Jan. 27, 1959 W. E. MELL 2,871,076

FOLDABLE TABLE

Filed Sept. 17, 1956 2 Sheets-Sheet 1

Fig. 1.

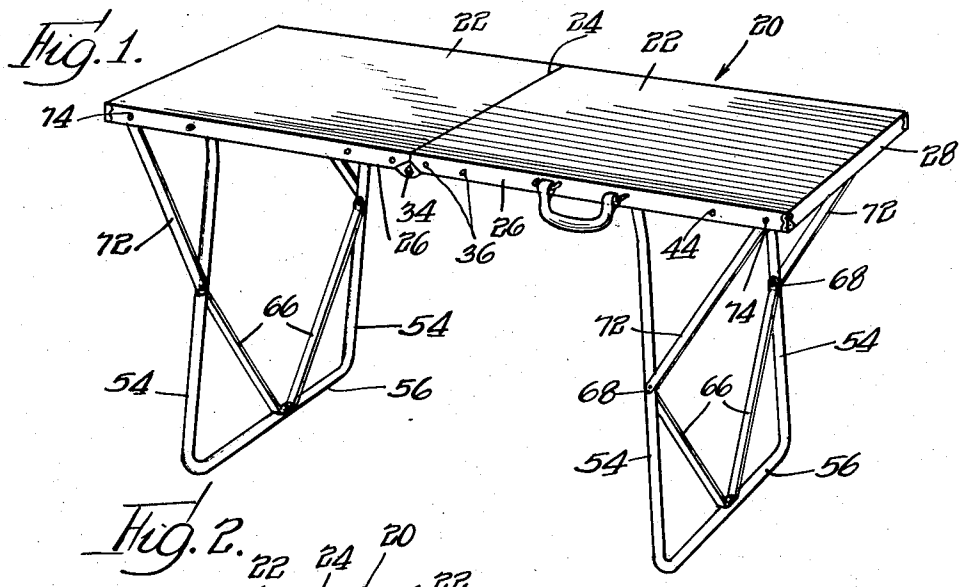


Fig. 2.

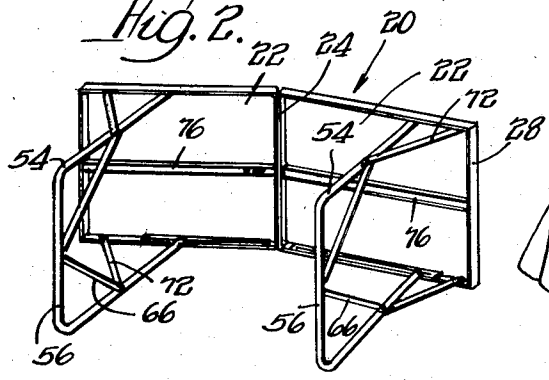


Fig. 4.

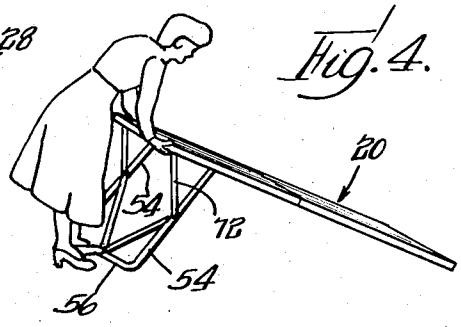


Fig. 3.

