

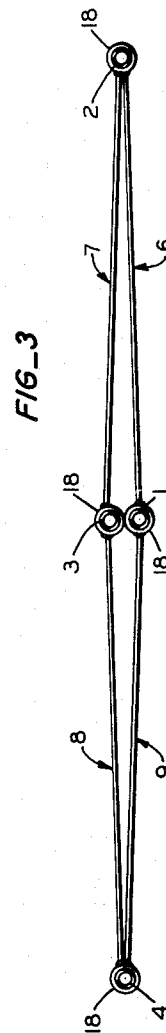
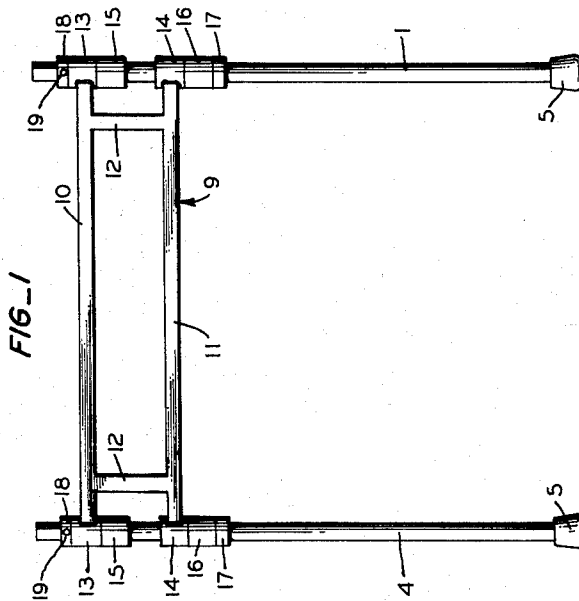
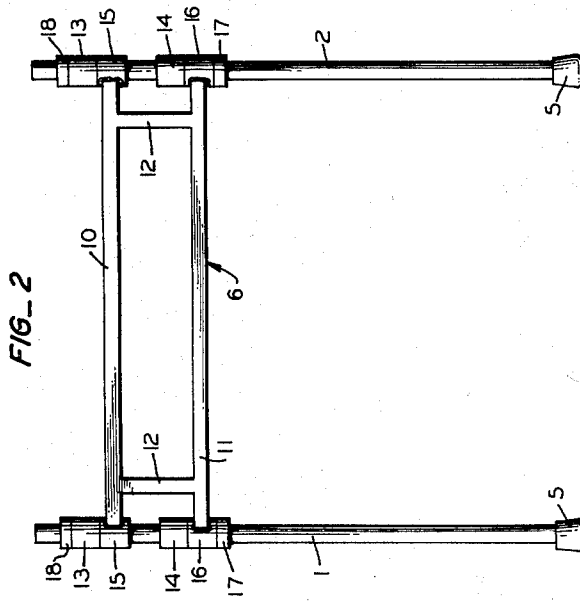
Aug. 2, 1960

