Aug. 25, 1953 C. M. MUGLER 2,650,146

FOLDING TABLE AND MEANS FOR DETACHABLY CONNECTING THE SAME TO A SUPPORT

Filed March 26, 1951

2 Sheets-Sheet 1

Fig. 3

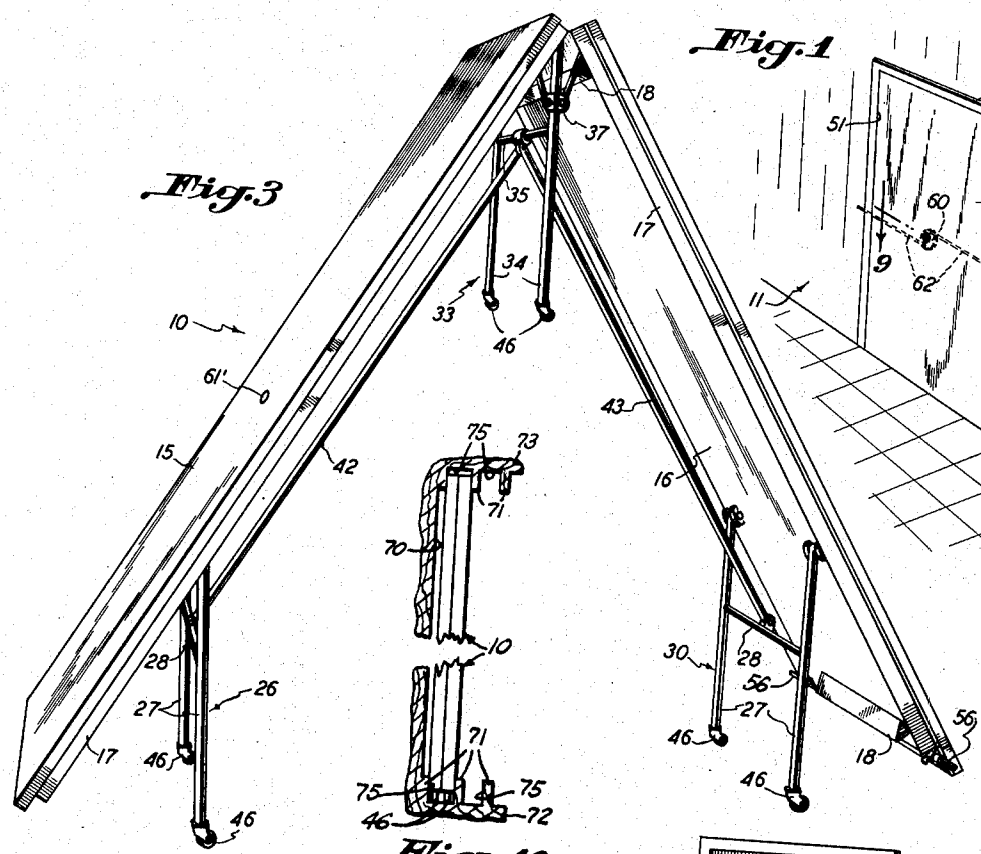
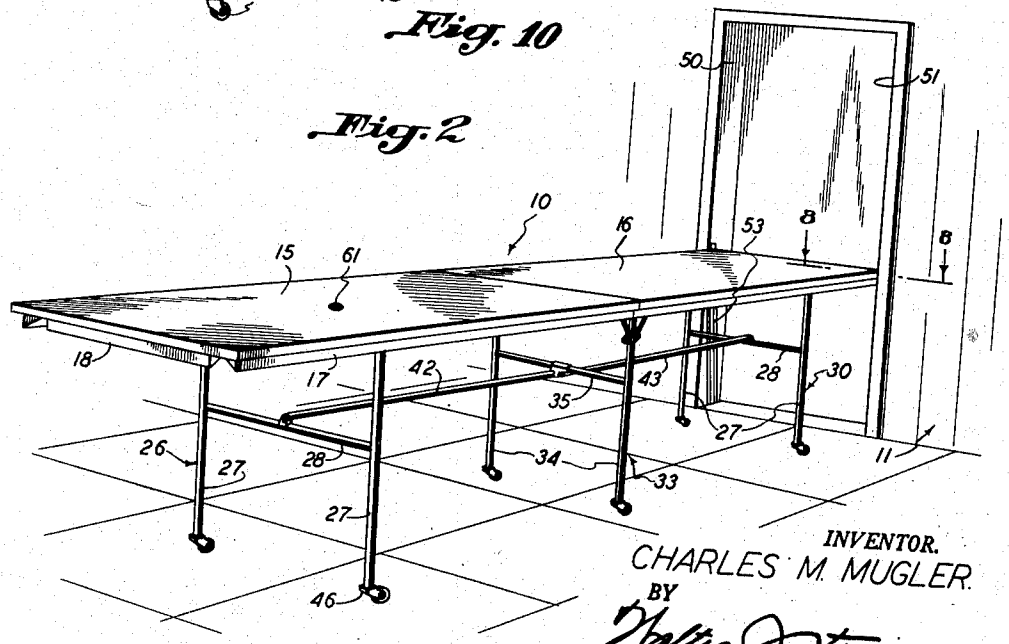


