Oct. 10, 1933. F. METZLER 1,930,176

COLLAPSIBLE TABLE

Filed July 28, 1932 3 Sheets-Sheet 1

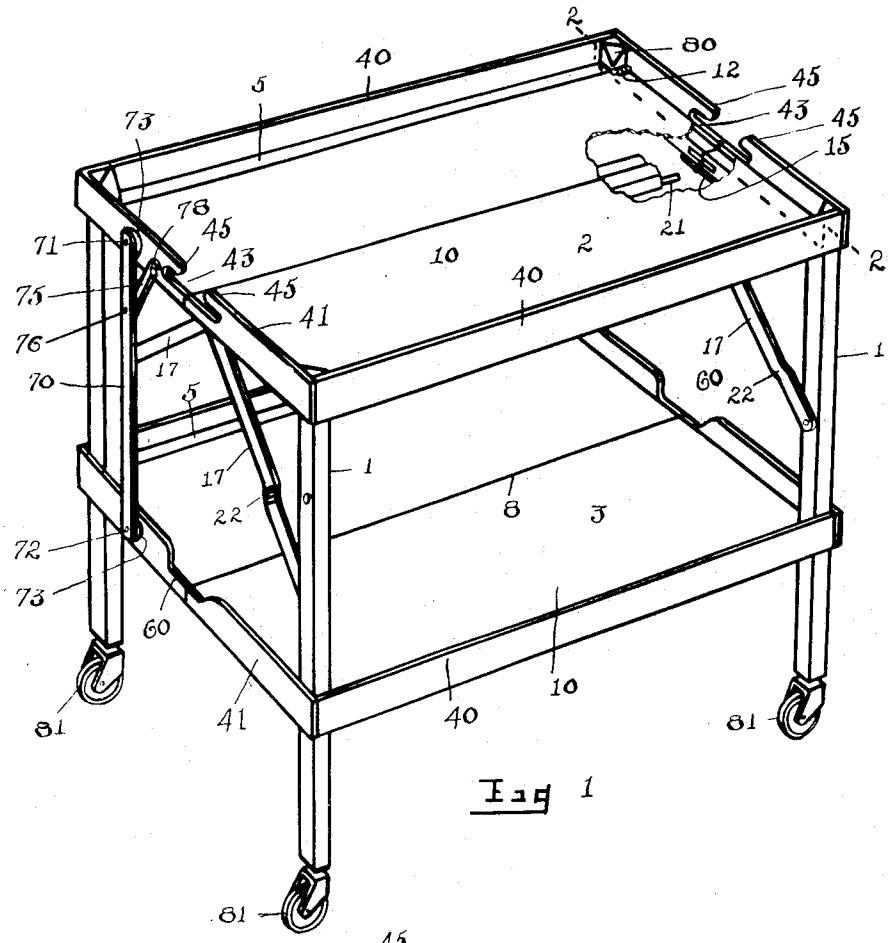


Fig 1

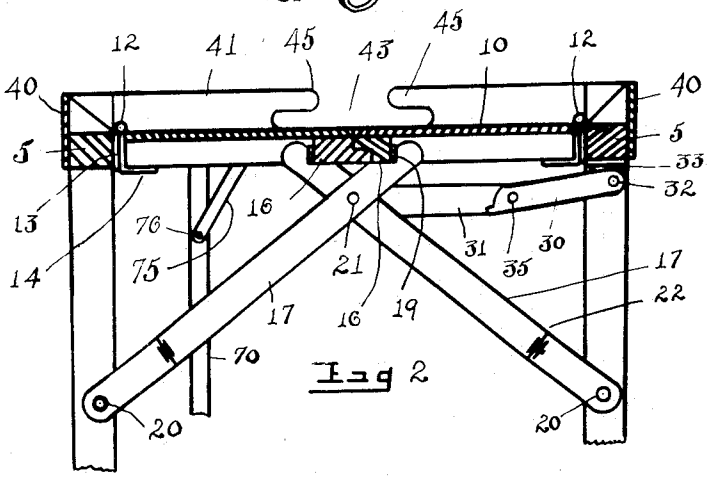


Fig 2

Inventor
Frederick Metzler
By Thomas L. Milder
Attorney

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COLLAPSIBLE TABLE

Filed July 28, 1932 3 Sheets-Sheet 2

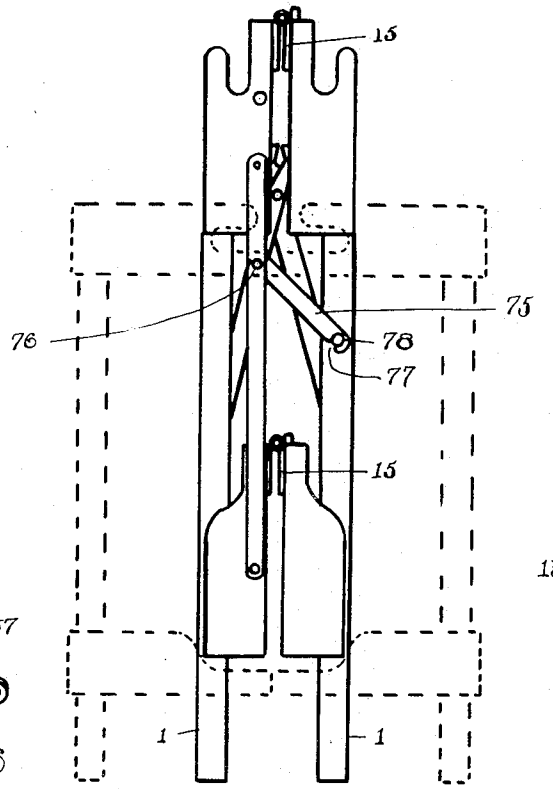


Fig 3

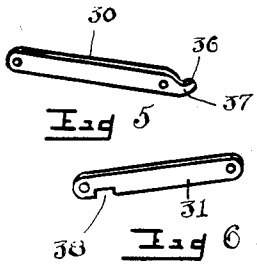


Fig 5

Fig 6

