

July 21, 1953

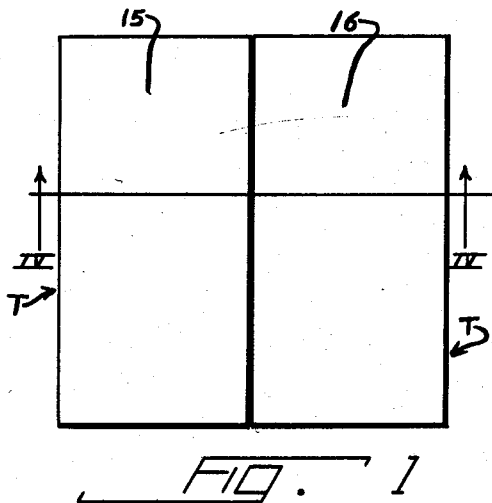
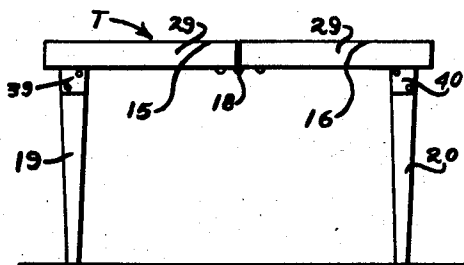
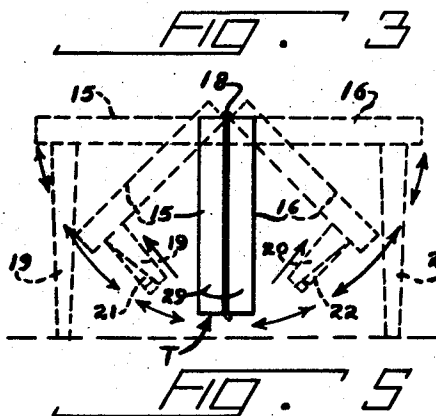
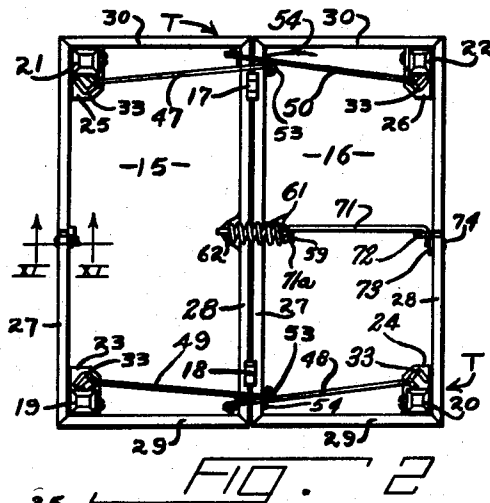
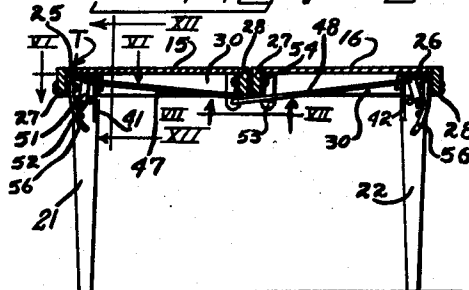
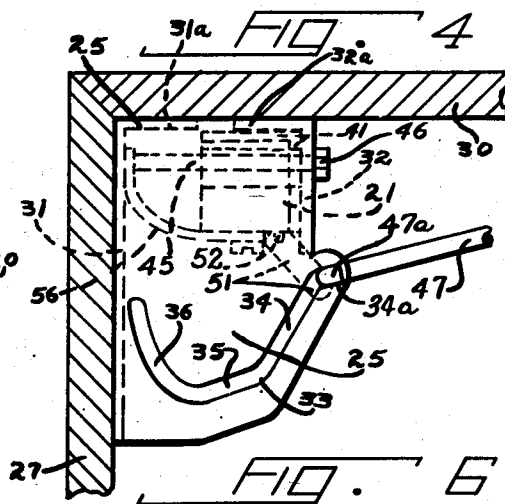
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2,646,324

