March 30, 1954 P. A. DI PRIMA 2,673,774

COMBINED FOLDING TABLE AND ARTICLE-CARRYING APPARATUS

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Fig. 1

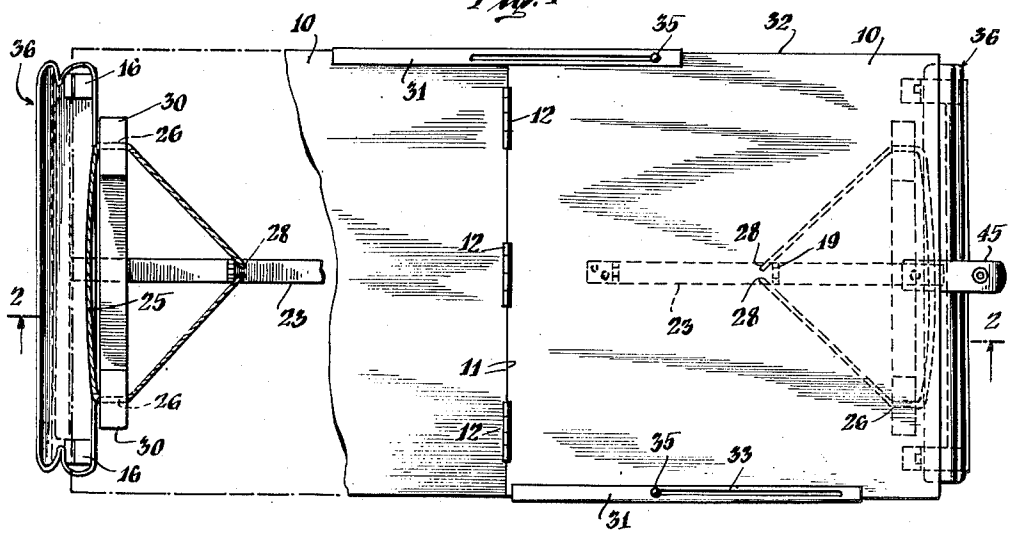

Fig. 2

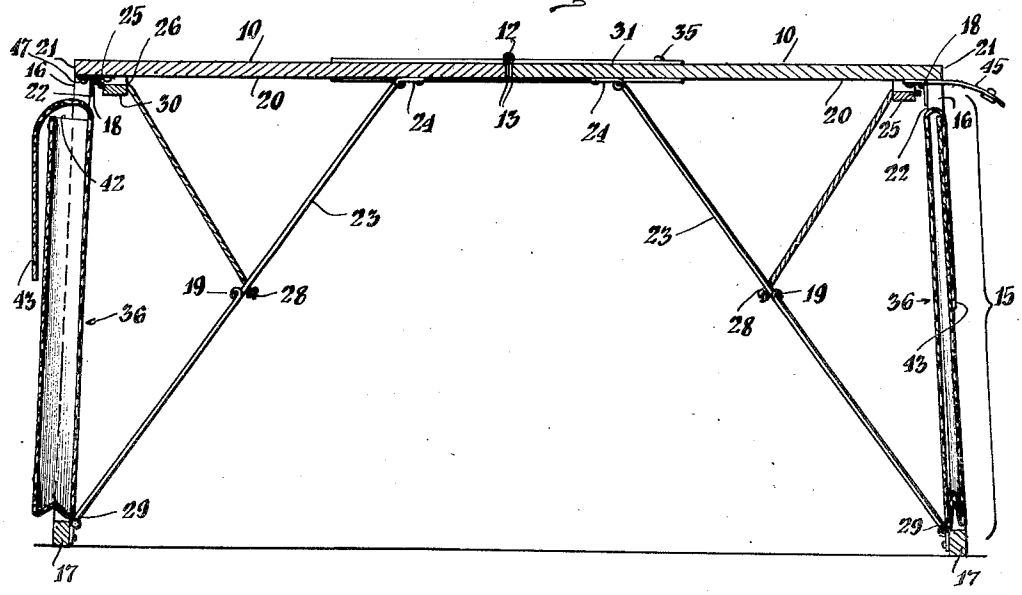