Fig. 1

Fig. 10

Fig. 2



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2 Sheets-Sheet 2

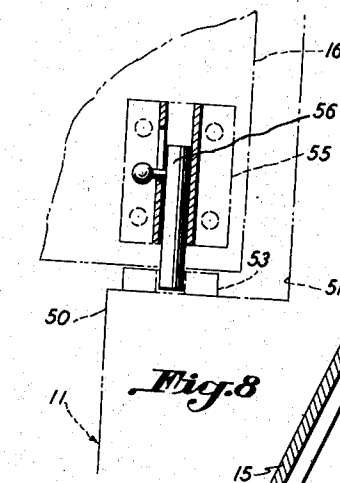


Fig. 8

Fig. 4

Fig. 9

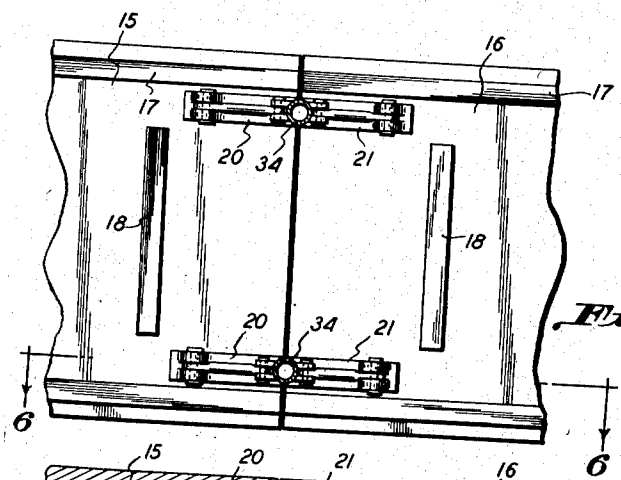


Fig. 5

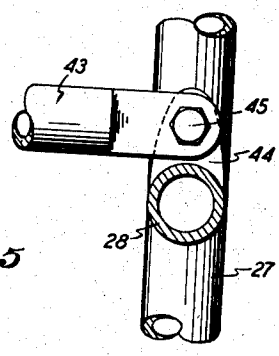


Fig. 7

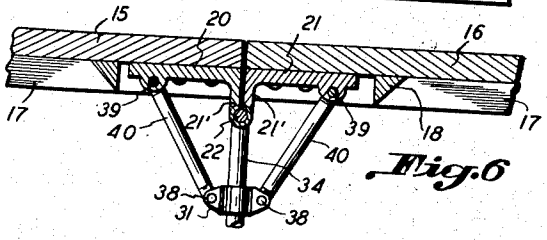


Fig. 6

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FOLDING TABLE AND MEANS FOR DETACHABLY CONNECTING THE SAME TO A SUPPORT

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Application March 26, 1951, Serial No. 217,427

5 Claims. (Cl. 311—16.5)

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This invention relates to tables, and particularly to a table of the foldable type adapted to be collapsed into a relatively flat form for storage purposes. Specifically, the invention pertains to a table structure which is adapted to be folded into a wall recess.

Relatively long narrow tables are used extensively in the cafeterias of schools and in rooms of other buildings where it is necessary to seat groups of people. In some instances, it is desirable that such tables be removed from the floor to make the room available for purposes other than dining. For example, it has been found advantageous to make school cafeteria rooms available for use as gymnasiums, assembly halls for academic and social gatherings, etc., such rooms thus serving a multiple purpose. It is, of course, extremely difficult to remove conventional dining tables from a cafeteria or other room since a very large storage space must be provided for receiving the tables, even when they are stacked.