FOLDING TABLE WITH SECTIONAL TOP

Filed Feb. 9, 1948

3 Sheets-Sheet 1



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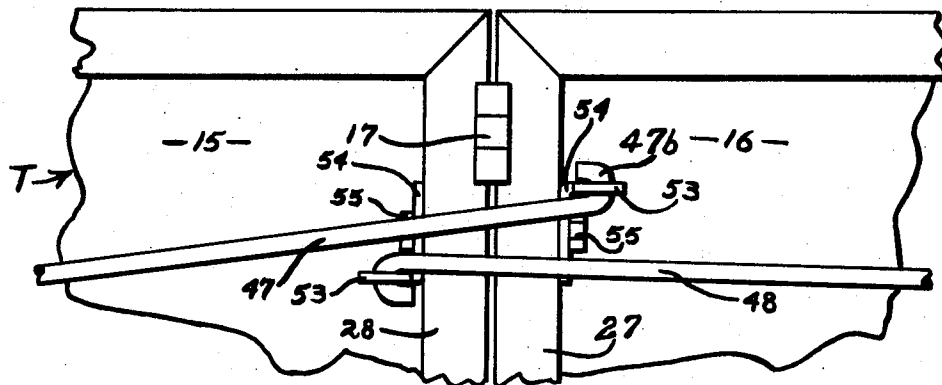
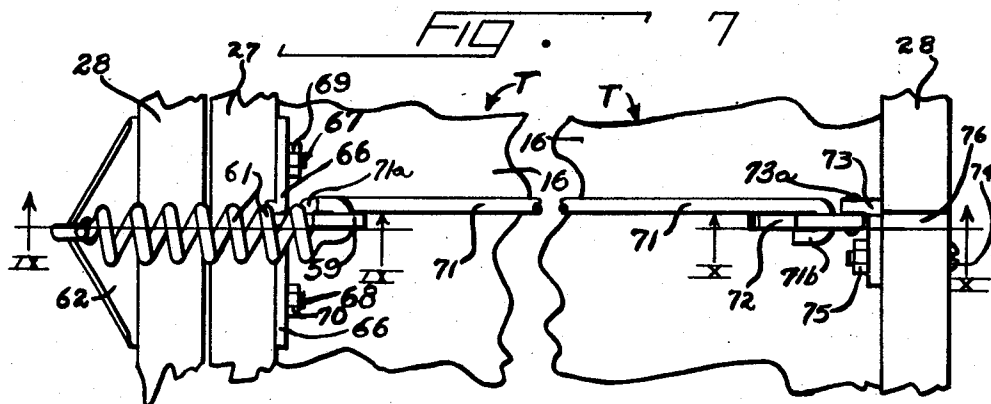
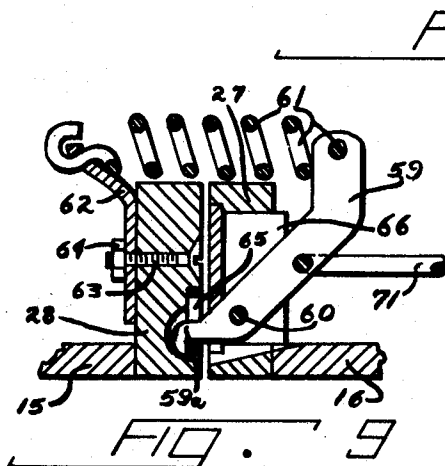
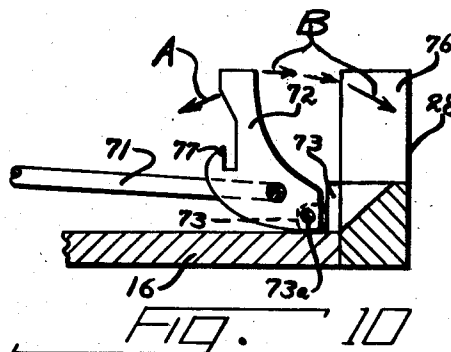
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FOLDING TABLE WITH SECTIONAL TOP

