

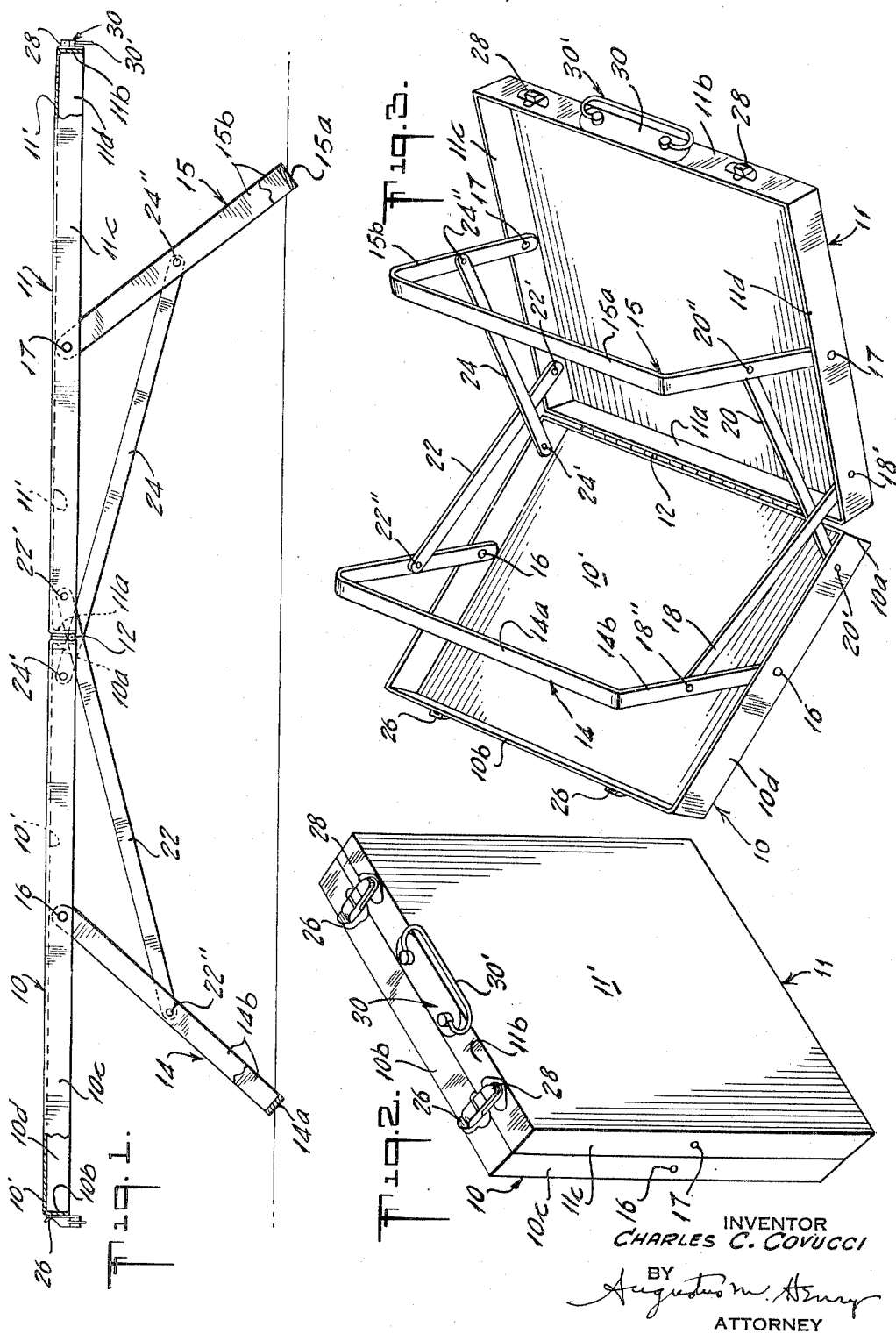
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FOLDING SECTIONAL TOP TABLE

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FOLDING SECTIONAL TOP TABLE

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This invention relates to collapsible tables, and, more particularly, the aim is to provide a novel and valuable collapsible table of a kind which may be expanded to afford a substantially rigid uniplanar table top on a plurality of then downwardly extending supports acting as table legs.