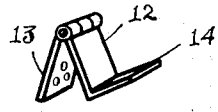


Fig 7

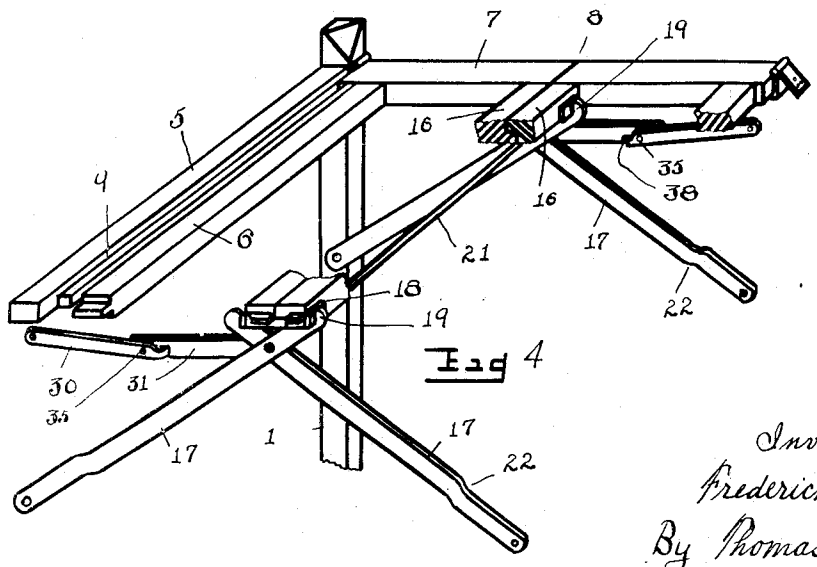


Fig 4

Inventor
Frederick Metzler
By Thomas L. Wilder
Attorney

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COLLAPSIBLE TABLE

Filed July 28, 1932 3 Sheets-Sheet 3

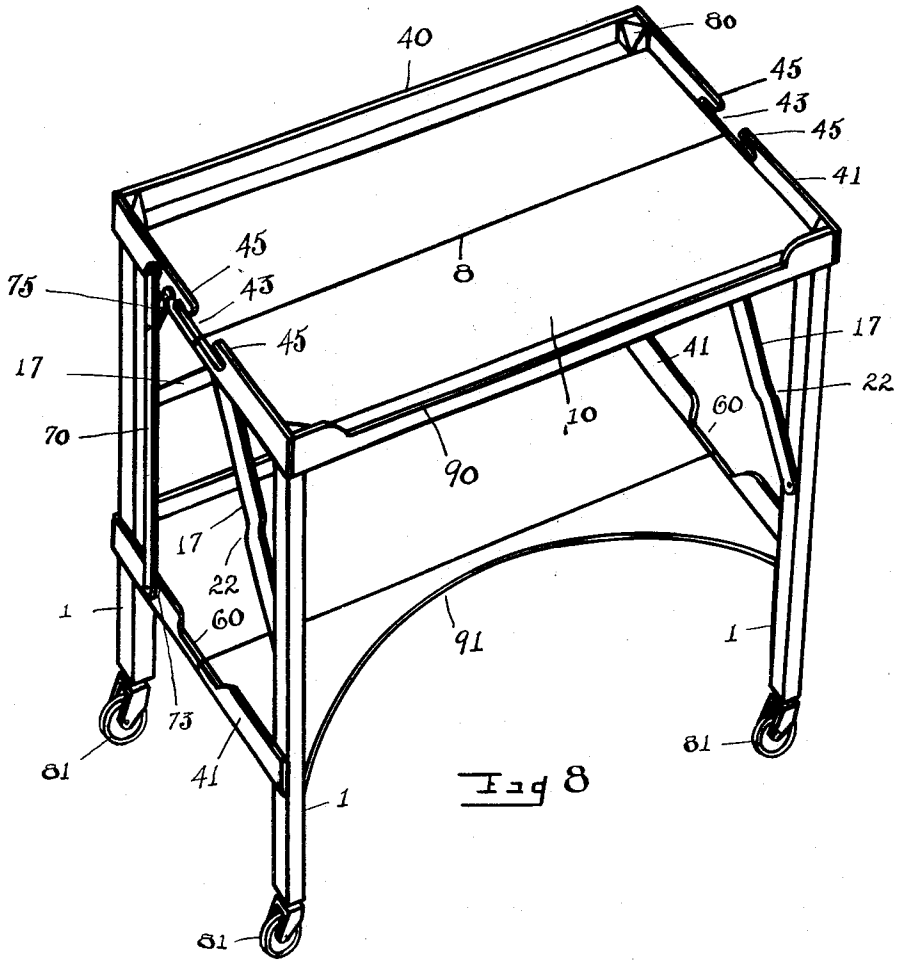


Fig 8

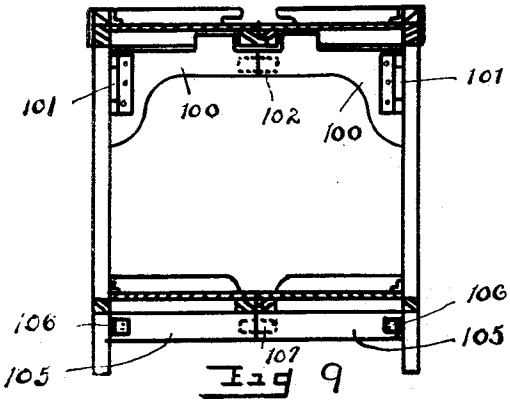


Fig 9

Inventor
Frederick Metzler
By Thomas L. Wilder
Attorney

Patented Oct. 10, 1933 1,930,176

UNITED STATES PATENT OFFICE

1,930,176

COLLAPSIBLE TABLE

Frederick Metzler, Utica, N. Y., assignor to H. R. Beebe Inc., Utica, N. Y., a corporation of New York

Application July 28, 1932. Serial No. 625,422

6 Claims. (Cl. 45—116)

My invention relates to a collapsible table and I declare the following to be a full, clear, concise and exact description thereof, sufficient to enable anyone skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings in which like characters refer to like parts throughout.