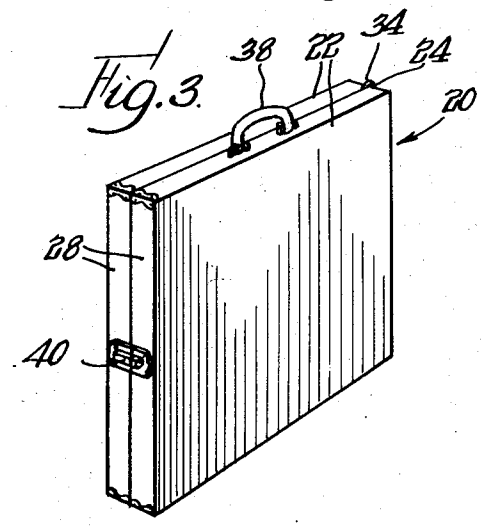
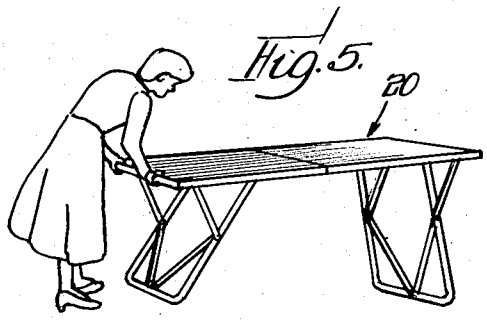


Fig. 5.



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FOLDABLE TABLE

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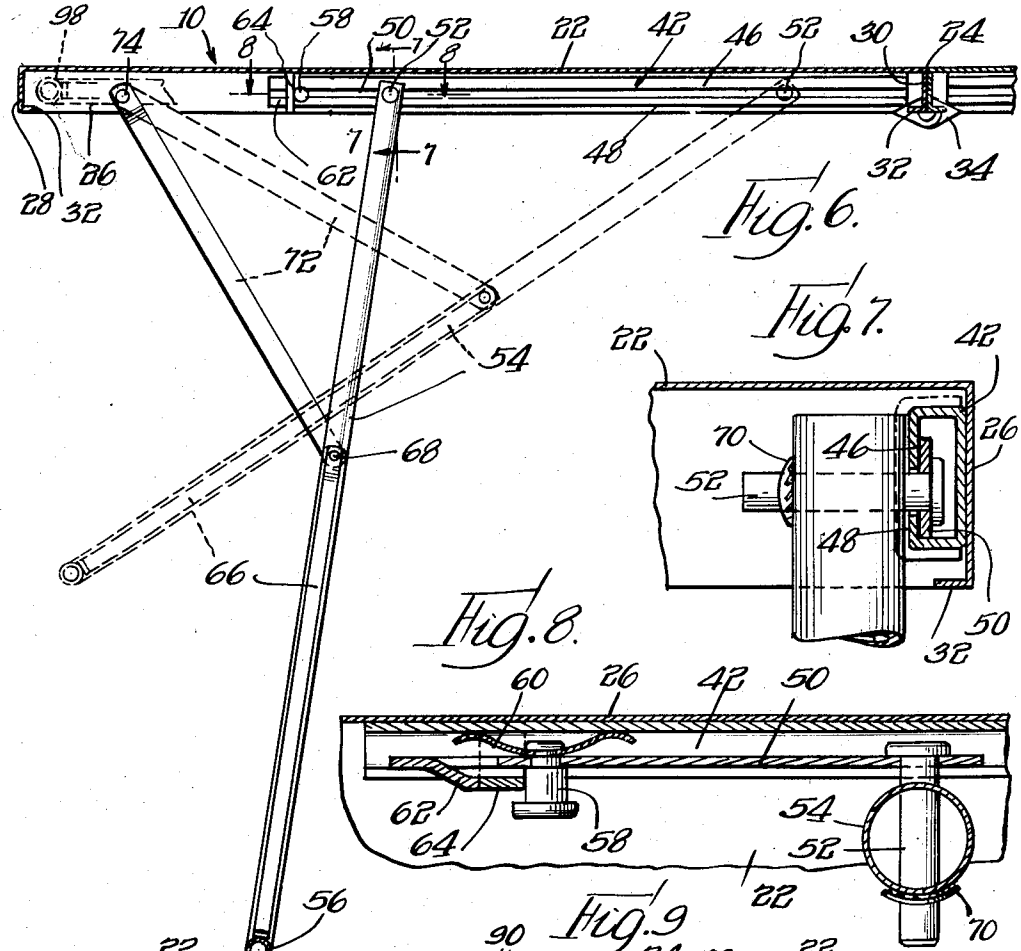


Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9

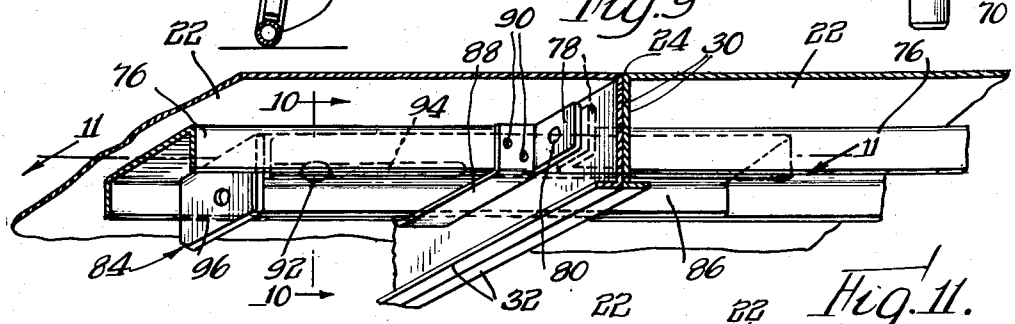


Fig. 11.

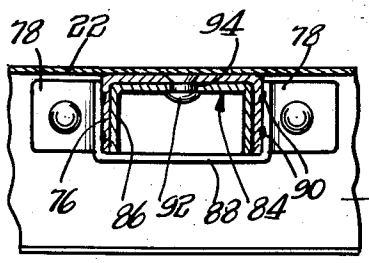
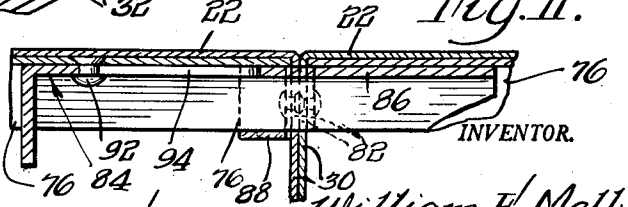


Fig. 10.



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2,871,076

FOLDABLE TABLE

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Application September 17, 1956, Serial No. 610,265

5 Claims. (Cl. 311—90)

This invention is concerned with an article of furniture, and more particularly with a portable folding table.

Portable folding tables are well known in the art, and find many uses, such as for picnics, for catering, and for various home uses. Such folding tables generally comprise two or more panels hinged together, and capable of movement into coplanar relation to form the top surface of the table. Legs of one sort or another are hingedly or otherwise movably or detachably connected to the top panels or sections so that they can be folded substantially flat against the undersides of the top panels or sections. The top panels or sections then are folded substantially flat against one another for carrying or storing the table.

Various problems in providing satisfactory leg structures have been encountered in the past. Generally speaking, the legs have not been susceptible to facile extension and folding. Considerable effort, and sometimes ingenuity has been necessary successfully to extend or fold the legs. Furthermore, prior art leg structures often have been unduly expensive. In addition, some trouble has been found in maintaining the panels or top sections in absolutely coplanar arrangement in use, without any tendency to fold up.

It is an object of this invention to provide a folding table having an improved leg structure which is more readily extended and collapsed.

A further object of this invention is to provide a folding table having an improved leg structure which may be extended simply by stepping on a part of the leg structure, and lifting the table to its raised position.

Yet another object of this invention is to provide a folding table having an improved leg structure which can be folded to storage position simply by releasing locking means, and pressing on the top of the table.

It is a further object of this invention to provide an improved latch for positively holding a folding table in unfolded or extended position.