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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

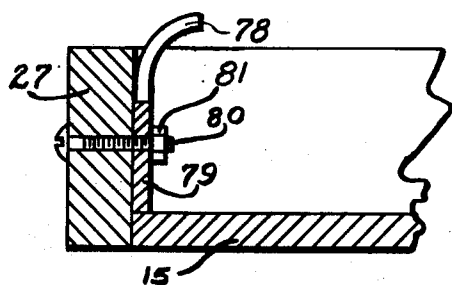


FIG. 11

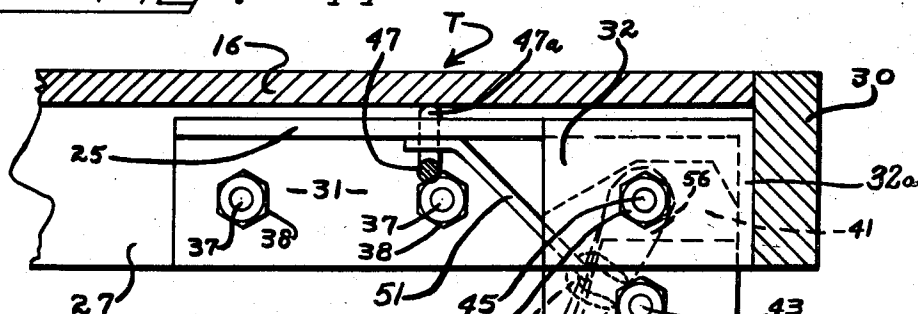


FIG. 12

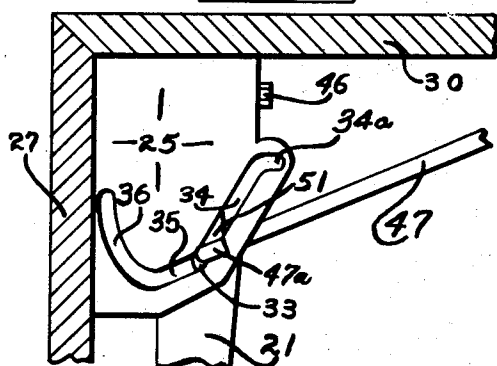


FIG. 13

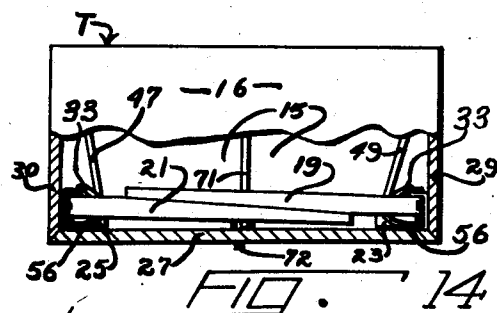


FIG. 14

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UNITED STATES PATENT OFFICE

2,646,324

FOLDING TABLE WITH SECTIONAL TOP

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Application February 9, 1948, Serial No. 7,156

3 Claims. (Cl. 311-90)

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My invention relates to an improvement in folding tables.

The object of my invention is to provide a table of the kind mentioned that is extremely solid when set up for use but when the occasion arises to put the table away, it will quickly, easily and positively fold up into a small unit for packing or storing.

Another object of my invention is to provide a table of the kind mentioned that is hinged in the center and each of the four legs has its own individual holding and folding mechanism that is operated by the folding of the table.

A further object of my invention is to provide a table of the kind mentioned that has a locking mechanism to lock the table either in an open or upright position for use or to also lock the table in a closed compact unit for storing.

A still further object of my invention is to provide a table of the kind mentioned that is beautiful in appearance, durable in construction and comparatively cheap to build and buy.

