United States Patent

Davis

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[45] **Mar. 14, 1972**

[54] WALL MOUNTED EXPANSIBLE TABLE

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[52] U.S. Cl. **108/33,** 108/63, 108/65, 108/73

[51] **Int. Cl.** **B65d 3/00**

[58] **Field of Search** 108/33, 36, 63, 65, 73, 42, 108/13; 312/277

[56] **References Cited**

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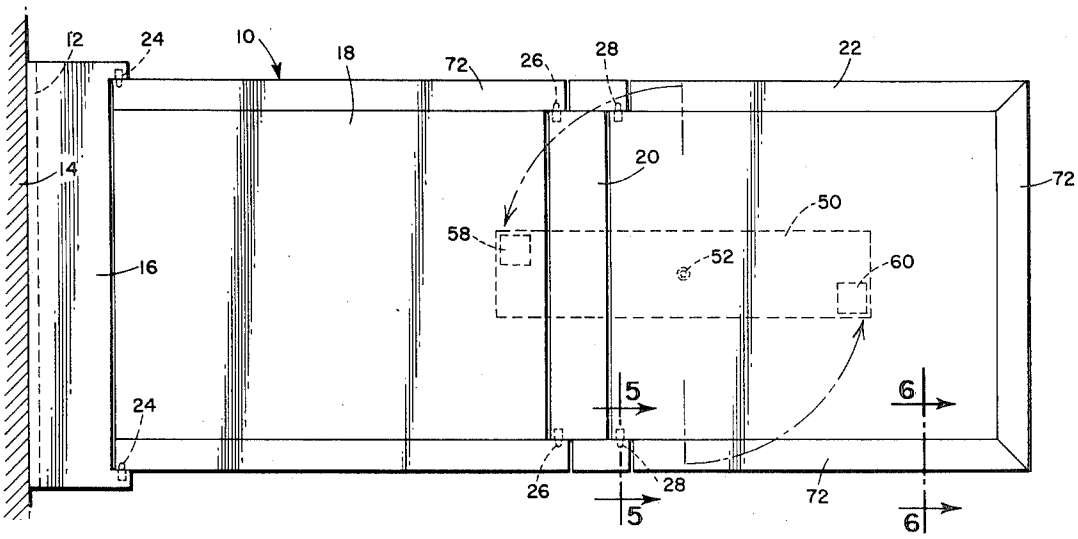
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[57] **ABSTRACT**

An expansible table supported from a vertical surface and movable between a collapsed position adjacent said surface to an expanded generally horizontal position. The table comprises a plurality of pivotally connected table sections and a cleat member pivotally connected to one of such sections. The cleat member can be pivoted to a position extending under all of the table sections when the latter are unfolded, with support legs being pivotally mounted on the cleat member for supporting the table when fully expanded.