The object of the present invention is to provide improvements particularly in the collapsing and expanding means for the table, whereby, with the weight thereof held down to the minimum as by the use of comparatively thin duralumin sheet metal and with the main parts shaped and assembled to provide a fairly small and easily portable suitcase-resembling carrying case when the device is collapsed, quick and dependable expansion of the device into a table may be deftly effected simply by swinging apart two hingedly-connected table-top sections each constituting one of the two opposite side walls of the carrying case when the device is in collapsed condition; whereby, further, other unique advantages are attained, so far as are concerned rigidity of the table-top with the device expanded, improved characteristics of the bottoms of the supports or leg-means to insure stout anchorage thereof on roughly surfaced terrain and particularly relative to the surface sand masses on a sandy beach or seaside place so often selected as the site of eating activities by a picnic party, and such natural retention of the device in expanded condition as to obviate any need for several or even a single locking means additional to that inherent in the collapsing and expanding means when the device is expanded; whereby, further, very considerable economies in manufacturing cost are effected because of the few and simple parts combining to provide the collapsing and expanding means of the device; and whereby, still further, and as a consequence of the advantage last alluded to, the device when expanded into a carrying case can have a large storage capacity, as for then housing a tablecloth, other pieces of napery, knives, forks, spoons and the like, paper plates, collapsible cups, sandwiches and other food articles, etc., etc.

According to the present invention, in the now preferred form thereof herein to be described, the collapsing and expanding means (to be wholly confined inside the carrying case when the device is collapsed to establish the latter, yet, nevertheless, as will be understood, to satisfy to the maximum extent possible the desideratum of providing ample storage space for the just above referred to articles to be removably contained therein) is radically simplified from any prior proposals in the art of which I am aware. For one thing, by the instant invention but a single link member is employed, as between each table-top section and the leg-support means connected to the other table-top section; with this new arrangement present in the form of only one unit thereof, as would be possible when said link member is extended along a line at or fairly near the center line of the table, or, as is illustrated in the accompanying drawing, with said new arrangement present in the form of a pair of

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units thereof, one at or near each side of the table-top.

Various other features, objects and advantages of the present invention will become apparent or be pointed out in the course of the following detailed description of a now favored embodiment of the invention—this being, but of course merely by way of example, the plural-unit structure last above referred to, as illustrated in the accompanying drawing.

In said drawing, wherein similar reference characters refer to similar parts through the several views—

Fig. 1 is a view in side elevation, showing the device expanded into a table;

Fig. 2 is a view also showing the device, but as now collapsed into a carrying case—this showing being in top perspective and drawn to a scale about $\frac{1}{4}$ that of Fig. 1; and

Fig. 3 is a view, also in perspective, looking down on the interior of the carrying case while it is being opened up to fully expanded condition, so that, when thereupon inverted from the disposition shown in Fig. 3, the table of Fig. 1 will be set up.

As will be noted, the device incorporates a table-top structure comprising two table-top subdivisions or sections 10 and 11, each of square outline and both alike in that both have side and end walls to establish each as a shallow open-top box. Said end walls of the section 10 are marked 10a and 10b and said side walls of that section are marked 10c and 10d. As herein shown, the two table-top portions which combine to provide the entirety of the table-top area are identical and square, said portions of the respective sections 10 and 11 being respectively marked 10' and 11'. Also, the end walls 11a and 11b, and the side walls 11c and 11d, of the section 11, are identical, respectively, with the walls 10a, 10b, 10c and 10d of the section 10.

With, for example, each table-top area 10' and 11' shaped to be a square, say 22" on a side, the table when expanded as in Fig. 1 would afford a working table-top area 22" wide and 44" long.

The two sections 10 and 11, along the free edges of the end walls 10a and 11a of, respectively, said two sections, are pivotally connected, as by a piano hinge such as illustrated at 12 in Figs. 1 and 3.

A support in the nature of a leg means thus to serve when the table is expanded, for the section 10, is as a whole designated 14; and a corresponding leg means for the section 11 is as a whole designated 15. Each of these supports, both identical, is generally shaped to present a U-shaped unit. Preferably, and as shown, each is bent longitudinally from a flat metal strip, as one of aluminum or duralumin or some material of good strength yet light weight; so that the support 14 for the section 10 comprises a central strip portion 14a for constituting the bowl of the U from which extend parallelly the two legs 14b, 14b of the U, and the support 15 for the section 11 comprises bowl and leg elements identical with the bowl and leg elements of the support 14. The bowl element of the support 15 is marked 15a, and the leg elements thereof 15b, 15b.