L. E. NAVELLIER
COLLAPSIBLE TABLE

2,947,587

Filed Aug. 24, 1959

3 Sheets-Sheet 1



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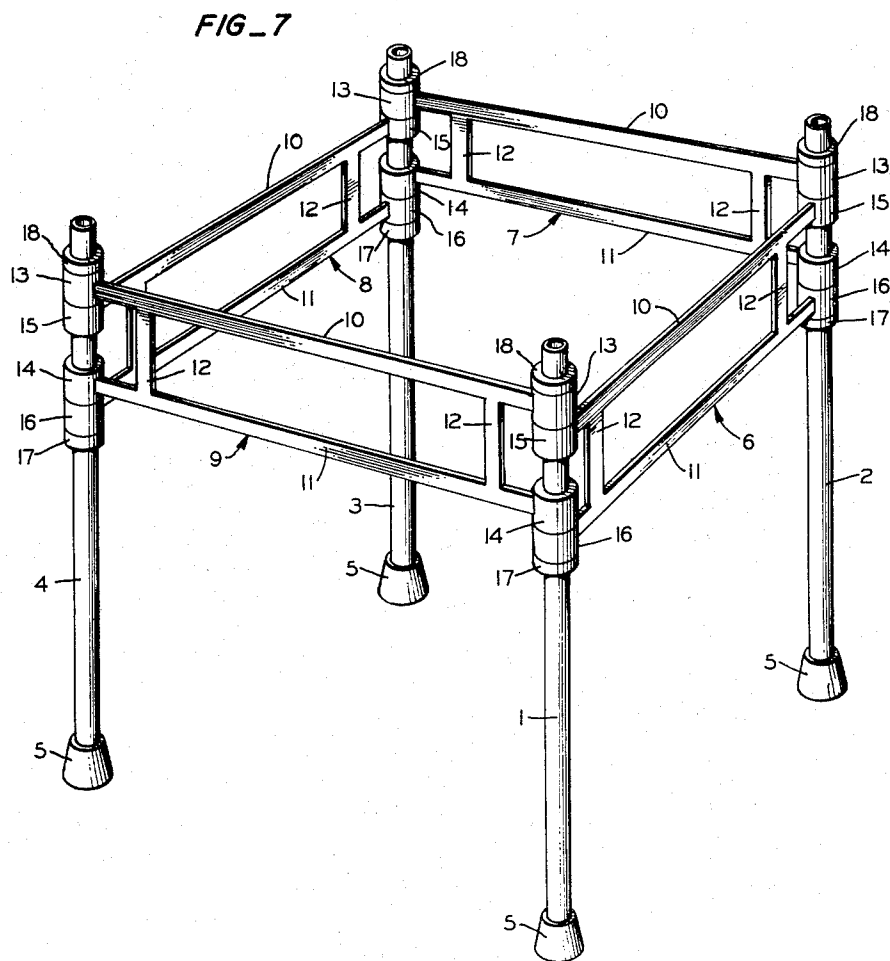
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COLLAPSIBLE TABLE

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3 Claims. (Cl. 311—79)

This invention relates to a collapsible table which is adapted to be disassembled and collapsed after use and which may be stored away in a relatively small space.

When it is required to temporarily seat a relatively large number of persons at tables in establishments such as restaurants it is desirable that the tables be set up solidly and quickly. Since storage space is valuable in most places, it is also important that the tables be stored away in a minimum amount of space during periods of non-use. In the past, tables have been temporarily erected by placing a table top over a pair of saw horses or the like, but such methods do not result in a firm structure and damage often results from the fact that the supporting members are not secured relative to the table top. Furthermore, the saw horses are unwieldy to handle and require relatively large storage space because of their shape.

Prior attempts have been made to design table top supports having hinged sections which may be collapsed after the table top is removed. However, these prior art devices generally have weak points, particularly at the hinges, and are not adapted to withstand rough usage. Furthermore, since such devices are generally similar to the conventional table structure except that they are hinged, complicated methods of securing the supporting structure to the table top are normally required.

One of the objects of this invention is the provision of a collapsible table which may be quickly erected and which will be suitable for any of the uses of conventional tables.

Another object of the invention is the provision of a collapsible table having a table support which may be firmly secured to the table top without the use of bolts or screws or other fasteners.

Another object of the invention is the provision of a collapsible table which may be stored away in a minimum of space.

Still another object of the invention is the provision of a collapsible table having removable legs which may be rigidly secured to the table top by magnetic means and which means also provides a method of conveniently storing the legs when not in use.

Yet another object of the invention is the provision of a table support adapted to be firmly secured to a table top but which support may be collapsed or expanded with little effort.

Other objects and advantages will be apparent from the specification and from the drawings wherein:

Fig. 1 is a side elevational view of the table support with the table top removed.

Fig. 2 is a side elevational view of the table support taken at right angles to Fig. 1.

Fig. 3 is a top plan view of the table support in collapsed condition.

Fig. 4 is a greatly enlarged end view of one of the legs showing schematically the method of securing the frame members to the sleeves.

Fig. 5 is a bottom plan view of the table top showing the method of securing the same to the support.