Other and further objects and advantages of the present invention will be apparent from the following description when taken in connection with the accompanying drawings, wherein:

Fig. 1 is a perspective view of a table in set up or extended position and constructed in accordance with the principles of this invention;

Fig. 2 is a perspective view of the underside of the table with the table partially set up;

Fig. 3 is a perspective view of the table as folded for transportation or storage;

Fig. 4 is a perspective view showing one step in setting up of the table;

Fig. 5 is a similar perspective view showing a subsequent step in setting up of the table;

Fig. 6 is a longitudinal sectional view of the table;

Fig. 7 is a cross sectional view of a part of the leg mounting structure as taken along the line 7—7 in Fig. 6;

Fig. 8 is a horizontal sectional view through the same

structure as taken substantially along the line 8—8 in Fig. 6;

Fig. 9 is a fragmentary perspective view below the table and showing the latch mechanism;

Fig. 10 is a cross sectional view through the latch mechanism as taken substantially along the line 10—10 in Fig. 9; and

Fig. 11 is a longitudinal sectional view taken through the latch mechanism substantially along the line 11—11 in Fig. 9.

Referring now in greater particularity to the drawings, and first to Figs. 1–6, there will be seen a table 20 constructed in accordance with the principles of the invention including a pair of top sections or panels 22 hingedly connected along a fold line 24. Each top section or panel comprises a sheet of metal, preferably aluminum, having turned down side flanges 26, end flanges 28, and inner flanges 3. A narrow, inwardly directed flange 32 is provided on each of the aforementioned flanges for making such flanges more rigid.

The aforesaid top sections or panels 22 are hinged together along the fold line 24 by a pair of hinges 34 affixed to the opposite side flanges 26 by means such as rivets 36. The hinges 34 are of the type shown in Hoffmann Patent No. 2,618,524, issued November 18, 1952. Each hinge includes a pair of sheet metal members riveted to opposite table sections, and pivoted together on a level with the bottom of the side flanges 26 for pivoting of the sections from the extended or coplanar position of Fig. 1 to the collapsed posititon of Fig. 3.

A suitcase type handle 38 is pivotally mounted on one of the side flanges for carrying the table when folded or collapsed, and a latch 40 having cooperating parts on the end flanges 28 serves to hold the panels or top sections of the table in the folded or collapsed position of Fig. 3.

Each of the top sections or panels 22 is provided with a pair of guideways 42 (Figs. 6–8). The guideways 42 are held on the inner surfaces of the side flanges 26 by means of the rivets 36 previously mentioned, and by means of rivets 44 adjacent the opposite ends of the guideways, the guideways extending from adjacent the inner flanges 30 to a position somewhat short of the end flanges 28. The guideways 42 are generally channel-shaped, and have confronting flanges 46 and 48 lying in a vertical plane, the flanges 48 being lower than the flanges 46, and being somewhat narrower than the flanges 46.

Slide bars 50 are slidably mounted within the channel-shaped guideways 42, and have studs 52 secured therein adjacent their inner ends, and projecting laterally through the space between the flanges 46 and 48. Substantially U-shaped legs or supports 54 have their opposite ends pivoted on the studs 52, with the bights 56 of the legs adapted to rest on the ground, or on a floor or other supporting surface.

The slide bars 50 are provided adjacent their opposite ends with buttons 58 extending through the space between the flanges 46 and 48. Leaf springs 60 are secured on the reverse side thereof to urge the slide bars out against the flanges 46 and 48. The slide bars 50 are provided at the ends near the buttons 58 with struck out fingers 62 projecting outwardly between the flanges 46 and 48 in the same direction as the buttons 58. A sheet metal strap 64 extends across the space between the flanges adjacent the outer end of each guideway 42, and the spring 60 forces the corresponding finger outwardly behind the strap. The strap fits rather snugly between the finger 62 and button 58. When it is desired to slide the slide bar, the button 58 is depressed against the force of the spring 60, so that the finger 62 will pass beneath the strap. This allows motion toward the right as viewed in Fig. 8. It will be apparent that the inclination of the fingers 62

allows them to cam beneath the strap 64 upon movement in the reverse direction. The strap 64 may be held in place by any suitable means, such as welding or rivets.

