United States Patent

[11] 3,561,376

[72] Inventor **Frederick D. Knoblock**
436 Bonnie Brier, Birmingham, Mich. 48009

[21] Appl. No. **713,604**
[22] Filed **Mar. 18, 1968**
[45] Patented **Feb. 9, 1971**

[54] **FOLDING TABLE AND FOLDING TABLE ATTACHMENTS**
8 Claims, 8 Drawing Figs.

[52] **U.S. Cl.** **108/124,** 108/157
[51] **Int. Cl.** **A47b 3/00**
[50] **Field of Search** 108/124, 157, 158; 248/167, 205, 226

[56] **References Cited**

UNITED STATES PATENTS

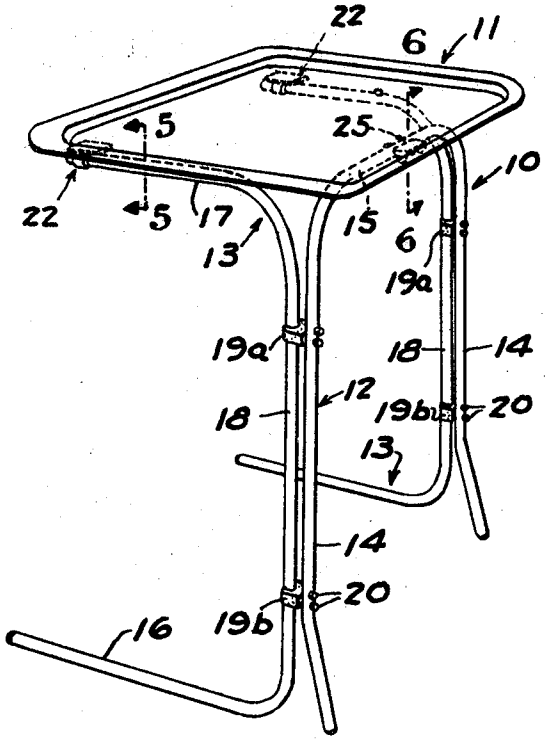
2,857,227	10/1958	Jacques	108/124
2,902,325	9/1959	Knoblock et al.	248/167
3,108,550	10/1963	Knoblock	102/124
3,217,673	11/1965	Knoblock	108/124X
3,256,840	6/1966	Knoblock	108/124
3,265,344	8/1966	Ornstein	248/243
3,295,474	1/1967	Ornstein	108/152
3,311,339	3/1967	Frye	248/205A
3,334,736	8/1967	Cole et al.	248/205A
3,401,653	9/1968	Knoblock	108/124

FOREIGN PATENTS

235,149	3/1945	Switzerland	24/67A

Primary Examiner—Bobby R. Gay
Assistant Examiner—Glenn O. Finch
Attorney—Barnes, Kisselle, Raisch and Choate

ABSTRACT: A folding table comprising a pair of frame members which are movable between extended and folded condition and a table top. The table top is pivoted to a cross portion of one of the frame members for swinging movement by a pivot assembly and has securing assemblies thereon which are adapted to engage the other frame member in the extended position. The pivot assembly and the contact assemblies are adhesively secured to the underside of the table top.



