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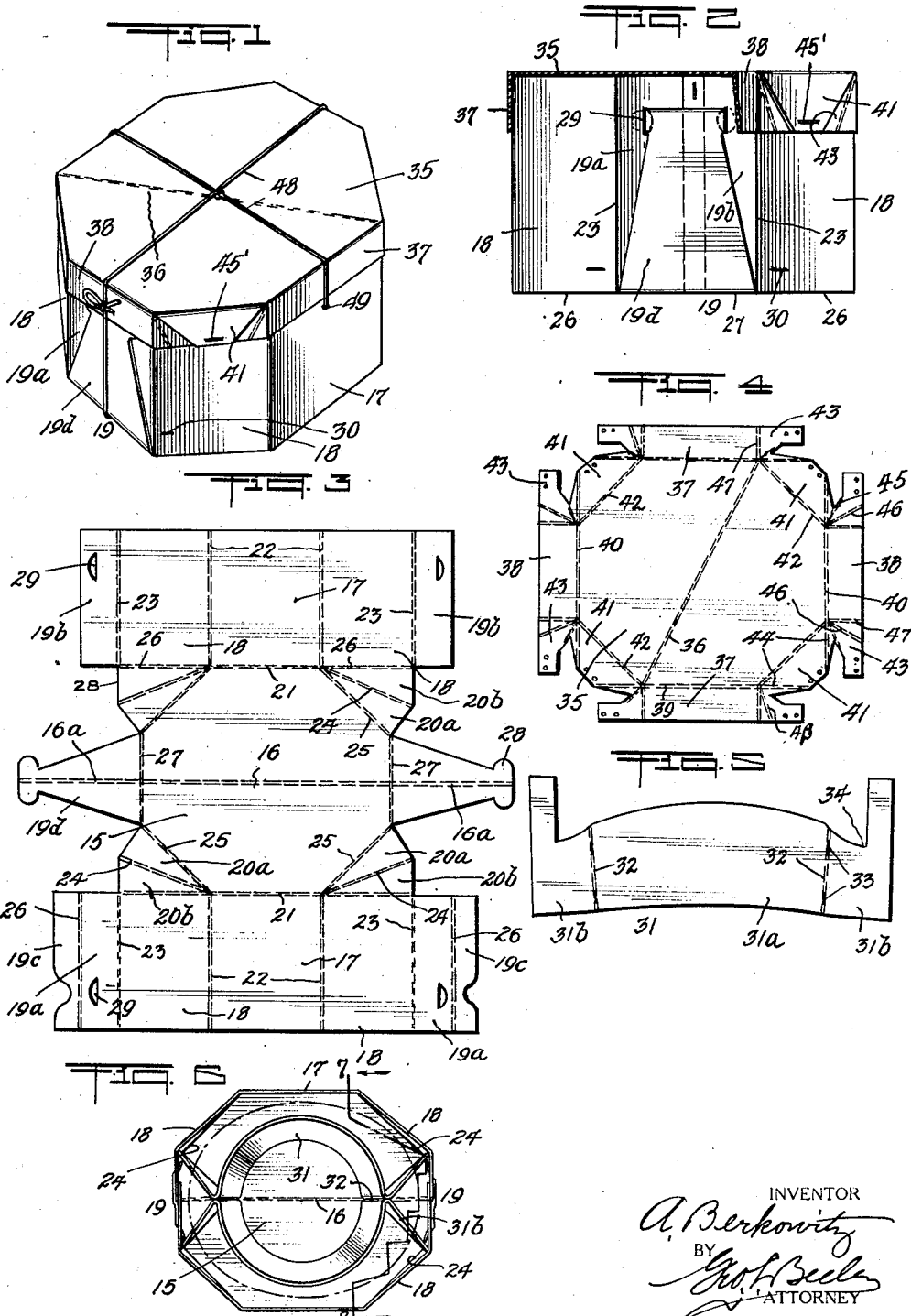
A. BERKOWITZ