7 Claims, 6 Drawing Figures



Patented March 14, 1972 3,648,628

3 Sheets-Sheet 1

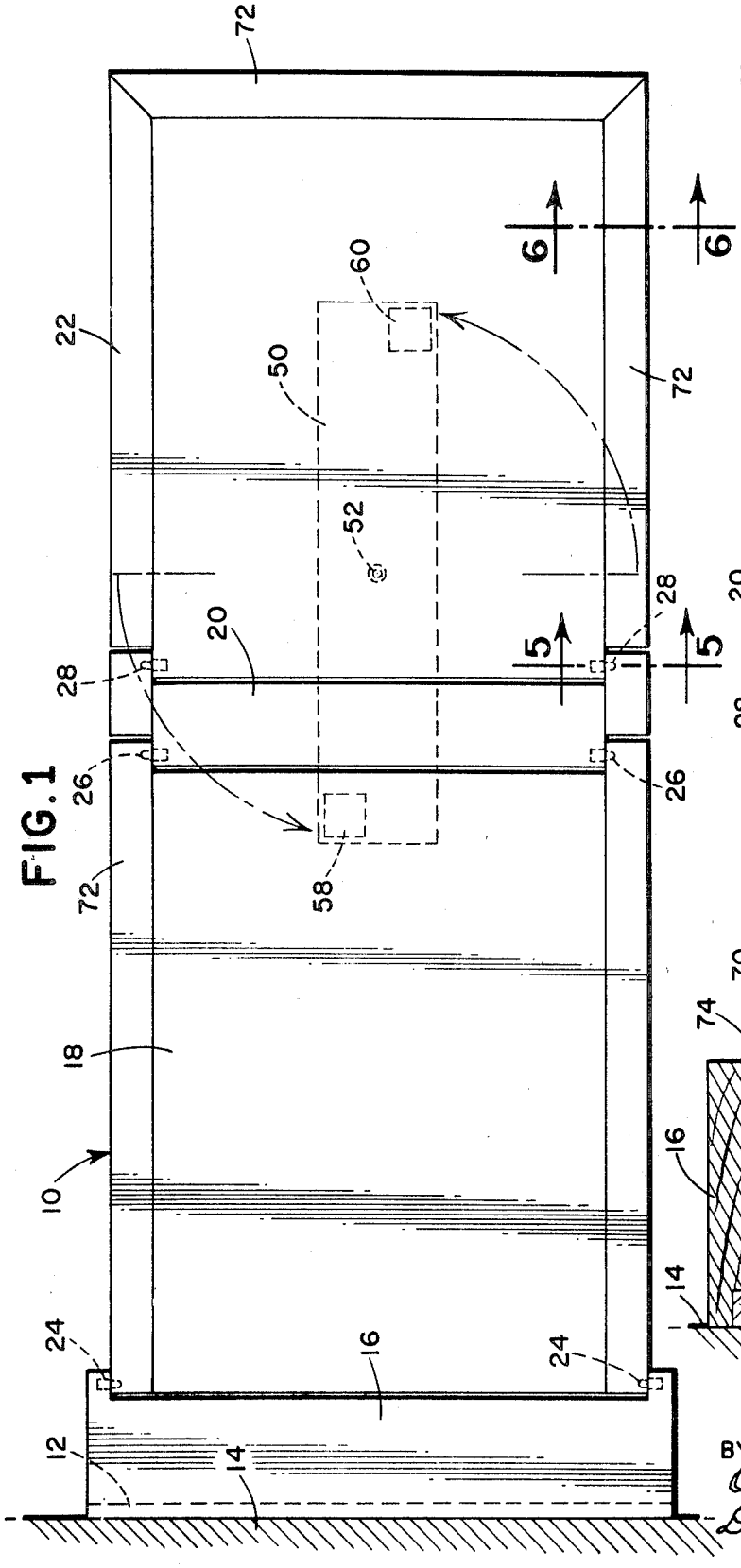


FIG. 1

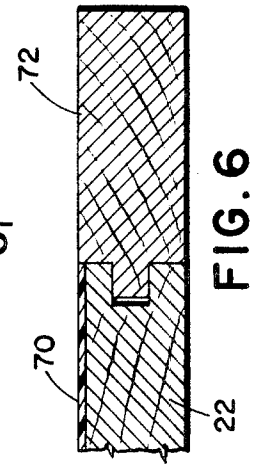


FIG. 6

