

April 15, 1969

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3,438,345

ONE-PIECE COLLAPSIBLE TABLE

Filed May 22, 1967

Sheet 1 of 2

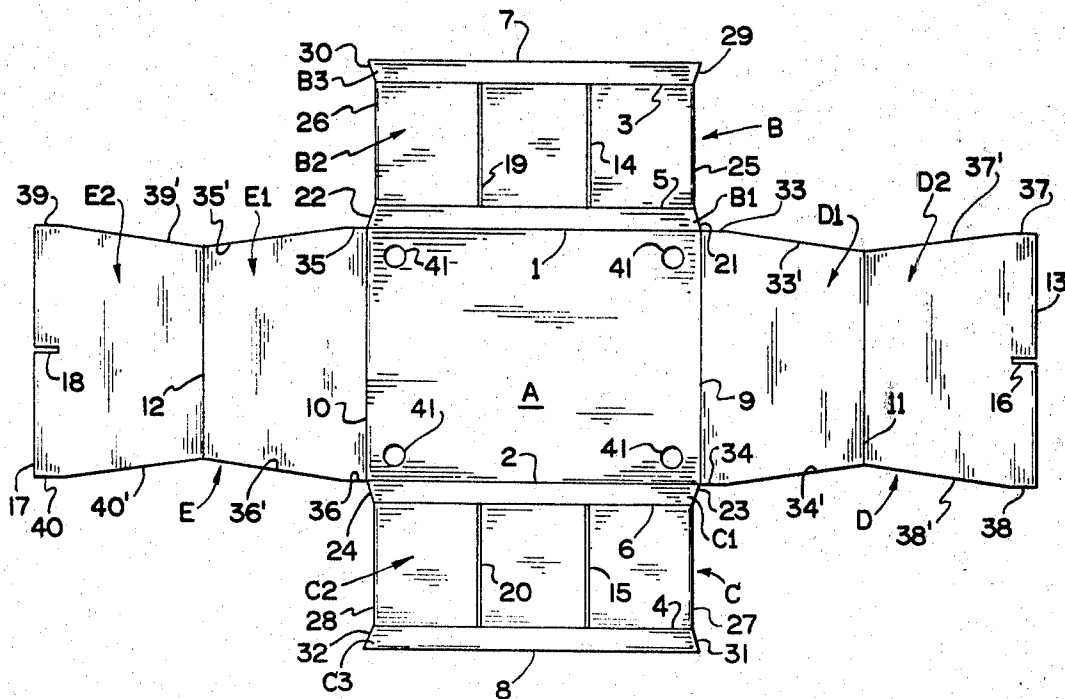


FIG. 1

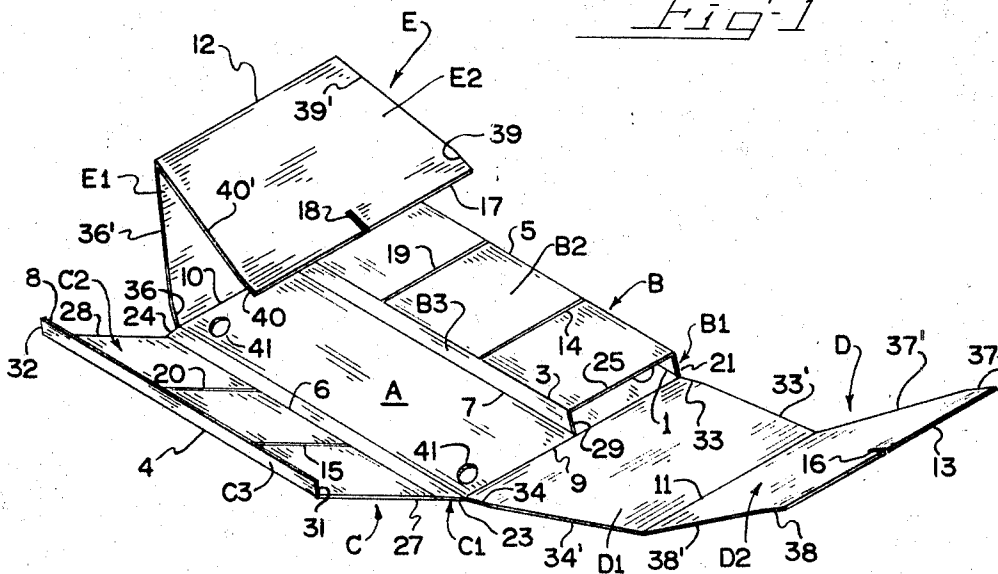


FIG. 2

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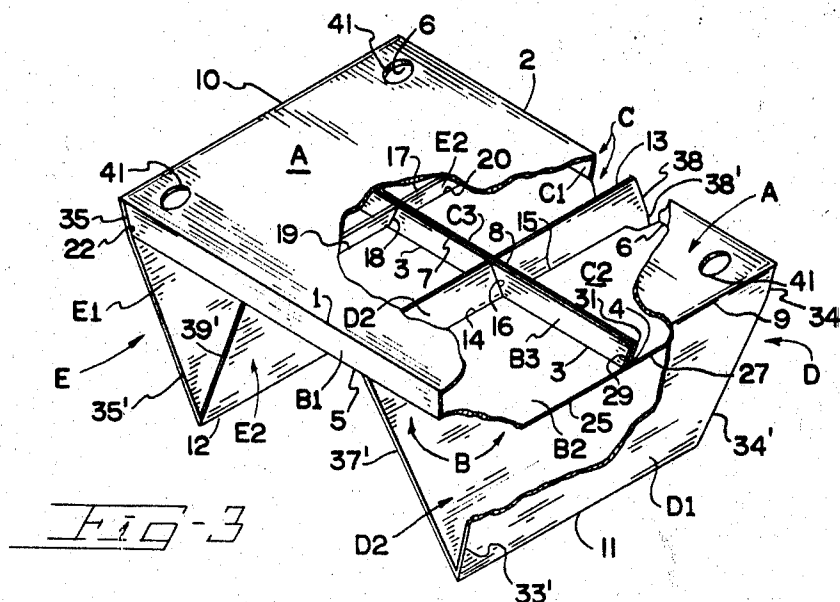


Fig-3

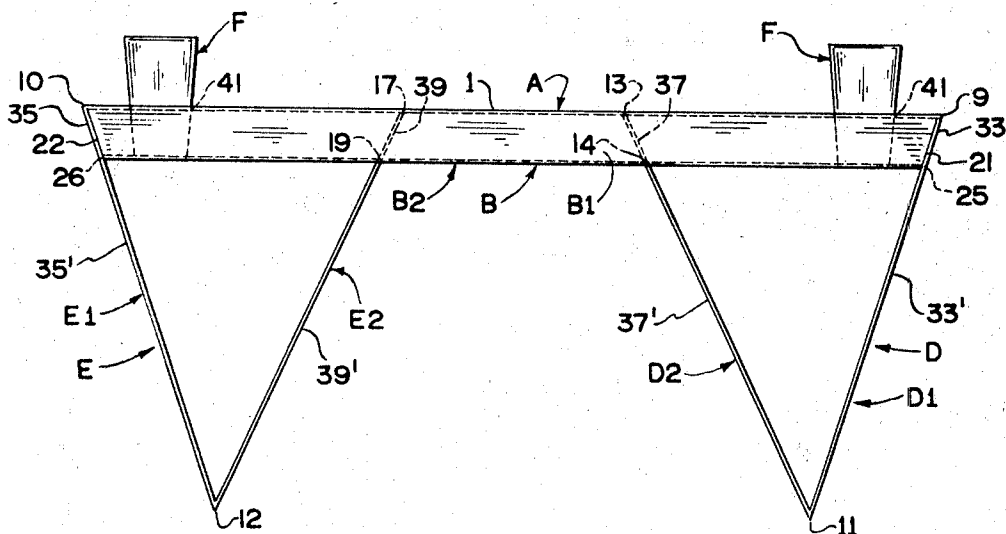


Fig-4

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ONE-PIECE COLLAPSIBLE TABLE

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1 Claim

ABSTRACT OF THE DISCLOSURE

A collapsible table formed from a single blank that is cut and folded to provide two V-shaped supporting legs, the blank also having a central table top area with side flaps that can be folded to reinforce the table top and also to receive the upper ends of the inner sides of the V-shaped legs. The table top can have openings near its corners for removably receiving drinking glasses and the bottoms of the glasses are supported in a novel manner. The completely folded table requires no fastening means to keep the parts assembled and yet the table can be folded into a flat condition for storage and transportation.

