Jan. 30, 1968 D. KORANSKY ET AL 3,366,079

KNOCKDOWN TABLE

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Fig. 1

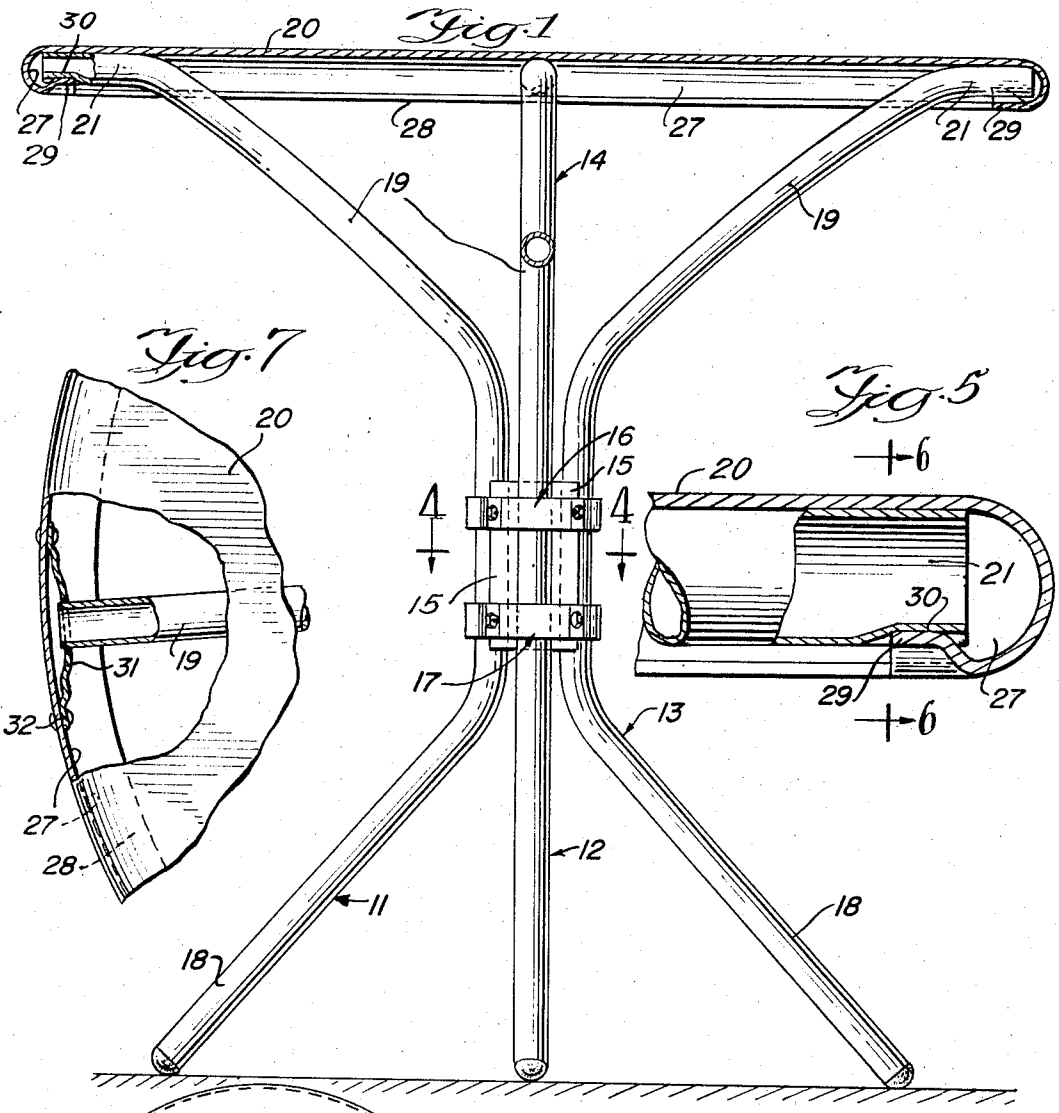


Fig. 7

Fig. 5

Fig. 2

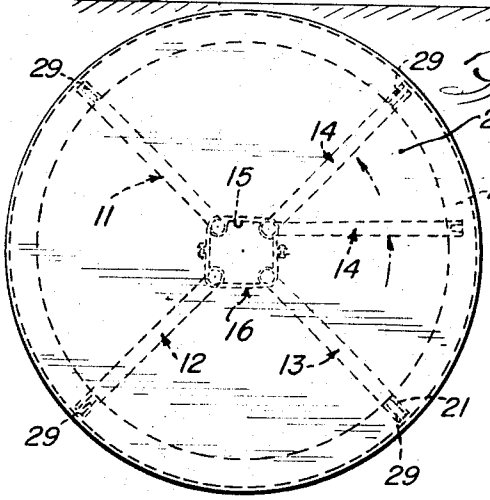
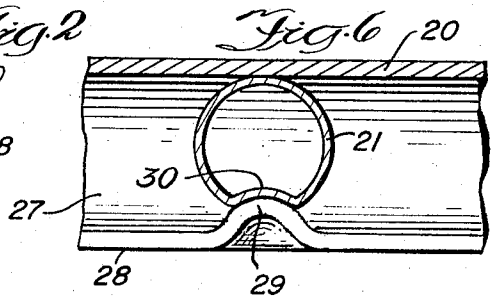


Fig. 6



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Fig. 4

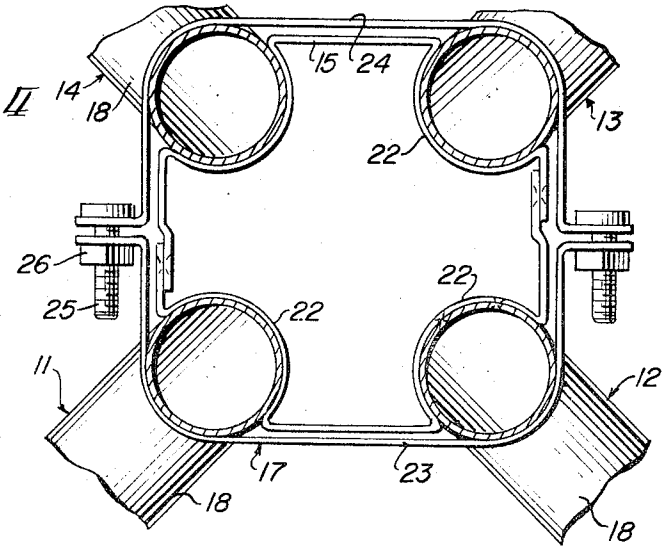
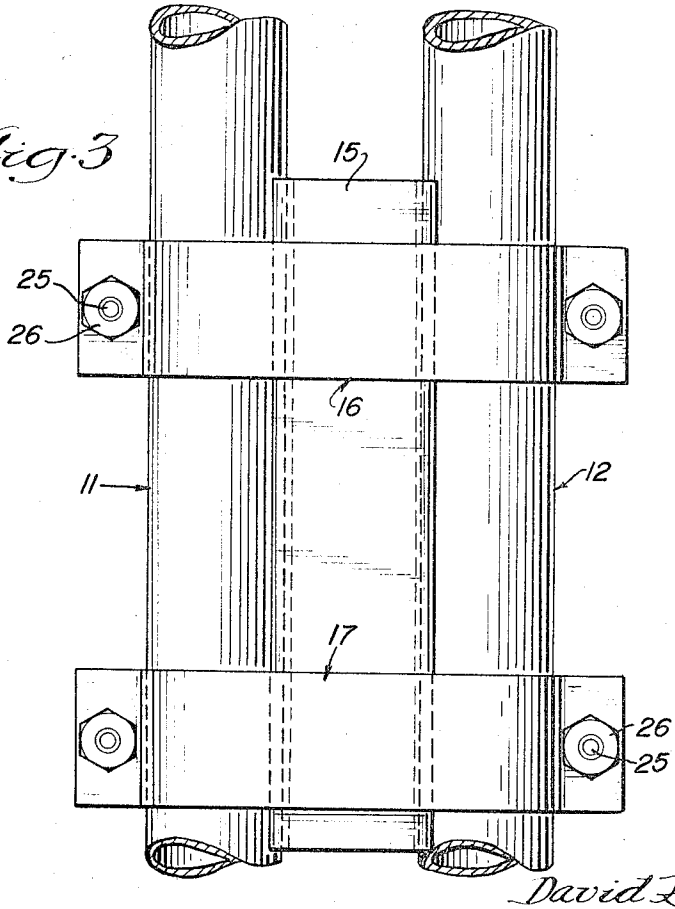


Fig. 3



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KNOCKDOWN TABLE

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4 Claims. (Cl. 108—157)

ABSTRACT OF THE DISCLOSURE

The table comprises a table top and a support member that may easily be assembled or disassembled. The top has a downwardly directed channel along its periphery and the legs of the support member have top sections that fit into the channel. One of the legs is welded to a core and the other legs are capable of limited rotational movement about an intermediate section as a pivot. The intermediate sections of all the legs are equally spaced from the longitudinal center of the core. The top sections of the legs are positioned against the underside of the table top and the top section of the welded leg is pushed into the channel and then into engagement with a detent for holding it against accidental displacement. The other legs are then rotated to position their top sections in the channel. Detents are located in the channel to engage the legs that are rotated into the channel.