Now referring to the accompanying drawings in which similar numerals of reference designate the same parts throughout the several figures of the drawings.

Fig. 1 is a top plan view of the table.

Fig. 2 is a bottom plan view of the table.

Fig. 3 is a side elevational view of the table.

Fig. 4 is a cross sectional view of the table, this view being as seen from the line IV—IV in Fig. 1 and looking in the direction of the arrows.

Fig. 5 is an end view of the table in a folded position, the dotted lines in this view show how the table can be folded to be put away.

Fig. 6 is a top view of one of the holding and folding plates that carry the legs, a corner of the table is shown in section in this view, this view being as seen from the line VI—VI in Fig. 4 and looking in the direction of the arrows.

Fig. 7 is a bottom view of a portion of the center hinged section of the table, this view also shows how the leg operating rods are fastened to the center strips of the table, this view being as seen from the line VII—VII in Fig. 4 and looking in the direction of the arrows.

Fig. 8 is a bottom view of a portion of the table in which the locking and releasing mechanism is positioned.

Fig. 9 is a cross sectional view of a portion of the center folding section of the table showing in detail the locking mechanism for holding the table in an open or upright position, this view being as seen from the line IX—IX in Fig. 8 and looking in the direction of the arrows.

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Fig. 10 is a cross sectional view of a portion of the table and showing the lock release mechanism, this mechanism is also the means for locking and holding the table in a closed position, this view being as seen from the line X—X in Fig. 8 and looking in the direction of the arrows.

Fig. 11 is a cross sectional view of a portion of the table and the locking hook that holds the release lever in Fig. 10 when the table is in a closed position, this view being as seen from the line XI—XI in Fig. 2 and looking in the direction of the arrows.

Fig. 12 is a cross sectional view of a corner portion of the table showing more clearly one of the leg supporting and locking elements and how it fastens onto the table, this view being as seen from the line XII—XII in Fig. 4 and looking in the direction of the arrows.

Fig. 13 is an enlarged detail plan view of the table leg hanger plate, and illustrating more clearly the detail of the guide slot for the table leg operating rod.

Fig. 14 is a side view of the table in a folded position, a portion of the table top being broken away to show the folded position of the table legs therebehind.

In the drawings is seen a table top T that is made in two sections 15 and 16 and hinged together in the center by two hinges 17 and 18. Located one on each of the four corners of the table T are four legs 19, 20, 21 and 22 that are hinged mounted on plates 23, 24, 25 and 26 respectively. These plates 23, 24, 25 and 26 are in turn mounted and securely fastened to downwardly extending edges 27, 28, 29 and 30 which are securely fastened to the two sections 15 and 16 of the table top T. The plates 23, 24, 25 and 26 are designed especially for the purpose for which they play in the operation of my table and the design is as follows.

The plate 25 is flat on top, one side 31 of which is bent down sharply and extends the full length of the plate and a short distance on past the corner as at 31a, the other side 32 of the plate 25 is bent down sharply and extends a short distance past the corner at 32a. The side 32 is much shorter than the other side 31 and is provided for the express purpose of holding the upper portion of the leg 21 pivotally. Starting immediately in front of the short leg support 32 is a guide slot 33 having a forward and outwardly sloping portion 34 and a laterally sloping portion 35 and an outwardly and rearwardly extending curved portion 36.

The other end of the slot 34 is provided with

an inwardly extending notch portion 34a for purposes that will later be described.

The plate 25 is securely fastened to the table edges 27 and 30 by bolts 37 with nuts 38 threaded thereon. The other three plates 23, 24 and 26 are identical in shape and means of fastening onto the table as the plate 25 above described and the guide slots 33 are identical also. The particular angular portions of the guide slot 33 are of importance in view of the fact that they govern the speed of movement of the table legs and also develop increased force at the proper points of leg folding movements to insure proper and positive movements of the legs in their simultaneous folding and unfolding movements and also provide a perfect stationing and locking of the legs in their unfolded position.

