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Forsyth

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[54] **KNOCK-DOWN DESK CONSTRUCTION**

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[52] **U.S. Cl.** ..... **312/195,** 108/26, 108/156, 248/188, 312/257 R

[51] **Int. Cl.** **A47b 13/06,** A47b 17/06

[58] **Field of Search** ..... 108/156, 33, 26; 312/257 R, 257 SK, 257 SM, 257 A, 195, 107, 108, 111; 248/188.8, 188; 211/177

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[57] **ABSTRACT**

A knock-down construction of an understructure for supporting the top of a table, desk or the like made up of a pair of side panels and a back panel adapted to be interconnected and held together by corner posts or legs which are secured to and support the table top. The side and back panels are formed of sheet metal stampings and have their ends flanged to provide, when in their assembled relation, corner joints having vertically extending angular seats or recesses in which the supporting posts are respectively non-rotatably received. The posts are each provided with self-contained horizontally projecting threaded studs which extend through openings provided in the flanged extremities of the panels for rigidly connecting the panels to one another simultaneously as the assembled panels are connected to the posts. The rear corner posts are provided with two vertically spaced pairs of angularly related threaded studs which respectively project through openings provided therefore in the angularly related flanged extremities of adjoining interconnected panels, while the front corner posts are provided with only two of such studs for securement of said posts to the front ends of the side panels.

An open topped accessory tray extends transversely between the front ends of the side panels for pivotal movement about a horizontal axis, with stops provided to limit the tilting of the tray between closed and open positions.

The assembled understructure for the table is further rigidified against relative angular displacement of the interconnected back and side panels upon securement of the table top to the top ends of the corner posts.

10 Claims, 6 Drawing Figures

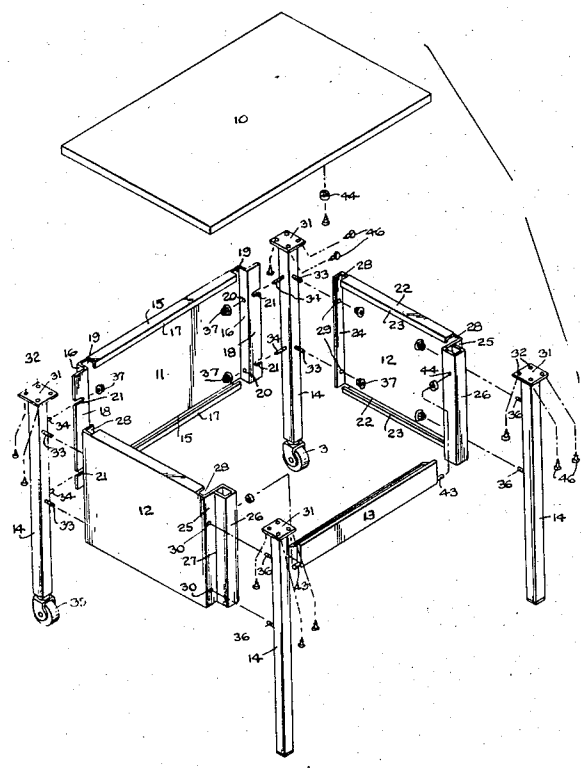
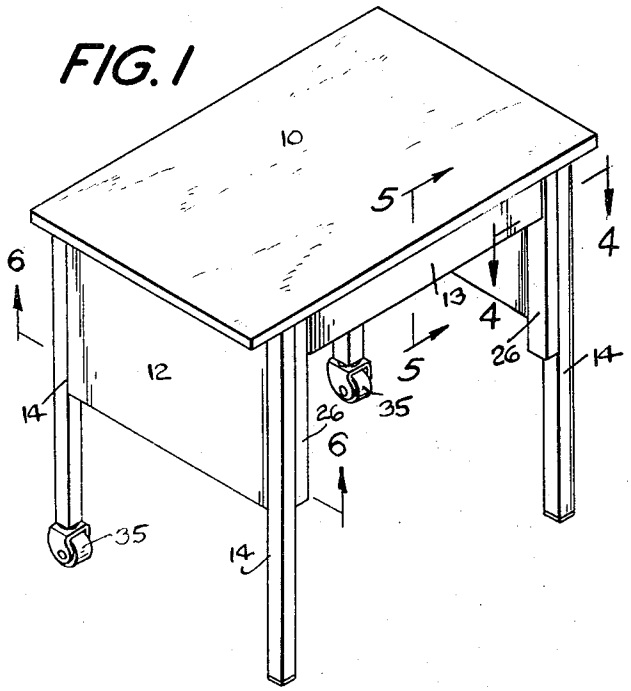