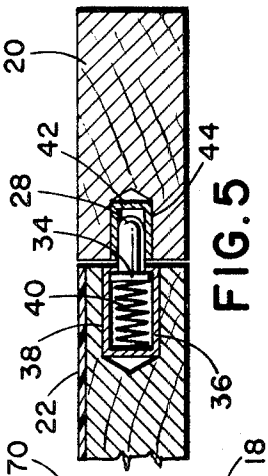


FIG. 5

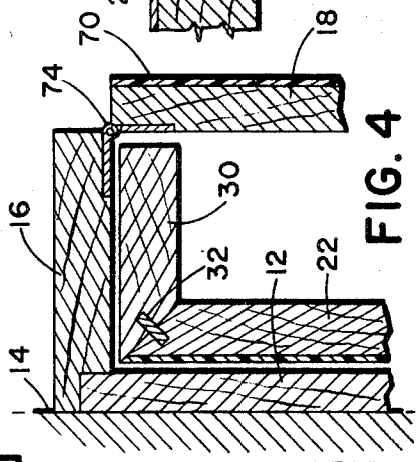


FIG. 4

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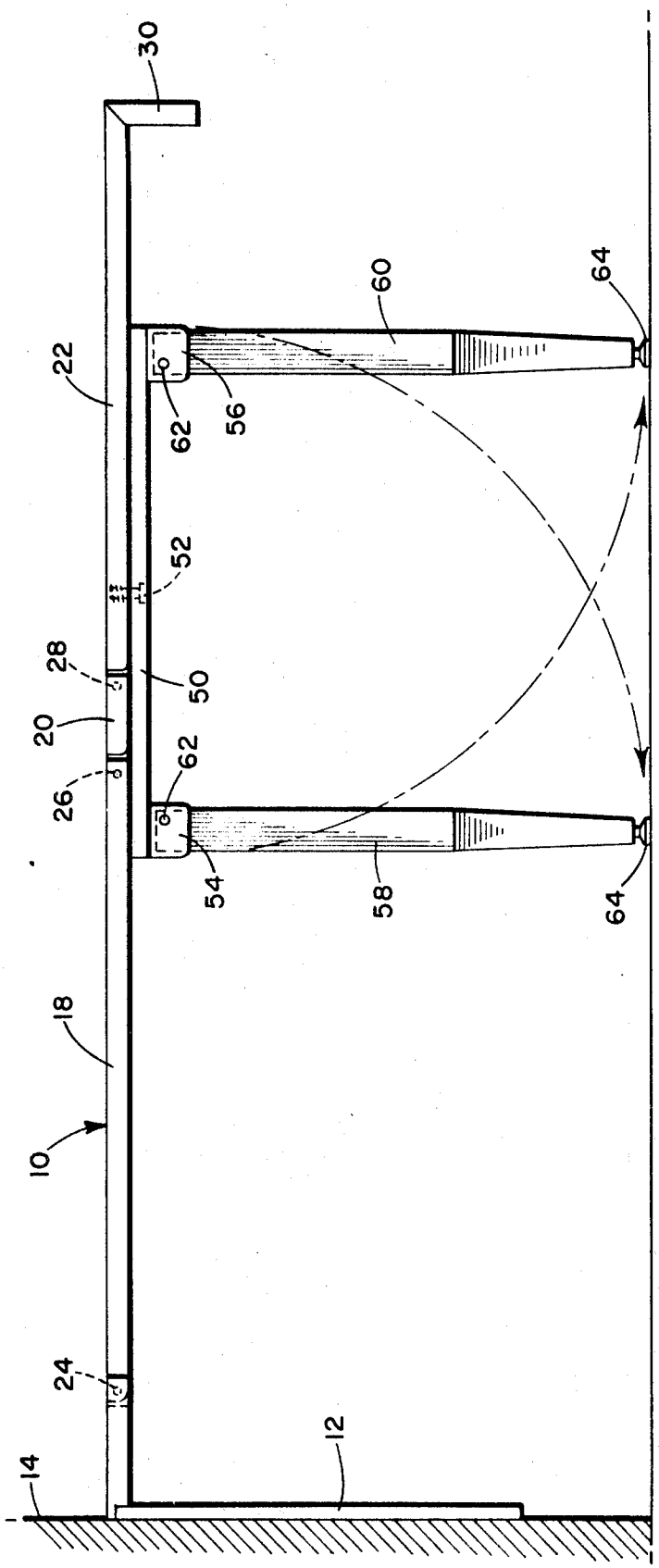


