

[54] STOWABLE WALL TABLE

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[51] Int. Cl..... A47b 3/00

[58] **Field of Search** 108/34-38;
297/14; 312/237, 241

[56] References Cited

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[57]

ABSTRACT

A table assembly comprising a one piece table top, vertically stowable within a structure, such as a wall frame or cabinet structure, when not in use with only the top surface of the table top in view. The table top can be moved from the wall frame to extend horizontally from the wall frame when set up for use. The table is attached to the wall frame by a pair of arms each pivotally secured at one end to a respective side of the wall frame and pivotally attached at the other end to the underside of the table top at a location spaced a moderate distance forward of the wall end of the table top. Supporting legs are positioned at the outer end of the table top, foldable upwardly and inwardly to a position against the underside of the table. Floor engaging wheels are attached to the outer end of the table top to facilitate movement along the floor surface when the table top is moved to and from its stowed position. The inner or wall end of the table top is movable away from its associated wall frame a limited distance to facilitate manipulation of the table top from its stowed to its use position.

10 Claims, 6 Drawing Figures

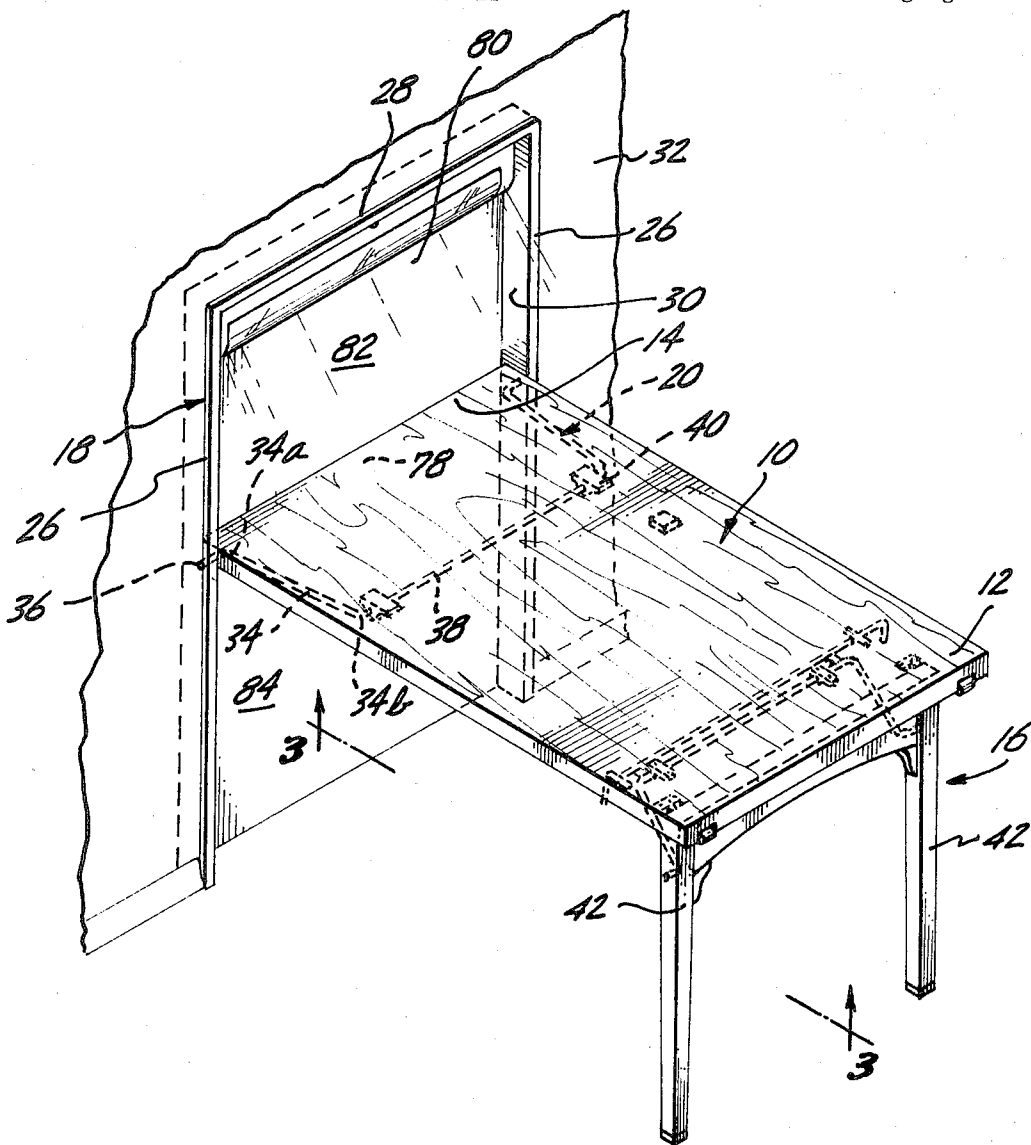


Fig. 3.

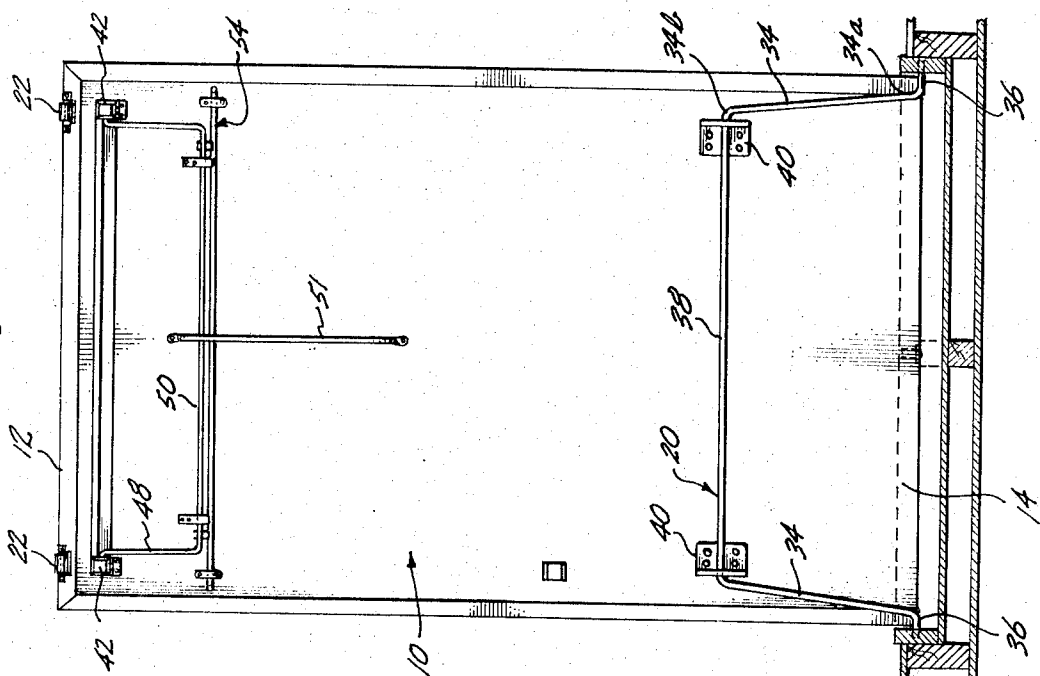


Fig. 1.