The object of the invention is to provide a table for use as a domestic article in a household, more particularly to be used as a serving table for conveying dishes from the kitchen to the dining room and vice-versa. Although this particular use is stated, obviously it may be used for many other purposes, such as transferring books from room to room.

Furthermore, the structure might even be used for scaffolding or other like purposes.

It is desirable that a serving table or scaffolding when not in use should be pushed in a corner and occupy as little space as possible. To this end, the present table has castors thereon and is made collapsible. The collapsible feature contemplates dividing the table along its longitudinal center line and hinging the parts together.

Moreover the hinged parts are so joined that they will remain automatically in open or folded position to which the parts are moved.

These and other objects will be understood by referring to the drawings in which

Fig. 1 is a perspective view of the table.

Fig. 2 is an enlarged transverse section taken on the line 2, 2 of Fig. 1, parts broken away.

Fig. 3 is an enlarged elevation showing the table in collapsed position in full lines and open position in dotted lines.

Fig. 4 is a detailed view showing more particularly the folding mechanism.

Figs. 5 and 6 are detailed views enlarged showing certain links employed.

Fig. 7 is a detailed view enlarged showing a hinge employed.

Fig. 8 is a perspective view showing a modified design of the table.

Fig. 9 shows another modification.

Referring more particularly to the drawings, the table embodies a frame comprising four uprights or legs 1, 1, 1, 1 disposed at corner locations for supporting an upper tray 2 and a lower tray 3. The framework further comprises horizontal side skirting rails 5, 5 which are fastened to legs 1, 1, 1, 1 in pairs; one of said bars 5, 5 located above and the other below in line with the location of trays 2 and 3 respectively.

Upper tray 2 embodies an auxiliary frame composed of side pieces or cleats 6, 6 that lie adjacent or parallel to skirting rails 5 though spaced therefrom, and end skirting rails 7, 7, also certain cleats 16 and a panel 10 hereinafter described. Side cleats 6, 6 and end skirting rails 7, 7 have a mortise and tenon interlocking fit. End skirting rails 7, 7 are divided at 8 and their free ends square butted in each instance. A panel 10 that is divided also at 8 to form two parts rests upon said cleats 6, 6 and end skirting rails 7, 7 forming the auxiliary frame. Horizontal stationary skirting rails 5, 5 are recessed or rabbeted at 9 to form a ledge for the respective edges of the parts of panel piece 10 which rests in said ledges in a free manner to allow for the swinging of the parts of tray 2. It thus is apparent that upper tray 2 is divided into two parts with upper surfaces of rails 5, 5 and panel 10 flush. These parts are connected in such manner that they can be moved into parallel relation to each other as shown in full lines in Fig. 3.

The means employed embodies L-shaped hinges 12 used at each of the four corners. Leaf 13 of hinge 12 is fastened by screws to the near side of leg 1; whereas L-shaped leaf 14 is fastened by screws to under side of end skirting rail 7, in each instance. Two flat hinges 15, 15 are fastened to the under side of end skirting rails 7, 7 adjacent to the center 8 to unite them at that location.

On the underside of bottom panel 10 along the division line there are disposed interlocking cleats 16, 16 which are united to end skirting rails 7, 7 by mortise and tenon joints. These cleats 16, 16 are attached to the respective portions of panel 10 by screws or otherwise. Cleats 16, 16 will aid in strengthening the center portion of the panel and hold the parts in a flush manner when the table is in open position. They will also act in conjunction with certain stay rods 17, 17 hereinafter mentioned to hold the table in extended position as shown in Fig. 1 and Fig. 2 and dotted lines in Fig. 3. The sides of cleats 16, 16 have metallic strike plates 18, 18 which are fastened by screws or other suitable manner to prevent wear on cleats 16, 16.

Cleats 16, 16 when united form an anchor or stay shoulder to prevent horizontal motion of the parts of the table and to make it rigid against which the recessed upper free ends 19, 19 of stay rods 17, 17 abut to hold the table in open position. Stay rods 17, 17 are used in pairs at either end of the table. They are pivoted to the near surfaces of legs 1, 1, 1, 1 at 20, 20 and to each other in pairs at end of rod 21.

Rods 17 are offset at 22 to clear each other and the framework.