In an effort to overcome this problem, it has been proposed in the past to provide collapsible tables which are foldable into recesses in the walls of the cafeteria or other room. Such a table comprises a pair of table top members or leaves which are hinged together intermediate the ends of the table to adapt them to be folded flat against each other, the members when so folded together being nested within a wall recess, one member forming a flush continuation of the wall surface. Such a table construction and arrangement serves the purpose for which it is designed, that is, to provide a convenient means by which tables can be removed from a floor to make the entire room area available for purposes other than dining. However, since the table is permanently connected to the wall, it is limited for use only in a predetermined fixed position on the floor. That is to say, since the table is connected to the wall it may be applied to use only at a definite location adjacent the wall.

It frequently occurs that other arrangements of the tables within the room may be desired as, for example, when the grouping of tables is necessary for banquets, for displaying articles, etc. As pointed out above, such movement of the prior folding tables is impossible for the reason that the tables are permanently connected to the walls. In addition, such tables are devoid of legs at their ends which are connected to the walls so that even if the tables were demountable from the walls their disconnected ends would be unsupported by legs and would fall against the floor. Stated another way, such prior foldable tables

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are complete only when attached to a wall, and it is impossible to utilize them apart from the wall.

It is an object of the present invention to obviate the deficiencies of prior foldable tables discussed above by providing a foldable table which is adapted for use either in connection with a wall, into which the table is foldable, or as a separate entity apart from the wall, both ends of the table, as well as the central portion thereof, being supported at all times by legs provided for this purpose.

Another object is to provide a foldable table having a pair of top sections hinged together transversely of the table and intermediate the ends thereof, and legs pivotally connected at the ends and adjacent the hinge connection between the two table sections. A related object is to provide means for maintaining all three longitudinally-spaced pairs of legs vertical in all positions of the foldable sections, that is, when the table sections are in open, co-extensive position, in completely folded side-by-side relationship, and in all intermediate part-folded positions. This desirable object is attained by providing means for automatically controlling the central pair of legs to maintain it in position to bisect the angle existing between the foldable table sections, and connecting means extending between the central, vertical pair of legs and the legs disposed at the ends of the table, the connecting means being so arranged that all the legs are maintained in parallelism and thus perpendicular to the floor.

Another object is to provide a foldable table structure in which the end legs are hinged at points spaced inwardly from the ends of the table a distance equal to at least the length of the legs so that the legs are completely enclosed and concealed by the table sections when the latter are in fully closed relationship.

A further object is to provide a foldable table which is adapted to be readily folded into the recess of a support member, such as a building wall, one of the table sections having laterally extending attaching means engageable in substantially vertically extending guides at the sides of the recess for guiding both sections vertically into place in the wall recess. As a particular feature of improvement, the attaching means are releasable to adapt them to be withdrawn from the guides, when the table is unfolded, so as to completely separate the table from the wall to permit use of the table at locations remote from the wall. In accordance with the invention, the

attaching means are in the form of laterally slidable bolts adapted, when slid outwardly, to slidably engage in the guides and adapted, when slid inwardly, to be withdrawn from the guides to unlock the table and permit separation thereof from the wall.

Another object is to provide locking means on the outer table section engageable with the sides of the wall recess for retaining the folded table structure within the recess, this means comprising a key-operated locking bolt.

Further objects of the invention will appear from the following description and from the drawings, which are intended for the purpose of illustration only, and in which:

Fig. 1 is a small scale perspective view of the present improved folding table construction, the table being shown as folded into a recess in a wall;

Fig. 2 is a perspective view of the table construction, showing it unfolded and extending from the wall;

Fig. 3 is an enlarged perspective view of the table, showing it in partly folded condition;

Fig. 4 is a longitudinal sectional view through the table, showing it being folded into or unfolded from the wall recess;

Fig. 5 is a bottom plan view of the central hinged portion of the table, the table being in open condition;

Fig. 6 is a sectional view, taken on line 6—6 of Fig. 5;

Fig. 7 is an enlarged fragmentary view of the connection between one of the connecting links and a leg of the table;

Fig. 8 is a sectional plan view of one of the releasable connecting means, taken on line 8—8 of Fig. 2;

Fig. 9 is a sectional plan view of the locking means, taken on line 9—9 of Fig. 1; and,

Fig. 10 is a fragmentary, elevational view of a wall closet, illustrating the manner in which the table may be stored therein.