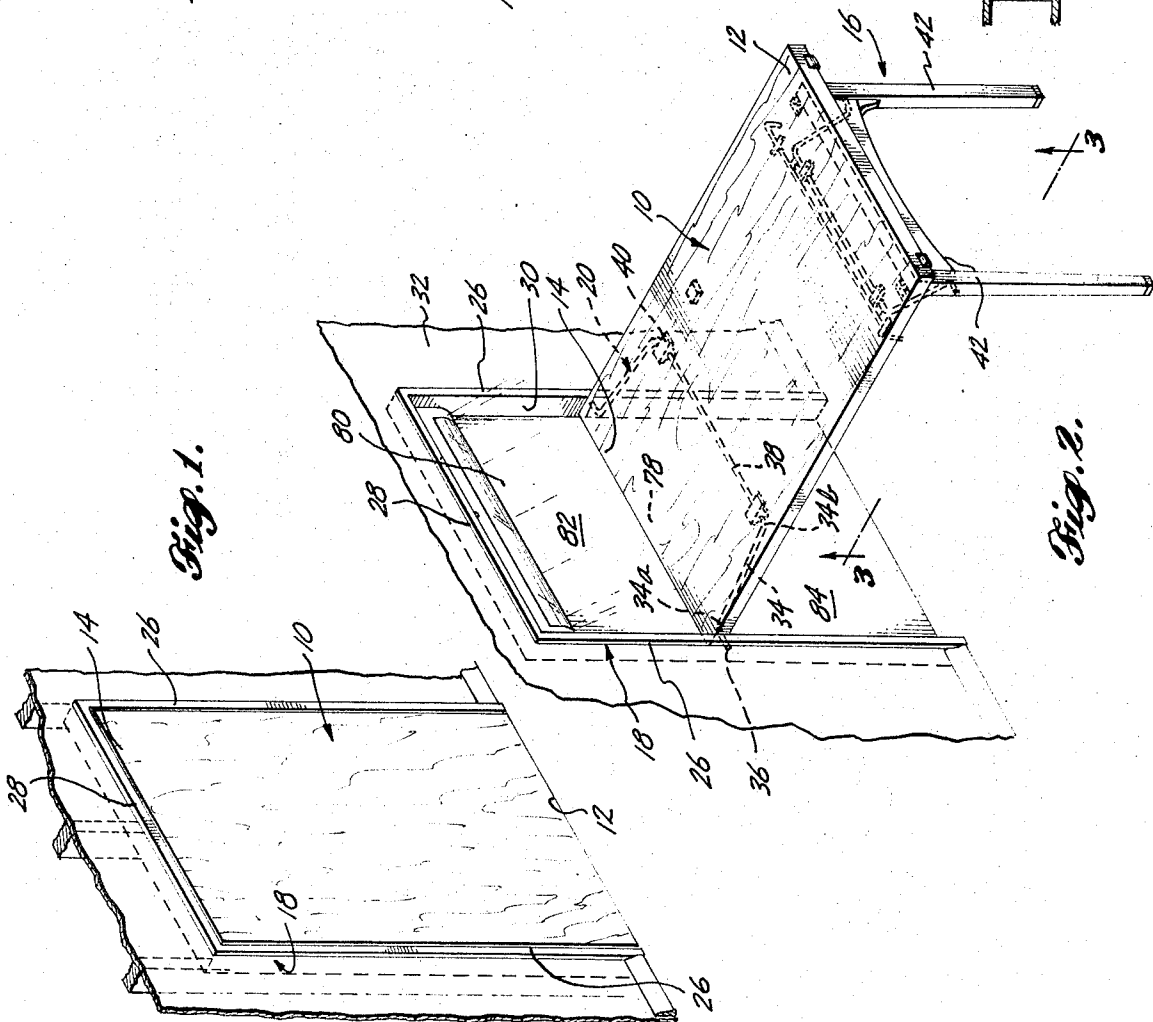