Links 30, 31 are used to direct the upper free ends 19, 19 of stay rods 17, 17 towards cleats 16, 16 when the table is moved from collapsed to open or operative position. Link 30 is pivoted at 32 to a depending bracket 33 fastened to the under surface of one of the upper side skirting rails 5, 5 whereas link 31 is pivoted to pivot rod 21 that unites stay rods 17, 17. Links 30, 31 are pivoted in turn to each other at 35. Link 30 has a lateral extending shoulder 36 formed by cutting its end and bending the cut portion inward at 37. Link 31 has an open recess formed at 38. The engagement of portion 37 with recess 38 will provide a stop to limit the movement of links 30, 31 from passing beyond a predetermined position to hold the trays 2 and 3 in horizontal position. Links 30, 31 are used conjointly or together and at either end of the table and approach rods 17, 17 from opposite sides as shown in Fig. 4.

Side face rails 40, 40 and end face rails 41, 41 are fastened to the upper ends of legs 1, 1, 1, 1 to form a guard to prevent articles on tray 2 from rolling off. End face rails 41, 41 are recessed at 43, 43 to allow openings through which crumbs may be swept from the surface of the tray onto another hand tray used for that purpose. In forming openings 43 projections or handles are provided for at 45, whereby the table can be moved from open to collapsed position as shown in full lines in Fig. 3 or vice-versa.

It will be observed that handles 45, 45 may be grasped from either side of the table or from either end, whereby to actuate the table from open to closed position.

Under-tray 3 embodies an auxiliary frame similar to that of upper tray 2. It has side cleats 6, 6 and end skirting rails 7, 7, which are divided at 8 and square butted. A bottom panel 10 rests on said frame; skirting rails 5, 5 of the main frame being recessed at 9 to form a ledge for the reception of the free edges of bottom panel 10 similar to the upper panel therein.

There are also employed center interlocking cleats 16, 16 as in the case of tray 2 above. Said cleats 16, 16 are fastened by screws or otherwise to the undersurface of the respective parts of bottom panel 10, whereby to strengthen the central portion of the tray 3 and keep parts of panel 10 flush when table is in open position. Flat hinges 15, 15 unite end skirting rails 7, 7 at each end of the table.

It will be observed, therefore, that lower tray 3 is made in two equal parts that swing relative to each other similar to the structure of tray 2. Moreover L-shaped hinges 12, 12 as in upper tray 2, are employed and disposed at each of the corners of legs 1, 1, 1, 1; one leaf 13 being attached to the near side of leg 1 and the other L-shaped leaf 14 to the underside of each of the end skirting rails 7, 7.

Furthermore, tray 3 has side face rails 40, 40 and end face rails 41, 41 to prevent articles rolling off the panel 10. End face rails 40 are equipped with openings 60 to allow for the exit of crumbs.

The means for causing trays 2 and 3 to collapse together embodies connecting links 70, 70 located at opposite ends of the table. Each of the links 70, 70 is pivoted at 71 to one of the end face rails 41 of upper tray 2 and at 72 to one of the end face rails 41 of the lower tray 3. Space washers 73 are mounted on said pivots 71 and 72 adjacent rails 41 and 72.

The means for locking the table in open or extended position contemplates the use of branch links 75, 75. Each of the links 75 is pivoted at 76 to connecting link 70. Branch link 75 has at its free end an open slot 77 adapted to engage a headed pin 78 fastened to leg 1, 1, 1, 1 and to the end face rails 41, 41 of upper tray 2.

The upper ends of legs 1, 1, 1, 1 are beveled off at 80 to avoid any sharp corners. To the lower ends of legs 1, 1, 1, 1 are attached casters 81, 81, 81, 81 having rubber or felt tires, whereby the table may be moved over the floor in a noiseless manner.

In using the table it may be folded into collapsed position by grasping one set of handles 45, 45 provided in end face rails 41, 41 and pulling upwards collapsing the table to fully closed position as shown in full lines in Fig. 3. The table will remain automatically in collapsed position due partly to friction between movable connecting parts and also because the weight of each part of the table exerts a force in a direct downward vertical plane. It may be locked in closed position by links 75.