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Fig. 3

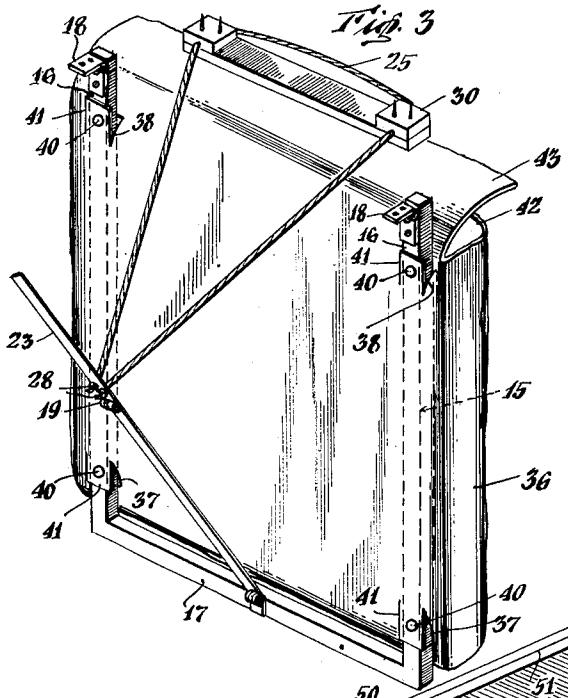


Fig. 4

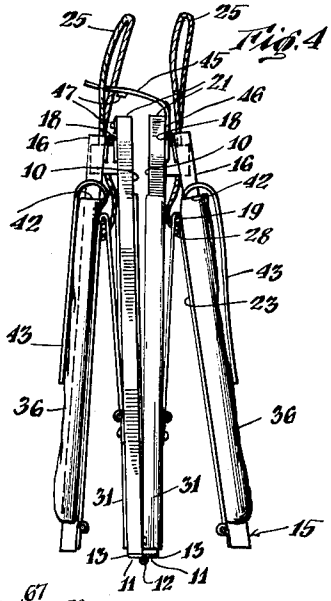


Fig. 5

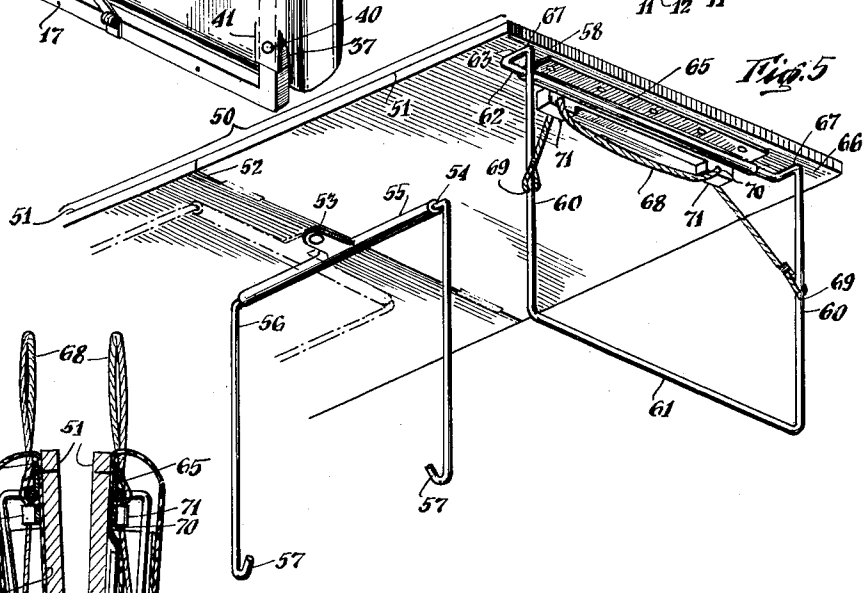
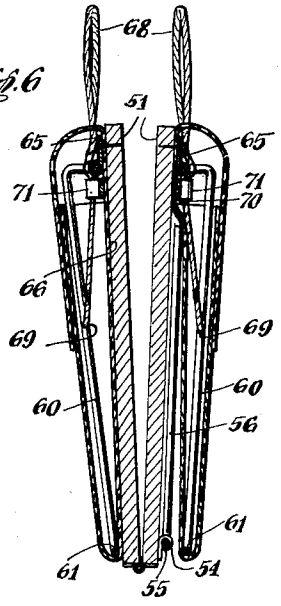