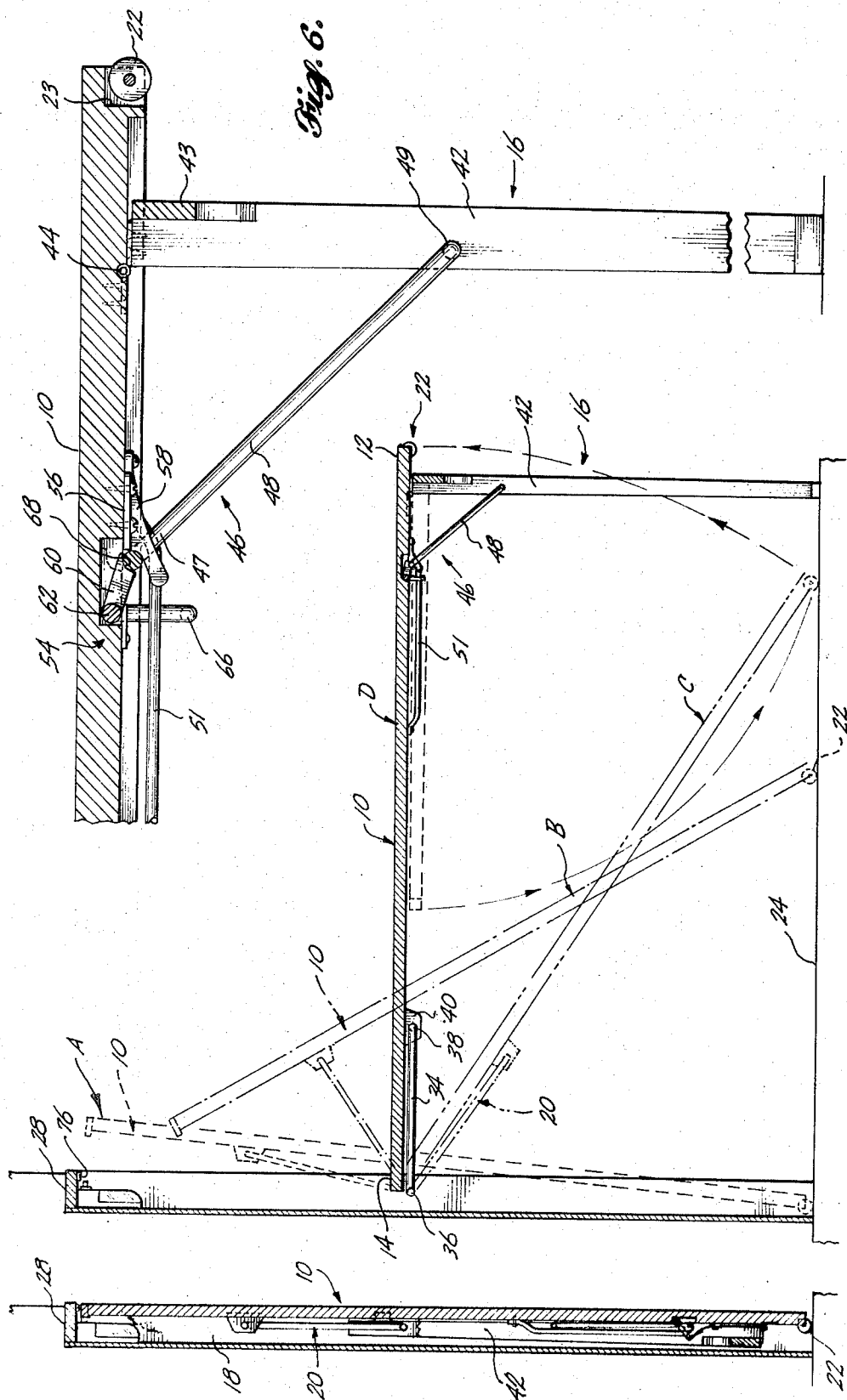