As the table is moved to open or extended position each pair of the stay rods 17, 17 located at opposite ends of the table will turn on their common pivot rod 21, whereby the free ends 19, 19 will open and gradually approach and grip the opposite sides of interlocking cleats 16, 16 similar to the action of a pair of tongs or pliers. Furthermore, free ends 19, 19 will be guided toward cleats 16, 16 by links 30 and 31. When closing the table, cleats 16, 16 will move upwards and away from the free ends 19, 19 of stay rods 17, 17.

When lowering the table to open or extended position branch links 75, 75 can be moved upon their respective pivots 76, 76 to cause their open slots 77, 77 to engage headed pins 78, 78 on end face rails 41, 41 to lock the parts in open position. Likewise said links 75, 75 can be moved to engage headed pin 78, 78 on legs 1, 1, 1, 1 to lock the parts when the table is in completely collapsed or folded position shown in full lines in Fig. 3.

When the table is collapsed and locked it will remain in upright position and can be moved freely in any direction on its noiseless casters 81, 81, 81, 81 without danger of falling over.

Figure 8 shows a modified design which has been adapted more particularly for a writing table. In this instance one of the upper sides of facing rails 40 has been cut away at 90 leaving an open recess without a guard and the upper panel 10 flushed with the edge of the table.

The lower tray 3 is cut away on the arc of a circle at 91 on the side corresponding to the cut away portion of the upper tray 2, whereby to allow space for the lower limbs of a person sitting up close to the table preparatory to using it as a writing desk, typewriting table or otherwise.

Fig. 9 shows a modification employing brackets 100, 100 which are hinged at 101 to legs 1, 1 and hinged to each other at 102 and have recesses at 103 which co-operate to form jaws that perform the same function as the jaws of stay rods 17, 17. There are also employed adjacent lower tray 3, brackets 105, 105 hinged at 106, 106 to legs 1, 1 and to each other at 107. In all other respects this modification is similar to the table heretofore described.

Having thus described my invention what I

claim as new and desire to secure by Letters Patent is as follows:

1. In a collapsible table, an upper and lower tray, standards for supporting said trays, pivotal means for holding said trays to said standard, a connecting link for causing said trays to move simultaneously, cleats formed on said trays to aid in holding them in predetermined position, and rods pivotally mounted to said standards and to each other to aid in holding said trays in open position.

2. In a collapsible table, a plurality of trays, standards for supporting said trays, said trays being divided into equal parts, rods connecting said trays, whereby they will move together, members formed on said trays whereby to aid in holding them in flush position and stay rods having open recesses pivoted to said standards and adapted to engage said members, whereby to support certain trays in movable position.

3. In a collapsible table, trays disposed above each other, standards for supporting said trays, rods connecting said trays, whereby to cause them to move together, interfitting cleats formed on said trays whereby to aid in holding them in flush position, stay rods pivotally mounted to said standards and to each other and said stay rods having open recesses adapted to engage said cleats, whereby to hold said trays in open position.

4. In a collapsible table, standards for supporting trays, said trays being divided into parts, rods connecting said parts, whereby the said trays will move simultaneously, cleats formed on said trays, said cleats being interfitting, whereby to aid in holding said trays in flush position, stay rods pivotally supported to said standards, said stay rods having open recesses for engaging said cleats, whereby to aid in holding said trays in open position and a link connected to said first mentioned rods, whereby to lock said table in open position.

5. In a collapsible table, an upper and lower tray, standards for supporting said trays, pivotal means for holding said trays to said standard, means attached to said trays for causing them to move simultaneously, means formed on said trays to aid in holding them in predetermined position, and rods pivotally mounted to said standards and to each other to aid in holding said trays in open position.

6. In a collapsible table, an upper and lower tray, standards for supporting said trays, pivotal means for holding said trays to said standard, a connecting link for causing said trays to move simultaneously, cleats formed on said trays to aid in holding them in predetermined position, rods pivotally mounted to said standards and to each other to aid in holding said trays in open position, and handles formed on said trays to aid in moving said trays.

FREDERICK METZLER.