PATENTED FEB 9 1971

3,561,376

SHEET 1 OF 2

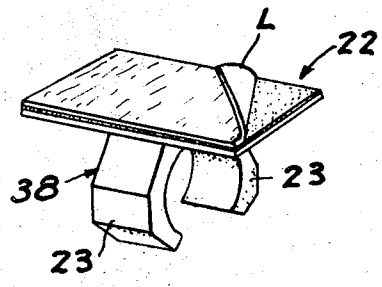


FIG. 2

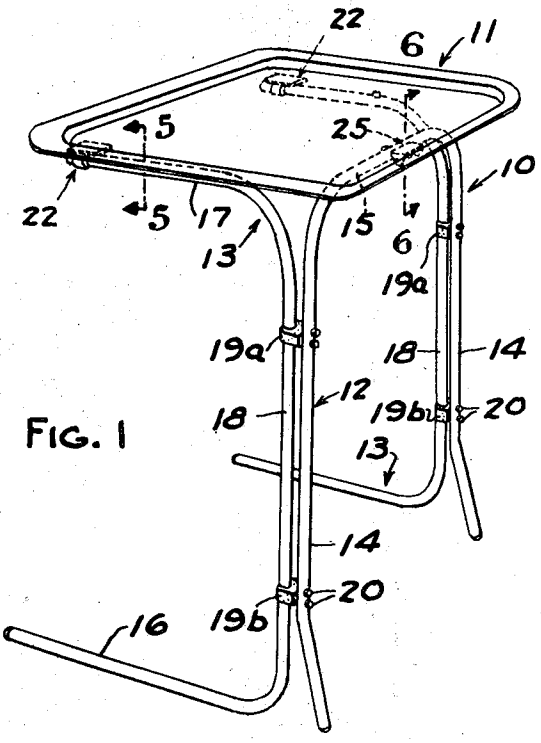


FIG. 1

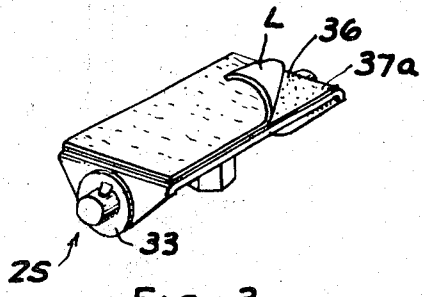


FIG. 3

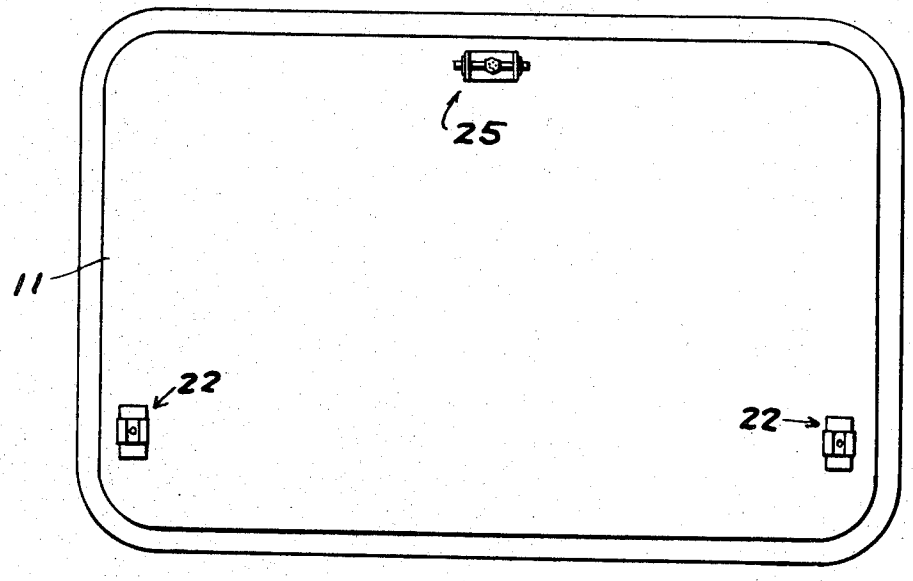


FIG. 4

INVENTOR.
FREDERICK D. KNOBLOCK

BY

Barnes, Kisselle, Raisch & Choate

ATTORNEYS

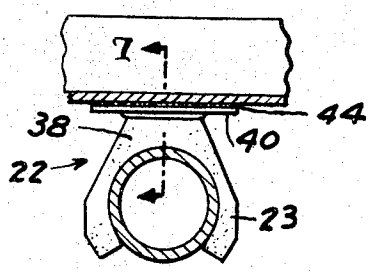


FIG. 5

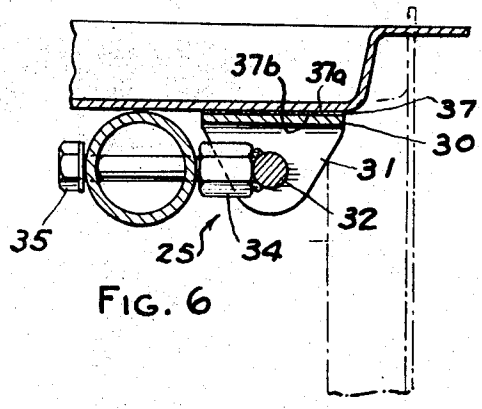


FIG. 6

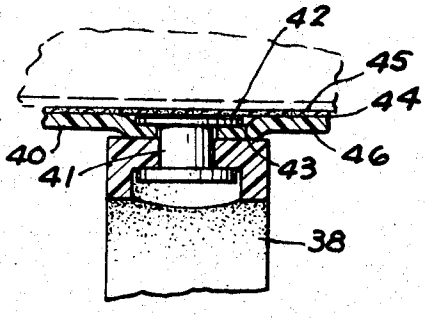


FIG. 7

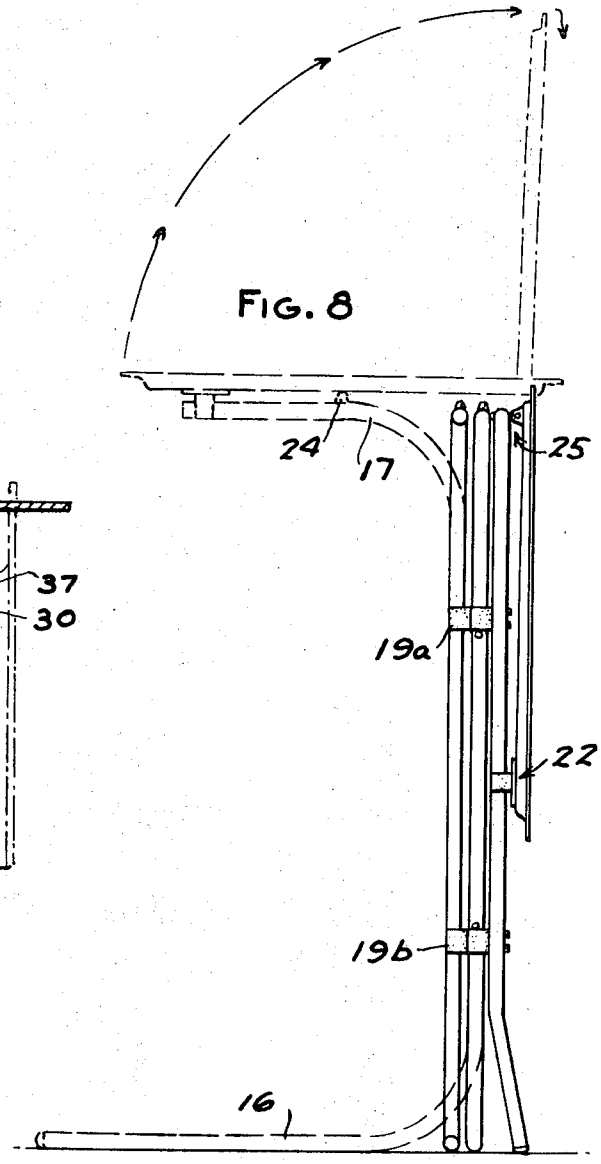


FIG. 8

INVENTOR.
FREDERICK D. KNOBLOCK

BY

Barnes, Kisselle, Raisch & Choate

ATTORNEYS

FOLDING TABLE AND FOLDING TABLE ATTACHMENTS

This invention relates to folding tables.

In my prior U.S. Pat. No. 3,108,550, issued Oct. 29, 1963, and my copending application Ser. No. 596,303, filed Nov. 22, 1966, now U.S. Pat. No. 3,401,653, issued Sept. 17, 1968, there are disclosed folding tables wherein the table top or tray is permanently but movably connected to the frame members so that it is movable from an unfolded position to a folded position.

In the folding tables of the type shown in the aforementioned patent and patent application, it has been common to provide pivot assemblies or securing members on the underside of the table top which are fixed by screws, bolts or rivets. This has not only marred the appearance of the table top but has also necessitated making the table tops with particular configurations or designs. This has necessarily limited the design of the table top or tray that can be used with the folding frame. Moreover, the use of screws, bolts or rivets necessitates substantial design and expense in assembly.