BACKGROUND OF THE INVENTION

Field of the invention

The one-piece collapsible table has a number of uses such as a beach table or a child's table. It can be used for bedridden patients or as a display table. It is preferably made from a blank of corrugated cardboard. There is a real need for a table that can be set up quickly without the need of any tools and in which the parts interlock to provide a table of sturdy construction. After the table has been used, it may be collapsed into a flat condition to take up little space.

Description of the prior art

A patent to A. W. Stone on a Folding Table, No. 2,240,024, issued Apr. 29, 1941, discloses a table formed from a single blank, but adhesive is used to secure the parts together in their folded condition. This prevents the table from being collapsed after use to occupy a small space and then reused at a later time. Other patents show foldable stands and seats constructed from a single blank, but the members do not reinforce each other when in folded position in the same manner as in the present device.

SUMMARY OF THE INVENTION

An object of our invention is to provide a collapsible table that is formed from a single blank that is cut and folded so that the different parts will interlock and will reinforce each other. The blank has side flaps that may be folded into box-like portions for reinforcing the table top and providing anchoring means for receiving the inner sides of the V-shaped legs.

A further object of our invention is to provide a collapsible table in which the folded parts of the table when in operative position may be readily disengaged from one another and folded into a flat plane when it is desired to store the collapsed table in a small space.

The one-piece collapsible table is simple in construction and is durable and efficient for the purpose intended.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a plan view of the precut blank for the collapsible table.

FIGURE 2 is an isometric view showing the table in an upside down position with one side flap completely folded into operative position and the other side flap and two legs in partially folded position.

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FIGURE 3 is an isometric view of the table when in operative position with portions of the table top and one of the side flaps and one of the table legs broken away to illustrate how the folded side flaps reinforce the table top and act as an anchor means for the inner sides of the V-shaped legs.

FIGURE 4 is a side elevation of the table on a larger scale with the table being shown in operative position.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In carrying out our invention, we show a precut blank in FIGURE 1 that may be made out of any stiff foldable material desired such as corrugated cardboard. The blank has a central rectangular portion A that will constitute the table top. The table top could be square rather than rectangular if desired. Reinforcing sideflaps B and C extend laterally from the side edges 1 and 2 of the table top A. These side edges 1 and 2 act as fold lines and permit two side portions B1 and C1 to be folded at right angles to the plane of the table top A and form the sides for the table top when the blank is folded into the completed table, see FIGURES 2, 3 and 4.

The side flaps B and C have central areas B2 and C2, each having a width equal to one-half the width of the table top A, see FIGURES 1 to 4 inclusive. The same side flaps also have ribs B3 and C3 that are disposed on the outer sides of the central areas B2 and C2 and are connected thereto by fold lines 3 and 4, respectively. The central areas B2 and C2 of the side flaps B and C are connected to the side portions B1 and C1 along fold lines 5 and 6 respectively. FIGURE 2 illustrates the initial folding of the side flap B into a box-shaped reinforcing structure for the table top A. The side portion B1 is bent at right angles to the table top A and it will constitute one side of the table. The central area B2 is bent at right angles to the side portion B1 and it will parallel and underlie the table top when the table is completely folded. The reinforcing rib B3 is bent at right angles to the central area B2 along the fold line 3 and the outer edge 7 of the rib will contact with the undersurface of the table top A.

The side flap C will be folded in precisely the same manner as just described for the side flap B. This will cause the central area C2 of the side flap C to lie in the same plane as the central area B2 of the side flap B. The two reinforcing ribs B3 and C3 will be arranged side by side in abutting relation as clearly shown in FIGURE 3. The outer edges 7 and 8 of the reinforcing ribs B3 and C3 will contact with the undersurface of the table top A and will provide a central support for the table top that extends throughout the length thereof.