Fig. 6



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COMBINED FOLDING TABLE AND ARTICLE-CARRYING APPARATUS

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Application July 13, 1951, Serial No. 236,611

4 Claims. (Cl. 311—90)

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This invention relates to an improved type of folding table and particularly to a folding table and article-carrying device which is readily portable and which may be easily folded and unfolded.

The apparatus may be adapted for uses, such as carrying and serving foodstuffs in a hospital, at picnics and beaches and carrying articles of clothing.

An important object of the invention is to provide a folding table which will fold into a compact and portable unit and which may be readily unfolded and set up for use.

Another object of the invention is to provide a foldable table of improved stability.

A still further object of the invention is to provide a foldable table which, when in the folded position, is maintained against accidental opening by the handle means which are provided to carry the table.

The invention includes a folding table having at least two parts which may be of substantially flat configuration and which are adapted to form a coplanar surface, the two parts being connected to each other along adjacent edges by hinge means for permitting the planar surfaces of each to be disposed in coplanar relationship, and, alternatively, to be disposed in face-to-face juxtaposition. Each of the parts, which form the coplanar surface which may be utilized as the table surface, is provided with at least one folding support which may be disposed in hinged engagement on the underside of said part and is adapted to be pivoted so that it may be positioned at an angle substantially 90° from the coplanar surface when the two parts are in the unfolded position. Alternatively, the supports may be folded into substantially parallel relationship to the underside of the parts when said parts are in the face-to-face juxtaposition, to form a compact unit.

The invention includes the improvement of providing braces of metal, wood or plastic, one end of each brace being pivotally mounted on the underside of each part adjacent the common hinge line thereof and extending to and being pivotally mounted at its other end adjacent the ends of the supports remote from their hinged connection with the said parts, the braces being centrally hinged so as to be foldable. In combination with the brace means are means which maintain the folded table in the collapsed position when the latter is being carried. The means for maintaining the braces and supports in the collapsed position include handle means consisting of flexible members, at least one end of each flexible handle member being attached adjacent to the central hinge of each of the braces, the handle means also including means spaced apart on the underside of each part and adapted to receive the portions of rope between the ends thereof in freely sliding engagement, whereby pulling on the flexible handles causes the ends of each handle attached to the central hinges of the braces to collapse the braces by urging the central hinges of the braces toward the hinged connection for the support, and means for releasably maintaining the two parts in coplanar relationship.

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The invention also contemplates the positioning of compartments of a type suitable to contain food or other articles and disposed on the folding supports with the opening to said containers being adjacent the hinged engagement of the supports with the underside of each of the parts forming the table surface.

For a more complete description of the invention, reference is made to the drawings wherein:

Fig. 1 is a plan view of one form of apparatus embodying the invention;

Fig. 2 is vertical sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a perspective view of a folding support for the apparatus;

Fig. 4 is a side view of the apparatus in folded position;

Fig. 5 is a perspective view of the underside of an alternate form of apparatus embodying the invention; and

Fig. 6 is a sectional view of the alternate form in the folded position.

In the form of the invention shown in Figs. 1, 2, 3 and 4 the surface of the table is constituted by the two substantially flat portions or parts 10 which may be made of wood, metal or other suitable material which is substantially rigid and of light weight and can be formed in relatively thin sheets or boards, as indicated in the drawings.

The portions 10 are connected to each other along adjacent edges 11 by hinged means 12 which permit the two portions 10 to be pivotally moved with respect to each other so that they may constitute a substantially coplanar surface, as indicated in Figs. 1 and 2, or may be moved into substantially parallel relationship, as indicated in Fig. 4. It may be desirable to position the pivot or the pintle of the hinge means adjacent the upper surfaces of the two portions 10 so that the lower edges 13 of said portions abut each other when the two portions are moved into

the substantially coplanar relation and restrict further upward movement of the hinged edges 11.