Fig. 2.



STOWABLE WALL TABLE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a stowable, wall attached table assembly which can be stowed in a vertical position proximate a wall structure and moved to a horizontal use position extending from the wall structure.

2. Description of the Prior Art

Various wall table assemblies are known which involve a table top vertically stowable within a wall frame or hung from a wall with the table top being movable to a horizontal position for use. However, to the best knowledge of the applicant various undesirable features are inherent in such prior art tables. For example, some require complex linkage systems to stow the table or to support it as it is moved between its stowed position and its usable position. Typical configurations of such prior art tables are shown in the following patents: Schimmel, U.S. Pat. Nos. 1,875,892; Bell, 2,199,981; Leonard, 2,559,021; Terrell, 2,580,618; Viets, 3,062,544; Novak, 3,223,054; Jackson, 3,267,879; and Andrews et al., 3,606,846.

It is an object of the present invention to provide a convenient and relatively simple stowable wall table assembly having an attractive single piece table top open to view when in storage or when in use, and comprising parts which are hidden from view when stowed.

SUMMARY OF THE INVENTION

The present invention comprises a unitary table top movable between a vertical stowed position adjacent a support structure, such as a wall or cabinet structure, and a horizontal use position where the table top extends horizontally from the wall structure. The table top is connected to the wall structure through arm means having an inner end pivotally attached to the wall structure and an outer end pivotally attached to the table top at a location spaced a moderate distance from the inner end of the table top. At the outer end of the table top, there is provided stowable leg means to support the table in its horizontal use position. Further, there is floor engaging means at the outer end of the table to permit the outer end of the table to move along the floor surface when the table is being moved between its stowed and use positions.

The aforementioned arm means is substantially the sole positive linkage connection between the wall structure and the table top, with both the inner and outer ends of the table top able to move free of the wall structure. Thus when the table top is being moved from its stowed position, the inner upwardly disposed end of the table top can be moved outwardly from the wall structure, to permit the table top to be grasped so that the outer downwardly disposed end of the table top can be moved outwardly along the floor surface toward its use position.

