottom by flexible connections, so that they may fold inward and down on the bottom. The sides are creased or folded from their lower corners to a point along the upper edges thereof, said folds being so made that the ends will have a tendency to normally fall inward. Each side is formed with two creases or folds 4 and 5, each fold extending from one lower corner of said side upward to the upper free edge of the side at an angle of forty-five degrees, forming three panels 6, 7, and 8. The result of this is that when the sides and ends are folded inward and down to the bottom of the box the upper edges of the panels 6 and 8 lie close to and parallel with the upper edges of the adjoining end pieces 2. The ends of the box are of such a height that the upper ends of the folds 4 and 5 terminate a short distance from each other at the upper edge of the sides, as shown in Fig. 2, and the ends of the box are of such height that when collapsed they do

not meet at the center of the bottom, a space or channel 9 being left between them, as shown in Fig. 4, the purpose of which will appear hereinafter. The entire box when thus formed has a tendency to fall inward to its collapsed position.

To hold the box in its extended position, I secure to the outer side of the middle panel 7 of each side a locking-bar 10, said bar being pivoted to said panel near its upper edge and midway between the panels 6 and 8. This bar is long enough to extend across the folds 4 and 5 when it is arranged in a horizontal position or substantially parallel with the upper edge of the side and to thereby prevent the inward folding of the sides. I prefer to pivot the bar on the panel 7 by means of an eyelet 11 passing through the bar and through the panel, and I prefer that the bar should be long enough to extend about halfway across the panels 6 and 8, as that length of the bar gives a substantial support for the sides. The eyelet-holes form convenient apertures through which may be passed the strings 12, by which the cover 13 is secured in place.

To collapse the box, the locking-bars 10 are brought to a vertical position between the panels 6 and 8. The sides will then fold inward and downward to the bottom of the box. The locking-bars 10 will lie side by side in the channel between the free edges of the end pieces of the box. It will be noted that there must be a space between the upper ends of the folds 4 and 5 in the sides in order that the locking-bars will project beyond the free edges of the sides when they are in their folded positions. To obtain this, the sides of the box must be longer than double their height, as will be manifest.

It will be readily understood that other forms of locking-bars may be employed, and I do not wish to be limited to the precise form shown in the drawing.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A collapsible box comprising an uncreased bottom, uncreased ends flexibly connected at their lower edges to the opposite edges of the bottom, creased or folded sides flexibly connected at their lower edges to opposite edges of the bottom and at their vertical edges to the adjoining vertical edges of the ends, each of said sides being folded to form three panels and normally tending



to fall inward to the bottom of the box, the folds or creases terminating at the upper free edge of the sides a suitable distance from each other, and a locking-bar pivoted to the  
5 outer side of the central panel of each side and of such length as to extend across the folds between the panels when said bar is substantially parallel with the upper edge  
10 of the side, and of such width that when it is perpendicular to the edges of the sides it will lie between the two end panels and not engage either of them.

2. A collapsible box comprising a bottom, ends flexibly connected at their lower edges  
15 to opposite edges of the bottom, sides flexibly connected to the bottom and to the adjoining vertical edges of the ends, said sides being folded to form three panels, said folds extending upward from the lower corners of  
20 the sides at an angle of forty-five degrees, said sides being longer than double their height, whereby the folds at their upper ends will be separated a short distance from each other, and locking-bars pivoted to the  
25 outer surfaces of the sides at the centers of the middle panels and adapted to lie, when the box is collapsed, in the channel between the edges of the ends of the box and the edges of the end panels of the sides.

3. A collapsible box comprising a bottom, 30 ends flexibly connected at their lower edges to opposite edges of the bottom, sides flexibly connected to the bottom and to the adjoining vertical edges of the ends; said sides being folded to form three panels, said folds ex- 35 tending upward from the lower corners of the sides at an angle of forty-five degrees, said sides being longer than double their height, whereby the folds at their upper ends will be separated a short distance from each 40 other, and locking-bars pivoted to the outer surfaces of the sides at the centers of the middle panels and adapted to lie, when the box is collapsed, in the channel between the edges of the ends of the box and the edges of 45 the end panels of the sides, a cover, and strings attached to the middle panel of the sides and adapted to secure the cover in place and to assist in holding the box in its extended positions. 50

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 11th day of December, 1906.

DANIEL F. FRIEDHEIM.

Witnesses:

WM. R. DAVIS,

E. H. KAUFMANN.