FIG. 1



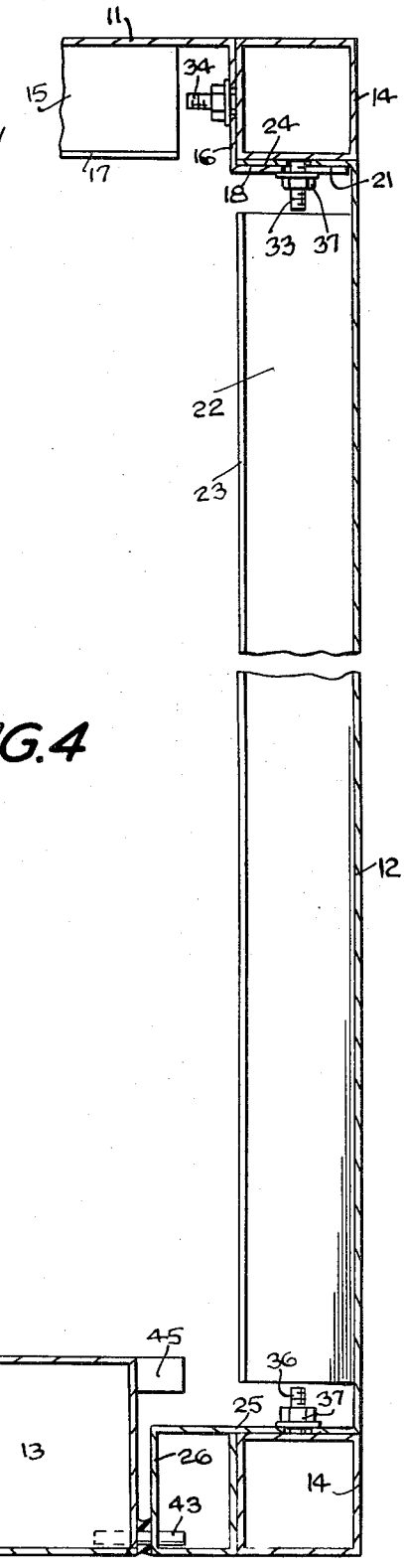


FIG. 4