In the preferred form, the pivot attachment of the arm means to the wall structure is at substantially the same height as the table top in its use position, with the arm means providing support for the inner end of the table top. Also, in the stowed position the lower end of the table top is spaced slightly above the floor structure, to facilitate outward movement of the upwardly disposed inner end of the table top in initial movement of the table top from its stowed to its use position.

While the table top is illustrated as being mounted to a wall frame, it is to be understood that it could be mounted to another type of frame, such as a cabinet frame. Other features of the invention will become apparent from the following detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric view showing the table assembly of the present invention in a stowed position within a wall frame;

FIG. 2 is an isometric view similar to FIG. 1 showing a table top assembly in its usable position;

FIG. 3 is a bottom plan view taken from the position indicated at 3—3 of FIG. 2;

FIG. 4 is a longitudinal sectional view taken generally along the longitudinal center line of the table top with the table top assembly being in a stowed position;

FIG. 5 is a side elevational view similar to FIG. 4 showing the table top assembly in dotted lines being moved from its stowed position to its usable position, the usable position being in full lines; and

FIG. 6 is an enlarged elevational view of a portion of FIG. 5 more clearly illustrating the collapsable front leg means in detail.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention comprises a unitary table top 10 having an outer end 12 and an inner wall end 14. A pair of foldable support legs 16 are pivotally positioned at the outer end 12 of the table top 10. These legs 16 are attached to and pivot between a stowed position against the underside of the table top 10 and a vertical support position where they extend downwardly from the horizontally positioned table top 10. An arm linkage generally designated 20, is pivotally mounted to wall frame 18 and to table top 10. Floor engaging means in the form of rollers 22 are located on the outer edge of the table top 10 and arranged to engage and move along a floor surface 24 as the table top 10 is being moved between its stowed position and its usable position. These wheels or rollers 22 are positioned in related recesses 23 at the outer lower edge of table top 10.

The wall frame 18 comprises two vertical side members 26 and a top cross member 28, which are or may be conventional frame members used in common house construction, either recessed within a wall or flush with a wall. As shown herein, the side members 26 and cross member 28 define a cavity 30 into which the table top 10 is moved for its stowed position, so that the table top 10 is substantially flushed with frame 18 and the wall surface 32 surrounding the frame 18.

The arm linkage means 20 comprises two oppositely positioned side arms 34 having an inner wall end 34a and an outer end 34b. Each arm 20 has at its inner end a laterally outwardly extending finger 36 at which each arm is pivotally connected to a respective one of the two side members 26. In the preferred embodiment, the pivot connection of the fingers 36 is at substantially the same height as the underside of the table top 10, when table top 10 is in its horizontal position of use, and supports the wall end of the table top.

The outer ends of arms 34 are rigidly interconnected by cross bar 38, which in turn is pivotally connected to the underside of table top 10 by means of two laterally spaced brackets 40. The location at which arm means

20 is pivotally attached to table top 10 is spaced moderately forward of the extreme wall end 14 of table top 10 (in the preferred embodiment about a quarter of the length of the table top from the wall end thereof). Preferably, the length of arms 34 is approximately equal to the distance from the inner wall end 14 of the table top 10 to the pivot axis at the table top 10, so that wall end 14 of table top 10 is properly positioned contiguous with wall surface 32 when the table is set up for use.

The aforementioned leg support means 16 comprises right and left leg members 42 pivotally attached to the underside of table top 10 by means of hinges 44 and are rigidly connected to each other by cross bar 43. To hold the leg members 42 in their vertical support position, a support brace 46 is provided having a pair of arms 48 with an inner end 47 and an outer end 49. The inner ends 47 of the arms 48 are rigidly interconnected by cross bar 50, and the outer ends 49 are pivotally connected each to a respective leg member 42 at a location moderately below table top 10. Cross bar 50 is slide mounted against the underside of table top 10 by means of the longitudinal guide bar 51 connected at each end to the bottom of table top 10. As the legs 42 are swung inwardly to their stowed position below the table top 10, the cross bar 50 slides inwardly along guide bar 52.