Supporting means for the table surface are provided to maintain the surface at the desired level which, in the case of a beach or bed table, may be between 12 and 18 inches, or, in the case of a picnic table, somewhat higher. The supporting means 15 may include vertical members 16 and a horizontal member 17 adjacent the lower end of the supporting means. The vertical members 16 may be pivotally connected by hinges 18 to the underside 20 of each part 10 at the end 21 of said part, i. e. the end remote from the hinged connection 12 with the other part 10. The hinge 18 is connected to the inner side 22 of the vertical supporting leg members 16 so that the supporting members and the undersides 20 of the members 10 may be disposed substantially parallel and adjacent to each other in the folded position.

Suitable bracing means are provided, such as the braces 23 which may be made of any suitably rigid material such as metal, wood or plastic. The brace for each supporting means 15 is pivotally connected at one end 24 to the underside 20 of the part 10 adjacent the hinged connection 12 and extends downwardly and is pivotally connected at the other end 29 to the horizontal member 17 fixed at the lower end of the vertical supporting means 16. Each brace is provided with a central hinge 19 to permit the brace to fold.

Handle means 25 are provided on each of the parts 10 and consist of flexible members made of suitable material, such as rope, or woven tape. Portions of each handle means pass through channels 26 in brackets 30 on the underside 20 of each part 10, and the ends 28 of the handle means are attached to the brace 23 adjacent to the central hinge 19 thereof. The channels 26 are sufficiently large so that the handle means may slide freely through the brackets 30.

Suitable means are provided for maintaining the parts 10 in the coplanar relationship shown in Figs. 1 and 2. Such means may be of any desired type and for purposes of illustration herein, U-shaped channel members 31 are mounted on the sides 32 of one part 10, the arms of the U-shaped channel member extending over the upper surface of the member 10 and of the under surface 20 of the member 10 a short distance from the edge 32 of said member. The member 32 is provided with a slot 33 extending parallel to the side 32 of the member 10 and is adapted to receive a pin 35 fixed in the upper surface of the portion 10 and extending upwardly into the slot 33 to permit each member 31 to be slidably moved along the edge 32 from the position shown in the lower portion of Fig. 1 to the position shown in the upper portion of Fig. 1. It will be understood that when the parts 10 are in the coplanar relationship shown in Fig. 2, and the channel members 31 are slidably moved from the right to the left, as shown in Figs. 1 and 2, the channel members will engage the upper and lower surfaces of the portions 10 along their edges 32 in the area of the hinge joint between the members 10, thereby maintaining the members 10 in the substantially coplanar relationship and providing a suitably rigid table surface for the uses desired.

Containers 36 in the form of extensible bags of pliable material, such as canvas, leather, plastic, woven fabric and the like, may be fixedly or removably positioned on each of the supporting means 15 and, as illustrated in Figs. 1 to 4, are disposed between the vertical members 16, the vertical members extending through lower openings 37 and emerging through openings 38 adjacent the top of the containers. Suitable means may be provided for attaching the containers to the vertical supporting members 16, for example, as shown in Fig. 3, the containers being attached to the vertical supporting members 16 by rivets 40 passing through the tabs 41. The containers 36 are formed with openings 42 adjacent the upper end of the members 16. The open ends may be suitably covered by flap members 43.

The containers 36 may be of sufficient size to receive thermos bottles, and food packages, and if desired the containers may be provided with suitable heat insulating material to maintain articles therein at the desired temperature. In the event the containers are provided with heat insulation, the flap members should be arranged to provide a substantially air-tight closure of the openings 42. In addition, it may be desirable to provide a waterproof lining so that wet articles can be carried therein.