As best shown in Fig. 3, each of the legs 14b of the support 14 is directly pivoted as at 16 to a different one of the two side walls 10c and 10d of the section 10, and each of the legs 15b of the support 15 is directly pivoted as at 17 to a different one of the two side walls 11c and 11d of the section 11.

As already stated, the collapsing and expanding means for the device is, as the same is illustratively shown in the embodiment selected for depiction in the drawing, a plural-unit structure, that is, each of the two supports, as the supports 10 and 11 in the present case, is connected to the section other than the section to which said support is connected, by two links—even though, in

pursuance of the basic concept of the invention, each of these links near one of its two ends is directly pivoted to one support and near its opposite end is directly pivoted to one section, and, also, both links are limited, relative to the support and to the section to which each is connected, to rotational movements only; which is to say that there are nowhere in the device any pin and slot, guide and slide or other provisions permitting a bodily movement of any link relative to any support or any section, or of any support relative to any section.

Thus, as will be noted from Fig. 3 most easily, there is provided, as between a support and the section other than the one to which that support is connected, a single structure no part of which is movable relative to another part thereof, to wit, a link 18 or 20. The link 18 is directly, non-slidingly pivoted as 18' to the section 10 and at 18'' is similarly pivoted to the leg 14b of the support 14. In the same operational field adjacent to one side of the table, that is, the same operational field in which said leg 14b swings, is the link 20, with its pivotal connection to the section 11 at 20' and its pivotal connection to the leg 15b at 20'' identical, respectively, with the pivotal connections 18' and 18''.

The other unit of the plural-unit arrangement incorporated in the embodiment illustrated in the drawing, said other unit in the operational field adjacent to the side of the table top at the far side of the showing of Fig. 3, is comprised of a link 22 corresponding to the link 18 and a link 24 corresponding to the link 20. All four of these links are identical, while, respectively, the pivotal connections 22', 22'', 24' and 24'' correspond to the pivotal connections 18', 18'', 20' and 20''.

As will be noted from Fig. 3 also, the link 20 lies opposite the inner side of the link 18, and, balancingly, the link 24 lies opposite the link 22 at the inner side of the latter. Suitable provisions (not shown) are made to insure easy simultaneous swing of the links; as by interposing a collar of suitable thickness between the link 24 and the side wall 10d of the section 10 with said collar on the pivot pin at the pivotal connection 24', and similarly adding collar elements at the pivotal connection 24'', and also at the pivotal connections 20' and 20''.

Any suitable latch means or the like for readily releasably locking the two sections 10 and 11 together, when the device has been collapsed into a carrying case as shown in Fig. 2 may be used; in the present case, said means is shown as comprised of a pair of like latch-fittings of a familiar type each having one operating part 26 secured to the section 10 and a complementary operating part 28 secured to the section 11.

A suspensory type of handling means comprising as indicated an attachment plate on which is a swivelly mounted C-handle 30', said means indicated generally by the reference numeral 30, is preferably employed, secured to the wall 11b of the section 11 in the structure illustrated in the drawing.

With the two sections 10 and 11, the two supports 15 and 15, and the links 18, 20, 22 and 24, made of an aluminum alloy such, for example, as 35 or 52S, and with the six last referred to members of bar stock about $\frac{3}{16}$ " thick, the sheet material of which the sections 10 and 11 are formed can be of aluminum sheet of a thickness merely of about .040", and yet an adequately sturdy and long-lived device can be provided, which, nevertheless, can be fabricated at moderate cost.

Also, with the two end walls and the two side walls of either or of both the sections 10 and 11 increased, for instance, in width, as by doubling the latter, the capacity of the carrying case may be very considerably increased; as sufficiently so to make it possible to carry contained in the device one or more Thermos bottles or the like, and this without making the carrying case inconveniently bulky or with too much increased weight.