1,623,715

HAT BOX

Filed July 22, 1926

2 Sheets-Sheet 1



INVENTOR
A. Berkowitz
BY
G. H. Seiler
ATTORNEY

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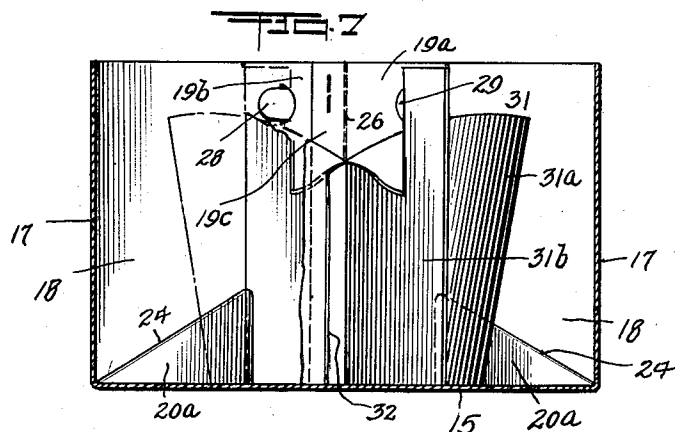
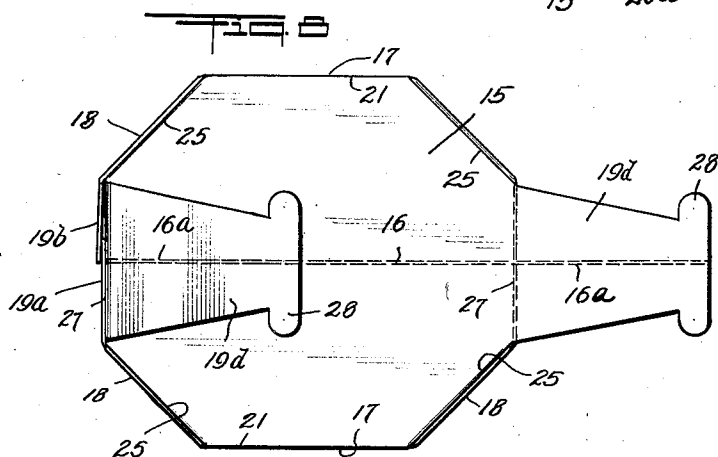
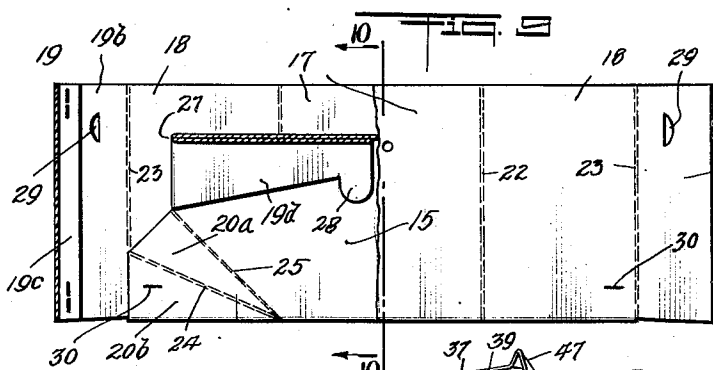
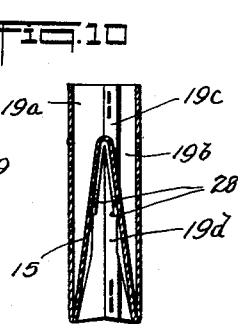
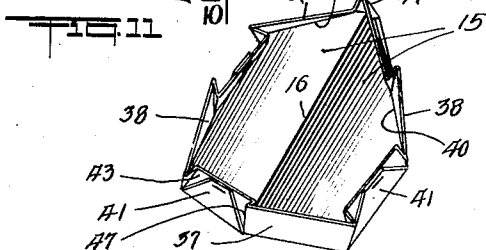
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A. BERKOWITZ

HAT BOX

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2 Sheets-Sheet 2



INVENTOR
A. Berkowitz
BY
J. H. Bula
ATTORNEY

Patented Apr. 5, 1927.

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UNITED STATES PATENT OFFICE.

AARON BERKOWITZ, OF NEW YORK, N. Y.

HAT BOX.

Application filed July 22, 1926. Serial No. 124,127.

This invention relates to foldable or collapsible shipping containers and has particular reference to boxes made of cardboard, strawboard, corrugated paper, or the like, and used extensively for the delivery of articles purchased in the retail trade such as men's hats or ladies' millinery.