FIG. 2

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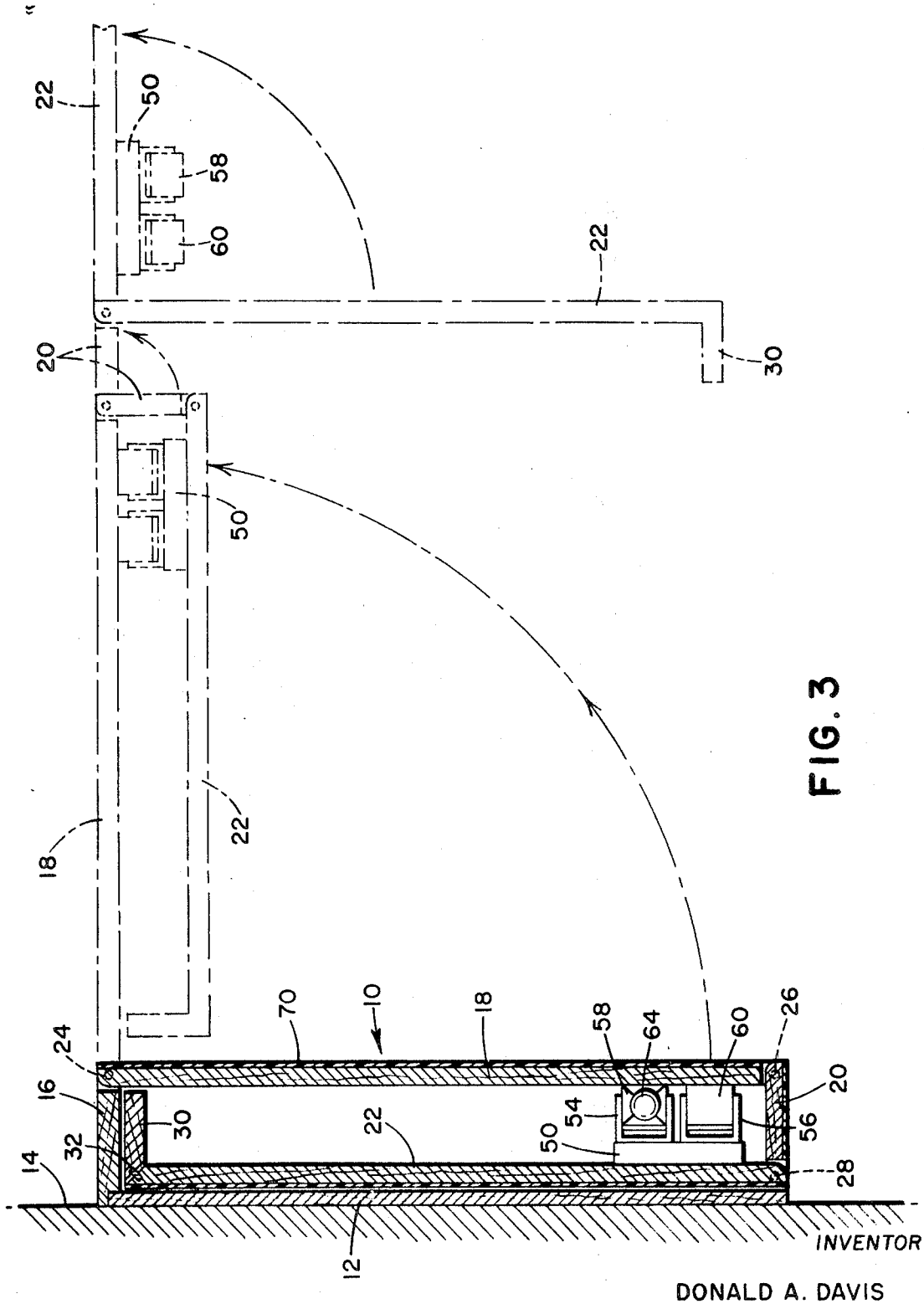


FIG. 3

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WALL MOUNTED EXPANSIBLE TABLE

BACKGROUND OF THE INVENTION

The present invention relates as indicated to an expansible table and more particularly to a table which can be mounted on a vertical support surface for movement between a collapsed position in which it occupies very little storage space and an expanded position providing a substantial table top surface. The term "vertical support surface" as used herein may include a wall, as shown in the application drawings, or a comparable fixed vertical surface such as provided, for example, by one side of a desk, a cabinet, or the like.