The one-piece collapsible table is provided with two legs that are formed from end extensions D and E which project from opposite end edges 9 and 10 of the table top central portion A, see FIGURE 1. These end edges 9 and 10 constitute fold lines between the leg portions D1 and E1 and the table top central portion A. The leg forming end extensions D and E are also provided with outer leg portions D2 and E2 of the blank shown in FIGURE 1 and these outer leg portions become inner leg portions of the table when in operative position, see FIGURES 3 and 4.

FIGURE 2 illustrates the initial folding of the leg sections D and E into V-shaped legs. The leg portions D1 and E1 are folded along the fold lines 9 and 10, while the leg portions D2 and E2 are folded along lines 11 and 12 respectively. The outer edge 13 of the leg section D2 has one-half of its length received in a transverse slot 14 provided in the central area B2 of the side flap B, when the latter is in operative position shown in FIGURE 2, while the remaining half length of the edge is received in a transverse slot 15 provided in the central area C2 of the

side flap C, see FIGURE 3. The leg section D2 has an inwardly extending slot 16 that bisects the length of the edge 13 and this slot is wide enough to receive the two reinforcing ribs B3 and C3 when the two are brought into abutting relation as shown in FIGURE 3.

In like manner the leg section E2 has an outer edge 17 with an inwardly extending slot 18 that divides the length of the edge in half. One half of the edge 17 is received in a slot 19 provided in the central area B2 of the side flap B, and the other half of the edge is received in a slot 20 provided in the central area C2 of the side flap C, see FIGURE 3. The slot 18 is wide enough to receive the two reinforcing ribs B3 and C3 when they are in abutting relation.

The side edges of the reinforcing flaps B and C, and the side edges of the leg-forming extensions D and E are cut in a particular manner to give an esthetic design appearance to the table as well as to reinforce the table when it is in operative position. The legs D and E are V-shaped when the table is formed from the blank and the fold lines 11 and 12 of the legs form the edges on which the table is supported as is clearly shown in FIGURE 4. The leg section or side D1 extends as a flat surface from the fold line 11 to the fold line 9. In like manner the leg section or side E1 extends as a flat surface from the fold line 12 to the fold line 10. Therefore the edges 21 and 22 of the side portion B1 of the blank in FIGURE 1, and the edges 23 and 24 of the other side portion C1 are cut at an oblique angle so that these edges will abut the inner surfaces of the leg sections D1 and D2 to reinforce them, see FIGURE 4. The edges 25 and 26 of the central area B2 will also contact the inner surfaces of the leg sections D1 and E1 and likewise the edges 27 and 28 of the central area C2 will contact with the inner surfaces of the same leg sections D1 and E1. The reinforcing rib B3 has its end edges 29 and 30 cut on an oblique angle in the same manner and for the same reason as the edges 21 and 22 of the side portion B1 are cut on an oblique angle. The edges 29 and 30 will contact with and therefore reinforce the inner surfaces of the leg sections or sides D1 and E1. FIGURE 1 shows the reinforcing rib C3 with its end edges 31 and 32 cut on an oblique angle so that these edges will contact the inner surfaces of the leg sections D1 and E1.

The leg section or side D1 has edge portions 33 and 34 that parallel each other and they have a length equal to the widths of the side portions B1 and B2. The edge 33 will coincide with the edge 21 of the side portion B1 when the table is in operative position and also the edge 34 will coincide with the edge 23 of the side portion C1. This will give a neat finished appearance to the table. In like manner the leg section or side E1 has edge portions 35 and 36 that parallel each other and they have a length equal to the widths of the side portions B1 and B2. The edge 35 will coincide with the edge 22 of the side portion B1 when the table is in operative position and the edge 36 will coincide with the edge 24 of the side portion C1.

It will be seen from FIGURE 1 that the leg portion D1 has its side edge portions 33' and 34' cut on an angle to give a tapered appearance to the leg D when looking at it from the end of the table when in operative position, see FIGURE 3. The leg portion or side D2 has its edge portions 37 and 38 paralleling the edge portions 33 and 34 of the leg section D1 and they will abut the inner surfaces of the side portions B1 and C1 for reinforcing them. The remaining edge portions 37' and 38' are cut on an angle that will be similar to the angle of the edge portions 33' and 34' for the leg portion D1. In the same manner, the leg portion E1 has its side edge portions 35' and 36' cut on an angle and the leg portion E2 has its side edges 39 and 40 paralleling the edge portions 35 and 36 of the leg section E1 and they will abut the inner surfaces of the side portions B1 and C1 for reinforcing them. The remaining edge portions 39' and 40' are cut on an angle that will be similar to the angle of the edge portions 35' and 36' for the leg portion E1.