Among the objects of the invention is to provide a hat box which is not only collapsible and adapted thereby to be stored in flat form in large quantities so as to occupy a minimum amount of loft space, but which when set up or expanded for use occupies practically the same amount of space as a round or oval hat box.

Another object of the invention is to provide a box having within it a filler in the nature of a pedestal having a peculiar adaptability for supporting a hat in the best possible position and condition, said pedestal construction constituting interior means for strengthening the box and reducing the likelihood of the crushing thereof while being handled or transported.

Another object of the invention is to improve the construction and assemblage of the box, the box body being made of a single substantially rectangular sheet of material suitably scored and manipulated so as to produce a box that is polygonal in plan view, the same having any suitable number of sides, but octagonal as shown, and with all the vertical side walls either integral or substantially integral with the one piece bottom.

A still further object of the invention is to provide an improved construction of lid or cover for the box having its usual functions as a cover and assisting in holding the box body in proper shape and preventing the collapse or unintended folding thereof while in use.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a perspective view showing the completed box with the lid tied in place.

Fig. 2 is an end elevation of the same, a portion of the lid being broken away.

Fig. 3 is a plan view of the blank showing the manner of construction of the box bottom and side walls.

Fig. 4 is a similar view of the lid blank.

Fig. 5 is a side elevation of the pedestal in flat form.

Fig. 6 is a plan view of the box with the filler in place and indicating in dotted lines the position of the hat brim, the lid being omitted.

Fig. 7 is a vertical transverse section on the line 7—7 of Fig. 6.

Fig. 8 is a bottom plan view of the box, one of the end flaps being in nested position as when folded, while the other flap is extended or in mid position between the folded position and its set up position where it is interlocked with the other features of the adjacent end wall.

Fig. 9 is a side view of the box in flat form, a portion of one end being broken away to show the position of the folded flaps.

Fig. 10 is a vertical transverse section on the line 10—10 of Fig. 9.

Fig. 11 is a perspective view of the lid in partially folded form.

Referring now more specifically to the drawings I show my improved box, the body and side walls of which are made from a single sheet of material, indicated best in Fig. 3, and comprising a bottom 15 having a longitudinal bending or score line 16, a series of vertical walls 17, 18, and 19, and a plurality of foldable triangular webs.

The walls 17 are hinged respectively to the bottom along the score lines 21 and jointed along the score lines 22 to the adjacent walls 18. Each wall 18 is hinged to the adjacent end wall 19 along a score line 23. The webs comprise each a pair of triangular members 20^a and 20^b of substantially right triangular form and hinged together along their hypotenuses at the score line 24, while the triangular portions are hinged respectively along the hinge lines 25 and 26 to the bottom and adjacent vertical wall 18.

Each end wall 19 is of composite nature being composed of four parts, namely, two rectangular wall sections 19^a and 19^b hinged respectively to the walls 18 adjacent thereto and on opposite sides thereof, the section 19^a having an extension or flange 19^c connected thereto by a hinge line 26 and adapted to overlap the section 19^b when the box is assembled and where it may be fastened

by glue, staples, or other fasteners. Each end wall 19 includes also one of the flaps 19^a hinged at 27 to the end of the bottom panel 15 and having also at 16^a a central longitudinal score line constituting a continuation of the score line 16. Each flap 19^a has a pair of locking tongues 28 which when the box is set up pass inward through registering slots 29 formed in the sections 19^a, 19^b, and 19^c, the flap for this purpose swinging downward from its nested position against the bottom panel and thence outward and upward through an angle of 270°, the connected hinge portion of the flap constituting finally the bottom portion of the end wall 19 and being integral with the bottom panel. When the box is either folded or set up for use, the crease line 16, 16^a, and 26 all lie in the same plane. The slots 29 register when the box is folded.

The web portion 20^b being formed as a right triangle, the free edge 28 thereof when in folded position registers with the adjacent crease line 23. Consequently when the box is being set up for use, pressure of the two hands of the operator directly against the outer surfaces of the end walls 19 acts directly against said ends 28 of the web triangles, resulting in the downward collapse of the web parts 20^a, thereby bringing the web portions each into folded position and at right angles to the horizontal bottom. To assure that the web portions will not collapse in the wrong direction it is preferable to employ for each portion 20^b a staple 30 applied therethrough and through the adjacent side wall 18.