Among the objects of the invention are to provide a folding table construction which can utilize table tops or trays or varying designs without marring or defacing the surface of the tray or table top; which utilizes novel attachments which can be readily adapted to the table top or tray with a minimum of labor.

In the drawings:

FIG. 1 is a perspective view of a folding table embodying the invention.

FIG. 2 is a perspective view on an enlarged scale of an attachment utilized in the table shown in FIG. 1.

FIG. 3 is a perspective view on an enlarged scale of another attachment utilized in the folding table shown in FIG. 1.

FIG. 4 is a bottom plan view of the tray or table top shown in FIG. 1 with the table top removed from the frame.

FIG. 5 is a fragmentary sectional view on an enlarged scale taken along the line 5–5 in FIG. 1.

FIG. 6 is a fragmentary sectional view or an enlarged scale taken along the line 6–6 in FIG. 1.

FIG. 7 is a fragmentary sectional view taken along the line 7–7 in FIG. 5.

FIG. 8 is a side elevational view showing the folded position of the folding table.

Referring to FIG. 1, the folding table embodying the invention comprises a base or frame 10 and a table top 11. The base 10 comprises a tubular main frame member 12 and tubular side frame member 13. Main frame member 12 comprises substantially vertical legs 14, the lower ends of which are bent outwardly and forwardly to engage the ground and a connecting cross portion 15. Each side frame member 13 comprises a lower substantially horizontal leg 16, an upper table top supporting leg 17 and a substantially vertical leg 18 connecting the horizontal legs 16, 17. The vertical legs 18 of each side frame member 13 extend substantially along the legs 14 of the main frame member 12 and are pivotally connected thereto so that the side frame members may be folded inwardly into substantially flat relation to one another and to the main frame member 12.

Specifically, the members are pivoted by hinges 19*a*, 19*b* comprising blocks of rubber or plastic material that are mounted on the vertical legs 14 by screws 20 and have flexible fingers which snap over the legs 18. The cross portion 15 may have an offset portion 21 so that when the one side frame member 13 is folded inwardly against the main frame member and the second side frame member 13 is thereafter folded inwardly, it will lie flat against the first side frame member 13.

As shown in FIG. 1, the table top 11 is connected adjacent its forward edge to the cross portion 15 so that in one position, it is substantially horizontal, securing assemblies 22 thereon having spaced fingers 23 (FIG. 3) are snapped over the upper legs 17 and resilient pads 24 on the legs 17 engage the underside of the table 11 to firmly support the table. In the folded position of the table top shown in FIG. 8, the table top 11 is supported in vertical position adjacent the main frame member 12.

Both the pivot assembly 25 and the assembly 22 include metal plates 30, 40. As shown in FIGS. 3 and 6, the assembly 25 further includes flanges 31 between which a rod 32 is rotatably mounted with press fitted end caps 33 holding the rod on the flanges. A nut 34 is welded to the rod 32 with its axis at a right angle to the axis of the rod and a bolt 35 extends through an opening in the cross portion and is threaded into the nut 34. Bolt 35 forms a pivot member. A tape 36 of foam material 36 with pressure sensitive adhesive on its opposite surfaces 37*a*, 37*b* is adhered to the plate 30 and the underside of the table top to hold the assembly 25 in position.

As shown in FIGS. 2, 5, and 7, the assembly 22 comprises a block 38 of resilient plastic material which has the integral fingers 23 formed thereon. Base plate 40 is fixed to the block by a rivet 41 that has its end deformed as at 42 into a depression 43 in the plate 40. A tape 44 of foam material with pressure sensitive adhesive on its opposite surfaces 45, 46 is adhered to the plate 40 and the underside of the table top to hold the assembly 22 in position.

By this arrangement, the table top 11 can be swung from the position shown in FIG. 1 upwardly to disconnect the assemblies 22 from the side legs 17 and thereafter revolved about the axis of the bolt 35 and swung downwardly about the axis of the rod 32 to bring it into position wherein it is substantially flat against the main frame member as shown in FIG. 8.