In its supporting position, the brace arms 48 extend diagonally from their pivot attachment on legs 42 upwardly and inwardly to a locking location at the underside of table top 10. To hold support the brace arms 48 in their locked positions, a locking mechanism 54 is provided. The locking mechanism 54 comprises a pair of brackets 56 fixably attached to the underside of table top 10, each bracket 56 having a downwardly and rearwardly extending finger 58, adapted to engage the cross bar 50 at its forwardmost position of travel. To retain cross bar 50 against and within fingers 58, a pair of laterally spaced locking members 60 are provided. Each locking member 60 is rigidly attached to a cross bar 62 pivotally mounted to the underside of the table top 10 parallel with cross bar 50. To move the locking members 60 upwardly to an unlocked position, a pair of downwardly extending handles 66 rigidly attached to the ends of cross bar 62 are provided.

Each of the locking members 60 has a concave recess 68 at its outer end to properly engage cross bar 50 and to hold it in its locked position against the fingers 58. To disengage the cross bar 50 from its locked position, the handle 66 is manipulated to move the pair of locking members 60 upwardly, thus permitting cross bar 50 to slide rearwardly against the underside of table top 10.

Operation of the present invention will be described with references to FIGS. 4 and 5. In its stowed position, the table top 10 fits within wall frame 18 in a vertical position so as to be substantially flush with the surrounding wall surface 32. A suitable catch mechanism 76 is mounted to the underside of the top cross member 28 to engage the inner wall end 14 of the table top 10 and thus hold table top 10 in its stowed position. The floor engaging wheels 22 are positioned slightly above the floor level, with the weight of the table top and its associated leg assembly 42 being supported by the arm means 20. At this time the sole connection of table top 10 with support frame 18 is through arm means 20 and the releasable top catch mechanism 76.

To move the table top 10 from its stowed position, the table top 10 is pushed inwardly at a location moderately beneath the location of the fingers 36 at which arm means 20 is pivotally connected to frame 18. This causes the top or wall end 14 of table top 10 to swing outwardly free of catch mechanism 76, so that the sides of table top 10 can easily be grasped. Alternately a pull tab can be provided at the upper edge of the table top 10. As the upwardly positioned wall end of the table top 10 moves outwardly from frame 18, the lower support wheels 20 come in contact with the floor surface 24. This position is shown in dotted lines on FIG. 5 at A. It should be noted that in this position substantially the entire weight of table top 10 is now being borne by the wheels 22. Then the person grasps the sides of table top 10 and rolls it outwardly through positions B and C. At position C, the table top 10 is supported at its forward end 12 by the wheels 22 and at its wall end 14 by the pivot connection 36 of the arm means 20. If desired, to provide additional support for the table top 10, a support mount 78 can be provided in the vertical back wall 80 of wall recess 30.

To move table top 10 from its position shown at C to that shown in full lines in FIG. 5, (i.e. position D) the outer end 12 of the table top 10 is lifted upwardly, and the support legs 42 are swung downwardly to the position shown in full lines in FIG. 5. To lock the legs 16 in their vertical support position, the locking members 60 drop automatically to the position shown in FIG. 6 to hold the cross bar 50 of the support brace arms 48 in locked position.

To move table top 10 to its stowed position, substantially the reverse operation is performed. First, the handle 66 is manipulated to release cross bar 50 of the support brace 46, and the legs 16 are swung upwardly against the underside of table top 10. Catch members (desirably in the form of small magnets) are provided on the underside of table top 10 to hold legs 42 in their collapsed position. Thereafter, the outer end 12 of the table top 10 (being supported by the person stowing the table) is simply lowered to its floor engaging position C of FIG. 5. Thereafter the wall end 14 of table top 10 is lifted moderately and the table top 10 is rolled rearwardly on the floor engaging wheels 22 along the floor 24 through positions C and B back to position A. Thereafter, the upwardly disposed wall end 14 of table top 10 is pushed rearwardly flush within wall recess 30, with the upper wall end 14 of table top 10 engaging catch mechanism 76.

It is to be understood that in the present invention other structure can be conveniently added to the table assembly. For example, with reference to FIG. 2, in the upper area of the frame 18, indicated at 82, it may be desirable to place some bookshelves or other structure. Further, in the lower area of the frame 18, indicated at 84, it may be desirable to insert a structure such as a roll-out cabinet or set of drawers that can fit below the table top 10 at the outer end thereof. Other modifications can be made to meet specific requirements, depending upon the particular application in which the table assembly of the present invention is used.