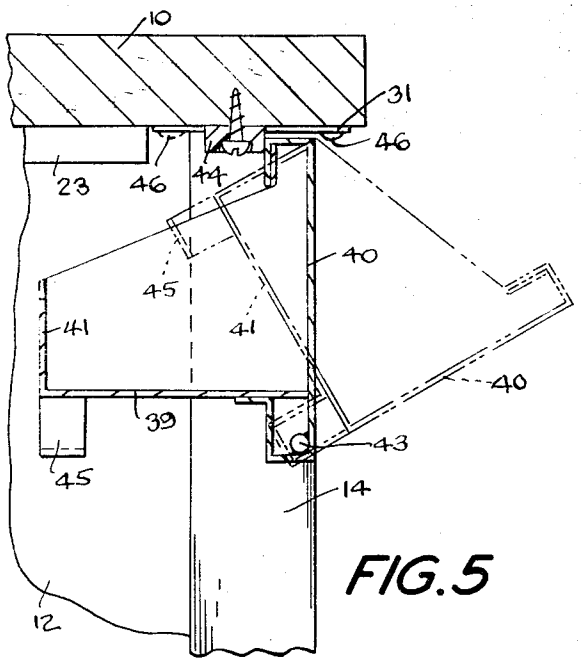


FIG. 5