We provide novel means for supporting drinking glasses F on the table so that the glasses cannot slide or tip over. All four figures of the drawings illustrate openings 41 preferably placed at the corners of the table top central portion A, although we do not wish to be confined to any certain number of openings nor to their exact position on the table top. The openings 41 may be of any shape desired and receive the drinking glasses F, shown in FIGURE 4. The bottoms of the drinking glasses are supported by the central areas B2 and C2 of the side flaps B and C, respectively, when they are folded into their table forming positions.

The device makes an ideal one piece collapsible corrugated beach table. The reinforcing ribs B3 and C3 extend lengthwise of the table top and midway between the sides thereof. Transverse reinforcement is provided by the portions of the leg section D2 and E2 that extend through the aligned slots 14 and 15 and the aligned slots 19 and 20 provided in the central areas B2 and C2 when the side flaps B and C are folded into a box-like form. These leg portions have their edges 13 and 17 contacting the undersurface of the table top A at two spaced apart lines that roughly divide the table top into thirds. Also the edges 37 and 38 of the leg section D2 and the edges 39 and 40 of the leg section E2 abut the inner surfaces of the side portions B1 and C1 to give transverse rigidity to the table. Finally the slots 16 and 18 in the leg sections D2 and E2 receive the reinforcing ribs B3 and C3 and maintain the planes of these ribs at right angles to the central areas B2 and C2 and at right angles to the plane of the table top A.

The table derives its rigidity from its box-like top. The interlocking feature of the leg sections D2 and E2 with the reinforcing ribs B3 and C3 and with the central areas B2 and C2 adds to the rigidity of the construction when the table is in operative position. This interlocking feature is the means for holding the table parts together. For packing after use, the flaps B and C are folded out and the legs are then folded down flat against the undersurface of the table top. Then the side flaps are folded back into place to overlie the legs. When corrugated cardboard is used, the corrugations extend in the direction of the length of the table top and of the table legs. It is possible to use laminated sheets with cross graining as a blank.

We claim:

1. A one-piece collapsible table formed from a blank and having:

- (a) a central table top area with two parallel and spaced apart fold lines constituting the sides of the central area and two parallel and spaced apart fold lines extending at right angles to said first pair of fold lines and constituting the ends of the central area;
- (b) a side flap extending from each one of the first-mentioned pair of fold lines and adapted to be folded into a box-like form to underlie said central area for reinforcing it;
- (c) a leg-forming portion extending from each one of the second-mentioned pair of fold lines and adapted to be folded into table top supporting positions; and
- (d) cooperating means carried by said leg-forming portions and said side flaps for holding said flaps in box-like form and for holding said leg portions in table top supporting position;
- (e) each side flap having a portion disposed adjacent to said fold line and extending the full length thereof and being swingable into a position at right angles to the plane of said table top;
- (f) each side flap also having a central area foldable into a plane paralleling said table top, and having a reinforcing rib integral with and foldable at right angles to said central area;

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- (g) the reinforcing ribs of the two side flaps being arranged parallel to and their adjacent faces abutting each other when said side flaps are in box-like form;
- (h) said cooperating means including slots in said leg-forming portions for receiving the two ribs and for holding them at right angles to the plane of the table top;
- (i) each leg-forming portion having an inner and an outer section with a fold line interconnecting the two, said leg sections being foldable into a V-shaped leg so that the outer section will extend upwardly under the table top;
- (j) said central areas having two pairs of aligned slots, one pair being adapted to receive the leg section of one leg that extends upwardly under the table top, and the other pair of aligned slots being adapted to receive the leg section of the other leg that extends upwardly under the table top;
- (k) whereby the legs are secured in their V-shaped table top supporting form;

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- (l) the portions of the two leg sections that are received in the two pairs of aligned slots having widths equal to the distance between said side flap portions so that the edges of these leg section portions will abut the inner surfaces of said side flap portions and aid in holding them at right angles to the plane of the table top.

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