The legs 54 are provided with V-shaped braces 66 extending from the bights 56 to which they are secured by means such as rivets, to a position somewhat above the mid-points of the legs 54, the ends of the brace being secured by means of rivets 68. The legs 54 preferably comprise aluminum tubing, and the studs 52 extend through suitable transverse holes in the tubing, the legs preferably being held on the studs by means of fasteners 70 of the spring metal type having resilient fingers which wedge against the stud, and dig into the stud slightly.

The rivets 68 serve also pivotally to secure the lower ends of pairs of struts 72. The upper ends of these struts are secured by means such as rivets 74 to the side flanges 26 for pivoting thereon. The rivets 74 are mounted on the side flanges 26 adjacent the end flanges 28.

It will be appreciated that the struts 72 are provided at their upper ends adjacent the rivets 74 with offset portions to provide for clearance of the inwardly directed edge flanges 32. Similarly, the upper ends of the legs 54 are angled inwardly in the vicinity of the studs 52 in order to provide clearance for the buttons 58 when the legs are folded or collapsed.

Each panel or top section 22 is provided with a downwardly facing, channel-shaped reinforcing member 76 (Figs. 2 and 9–11) extending from the end flange 28 to the inner flange 30, and being secured to these two flanges by outwardly directed ears 78 fitting flat against these flanges and secured thereto by means of rivets 80. The support or base members 76 also are preferably secured to panels or top sections intermediate their ends by rivets passing through the sections and through the webs of the channel-shaped supports 76.

The inner flanges 30 are apertured as at 82 (Fig. 11) in alignment with the channel-shaped supports 76, and of the same size as the inside dimensions of the channels. A slide bar type of latch 84 is slidingly mounted within one of the supports 76, and is adapted to extend through the apertures 82.

Specifically, the slide bar latch 84 comprises a channel 86 opening downwardly, and slidable within the brace members 76. The slide bar channel is held in place by a U-shaped strap 88 extending across one of the channel-shaped supports 76, and held thereto by means such as spot welds 90. The slide bar channel further is held in place by a rivet or headed stud 92 secured in the web of the channel-shaped support 76 and extending through an elongated slot 94 in the web of the slide bar channel 86. The stud-in-slot construction 92, 94 also limits the extent of sliding motion of the slide bar channel 86. The slide bar 84 is completed by a downwardly directed ear or flange 96 at its rear end which serves as a finger grip for sliding the latch bar 84.

Assuming that the folding table 20 has been carried in its folded condition as shown in Fig. 3 to a site where it is desired to use the table, the latch 40 is first released, and the hinged upper sections or panels 22 are moved out into extended or coplanar relation. The slide bar 84 then is moved from its normal position which is entirely within the left most support 76 (as viewed in Fig. 9) to the position shown in solid lines in Figs. 9 and 11 where it extends across the junction or fold line 24 between the two top sections 22. This positively precludes folding of the table.

The table is then held with its top surface upper most, and one end thereof is lifted, while the foot is kept on the bight 56 of the adjacent legs 54, it being understood that the bight is positioned quite close to the end flange 28 with the legs in folded or collapsed position as shown in dashed lines at 98 in Fig. 6. Movement of the upper portion of the table upwardly and toward the person unfolding the legs causing the legs 54 to move through the intermediate dashed line position shown in Fig. 6 to the solid line position of Figs. 4 and 6. This causes the struts 72 to move from a position immediately beneath the top sections or panels 22, down through the dashed line position to the solid line position of Fig. 6. Similarly, the struts 72 and slide bars 50 on which they are mounted slide outwardly from their collapsed position to their extended position of Fig. 4 and as indicated in solid lines in Fig. 6. The legs at the other end of the table then simply are folded to extended positions in the same manner.