The assembly of the box is substantially as follows: Considering Fig. 3 as showing the inner surface of the blank and shaped and creased as indicated, the flaps 19^a are folded under the bottom 15. The central part of the bottom and said flaps are then elevated, the crease lines 16 and 16^a constituting the hinge line, bringing the bottom and flaps into position shown in Figs. 9 and 10. The side strips, constituting the two series of side walls 17 and 18 and portions of the walls 19, are then folded upward against the bottom around the hinge lines 21 and 26 as shown in Fig. 10. The flanges 19^c are then caused to overlap either on the inside or outside the mating portions 19^b of the corresponding end walls 19 and there glued or otherwise fastened. If the fasteners are in the nature of staples the end walls must be flattened so that the staples will not pass through the portions 19^a. While in collapsed or flat form, the staples 30 are applied through the web portions and walls 18 as above set forth. The body of the box is now complete. In order to open or set up the box for use pressure is applied directly against the ends or end walls 19 thereof, the first effect of which is

to flatten the end walls 19. As above indicated pressure so applied to the end walls causes the downward collapse of the crease line portions 25 carrying down therewith the bottom 15 and spreading apart the side portions of the box. The operator then swings the flaps 19^a downward and away from each other and thence upward to interlocking position as shown in Figs. 2 and 6, becoming thereby parts of the end walls 19.

The hat holding filler or pedestal shown in Figs. 5 to 7 is composed of two similar flat members 31 each having approximately vertical crease lines 32 where staples or other fasteners 33 pass to unite the two members together permanently. Each of these flat members is composed of a central body portion 31^a and two end brace members 31^b. The body portion 31^a in flat form is substantially curved or arc shaped and the top portion of the member is longer than the bottom portion. For example, in a practical construction the length between the top ends of the crease lines 32 should be proportioned to the bottom length as about thirteen to twelve. Likewise the brace portions 31^b are tapered somewhat toward the bottom. The ends or points of the brace members extend practically the full height of the box and thereby they constitute vertical braces, tending to resist downward crushing of the box, the lid resting upon their upper ends as well as upon the upper edge of the box body. The brace members are notched downward at their tops at 34 to form seats for the hat brim. The filler as a whole in flat form is longer than the interior of the box and to introduce it it is contracted longitudinally and spread apart at its middle and at its ends as shown in Fig. 6, the extreme vertical edges of the brace members 31^b coming directly into the corners or crease lines 23 joining the end walls with the corner walls 18. Each brace member 31^b, moreover, bears directly against the end of a web member 20 at one side and against the end wall 19 on the other side, whereby the brace members and the filler as a whole are retained snugly in fixed position. By virtue of the upward curvature of the filler member as above explained and the upward flare of the parts in flat form as shown in Fig. 5, when the device is contracted and inserted into the box as shown in Fig. 6, the body portion 31^a assumes a conical form with a taper downward. Thereby when the hat crown is inserted therein it is held with an easy but snug reliable fit in fixed position in the center of the box while the brim portion rests upon the seats 34 of the brace members 31^b.

The lid in its preferred form is made as shown in Figs. 1, 4, and 11, from a single piece or sheet of stock and designed of