At the upper end of each leg 19, 20, 21 and 22 is a formed metal end 39, 40, 41 and 42. In Figs. 6 and 12 is seen the leg 21 with its upper metal end 41 securely fastened to the leg 21 by bolts 43 with nuts 44 threaded thereon. The leg 21, along with its respective metal end 41 is pivotally fastened to the metal plate 25 by a bolt 45 with a nut 46 threaded thereon. The legs 19, 20 and 22 and their respective metal ends 39, 40 and 42 are identical in construction to the leg 21 and metal end 41, above described and fasten in the same manner.

Four leg operating rods 47, 48, 49 and 50 are mounted in their respective positions, one end to the table T and the other end to its respective guide slot 33 in the plates 23, 24, 25 and 26.

One end of the leg operating rod 47 has a hook 47a formed thereon. The hook 47a hooks into the guide slot 33 and through a hold in one end of a connecting link 51, the other end of which is securely, but moveably positioned and fastened to the upper end of the leg 21 by means of a staple or hook eye screw 52. The other end of the leg operating rod 47 has a hook 47b formed thereon that hooks into the downwardly extending leg 53 of a bracket 54. A similar bracket 54 is located on the opposite side of the table edge 28 for the hook end of the rod 48. The brackets 54 are held in place on the table edges 27 and 28 by means of a bolt, the head of which is countersunk and has a nut 55 threaded thereon. All the leg operating rods 48, 49 and 50 and their means of operation and fastening are identical to the leg operating rod 47 above described.

Positioned, one on each of the legs 19, 20, 21 and 22 are four leg braces 56, one end of which fastens to its respective leg as in Fig. 12. The brace 56 fastens a short distance below the lower end of the leg support plate 41 and is pivotally held in place by a bolt 57 with a nut 58 threaded thereon. The other end of the leg brace 56 is pivotally fastened to the leg pivot bolt 45. The leg support plates 23, 24, 25 and 26 are spaced away from the underneath side of the table sections 15 and 16 to permit the leg operating rods 47, 48, 49 and 50 to work freely as the table is folded up.

In Figs. 8 and 9 is shown the hook element for the purpose of holding the table in an open or upright position. The hook element consists of a hook 59a that is pivoted as at 60, the hook 59 extends on back and down to a point where one end of a spring 61 is fastened thereto. The other end of the spring 61 is fastened to a bracket 62. The bracket 62 is fastened to the table edge 28 by a bolt 63, the head of which is countersunk and the bolt 63 has a nut 64 threaded thereon. The tension of the spring 61 serves to rock the lever

59 about the pivot point 60 so that the hook 59a will hook behind a keeper element 65 which is a piece of metal.

The piece of metal 65 is securely fastened to the table edge 28 and is in exact registry with the hook 59a. The hook 59 is pivotally supported on a bracket 66 and is held in place by two bolts 67 and 68 with nuts 69 and 70 threaded thereon. Located about halfway between the hook 59a and the spring connection point 61 is positioned an operating rod 71, one end of which is a hook formation 71a which hooks in a hole formed in the body of the hook lever 59. The other end of the operating rod 71 is provided with a second hook formation 71b that fastens in a hole formed by an operating and locking lever 72. This locking 72 is mounted on a mounting 73 by means of a rivet 73a. The mounting 73 is securely fastened to the table edge 28 by a bolt 74 with a nut 75 threaded thereon. A slot 76 is provided in the edge 28 of the table T to accommodate the complete movement of the locking lever 72 when the table is folded up. A hook 77 is provided in the locking lever 72 which contacts the upper inwardly turned end 78 of the metal strip 79 which is held in place on the opposite side 27 of the table T shown in Fig. 11 by a bolt 80 with a nut 81 threaded thereon.