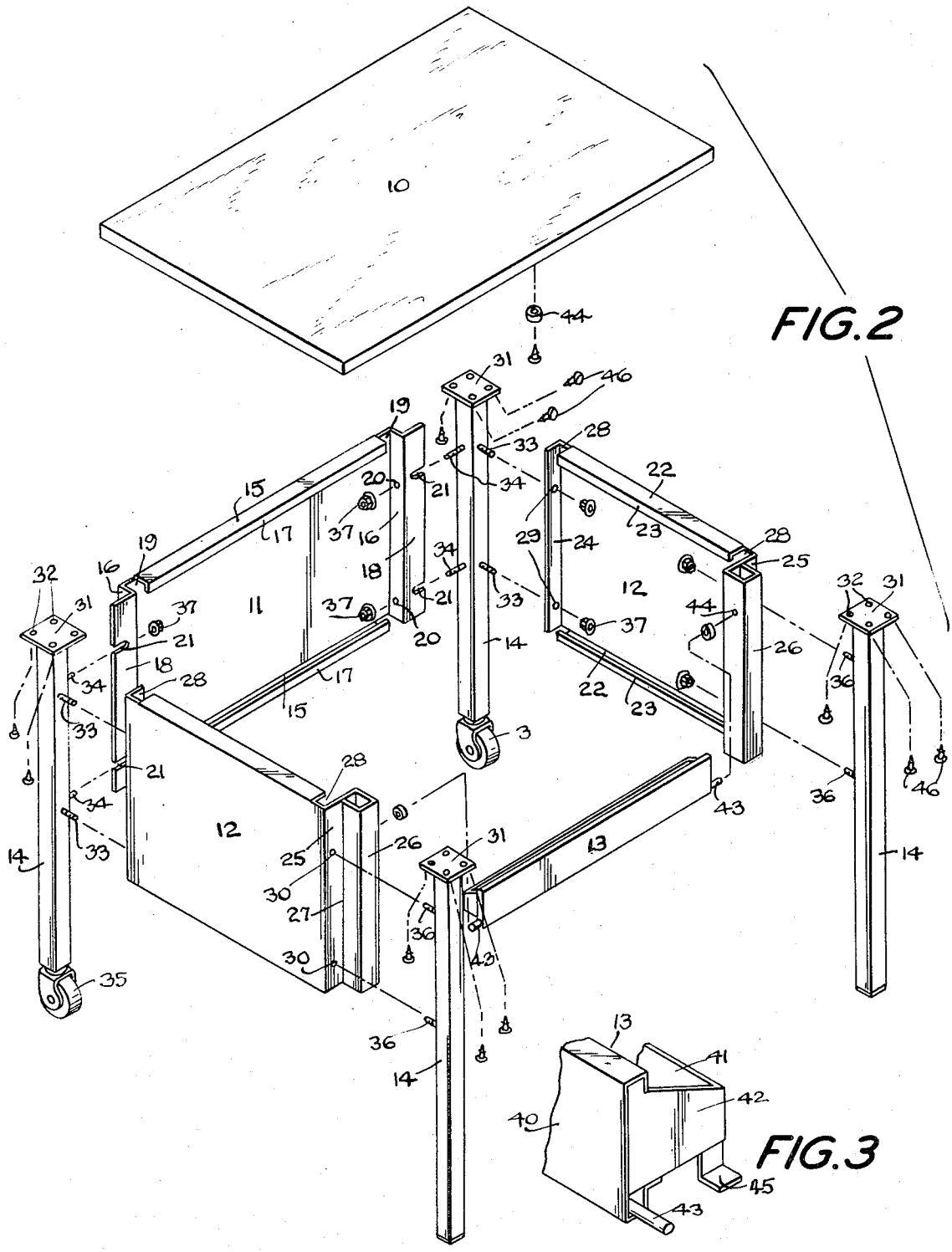
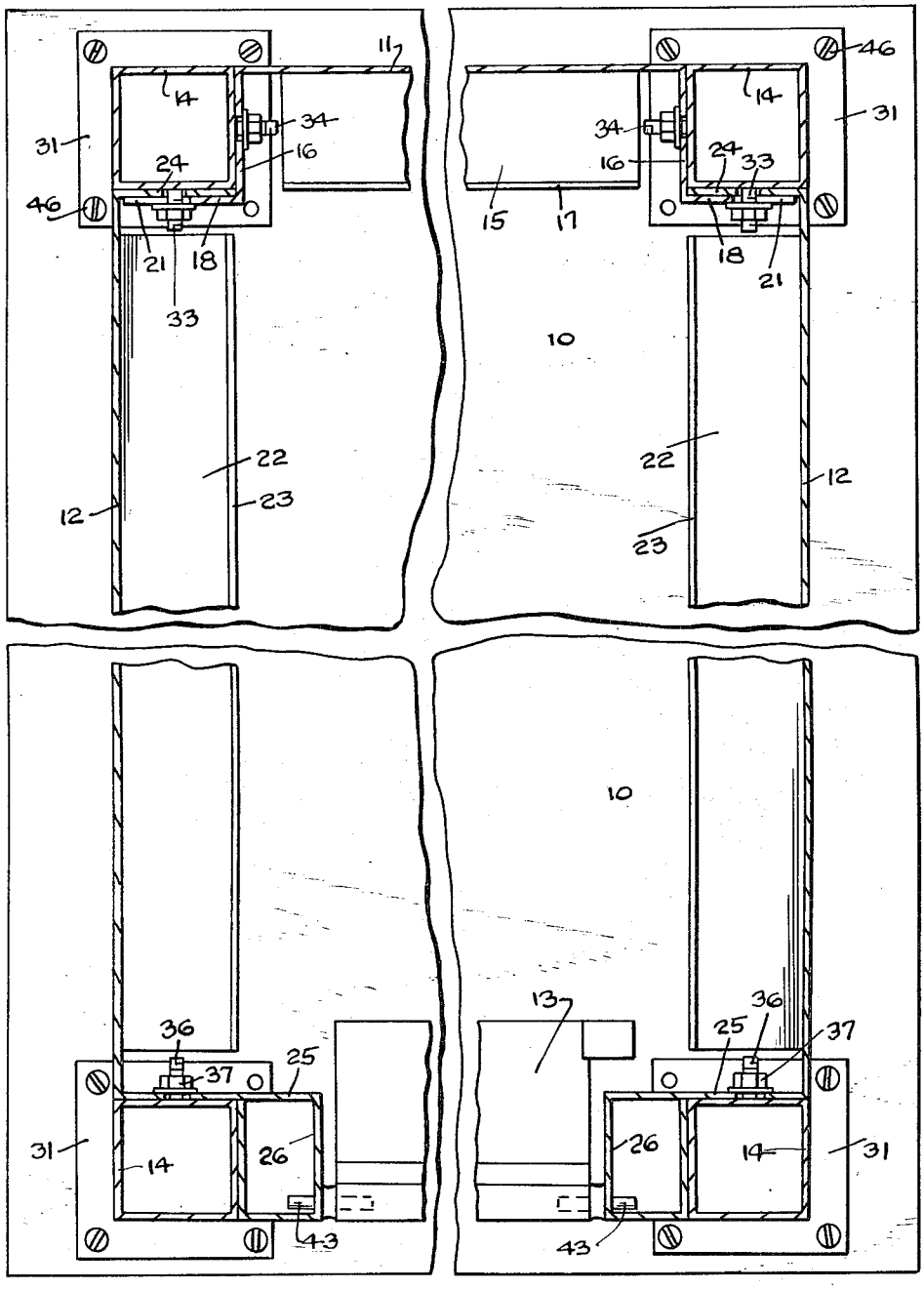