In the folded position, as shown in Fig. 4, the supporting members 15 and the top members 10 are all in substantially parallel relationship to each other with the supporting members diverging outwardly from their upper ends, to give the folded table stability when it is positioned on the floor or other surface. The containers 36 may be opened by lifting the flaps 43 and extending the container opening 42. Thereafter, food packages and liquid containers, beach equipment or any other articles which are to be carried, may be placed in the containers. The flaps may then be returned to the position shown in Fig. 4, and the locking strap 45, which is fixedly connected at 46 to the underside of one member 10, is passed over the outer ends 21 of each of the members 10 and fastened by a snap fastener 47 or other suitable fastening device to the underside of the other part 10. Thereafter, the table and combined article carrier may be easily transported by means of the rope handles 25 which present loop portions at the upper end of the folded device, as indicated in Fig. 4. The person carrying the device may readily grasp both rope handles for carrying purposes.

When it is desired to unfold the table, the fastening device 47 is released and the ends 21 of the portions 10 are moved away from each other, the hinged sides of the members 10 are moved upwardly into coplanar relationship by the operator pressing from the underside. The channel bars 31 are moved from their position on one member 10 into the position shown in Fig. 2 so that the members 10 are maintained in the coplanar relationship. The ends 17 of the supporting members 15 are then moved into the position shown in Fig. 2, the supporting members 15 being disposed at substantially right angles to the coplanar parts 10. In this position the bracing means 23 have unfolded and are substantially rigid. Standard locking means for maintaining the braces in the rigid position may be provided.

It will be noted that whether the device is in the folded position shown in Fig. 4, or whether it is in the open position as shown in Fig. 2, or in any intermediate position, the containers 36 are disposed substantially upright with the openings 42 being uppermost during all such phases of operation.

In order to close or fold the table and article-carrying device, the channel members 31 are moved from left to right, as shown in Figs. 1 and 2, so that they no longer bridge the two members 10; thereafter, it is only necessary to grasp the loops of the two handle members 25 so that the ends 21 of the table move upwardly into position adjacent to each other and the supporting means are folded so that the members 17 are adjacent the hinges 12 of the portions 10. The ends 28 of the handles 25 attached to central hinge parts 19 of the braces 23 draw the central portions of the braces upwardly toward the hinges 18 and cause the members 17 to be moved toward the hinges 12. Furthermore, while the device is being carried, the continued tension on the handles 25 maintains the braces 23 in the folded position and thereby prevents the accidental unfolding of the supporting members 15.

Although the ends 17 of the supporting members move into position adjacent the hinges 12, the containers disposed in the supporting members 15 are not apt to become horizontally disposed because the lifting force on the folded table is from points adjacent the edges 21 so that in operation the table folds downwardly rather than the ends of the supporting members folding upwardly. It is this feature which prevents the containers from being incorrectly tilted or displaced out of vertical position.

Figs. 5 and 6 indicate an alternative form of the invention wherein the planar table surface 50 is formed of the flat members 51 which are hinged along their adjacent sides 52. The means for giving the planar surface rigidity in the form illustrated in Figs. 5 and 6 includes a member pivotally connected at 53 to the underside of one of the members 51 and having a tubular member 55 in which is rotatably mounted a supporting frame having an intermediate portion 54 enclosed in the tubular member 55 and parallel arms 56 extending at right angles to the intermediate portion and the tubular member 55. When the table is to be supported in the open position, the tubular portion 55 is pivoted from the dash line position shown in Fig. 5 to the solid line position shown therein and the arms 56 are rotated approximately 90° to bring the foot portions 57 of the parallel arms 56 into contact with the floor or other supporting surface.

The supporting means adjacent the ends 58 of the members 51 may be suitably formed of wire having parallel, vertical portions 60 and a lower horizontal portion 61 connecting the lower ends of the vertical portions 60, and an upper horizontal portion 62 connected to the upper ends of the vertical portions 60 by the horizontal portions 63. The upper horizontal portion 62 may be suitably pivotally mounted in the bracket member 65 which is fixed to the under surface 66 of the member 51 adjacent its ends.