Referring to the drawings in detail, the present improved folding table 10 is adapted for use either in connection with a wall 11 of a cafeteria, auditorium, or other building, as shown in Figs. 1, 2, and 3, or by itself, that is, apart from the wall as illustrated in Fig. 3. The foldable table will first be described per se, and the means adapting it for installation in a wall recess will thereafter be discussed.

The table 10, which forms the subject matter of my application, Serial No. 306,527, filed August 27, 1952, for Folding Table and Cabinet Construction, said application being a continuation-in-part of the present application. Said table includes a pair of top sections 15 and 16 which are preferably, although not necessarily, made from plywood and have a plastic or other hard, heat-resistant and mar-proof surface. Each of the table top sections is shown to be longer than the height of the table. The table sections are reinforced and made more rigid by means of longitudinally and transversely extending strips and cleats 17 and 18. Referring to Figs. 4 and 5, the inner ends of the top sections 15 and 16 have angular hinge brackets 20 and 21 secured thereto by suitable means, the hinge brackets having downwardly projecting portions 21' which are pivotally connected by a hinge pin or rod 22 extending transversely of the table, it being noted that the hinge pin is disposed below the plane of the table top. By this hinge connection, the top sections 15 and 16 are adapted to be folded into a substantially parallel, side-by-side relation and to be unfolded to the fully open or coplanar relation shown in Fig. 2 with their longitudinal margins in alignment.

Secured against the under side of the top section 15 at a distance from the free end thereof slightly shorter than the desired height of the table is a pair of hinge brackets 25 to which is pivoted a first leg means 26. The leg means includes vertical legs 27 connected by a cross-bar 28, the upper ends of the legs being pivoted to the brackets. A second leg means 30, comprising legs 27 and a cross-bar 28, is similarly pivoted to hinge brackets 31 carried by the other top section 16. As shown in the drawings, hinge brackets 25 and 31 are desirably so disposed that the pivotal axes of the respective leg means 26 and 30 are spaced from the free ends of the respective top sections by a distance slightly less than the length of the leg means. Accordingly, the leg means always rest upon the floor in all positions of the table. A third leg means 33 is disposed at the center of the table and includes a pair of legs 34 which are connected by a cross-bar 35, the upper ends of the legs being pivotally connected to the hinge pin or rod 22.

Positioning means are provided for maintaining the leg means 26, 30, and 33 in vertical position, regardless of the relative positions of the table top sections 15 and 16. This means includes a pair of slide elements 37 which are slidably mounted on the central legs 34. Pivotally connected between pins 38 on the slide elements 37 and transverse pins 39 on the hinge brackets 20 and 21 are link elements 40. It will be noted that the link elements 40 are pivotally attached to the respective hinge brackets at joints spaced from the axis 22 of pivotal connection between the top sections. By this means, the leg means 33 is maintained vertical, that is, it is caused to assume a position in which it bisects the included angle between the sections and to lie parallel to the sections when the latter are completely folded together. Connecting links 42 and 43 are pivotally connected between the cross-bar 35 and the respective cross-bars 28 of the leg means 26 and 30, the cross-bars 28 carrying arms 44 and pivot studs 45 for this purpose (Fig. 7). The links 42 and 43 define, with the sections 15, 16, and legs 27, 34, parallelograms which maintain the legs 27 parallel to the legs 34, that is, in a vertical position. The legs 27, 34 and connecting links 42, 43 are preferably made tubular, and these components, in addition to the hardware therefor, are preferably chromium plated to enhance the appearance of the table and resist corrosion. It is intended that the present folding table be movable along a floor, and for the purpose of facilitating such movement the legs are provided with roller means in the form of casters 46.

Assuming that the table is in unfolded condition, that is, with its top sections 15 and 16 coplanar as shown in Fig. 2, although detached from the wall 11, the table is supported by the leg means 26, 30, and 33, and the casters 46. When in this unfolded relation, the inner pivoted edges of the sections substantially abut, and since the leg means are connected by the links 42 and 43, which serve as braces, the entire table is exceptionally strong and rigid and will support considerable weight. The table may be readily moved to selected locations by simply rolling it along the floor.

When use of the table is no longer required, it may be stored for future use. In order to con-

serve storage space, the table may be reduced to relatively small compass by simply folding its sections 15 and 16 together. The folding of the sections is readily accomplished by raising the central portion of the table, that is, at the central hinge 22, as shown in Fig. 3. It will be observed by reference to this view that the legs 27 and 34 remain vertical during such folding of the sections and that the legs 27 of the sections roll toward each other. Eventually, the sections 15 and 16 are caused to assume a parallel relation with the several legs disposed therebetween and parallel to the sections, as indicated by the broken lines in Fig. 4. The table thus is reduced to one-half its original length and may be stored in this folded condition in upright position, or a number of the tables may be stacked, one upon another. When a table is to be again set up for use, it is unfolded by simply reversing the procedure outlined above.