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FIG. 2

FIG. 3

FIG.6



KNOCK-DOWN DESK CONSTRUCTION

This invention relates to table constructions and more particularly to an improved construction of a table which is adapted to be packed and shipped in knocked-down form and easily erected into rigid form for use.

A principal object of the invention is the provision of a table structure by utilization of a plurality of sheet metal panels and legs which are designed to be interfitted and rigidly joined together to provide a table top supporting understructure of relatively light weight and high structural strength.

Another object of the invention is to provide a novel supporting understructure for a table top which utilizes a plurality of sheet metal panels adapted to be interfitted and secured in rigidly fixed relation to a plurality of legs, the latter being provided with self-contained threaded studs relatively so arranged as to facilitate assembly and rigid securement of the panels to one another and to the legs.

Still another object of the invention is to provide a knockdown construction of table which includes as one of its components an accessory tray which is pivoted between the assembled side panels of the table for tilting movement into open or closed position beneath the front edge of the table top.

The foregoing and other objects of the present invention will be apparent hereinafter, it being understood that the invention consists substantially in the combination, construction, location and relative arrangement of parts, as described in detail in the following specification, as shown in the accompanying drawings and as finally pointed out in the appended claims.

In the accompanying drawings:

FIG. 1 is a perspective view from above and to one side showing a table constructed in accordance with the present invention;

FIG. 2 is an exploded perspective view of the several components which comprise the complete table;

FIG. 3 is a perspective view of one end of the pivoted accessory tray mounted at the front end of the table;

FIG. 4 is a horizontal sectional view of one side of the table as viewed from the horizontal plane of the line 4—4 of FIG. 1;

FIG. 5 is a vertical sectional view of the front portion of the table as taken along the line 5—5 of FIG. 1; and

FIG. 6 is a horizontal sectional view of the table in its inverted position as viewed from the horizontal plane of the line 6—6 of FIG. 1;

Referring now to the drawings, it will be observed that the knock-down table of the present invention comprises an assembly of the structural elements best shown in the exploded view of FIG. 2, which elements include a table top 10, a back panel 11, a pair of side panels 12—12, four corner legs 14 and a frontally disposed accessory tray 13 for receiving pencils, pens and the like. Except for the table top, all of these structural elements are made of sheet metal stamping and although the table top is preferably formed of wood or other suitable composite material, it also may be stamped out of sheet metal to provide it with an inturned perimetral bottom flange (not shown) for securing it to the upper extremities of the legs 14.

The back panel 11 and the side panels 12—12 are all of such equal depth or height that when secured to the legs their bottom edges are commonly disposed in a horizontal plane spaced substantially above the floor upon which the assembled table rests, as in best shown in FIG. 1.

Referring first to the back panel 11, it will be noted that it is marginally provided with inturned top and bottom flanges 15—15 and opposite side flanges 16—16. The top and bottom flanges 15—15 are respectively provided with coplanar oppositely bent finishing lips 17—17, while the opposite side flanges 16—16 are respectively provided with coplanar lips 18—18 extending outwardly from and at right angles to their associated flanges 16—16. The opposite ends of the top and bottom flanges 15—15 of the back panel 11, as do their opposed lips 17—17, terminate short of the panel side flanges 16—16 to provide clearances therebetween as at 19—19, for reasons which will appear hereinafter.

Each of the opposite side flanges 16—16 of the back panel is provided with a pair of vertically spaced apertures 20—20, while the out-turned lips 18—18 of said apertured side flanges 16—16 are each provided with a pair of vertically spaced openended notches 21—21, each of the latter being in horizontal alinement with one of the apertures 20.

The side panels 12—12 are respectively similar in construction, each being provided along its top and bottom edges with an inturned flange 22 terminating in a vertically disposed finishing lip 23. The vertical rear end of each side panel 12 is provided with an inturned flange 24, while the front edge of each of said side panels is provided with an inturned flange 25 which is bent upon itself into the form of a box-like section 26 to provide a vertically extending frontal extension of the flange 25 which is offset inwardly from the plane of the side panel 12 and thus provide an elongated right angular recess or seat 27 for accommodating one of the front legs of the table. As in the case of the back panel, clearances are provided, as at 28—28, between the opposite ends of the top flange 22 of each side panel and the front and rear flanges thereof.