Tables which extend and fold away are of course desirable from the standpoint of saving much needed space, and tables of this type have taken on many forms in the past. By way of example but not limitation, reference is directed to U.S. Pat. Nos. 1,532,996; 2,672,384 and 3,072,453, all of which show tables which can be folded away and stored in an article of furniture, such as a cabinet or the like, or suspended vertically against the supporting surface, an arrangement shown in the mentioned U.S. Pat. No. 1,532,996.

Prior art tables of this type have not been wholly satisfactory for a number of reasons. Frequently, the mechanism employed either for folding the table or for supporting the same when expanded, or both, is relatively complex and thus costly. A further problem presented in prior art arrangements is the provision of sufficiently strong support means when the table is expanded without greatly sacrificing much needed space when the table is folded or collapsed. Leg support is of course a common method of supporting the table when open, but with a multisection table the space required for leg storage presents a problem. As a result, the table when expanded is frequently supported only at its hinged and outer ends, thereby leaving the midportion without firm support. Where the table sections are numerous and/or the table is used to support relatively heavy objects when open, the lack of firm support may present limitations on the use of the table.

SUMMARY OF THE INVENTION

With the above in mind, the primary object of the present invention is to provide an expansible table which can be mounted on a vertical support surface for movement between a collapsed, stored position and an extended, open position. The unfolding of the table can be effected simply and quickly, and without the need for tools or other equipment. Although the table of the present invention can be used in essentially any environment where space is of considerable importance, the table can be used to particular advantage in environments such as scientific laboratories and the like. With construction costs ever increasing, laboratory space is becoming correspondingly more expensive and tables constructed in accordance with the present invention permits maximum utilization of the space when the table are collapsed. Where class discussions or critiques are scheduled, at the end of a laboratory session, for example, one or more tables can be expanded to an open position and the students and instructor positioned therearound.

A further object of the present invention is to provide an expansible table the design of which permits the table to require a minimum of space when collapsed but which at the same time provides firm support for the table when expanded to an open position.

A more specific object of the invention is to provide an expansible table in which the supporting legs when folded and stored require a minimum of space but which can be pivoted to a position generally parallel to the longitudinal axis of the table when expanded, thereby giving the table firm support in the intermediate portion thereof as well as at its hinged and open ends.

A still further object of the present invention is to provide a table which is inexpensive to manufacture but pleasing in appearance, and which can be provided with a top surface adaptable to the conditions of use. In scientific laboratories, for example, the table sections can be provided with a chemically resistant top surface.

Other objects of the present invention will become apparent as the following description proceeds, in particular reference to the application drawings.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 comprises a top plan view of the invention with the table shown in an open or fully expanded position, with the legs being positioned to provide maximum support;

FIG. 2 is a side elevational view of the table when in its FIG. 1 expanded position;

FIG. 3 is a sectional view illustrating the table in a collapsed position, and further showing in dash lines the manner in which the table is unfolded to an expanded position;

FIG. 4 is a fragmentary sectional view similar to the top portion of FIG. 3, showing an alternative hinging arrangement;

FIG. 5 is a sectional view taken on line 5—5 of FIG. 1 showing the preferred form of pivotal connection between the table sections, and

FIG. 6 is a sectional view taken on line 6—6 of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, wherein like parts are indicated by like reference numerals, the table of the present invention is generally indicated at 10 and the construction thereof is best seen in FIG. 3. The table 10 comprises a rigid back plate 12 which is adapted to be mounted on the vertical supporting surface 14, which in the form shown comprises a wall. The plate can be attached to the wall in any suitable manner, such as by fasteners, hangers or the like.

Rigidly attached to the top of the back plate 12 is a ledge 16 which extends perpendicular to the wall 14. The ledge 16 can be permanently secured to the back plate 12 in any suitable manner.