It has been stated that the present table is adapted for use in connection with a support member such as a wall of a room. Unlike other previously proposed tables which are permanently connected to a wall and foldable into a recess thereof, the instant table, while foldable into a wall recess, is disconnectible from the wall so that it may be used either in a position wherein it extends from the wall or at selected positions in the room. To adapt the table to be folded into the wall 11, the latter is provided with a rectangular box-like frame 50, similar to an ordinary door-frame, the frame thus providing a recess 51 in the wall. Secured to the inner surfaces of the side members 52 of the frame 50, adjacent the lower ends thereof, are guides 53 of channel-shaped cross-section, the guides being inclined slightly from the vertical.

Secured to the under side of the table section 16, adjacent the free end thereof, are brackets 55 in which bolts 56 are slidable transversely of the table section. When the table is in the open or operative condition shown in Fig. 2, it may be connected to the wall by moving the free end of the section 16 into the wall recess 51 and moving the bolts 56 outwardly to cause their ends to engage in the guides 53 (Figs. 2, 4 and 8). It will be noted that when the table is in extended position, the sole connection between the table and the recess is by way of the bolts 56 in engagement with the guide tracks 53.

To fold the table into the wall recess, its central portion is first raised slightly after which the section 15 is moved toward the section 16 and the wall 11. During this movement, the bolts 56 slide downwardly in the guides 53 and serve as pivots for the free end of the section 16. Eventually, the sections 15 and 16 are brought together, the bolts 56 being disposed adjacent the lower ends of the guides 53, the upper surface of the section 15 being arranged flush with the face of the frame 50, and the legs 27 and 34 being located between the sections, as shown by full lines in Fig. 1 and indicated by the broken lines in Fig. 4.

In order to retain the folded table within the wall recess 51, I provide the locking means shown in Fig. 9. The locking means comprises an element 60 rotatable against the under side of the table section 15, the element having a socket portion 61 disposed in a small hole 61' in the section. A suitable key (not shown) inserted through the hole and into the socket may be turned to rotate the element 60. Pivotally connected to the element 60 at points eccentrically of its axis of rotation are locking bolts 62 which are slidable transversely of the table in bearings 63. After the table has been folded into the wall recess 51, the element 60 is rotated through ninety degrees so as to project the ends of the bolts 62 into keeper holes 65 provided in the side members of the frame 50 so as to lock the table in its inoperative position.

To apply the table to use, the bolts 62 are withdrawn and the table unfolded by reversing the procedure already outlined. When it is desired to detach the table from the wall so that it may be rolled to a selected location in the room, it is necessary to merely withdraw the bolts 56 from the guides 53 and roll the unfolded table from the wall 11.

Referring now to Fig. 10, it is within the concept of this invention to provide means by which the folded table may be stored in a wall closet 70. As shown in this view, a plurality of forwardly and rearwardly extending cleats or guide strips 71 are provided on the floor 72 and on the header portion 73 of the closet 70. The upper and lower strips 71 cooperate to provide a series of upper and lower channels or guideways 75.

After a table 10 has been folded in the manner previously explained, it is moved into the closet 70 with its casters 46 rolling on the floor. During this movement, the upper and lower ends of the folded table are inserted in the guideways 75 as shown, the guideways thus serving to retain the table in vertical position. A plurality of the guideways may be provided for receiving a number of the tables. A suitable door (not shown) may be provided for closing the closet opening so as to conceal the stored tables.

In accordance with the provisions of the patent statutes, I have described the folding table construction which I now consider to represent the best embodiment of my invention, but I desire to have it understood that the construction shown is only illustrative and that the invention may be carried out by modified means.

I claim as my invention:

1. A foldable table for use with a vertical support having substantially vertical guides, comprising: a pair of top sections; hinge means pivotally connecting edges of said sections, said sections being foldable from a coplanar relation with their pivoted edges adjacent, to a substantially parallel side-by-side relation; a first leg means pivoted to one of said top sections adjacent the free end thereof; a second leg means pivoted to the other of said top sections adjacent the free end thereof; a third leg means pivotally mounted on said hinge means of said sections; positioning means operatively connected between said third leg means and each of said sections, said positioning means being operative to maintain said third leg means vertical at all positions of said sections; connecting link means pivotally connected between said third leg means and each of said first and second leg means at points disposed equidistantly below said sections, said link means being operative to maintain said first and second leg means parallel to said third leg means; and laterally slidable bolt means at the free end of one of said table sections, said bolt means being releasably engageable in said guides to pivotally and slidably connect said table to the support.