course to fit the box for which it is intended as to size and number of sides. This blank includes a top proper 35 having two portions united along a crease line 36 and rim portions including those shown at 37 and 38 fitting respectively over the side and end walls 17 and 19, these portions being uncreased but united to the main top by crease lines 39 and 40 respectively, and composite corner pieces, each consisting of a triangular part 41 connected along a crease line 42 with the main portion 35 and two overlapping tongue portions 43 hinged to the triangular portion 41 along the crease lines 44 and having another crease line 45 to enable the tongue portions to fold against the triangular portion 41, preferably on the inside to bring the tongue portions and the point of the triangular portion into registry and in a plane perpendicular to the plane of the main top where a fastening means such as a staple or the equivalent is passed through at 45'. The tongue portion 43 remote from the end of the diameter crease 36 is provided with a diagonal crease line 46 which together with the hinge lines 47 between the tongue portions and the adjacent uncreased flange portions permits the inward collapse or folding of the lid. Each corner portion spaced and remote from the diameter line 36 has its tongue portions 43 both creased at 46 for the same purpose. Considering then that Fig. 4 shows the inside surface of the lid with the parts creased and assembled as above described, to fold or collapse the lid the flange portions are bent inward toward the inner surface of the panel 35 and the center diameter crease line 36 is elevated as shown in Fig. 11 and when the two halves of the panel 35 come together at their outer surfaces the flange portions become substantially flat. In the final folded position the crease line 44 and the adjacent hinge line 47 come into close proximity at all angles except directly at the end of the crease line 36. In this instance the line 47 assumes an angle and so is flared from the hinge line 44 and also from the line 36. In opening the lid for application to the box, the operator simply flattens it and opens out the flange portions so that they all stand perpendicular to the main panel 35. The lid is then applied to the box in the ordinary way and the box and lid co-operate with each other for holding the devices in proper carrying position or form. Furthermore, the flange portion of the lid overlapping the tongue portions of the flaps 19^d serves not only to obscure the tongue ends of the flaps, but to prevent positively any accidental removal or disconnection of the tongues from the slots 29.

Tie members shown as cords 48 may be employed to hold the lid upon the box and

for carrying purposes. These cords are shown as provided with knots on the inside of the box whence the cords are threaded outward through holes 49 in the side walls 17. As practised most successfully, one cord is longer than the other and when they are brought into crossed relation across the top of the box the longer cord is passed thence downward around one end across the bottom and thence upward along the other, and finally tied to the shorter cord as shown in Fig. 1. This application of the cord further re-enforces the construction of the flap portions of the end walls of the box as well as binding all the parts of the box together.

I claim:

1. The herein described collapsible box comprising a bottom and side wall portions united to one another, the bottom being of polygonal form, the side walls including two members hinged directly to the bottom, and other two members of composite nature each including a flap hinged directly to the bottom and swingable from one side of the plane of the bottom in one condition of the box, past the plane of the bottom, and into a position at an angle to the plane aforesaid in another condition of the box, said bottom being foldable upward along its longitudinal center when the box is collapsed and the flaps being at such time folded between the two parts of the bottom.

2. The herein described hat box comprising an upwardly-foldable bottom and side wall portions hinged to one another so as to occupy different relative positions as to whether the box is collapsed or set up, some of said side walls being united directly to edges of the bottom, others being united to the bottom through foldable web portions, and other of the side walls being of composite nature each including a pair of wall sections hinged respectively to the two walls on opposite sides thereof and a flap hinged to the bottom and adapted to occupy a position against the lower surface of the bottom and to stand erect in interlocking position with the aforesaid wall sections, said flaps having means for attaching them to the other sections of the same walls when the box is set up to secure the permanency of the box, and being foldable upward between the folds of the bottom when the box is collapsed.

3. The herein described collapsible box comprising a polygonal bottom, a plurality of side walls, and means for hinging the side walls to the bottom, said hinging means including a plurality of triangular web members each having two portions, one portion being integral with a side wall, while the other portion is integral with the bottom, said portions being of right triangular form united to each other along their hypothe-

nuses, and said two triangular web portions being in the same plane when the box is folded and lying against said side wall.

4. A device as set forth in claim 3 including fastening means for securing permanently together the side wall and its adjacent triangular web portion.

5. A construction as set forth in claim 3 including a side wall hinged to the side wall having the web construction, said side wall first mentioned bearing directly against the end of the web structure secured to the other side wall when in set up position.

6. The herein described foldable box comprising a bottom and a plurality of side walls united therewith and to one another, certain of said side walls being of composite nature, each including two panel portions with means to unite them together and having a pair of spaced slots, said panel por-

tions being hinged directly to adjacent side walls and spaced from the bottom, said composite wall including also a flap hinged to the bottom and swingable around its hinge so as to occupy a position at an angle to the plane of the bottom and having means cooperating with said slots for interlocking it with the other portions of its wall when set up, thereby hinging said wall directly to the bottom, said box having a longitudinal crease along its center for upward collapse of the bottom for folding, the crease being extended along the flaps, the hinges of the flaps being at right angles to the creases, and the flaps being swingable from a position against the bottom surface of the bottom of the box through 270° to flat upright position when the box is set up.

In testimony whereof I affix my signature.
AARON BERKOWITZ.