In practice the assembly 22 and pivot assembly 25 are provided with a layer L of paper over the surfaces 36, 45 to facilitate handling of the assembly. When a proper tray or table top is selected for use with the frame, the layers L are removed and the assemblies are fixed at the proper locations to the underside of the table top by pressing (FIG. 4).

The area of the plate 40 of each assembly 22 is substantially greater than the area of the base of the block 38.

A preferred form of tape which has been found to be satisfactory comprises vinyl foam tape having pressure sensitive adhesive on opposite surfaces thereof.

I claim:

l, A folding table comprising:

a first frame member;

a second frame member movable between an extended position and a position wherein said second frame member is folded substantially flat against said first frame member;

said first frame member having a connecting cross portion at the upper end thereof;

a table top

a pivot member;

a means for mounting said pivot member on the cross portion of said first frame member for rotational movement about a fixed pivotal axis generally perpendicular to the axis of the cross portion;

means for mounting said table top on said pivot member for swinging movement about an axis forming an angle with the first mentioned fixed pivotal axis whereby said table top will extend substantially horizontally and engage the second frame member when the second frame member is in extended position and said table top may be rotated about the pivotal axis and swung downwardly about the second mentioned axis so that it hangs substantially vertically when the frame member is in folded condition;

said last-mentioned means comprising a pivot assembly fixed on the underside of the table top;

said pivot assembly comprising a base;

means adhesively securing said base to the underside of said table top;

said second frame member includes a horizontal portion;

said table having means thereon engaging the horizontal portion of said second frame member when said table is expanded;

said last-mentioned means comprising a body including a base portion and spaced finger portions adapted to encircle the horizontal portion of the other said leg;

means adhesively securing said base portion to the underside of said table top;

said last-mentioned means comprises a piece of tape having pressure sensitive adhesive on opposite surfaces thereof; and

one of said surfaces being adhered by said adhesive to the base portion and the other of said surfaces being adhered by said adhesive to the underside of the table top.

2. A folding table comprising:

a first frame member;

a second frame member movable between an extended position and a position wherein said second frame member is folded substantially flat against said first frame member;

said first frame member having a connecting cross portion at the upper end thereof;

a table top;

a pivot member;

means for mounting said pivot member on the cross portion of said first frame member for rotational movement about a fixed pivotal axis generally perpendicular to the axis of the cross portion;

means for mounting said table top on said pivot member for swinging movement about an axis forming an angle with the first mentioned fixed pivotal axis whereby said table top will extend substantially horizontally and engage the second frame member when the second frame member is in extended position and said table top may be rotated about the pivotal axis and swung downwardly about the second mentioned axis so that it hangs substantially vertically when the frame member is in folded condition;

said last-mentioned means comprising a pivot assembly fixed on the underside of the table top;

said pivot assembly comprising a base;

means adhesively securing said base to the underside of said table top;

said means adhesively securing said base to the underside of the said table top comprising a tape having pressure sensitive adhesives on opposite surfaces thereof; and

one surface of said tape being adhered to said base by said adhesive and the other surface of said tape being adhered to the underside of said table top by said adhesive.

3. The combination set forth in claim 1 wherein said tape comprises a strip of foam plastic material.

4. The combination set forth in claim 2 wherein said base comprises a base portion and spaced flanged portions, said means for mounting said pivot member comprising a rod rotatably mounted between said flange portions with its axis generally parallel to the axis of the cross portions, said pivot member extending at an angle from said shaft.

5. The combination set forth in claim 4 wherein said pivot member comprises a nut fixed to said shaft and a bolt extending trough said cross portion and threaded into said nut.

6 The combination set forth in claim 1 wherein said base portion comprises a plate, and a body of resilient material fixed to said plate, said spaced finger portions being integral with said base portion of said body.

7. The combination set forth in claim 6 wherein said plate has an area substantially greater than the base portion of said body.

8. The combination set forth in claim 1 wherein said tape comprises a strip of foam plastic material.