Now the operation of my table is as follows: The table is set up for use as shown in Figs. 1, 2, 3 and 4. Now by grasping the locking lever 72 and pushing it in the direction of the arrow A in Fig. 10, the operating rod 71 will be pushed and the hook 59a will be disengaged from the metal strip 65. Immediately following this operation the table is folded as shown by the dotted lines in Fig. 5 and as the table is folded, the leg operating rods 47, 48, 49 and 50, which are hingedly fastened at one end to the bracket leg 53 of the support bracket 54 are forced out of the notch 34a into the slot 33 to move and follow the guide slot 33 in its slopes 34, 35 and 36 and at the same time taking with it each of its respective connecting links 51, the other end of which is fastened to the hook eye screw 52 and its respective leg 19, 20, 21 and 22. The object of the notch 34a is to provide a locking seat for the curved end 47a of the rod 47 to hold the table leg 21 in a locked open position.

As the connecting links move with the leg operating rods 47, 48, 49 and 50 in the guide slots 33, the legs 19, 20, 21 and 22 are folded as shown by the dotted lines in Fig. 5.

When the table is folded together, a second action also takes place. The operating rod 71 rocks the locking lever in the direction of the arrows B in Fig. 10 over and into the slot 76 which is formed in the table edge 28. At this instant the table is practically closed and the hook 77 which is an integral formed part of the locking lever 72 is in position to contact and catch the upper inwardly turned end 78 of the metal strip 79 which is fastened to the opposite side of the table edge 27 and this action holds the table in a closed position for carrying or storing. As the table is opened the locking lever 72 is pressed, unhooking the hook 77 from the inwardly turned end 78 of the metal strip 79 and the above described operation is followed in reverse.

Now having fully shown and described my invention, what I claim is:

1. In a folding table device of the kind described; said table device having two table top sections each having depending rails around

each side and end thereof and being rigidly attached thereto, one similar rail of each section being hingedly attached each to the other to form a smooth table top of the two sections when in an opened position, table leg supporting elements, one for and rigidly fixed in each corner of the table sections opposite the hinge connections of the table top sections, table legs, one for and pivotally mounted in each of said leg supporting elements and being foldably swingable toward the other leg of its respective table top section, each of said table leg supporting elements having a plate and a guide slot therein, said plate lying in a plane parallel to the table top, actuator rods, one for each plate, one end of each actuator rod being travelably received in the guide slot of its respective leg support element plate, the other end of each actuator rod being hingedly attached to the hinged rail of its adjoining table top section, table leg actuator links, one for each table leg, said links being pivotally connected, one end to their respective table leg at a point spaced away from the pivotal mounting point of the leg and the other end of each actuator link being workably connected to the travelable end of said actuating rods in said guide slots, said guide slots being tortuous in shape to push and pull said leg actuator links to unfold to an open position and to fold to a closed position each of said table legs simultaneously as the travelable actuator ends are moved in said guide slots as the folding and unfolding movements of the table top sections impart longitudinal movement to said actuator rods.

2. In a folding table device of the kind described; the structure defined in claim 1, in combination with the said foregoing defined structure, latch and keeper means therefor for holding the table sections in an unfolded position, said latch and keeper means being carried one on

each of the said two hinged together section rails and being operable for unlatching purposes from the opposite side of one of said table top sections.

3. In a folding table device of the kind described; the structure defined in claim 1, in combination with the said foregoing defined structure, latch means for holding the table sections in an unfolded position, said latch means being carried in part on each of the said two hinged together section rails and being operable for unlatching purposes from the opposite side of one of said table top sections, said combination being further characterized by having a further latch and catch element, the last said latch and catch elements being carried one on each opposite table top rails when the table top sections are in their unfolded position, the last said latch and catch elements being engageable each with the other to hold the table top sections together when they are in their folded position, said catch and the last said hook element being joined together by a rod, and both the latch and hook being operable by a single spring attached to the said hook element and being tensioned to rock the hook element into engagement with its aforesaid keeper therefor.

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