Fig. 6 is a cross sectional view of the table top shown in Fig. 5.

Fig. 7 is a perspective view of the table support set up in its expanded condition.

Fig. 8 is a fragmentary section of one table leg showing the magnet therein.

The supporting structure of the present invention on which the table is adapted to be positioned comprises four legs designated 1, 2, 3, 4 which may have at their lower ends conventional bearing pads 5 for engaging the floor. The legs 1 are made of tubular material such as steel or aluminum but the latter is preferable because of its lightness. These legs are connected together as seen in Fig. 7 by means of frame members 6, 7, 8, 9, each of which is pivotally connected at its ends to a pair of legs (Fig. 7). The frames 6, 7, 8 and 9 are identical and are preferably formed from a pair of parallel longitudinally extending members 10, 11 which are spaced apart adjacent their ends by means of cross-members 12. It will be noted that the depth of the frame members is such that the connected legs are supported at spaced points along their length thus maintaining the legs parallel to each other which is desirable. The particular shape of the frame members 6, 7, 8 and 9 as shown in the drawings is preferred and is important in giving rigidity to the structure.

As seen in the drawings the frame members 7 and 9 are secured to the legs at a point slightly above the point at which the frame members 6 and 8 are secured. Thus adjacent frame members are staggered with respect to each other along the length of the legs and are independently secured to the legs (Figs. 1, 2).

The upper longitudinal members 10 of frames 7 and 9 are rigidly secured at their ends as by welding to sleeves 13 which in turn are rotatable on the legs 1, 2, 3 and 4 respectively. In like manner the lower longitudinal members 11 of frames 7 and 9 are secured to sleeves 14.

Similarly, the upper longitudinal members 10 of frames 6 and 8 are secured to sleeves 15 and the lower members are secured to sleeves 16.

For the purpose of preventing downward movement of the frame members along the length of the legs a collar 17 is rigidly secured to each leg as by welding (Figs. 1, 2) for engaging the lower end of each sleeve 16. Releasably secured to the legs 1, 2, 3 and 4 by set screws 19 (Fig. 1) are collars 18 which upon removal permit complete disassembly of the frames from the legs.

Referring to Fig. 7, it is seen that diagonally opposite legs 1 and 3 (or 2 and 4) may be moved toward each other to collapse the structure to the position seen in Fig. 3. In this connection it is important to note that if the longitudinal members 10 and 11 are secured to their corresponding sleeves in such a manner that they are in alignment with a radius of the sleeves, complete collapse of the structure as shown in Fig. 3 could not be effected. The reason for this is that the cross members 12 which connect the longitudinal members 10 and 11 of one frame would be engaged by the longitudinal members 10 and 11 of the adjacent frame before the opposite legs (1 and 3 as seen in Fig. 3) are brought into contact with each other.

Referring to Fig. 4, dot-dash lines A and B indicate center lines drawn between leg 4 and legs 3 and 1 respectively. It will be seen that the longitudinal members 10 and 11 are secured to their corresponding sleeves so that they are offset with respect to the radial lines A and B. It will be apparent from Fig. 4 that if the frames 8 and 9 were disposed in centerline planes between leg 4 and legs

3 and 1 respectively that the above described interference would occur.

In Figs. 5 and 6 a modification to a conventional table top 20 is shown which permits the use of such a table top with the support herein before described. A downwardly opening square recess is formed on the under side of the table by means of four elongated generally flat strips 21 which may be permanently secured to the underside of the table top in any convenient manner. These strips 21 may be of wood and secured in the form of a square so that the upper ends of the legs are received in the corners of the recess as indicated in Fig. 5. It will be apparent that when the table top and the support are thus assembled, the combined structure is rigid and similar in all respects to a conventional table except that upward movement of the table top will permit complete collapse of the support. Relatively small sections 22 of steel plate may be provided in the corners as shown in Fig. 5 to serve as bearing plates for the legs.