The folding sections of the table comprise first, second and third table sections indicated at 18, 20 and 22, respectively. The first table section 18 is pivotally connected by means of pin 24 to the outer end of the ledge 16. Similarly, the intermediate table section 20 is pivotally connected by pin 26 to the adjacent end of the table section 18, and the third section 22 is pivotally connected by pin 28 to the adjacent end of the intermediate section 20. In the form shown, the free end of the third table section 22 has mounted thereon a front ledge member 30 which extends downwardly when the table is fully open, as shown in FIG. 2. Fastener members 32 or the like, preferably hidden rigidly mount the ledge 30 to the table section 22.

Referring to FIG. 5, there is illustrated therein the preferred form of pivotal connection between the several table sections, with FIG. 5 illustrating the pivotal connection between the intermediate table section 20 and the third table section 22. It will be understood, however, that the pivotal connection shown in FIG. 5 is exemplary of the pivotal connections between the other table sections.

The pin 28 includes a base portion 34 which is slidable within a cylindrical sleeve 36 mounted in an opening 38 therefor in the table section 22. A coil spring 40 biases the pin 28 outwardly, as shown in FIG. 5.

A pin receiving sleeve 42 is mounted in an opening 44 provided therefor in the intermediate table section 20, with the table sections 20 and 22 when thus assembled permitting pivotal movement of the third table section 22 about the intermediate table section 20 about the longitudinal axis of the pin 28.

A cleat member 50 is pivotally connected to the third table section 22 by a pivot pin 52. The cleat member 50 can be rotated from its stored position as shown in FIG. 3, in which the cleat member 50 is oriented generally parallel to the pivot pins 28 and wholly within the confines of the third table section 22, to a position shown in FIG. 1, in which the cleat member 50, shown in dash lines in this figure, extends

generally perpendicular to the pins **28** and generally parallel to the length of the expanded table. It will be noted that when the cleat member is in its dash line, FIG. **1** position, the member extends beneath both the intermediate table section **20** and the adjacent end of the first table section **18**.

A pair of brackets **54** and **56** are fixedly mounted on the underside of the cleat member **50** on either side of a longitudinal plane through the pin **52** of the cleat member. Legs **58** and **60**, respectively, are pivotally mounted by pins commonly designated at **62** to the brackets **54** and **56** for folding movement between their stored position, as shown in FIG. **3**, and their open, support position as shown in FIG. **2**. The direction of folding of the legs **58** and **60** is shown in dash lines in FIG. **2**.

The bottom of each leg **58** and **60** is preferably provided with an adjusting foot commonly designated at **64** for the purpose of achieving a perpendicular relationship between the table when expanded as shown in FIG. **2** and the vertical supporting surface **14**.

As shown in the application drawings, the table sections, the top ledge **16**, and the back plate **12** are constructed of wood, and where the table is likely to be exposed to materials harmful thereto, the table sections can be provided with a plastic laminate top surface, as commonly shown at **70**. It will be understood that any suitable, commercially available plastic or other type protective material can be employed, and that the wood can likewise be selected from commercially available types.

Referring to FIG. **6**, each table section, with table section **22** being shown in this figure, is formed with a peripheral dressed edge **72** which may be rabbited to the adjacent phase of the table section, as shown in this figure. Normally plywood material, due to its availability and cost, is employed for the main body portion of the table sections, and when such plywood is covered by the plastic laminate **70** and edged by the dressing member **72**, a highly attractive top table surface is provided.

It will further be noted that the table sections at their adjoining ends are offset to accommodate the pivotal connections therebetween. In this manner, the third table section **22** can be pivotally mounted about the intermediate section **20**, and the latter about the first table section **18** without interference. In lieu of the pivotal connection shown in FIG. **5**, the adjoining edges of the several table sections may be formed planar, and the edges connected by continuous hinges of the type shown at **74** in FIG. **4**.

To briefly redescribe the mounting and use of the table constructed in accordance with the present invention, the table can be mounted on any suitable vertical support surface in the manner shown in FIG. **3**. The table can conveniently be preassembled and shipped in the collapsed position shown in this figure. To mount the table on the vertical support surface, the back plate **12** need only be fastened to or hung from the support surface **14**. In such collapsed position, the table takes up a minimum of space.