2. A table construction comprising, in combination with a wall recess including horizontally spaced, downwardly inclined side guide tracks: a removable folding table having a pair of table

top sections, each of said sections being an elongated rectangle in plan, said sections being hingedly connected together with their longitudinal margins in alignment and capable of assuming a coplanar relation when the table is extended; supporting leg structure means pivotally connected to each of the top sections; means for maintaining said leg structures in vertical planes during folding and unfolding of said top sections; each of said top sections being longer than the height of the table when in extended position supported by the said leg structures; track-engaging means extending beyond the longitudinal margins of a top section adjacent its free end and constituting the sole connection between the table and wall recess during folding and unfolding of the table; and means for disengaging said track-engaging means whereby the table may be removed from the wall recess while supported solely by the said leg structures.

3. A table construction comprising, in combination with a wall recess including horizontally spaced, downwardly inclined side guide tracks: a removable folding table having a pair of table top sections, each of said sections being an elongated rectangle in plan, said sections being hingedly connected together with their longitudinal margins in alignment, to assume a coplanar relation when the table is extended; a supporting leg structure pivotally connected to each of the top sections near its free end; a third leg structure carried by the table adjacent the hinged connection between said top sections; means for maintaining said leg structures in vertical planes during folding and unfolding of said top sections; each of said top sections being longer than the height of the table when in extended position supported by the said leg structures; track-engaging means extending beyond the longitudinal margins of a top section adjacent its free end and constituting the sole connection between the table and wall recess during folding and unfolding of the table; and means for disengaging said track-engaging means whereby the table may be removed from the wall recess while supported solely by the said leg structures.

4. A foldable table for use with a vertical support having a pair of spaced opposing virtually vertical track guides comprising: a pair of elongated, rectangular top sections, said sections being hingedly connected together with their longitudinal margin in alignment, said top sections being foldable from a position where the top sections are in parallel planes to an extended position wherein said top sections are coplanar; a first leg structure pivoted to one of the top sections near the free end thereof, a second leg structure pivoted to the other top section near the free end thereof, a third leg structure carried by the table near the hinged connection between said top sections; a leg structure positioning means including translating means pivotally connected to an end portion of a top section and spaced from the axis of hinged connection between said top sections for maintaining one of said leg structures substantially vertical during folding movement of said top sections, and connecting links extending between said first, second and third leg structures and pivotally attached thereto at points spaced equidistantly below said top sections for maintaining all of said leg structures in substantially parallel relation; guide track-engaging means extending beyond the longitudinal margins of a top section adjacent its free end, said track-engaging means extending into the virtually vertical track guides and control the course of pivotal and slidable movement of said free end during folding and unfolding movement of the table, said track-engaging means constituting the sole connection between the table and wall recess during folding and unfolding of the table; and means for disengaging said track-engaging means whereby the table may be released from said recess into extended position supported by the leg structures.

5. A foldable table for use with a vertical support having a pair of spaced, opposing, virtually vertical track guides comprising: a pair of elongated, rectangular top sections, said sections being hingedly connected together with their longitudinal margins in alignment, said top sections being foldable from a position where the top sections are in parallel planes to an extended position wherein said top sections are coplanar; a first leg structure pivoted to one of the top sections at a point spaced from the free end thereof a distance slightly less than the length of the leg structure, a second leg structure pivotally connected to the other top section near the free end thereof, a third leg structure carried by the table adjacent the hinged connection between said top sections; leg structure positioning means including translating means pivotally connected to an end portion of a top section and spaced from the axis of hinged connection between said top sections and slidably connected to one of said leg structures for maintaining said leg structure substantially vertical during folding movement of said top sections, and connecting links extending between said first, second and third leg structures and pivotally attached thereto at points spaced equidistantly below said top sections for maintaining all said leg structures in substantially parallel relation; track-engaging means extending beyond the longitudinal margins of a top section adjacent its free end and constituting the sole connection between the table and wall recess during folding and unfolding of the table; and means for disengaging said track-engaging means whereby the table may be removed from the wall recess while supported by the said leg structures.

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