In Fig. 1, where the dot and dash line 32 may be taken as indicating a level stretch of sand at a beach, note that

the bowl portions 14a and 15a of the supports 14 and 15 become digged into the sand, consequent upon comparatively slight downward pressures on the table top, as by downward palm thrust or by the mere weight of the articles placed on the table. The table will thereby always be given good solid anchorage at the spot where it is set up, and so will remain in place in a manner to combat accidental shifting thereof. This advantage follows from the fact that the bendings of the bar or strip stock from which the supports 14 and 15 are made are all about axes of bend each at right angles to the direction of length of said supports; while, also, as a further advantage, the fabrication of said supports is made possible without the necessity for any special forming equipment.

Variations and modifications are possible within the invention, and parts of the improvements may be used without others.

I claim:

1. In a collapsible table, the combination of a table top comprising two sections each including a table-top subdivision of substantially the same shape and area as the other, means for pivotally interconnecting said sections whereby they may be extended in substantially the same plane incidental to expanding the table from its collapsed condition or swung toward parallelism incidental to collapsing the table, a separate support for each of said sections pivoted to its section at a point of pivotal connection therewith fixed on said section and also on said support, each of said supports being movable from a position substantially parallel with its section to a position angularly offset from its section, and collapsing and expanding means for said table including two links each near one end thereof pivoted to a different one of said sections at a point of pivotal connection therewith fixed on said link and also fixed on said section, each of said links near its other end being pivoted to a different one of said supports at a point of pivotal connection therewith fixed on said link and also fixed on said support, a first one of said links being extended between one of said supports and the section on which the other support is pivoted, and the other of said links being extended between said other support and the section other than the one connected to the said first one of said links.

2. In a collapsible table, the combination of a table top comprising two sections each including a table-top subdivision of substantially the same shape and area as the other, means for pivotally interconnecting said sections whereby they may be extended in substantially the same plane incidental to expanding the table from its collapsed condition or swung toward parallelism incidental to collapsing the table, a separate support for each of said sections pivoted to its section at a point of pivotal connection therewith fixed on said section and also fixed on said support, each of said supports being movable from a position substantially parallel with its section to a position angularly offset from its section, and collapsing and expanding means for said table consisting solely of multiples of a mechanism incorporating merely two links each near one end thereof pivoted to a different one of said sections at a point of pivotal connection therewith fixed on said link and also fixed on said section, each of said links near its other end being pivoted to a different one of said supports at a point of pivotal connection therewith fixed on said link and also fixed on said support, in each of said mechanisms a first one of its two links being extended between one of said supports and the section on which the other support is pivoted, and in each said mechanism the other of said links being extended between the said other support and the section other than the one connected to the said first one of said links.

3. In a collapsible table, the combination of a table top comprising two sections each including a table-top subdivision, means for pivotally interconnecting said sec-

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tions whereby they may be extended one in extension of the other incidental to expanding the table from its collapsed condition or swung toward parallelism incidental to collapsing the table, a separate support for each of said sections pivoted to its section at a point of pivotal connection therewith fixed on said section and also fixed on said support, each of said supports being substantially of U-extension and pivoted to its section near the free ends of the two legs of the U, and collapsing and expanding means for said table consisting solely, relative to each support in an operational field adjacent to a side of the table including one leg of said support, of a single substantially rigid pivotally interposed connecting means between said leg and the section to which the other support is pivoted.

4. In a collapsible table, the combination of a table top comprising two sections each including a table-top subdivision, means for pivotally interconnecting said sections whereby they may be extended one in prolongation of the other incidental to expanding the table from its collapsed condition or swung toward each other incidental to collapsing the table, a separate support individual to each of said sections pivoted to its section at a point of pivotal connection therewith fixed on said section and also fixed on said supports, each of said supports being a flat strip bent to U-extension longitudinally of the strip and pivoted to its section by way of the two legs

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of the U, and collapsing and expanding means for said table consisting solely, relative to each support and in an operational field adjacent to a side of the table including one leg of said support, of a single substantially rigid link non-slidably, directly pivoted to one leg of said support and non-slidably, directly pivoted to the section on which the other support is pivoted.

5. A collapsible table as in claim 3, wherein each of said supports is comprised of a flat bar laterally bent in such manner as not only to impart to the support its U-extension but also to provide at the end of the support remote from the table top when the table is expanded an obliquely inclined blade like element for digging into an underlying sand mass to adapt the table for rigidly anchored set-up as at a beach picnic.

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