It will be noted that the horizontal members 63 which extend at right angles to the horizontal member 62 and connect with the upper ends of the vertical members 60 provide an offset from the pivotal connection of the supporting means so that when the supporting means is moved into the position shown in Fig. 5, the portions 67 abut against the underside 66 of the member 51, causing the supporting member to be braced against further pivotal movement and giving additional lateral support to the table in the unfolded position shown in Fig. 5. The

handle means in this form may be a rope member 68 with the ends 69 thereof being connected to the vertical members 60 and with portions of the rope members passing through openings 70 in brackets 71.

As the apparatus is folded from the position shown in Fig. 5 to that shown in Fig. 6, the vertical members 60 of the supporting means are caused to move into position parallel and adjacent to the undersides 66 of the members 51, as the operator pulls upon the portions of the rope members 68 between the brackets 71.

It will be appreciated from the foregoing description that the invention fulfills all the objects and advantages set forth above, and provides a compact, foldable table which may be used in conjunction with the article containers fixed therein to form a novel combination wherein the article containers are at all times disposed in the vertical, upright position so that articles contained therein do not become disarranged and particularly so that liquids carried in the containers are not subject to spillage resulting from the containers being tilted out of vertical position, and which provides carrying means for the foldable table and the article carriers which assures that the table will not become unfolded or the containers tilted while being transported.

According to the patent statutes, I have herein described the principle of my invention, together with the best forms in which it is presently considered to carry out the invention. However, it will be understood that the invention may be carried out in other forms without departing from the spirit and scope thereof.

Having thus described my invention, I claim:

1. A folding table with at least two parts having planar surfaces connected to each other along one end of each by hinge means for permitting the planar surfaces to be disposed in coplanar relationship in the unfolded position and to be disposed in face-to-face juxtaposition in the folded condition, at least one folding support is disposed in pivotal engagement with the underside of each of the two said parts to be positioned at an angle substantially at right angles to the aforesaid coplanar surface in the unfolded position and in substantially parallel position to the underside of said parts when said parts are in the folded face-to-face relationship, braces each of which is pivotally mounted at one end to the underside of one part adjacent the hinge means and pivotally mounted at its other end adjacent the end of one support remote from the pivotal connection with the one part, each brace being provided with a central hinge so that it may be folded, handle means including flexible portions slidably mounted on the said parts adjacent the ends above the supports, at least one end of each handle means being connected to the brace adjacent its central hinge.

2. A folding table with at least two parts having planar surfaces connected to each other along one end of each by hinge means for permitting the two parts to be disposed in coplanar relationship in the unfolded position and to be disposed in face-to-face juxtaposition in the folded position, at least one folding support disposed in hinged engagement with the underside of each of the two parts at a second end of each remote from the ends in hinged engagement, said folding supports to be positioned at substantially right angles to the parts when they are in the unfolded position and substantially

parallel to the underside of said parts when the latter are in the folded position, braces, each of which is, pivotally mounted at one end to the underside of one part adjacent to said first mentioned end thereof and the other end of each brace being pivotally mounted adjacent the end of the support, remote from the hinged connection of the support with its respective part, each brace being provided with a central hinge so that it may be folded, handle means, two portions of which are slidably mounted in brackets on the said parts adjacent the second ends thereof, the two ends of each handle means being connected to one of the braces adjacent to its central hinge.

3. A folding table with at least two parts having planar surfaces connected to each other along one end of each by hinged means for permitting the planar surfaces to be disposed in coplanar relationship in unfolded position and to be disposed with the upper faces of the two parts in face to face juxtaposition in folded position, supporting means including at least one folding support disposed in pivotal engagement with the underside of each of the two parts, the folding support member being positioned at substantially right angles to the aforesaid coplanar surface in the unfolded position and in substantially parallel position to the underside of said part when the parts are in the folded position, and said supporting means also including braces for maintaining each folding support member in the right angular position in the unfolded position and handle means having at least one end connected to said supporting means for maintaining the supporting means in the folded position.

4. The table of claim 2 with releasable locking means for maintaining the said two parts in coplanar relationship in the unfolded position.

PHILIP A. DI PRIMA.

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