It is important to note that the present invention provides for an extremely solid structure because of the particular shape of the frame members 6, 7, 8 and 9. At the same time the weight of these frame members is a minimum and the entire structure need not weigh any more than a conventional table. These frame members may take other shapes, but that shown in the drawings is preferred since such a shape results in a maximum resistance to bending efforts with a minimum of weight.

The legs of the support are shown in the drawings disposed in the form of a square but it will be apparent that they may be arranged in the form of an oblong or parallelogram. However, the square shape is preferred since it permits uniformity of parts and makes for a less expensive product.

A modified form of the invention involves the use of a magnet 25 carried by the upper end of each of the legs 1, 2, 3, 4. As best seen in Fig. 8 the magnet is preferably cylindrical and may be press fitted or otherwise secured within the upper end of each leg so that the upper end of the magnet is flush with the upper end of the leg in which it is received. When the legs are assembled with the table top as shown in Fig. 6 the magnetic attraction between the magnets 25 and the steel plates 22 results in an extremely rigid assembly permitting the table to be picked up and moved about by grasping only the table top. Disassembly may be effected merely by forceably separating the top and legs.

It will be understood of course that the magnetic force created by magnets 25 is sufficiently great to oppose the force of gravity on the leg structure.

Inadvertent tilting of the table top relative to the legs is effectively prevented while the table is in use and in addition the legs may be readily stored when disassembled from the top by merely suspending the leg structure from a steel plate, beam or the like on the ceiling of the room in which they are stored.

The embodiment of the invention herein disclosed should not be construed as a limitation of the invention since it is apparent that certain modifications may be made without departing from the spirit of the invention.

I claim:

1. In a round table, a support for the top of such table comprising: four spaced legs positioned at points defining the corners of a square, frame members of equal length pivotally connected at their ends to said legs and aligned with the two pairs of opposite sides of such square, one pair of said frame members that are aligned with one pair

of parallel sides of said square being correspondingly offset vertically relative to the other pair of said frame members, each of said frame members being formed with vertically spaced axially aligned cylindrical sleeves for rotatably securing one of said legs thereto to provide the pivotal connection between each leg and the adjacent pairs of said frame members, the sleeves on one of each adjacent pair of frame members being alternately disposed relative to the sleeves on the other frame member of each adjacent pair, and the longitudinal axes of said frame member being offset outwardly of the vertical axes of said legs relative to the square area enclosed by said frame members to facilitate collapsing said support to a position in which the corresponding sleeves of two of said legs are in engagement with each other.

2. A knockdown table comprising: two opposed pairs of elongated legs arranged to form the four corners of a parallelogram, frame members extending between the legs of each said pair and between adjacent legs of said pairs along the sides of such parallelogram, pivotal connections between said legs and said members, said connections being freely pivotable through substantially 180° about the respective longitudinal axes of said legs for folding said members and said legs from one collapsed position with the shortest diagonal distance between one set of opposed corner legs to the other collapsed position with the shortest diagonal distance between the other set of opposed corner legs, upwardly directed projections formed at the upper ends of said legs, a table top, and oppositely inwardly directed shoulder means on the underside of said table top at equal diagonal distances adapted to receive said projections inwardly thereof and in engagement therewith for holding said legs in the form of a rectangle with said top supported thereon.

3. A knockdown table comprising: two opposed pairs of elongated legs arranged to form the four corners of a rectangle, frame members extending between the legs of each said pair and connecting the legs of one pair with the corresponding legs of the other pair whereby the horizontal projection of said frames forms a rectangle, pivotal connections between said legs and said members, said connections being freely pivotable through substantially 180° about the respective longitudinal axes of said legs for folding said members and said legs from one collapsed position with the shortest diagonal distance between one set of opposed corner legs to the other collapsed position with the shortest diagonal distance between the other set of opposed corner legs, upwardly directed projections formed at the upper ends of said legs, a table top, and oppositely inwardly directed shoulder means on the underside of said table top at equal diagonal distances adapted to receive said projections inwardly thereof and in engagement therewith for holding said legs in the form of a rectangle with said top supported thereon, and permanent magnet means and magnetic means carried by said projections and by said top adjacent said shoulder means for releasably securing said top to said projections.

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