The rear flange 24 of each side panel is provided with a pair of vertically spaced apertures 29—29, while the exposed portion of the front flange 25 is also provided with a pair of vertically spaced apertures 30—30.

The legs 14 are basically of similar construction in that each is in the form of an elongated hollow member of square cross section to the top end of which is welded or otherwise secured a flat anchoring plate 31 having its several overhanging corner portions each apertured, as at 32. Each of the two rear legs 14 is integrally provided with vertically spaced pairs of threaded studs 33-34, with the studs 33—33 respectively projecting at right angles to the studs 34—34. The vertical spacing between the two pairs of studs is the same as that between the vertically spaced apertures 20—20 and notches 21—21 of the back panel 11 and the vertically spaced apertures 29—29 in the rear end flanges of the side panels 12—12, whereby the studs 33—33 may be horizontally alined with the apertures 29—29 in the rear end flange of each side panel 12 and the studs 34—34 may be similarly alined with the apertures 20—20 in the flanged ends of the back panel 11. Preferably, the bottom ends of the two rear legs 14 are each fitted with a swivel castor 35.

The two front legs 14 are each provided with but two vertically spaced threaded studs 36 which commonly project from only one face of the leg for respective reg-

istry with the vertically spaced apertures **30—30** provided in the front ends of the side panels **12—12.**

It is of importance to note that the squared cross sectional configuration of the legs is complemental to the right-angularly shaped flanged ends of the back and side panels so that when said panels and legs are assembled and secured together as will now be described the legs are held fixed against any tendency to rotate about their vertical axes.

In order to most conveniently assemble the several components of the table, the preferred procedure is to first secure each of the two rear legs **14** to the rear end of each side panel **12** by projecting the threaded studs **33—33** of each leg through the apertures **29—29** of the panel and loosely securing the latter to the leg by nuts **37** threaded onto the studs.

Thereafter, each loosely interconnected side panel and leg is slipped onto an end of the back panel with the flange **18** of the latter inserted between the end flange **24** of the side panel and the nuts **37** threaded onto the studs **33,** in which step the rear panel notches **21** ride over the studs **33** simultaneously as their angularly related studs **34—34** are projected through the apertures **20—20** of the rear panel for threaded engagement by the nuts **37.**

Having so loosely secured together the back and side panels and the two rear legs, the front legs **14** are now respectively secured to the front ends of the side panels by projecting the front leg studs **36—36** through the frontal apertures **30—30** for threaded engagement by the nuts **37.**

The accessory tray **13** may now be mounted between the box-like frontal extensions **26** of the side panels, which tray **13** is in the form of open-topped trough having a bottom wall **39,** a front wall **40,** a back wall **41** and opposite end walls **42,** as well as oppositely projecting pivot pins **43—43** which are respectively journalled in apertures **44—44** provided therefor in the opposed inner faces of the frontal extensions **26** of the side panels. The pivot pins **43—43** are so located toward the frontal side of the tray **13** as to permit tilting of the tray from its dotted line opened position shown in FIG. **5** to its full line closed position shown therein. When tilted into its closed position, the upper edge of the tray abuts a stop **44** provided therefor on the under side of the table top **40** to limit its inward tilting movement, while outward tilting movement of the tray about the horizontal axis of its pivot pins **43—43** to afford access to the interior of the tray is limited by a stop **45** formed as a part of the tray at one end thereof which engages the rear face of the frontal box-like extension of a side panel **12,** as most clearly appears in FIG. **5.** As the tray **13** is tilted from its fully closed to its fully open position, and vise versa, its center of gravity shifts relatively to its axis of tilt to hold the tray engaged against one or the other of its limit stops **44** and **45.**

To finally secure the several assembled components of the table in rigidly interconnected relation, the several nuts **37** are tightly threaded upon their respective studs, following which the assembly is rigidly secured to the table top by fastening screws **46** projected upwardly through the apertures **32** of the leg anchoring plates **31** and into the underside of the table top **10.**