What is claimed is:

1. A stowable table, comprising:

(a) a support structure, such as a wall or cabinet structure, adapted to have said table mounted thereto;

- (b) a substantially unitary table top having an inner end and an outer end, said table top having a first vertical stowed position proximate said support structure, and a second horizontal use position where it extends horizontally from said support structure;
- (c) arm means connecting said table top to said support structure, said arm means having an inner end pivotally fixed to said support structure at a predetermined location on said structure, and an outer end pivotally connected to said table top at a predetermined location proximate the inner end of the table top;
- (d) leg support means connected to said table top at the outer end thereof, said leg support means having a stowed position against the table top and a supporting position wherein said leg support means extend downwardly from the outer end of the table top toward a floor surface;
- (e) floor engaging means at the outer end of said table top and adapted to move along in contact with the floor surface when the table top is being moved between its first and second positions, and
- (f) said arm means being the sole primary connection between said table top and said support structure, such that both the inner end and the outer end of said table top are able to move away from said support structure, said arm means and said table top being so arranged relative to said support structure that the length of the arm means plus the distance from the pivot connection of the arm means on the table top to the inner end of the table equals the distance from the pivot location of the arm means on the support structure to a location on said structure proximate the inner end of the table in its stowed position, and the distance from the pivot connection of the table top to the outer end of the table top equals the length of the arm means plus the distance from the pivot connection on the support structure to the location of the outer end of the table proximate the floor surface in its stowed position, whereby,

with said table top in its stowed position, the upwardly disposed inner end of the table top can be moved outwardly from said support structure, with the inner end being supported by said arm means, and downwardly positioned outer end of the table can be moved outwardly from the support structure along the floor surface, with the outer end being supported by the floor surface, and then upwardly to its use position.

2. The table as recited in claim 1, wherein the pivot location of the inner end of the arm means is at the same height as the table top in its horizontal use position, and said arm means functions to support the inner end of said table top in its horizontal use position.

3. The table as recited in claim 2, wherein the length of said arm means is substantially the same as the distance from the inner end of the table top to the pivot connection of the arm means to the table top, whereby

with the table top in its horizontal use position, the inner end of the table is located substantially at the pivot connection of the arm means at the support structure.

4. The table top as recited in claim 1, wherein the length of the table top is such relative to the location of the arm means that with the table top in its stowed position, the downwardly disposed outer end of the table top is positioned slightly above said floor surface, whereby when the upwardly positioned inner end of the table top is pulled outwardly from the stowed position, the upper inner end is able to swing outwardly a moderate distance from the support structure with the lower positioned outer end of the table top then coming into contact with the floor surface.

5. The table as recited in claim 4, wherein there is releasable catch means arranged to hold the inner end of the table top against the support structure with the table top in its stowed position.

6. The table top as recited in claim 1, wherein said floor engaging means comprises roller means at the outer end of said table.

7. The table top as recited in claim 1, wherein said arm means comprises a pair of laterally spaced arms rigidly interconnected with one another.

8. The table as recited in claim 7, wherein said arm means comprises a cross bar rigidly interconnecting said two laterally spaced arms.

9. The table top as recited in claim 1, wherein said leg support means comprises a pair of legs pivotally attached to the outer end of the table top and disposed to swing upwardly against the undersurface of said table top.

10. The table top as recited in claim 1, wherein:

(a) the pivot location of the inner end of the arm means is at the same height as the table top in its horizontal use position, and said arm means functions to support the inner end of said table top in its horizontal use position;

(b) the length of said arm means is substantially the same as the distance from the inner end of the table top to the pivot connection of the arm means to the table top, whereby with the table top in its horizontal use position, the inner end of the table is located substantially at the pivot connection of the arm means at the support structure, and

(c) the length of the table top is such relative to the location of the arm means that with the table top in its stowed position, the downwardly disposed outer end of the table top is positioned slightly above said floor surface, whereby when the upwardly positioned inner end of the table top is pulled outwardly from the stowed position, the upper inner end is able to swing outwardly a moderate distance from the support structure with the lower positioned outer end of the table top then coming into contact with the floor surface.

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