Folding of the table to carrying or storage position is substantially the reverse of the procedure just described. The person wishing to fold the table stands at one end thereof, and reaches within the flanges 26 to press on the buttons 58 with the fingers. At the same time, a person presses with the heels of the hands, downwardly and away from himself on the top of the table. This causes the legs and struts to move in the opposite direction of that previously described, and to folded or storage position. This procedure is carried out at both ends of the table, and the slide bar 84 then is retracted by means of the flange or finger piece 96. The top sections or panels 22 then can be simply folded together, and the latch 40 can be closed.

It will be apparent that a novel and superior leg structure for folding tables now has been fully disclosed. This structure is more readily folded or moved from collapsed to extended position than those heretofore known in the prior art, and has no complicated parts, requiring skill and ingenuity on the part of the user, or causing substantial expense in manufacture. In addition, the latch mechanism as herein shown and described provides an extremely rigid and stable table top which will not fold and collapse accidently.

The specific example of the invention as herein shown and described will be understood as being for illustrative purposes only. Various changes in structure will no doubt occur to those skilled in the art, and such changes are to be considered as being a part of this invention insofar as they fall within the spirit and scope of the appended claims.

The invention is claimed as follows:

1. A table comprising load supporting panel means, leg means disposed adjacent opposite ends of said load supporting panel means and pivotally and slidably connected thereto, and a plurality of struts respectively pivotally secured to said leg means intermediate the ends thereof and to said panel means spaced from the connection of the leg means thereto toward the adjacent ends of said panel means whereby the ends of the leg means that are not connected to the panel means are movable between collapsed position adjacent the ends of the panel means and extended position projecting downwardly from said panel means to support the same, the ends of said leg means connected to said panel means correspondingly pivoting and sliding from positions relatively remote from the ends of said panel means to positions less remote thereto, and said struts pivoting from a position adjacent said panel means to a position extending downwardly therefrom.

2. A table comprising load supporting panel means, guide means secured adjacent opposite longitudinal edges thereof, said guide means terminating at positions spaced from the ends of the panel and extending away from said ends slide means received in said guide means, leg means pivotally attached at their upper ends to said slide means, and a plurality of struts respectively pivotally secured to said leg means intermediate the ends thereof and to said panel means spaced from said slide means toward the adjacent ends of said panel means whereby the ends of the legs opposite the slide means are movable between collapsed position adjacent the ends of the panel means and extended position projecting downwardly from said panel means to support the same, said slide means correspondingly moving from

positions relatively remote from the ends of said panel means to positions less remote relative thereto substantially at the terminating positions of said guide means, and said struts pivoting from a position adjacent said panel means to a position extending downwardly therefrom.

3. A table as set forth in claim 2 and further including means for locking said slide means releasably at said terminating positions.

4. A table as set forth in claim 3 wherein the locking means comprises a projection on each slide, spring means urging each slide outwardly of its guide means, and means projecting across each guide means and engageable by said projection.

5. A folding table comprising a pair of hingedly connected load supporting panels pivoted to one another for movement between face-to-face relation and coplanar relation, latch means acting between said panel means to secure the same releasably in coplanar relation, channel-shaped guide means having inwardly directed confronting flanges, said guide means being secured along opposite longitudinal edges of said load supporting panel means, there being four such guide means, said guide means having terminating positions spaced from the outer ends of said panels and extending away therefrom, substantially U-shaped leg means, slides received in said guide means and pivotally connected to the upper ends of said U-shaped leg means, a plurality of struts respectively pivotally secured to said legs intermediate the ends thereof and to said panel means spaced from said slide means toward the adjacent outer ends of said panel means whereby the ends of the legs opposite the slide means are movable between collapsed position adjacent the ends of the panel means and extended position projecting downwardly from the panel means to support the same, said slides having projections therefrom extending beyond the terminating positions of guides through the space between the confronting flanges and cooperable with keeper means extending across such space, said slides being spring pressed outwardly to engage said projections releasably behind said keeper means, said slide means being movable from positions relatively remote from the ends of the panel means to said terminating positions less remote relative thereto upon the aforesaid movement of said leg means, and said struts correspondingly pivoting from a position adjacent said panel means to a position extending downwardly therefrom.

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