Preferably, the guage of the anchoring plates **31** of the table legs is the same as that of the back and side panels so that when the panels are assembled as above described with the leg plates **31** seated in the clearances **19—19** in the top edge of the back panels **11** and the clearances **28—28** in the top edges of the side panels **12—12** the upper surfaces of said anchoring plates **31** are flush with the upper edge surfaces of the back and side panels, thereby insuring a substantially uninterrupted engagement of the panels and legs with the undersurface of the table top. It will also be noted that by slipping the notched end flanges **18—18** of the back panel inside of the rear end flanges **24—24** of the side panels, the edges of the said notched flanges are covered by the side panels to which they are joined and are thus concealed from view to enhance the finished appearance of the assembled table. However, where such concealment is not an important desideratum, the back and side panels could just as well be connected to the table legs with the notched end flanged **18—18** of the back panel inserted between the rear legs and the rear flanges **24** of the side panels.

What is claimed as new and useful is:

1. A knock-down construction of a supporting understructure for the top of a table or the like comprising in combination,

a. a pair of vertically extending side panels disposed in laterally spaced, parallel relation, each side panel having at its rear end a vertically extending inturned flange and at its front end a vertically extending flange bent upon itself to provide a frontally projecting box-like section inwardly offset from the panel to provide a right angular space or seat extending along the full vertical length of the panel for accommodating therein a vertically extending front leg for the table,

b. a vertically disposed back panel extending transversely between the rear ends of said side panels, said back panel being provided at each of its opposite ends with a vertically extending right-angular flange having a terminal branch of which extends freely beyond the end of and is disposed in inwardly spaced parallel relation to said back panel to provide at each said end of said panel a right angular vertically extending space or seat in oppositely facing relation to the space or seat provided at the front end of the adjoining side panel for accommodating therein a vertically extending rear leg for the table,

c. a plurality of vertically extending post members or legs of square cross section respectively nested in the vertically extending right-angular spaces or seats provided in the opposite ends of said back panel and the front ends of said side panels, and

d. means for rigidly securing said side panels and said back panel to said posts or legs with said rear end flanges of said side panels respectively overlapping said freely extending terminal branches of the end flanges of said back panel and with said posts held secured against rotation about their vertical axes.

2. A construction as defined in claim **1** wherein said overlapping flanges of said panels are commonly secured to said posts or legs.

3. A construction as defined in claim **2** wherein said posts or lugs to which said back and side panels are commonly connected are respectively provided with at least one pair of vertically spaced nut-engageable threaded studs projecting from one face thereof along lines paralleling the planes of said side panels for projection through correspondingly spaced openings pro-

vided in said overlapping flanges of said back and side panels.

4. A construction as defined in claim **3** wherein said posts or legs to which said back and side panels are commonly connected are respectively provided with at least a second pair of vertically spaced nut-engageable threaded studs projecting at right angles to said first-mentioned pair of studs and along lines parallel to the plane of said back panel for projection through openings provided in the opposite end flanges of said back.

5. A construction as defined in claim **1** wherein the posts or legs disposed in said spaces or seats provided at the front ends of said side panels are respectively provided with vertically spaced nut-engageable threaded studs which extend along lines paralleling the planes of said side panels for projection through correspondingly spaced openings provided in said vertically extending front end flanges of said side panels.

6. A construction as defined in claim **1** wherein said posts or legs are respectively provided at their top ends with flat anchoring plates for securing a table top in overlying relation to said supporting understructure.

7. A construction as defined in claim **6** wherein said anchoring plates are disposed in recesses provided in opposite end portions of the top edges of said back and side panels whereby the upper surfaces of said plates are flush with the upper edges of the interconnected panels.

8. A construction as defined in claim **1** wherein the opposed faces of said box-like sections at the front ends of said side panels pivotally receive therebetween an open-topped tiltable accessory tray.

9. A construction as defined in claim **8** wherein said accessory tray is provided with opposite projecting end pins which are respectively journalled for tilting movement of the tray about a horizontally extending axis.

10. A construction as defined in claim **8** including stop means for limiting tilting of said tray beyond its fully opened and closed positions accordingly as its center of gravity shifts from a point to the rear of its said axis to a point in front of said axis.

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