To move the table to an open position, the first table section **18** is grasped and moved upwardly into its dash line, FIG. **3** position. The intermediate section **20** and the third table section **22** can then be pivoted to a generally horizontal position, as shown in FIG. **2**. The cleat member **50** is thereafter rotated to its FIG. **1** position wherein it extends lengthwise of the table and beneath all three table sections. The legs **58** and **60** can then be folded downwardly into their FIG. **2** position thereby supporting the table in its fully open position.

It will be understood that the dimensions of the table may vary considerably depending upon the ultimate use thereof. By way of example, the table illustrated in the drawings is approximately **4–4 ½** feet long when fully open, and is positioned at normal table height above the supporting surface, slightly less than **30** inches. The width of the table shown is approximately **20–24** inches. It will thus be seen that the table when open provides an extensive working surface which is firmly supported throughout its length and thus capable of sustaining fairly heavy loading.

To fold or collapse the table, the reverse procedure is followed. The legs **58** and **60** are folded to a closed position against cleat member **50**, and the latter is then rotated **90** degrees from its dash line position in FIG. **1** to a position wholly within the dimensions of the third table section **22**, thereby permitting pivotal movement of this section about the intermediate section **20**. When fully collapsed, the table reassumes its FIG. **3** position.

It will thus be seen that the present invention provides a table which is simple in construction and economical to manufacture. The table can be folded and unfolded in a minimum amount of time, and the mounting of the leg members on the pivoted cleat provides firm support for the table when expanded while at the same time permitting folding of the table to a collapsed position taking up very little space.

I claim:

1. An expansible table adapted to be supported from a vertical support surface and movable between a collapsed position contiguous said surface and an expanded position extending generally normal to said vertical support surface, comprising:

a. a support member fixed to and extending laterally from said vertical support surface,

b. a first table section pivotally connected to said lateral support member and hanging vertically downwardly when said table is collapsed,

c. a second table section pivotally connected to the other end of said first section and extending generally normal to said first section and said support surface when said table is collapsed,

d. a third table section pivotally connected to the opposite end of said second section and disposed contiguous said support surface when said table is collapsed,

e. a cleat member contiguous and pivotally connected to said third table section on the side thereof remote from said support surface, said cleat member being disposed wholly within the confines of said third table section when said table is collapsed and being adapted to be pivoted to a position extending under said first and second table sections when said table is moved to an open position wherein said table sections are in a plane generally normal to said support surface, and

f. a pair of leg members pivotally mounted on said cleat member and movable between a closed position contiguous and within the confines of said cleat member when said table is collapsed to an open, support position when said cleat has been pivoted to a position transverse to said table sections for supporting the same in planar relation.

2. The table of claim **1** wherein said first and third table sections are substantially equal in length and said second section is generally equal in length to said fixed support member thereby to provide a compact table when collapsed.

3. The table of claim **2** further including a front ledge portion fixed to the free end of said third table section and providing a front ledge portion extending downwardly from said third table section when said table is in an expanded position.

4. The table of claim **1** wherein each of said legs is pivotally mounted on said cleat member by means of a bracket mounted relatively adjacent the opposed ends of said cleat member, said brackets being mounted on opposed sides of the longitudinal center line of said cleat member thereby to permit folding of said legs to a collapsed position contiguous said cleat member and wholly within the confines thereof.

5. The table of claim **4** wherein said cleat member is substantially as long as the width of said third table section, the pivot point for said cleat member being generally intermediate the width of said third table section and spaced from the inner edge of said third table section a distance approximately equal to the width of said cleat member, whereby one end of said cleat member and the leg carried thereby extends under said first table section for directly supporting the same when said leg is moved to an open, support position.

6. The table of claim 1 wherein said pivoted connections between the several table sections and between the first table section and said fixed support member comprises a spring mounted detent carried by one of said pivotally connected members and a cylindrical sleeve carried by the other for receiving said detent.

7. The table of claim 1 wherein said pivotal connections between the several table sections and between the first table section and said fixed support member comprises a continuous hinge mounted on the adjacent ends of said sections.

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