This invention relates to a knockdown table and is particularly concerned with a removable support structure comprising a plurality of rigid legs that may easily be applied to a table top as a unit with each leg in predetermined position, relative to the other legs and to the table top, to provide a sturdy table structure having the appearance of a rigid unitary structure.

The invention will be described with particular reference to a table of the type usually used outdoors on a lawn, patio or garden, but it will be understood that it is equally suitable for use in a home or commercial establishment.

Support structure of the present invention may be assembled in the factory as a unit for shipment or storage, and may be easily assembled by the ultimate user without tools and without any special skill or training.

Suitable structure by means of which the above mentioned and other advantages of the invention are attained will be fully described in the following specification, taken in conjunction with the accompanying drawings showing a preferred embodiment of the invention, in which:

FIG. 1 is a view, partly in section and partly in elevation, showing a table embodying the invention;

FIG. 2 is a schematic view showing the radial disposition of the legs relative to the table top;

FIG. 3 is an enlarged fragmentary elevational view showing the clamping structure holding the intermediate portions of the legs together;

FIG. 4 is an enlarged cross sectional view taken in the plane indicated by the lines 4—4 of FIG. 1;

FIG. 5 is an enlarged fragmentary cross sectional view showing one embodiment of means for holding the legs against accidental displacement from support position;

FIG. 6 is a cross sectional view taken in the plane indicated by the line 6—6 of FIG. 5; and

FIG. 7 is a view, partly in elevation and partly in section, showing another embodiment of means for holding the legs against accidental displacement from support position.

In the drawings, four legs **11**, **12**, **13** and **14** have parallel intermediate sections that are clamped against a rigid inner core **15** by a pair of longitudinally spaced clamps **16**

and **17**. The exact angular configuration of the individual legs is not critical, but each leg preferably has its lower section bent outwardly, as indicated at **18**, to provide spaced points of engagement with a support surface on which the table is to stand, and its upper section bent outwardly, as indicated at **19**, to provide spaced points of support for a table top **20**. The table top may have a centrally disposed aperture for reception of the post of a conventional sun shade. The upper section **19** of each leg each terminates in a short horizontally disposed section **21** adapted to be engaged with the table top in a manner hereinafter described.

The legs may be of any desired configuration, but preferably are circular in cross section. The cross sectional configuration of the inner core **15** is generally square except that each corner is deformed inwardly in its longitudinal direction to form a groove **22** shaped to conform to the peripheral surface of the intermediate section of the leg engaged thereby. The grooves **22** are spaced equidistant from the longitudinal center of the core **15**. The intermediate section of the leg **12** is welded to its groove **22** so as to secure the leg **12** rigidly to the core **15**, but each of the other legs **11**, **13** and **14** is free of any rigid securement to the core and may be rotationally moved a limited distance about the longitudinal center of its intermediate section as an axis. The core is tubular, and is large enough in cross section for the post of a conventional sun shade to be received between the peripheral surfaces of the back portions of the grooves **22**.

Each clamp **16** and **17** may comprise a single strip of metal or other suitable material having its ends secured together in any suitable manner, but preferably comprises two strips **23** and **24**. Each of the strips **23** and **24** has one end secured to one end of the other strip by a bolt **25** and nut **26**, or by other suitable fastener means. If desired, the nut **26** may be welded to one end of each strip with its aperture aligned with an aperture provided in the end of the strip for reception of the bolt. The clamping structure comprising two strips is preferred because it facilitates the application of uniform tension against each of the legs.

The clamps **16** and **17** cooperate with the grooves **22** to hold the intermediate sections of the legs **11**, **13** and **14** in spaced parallel relationship to the intermediate section of the leg **12** which is welded to the core. When the table support is to be stored or packed for shipment, each of the legs **11** and **13** is moved pivotally about its individual axis into parallel relationship on opposite sides of the fixed leg **12**, and the leg **14** is moved pivotally about its axis into close adjacency with either leg **11** or **13**.

The intermediate sections of the legs are spaced uniformly from the longitudinal center of the core **15**, and when the support structure is assembled in supporting engagement with the table top each intermediate section is equidistant from the circumference of the table top. The table top **20** has its outer edge portion bent downwardly and inwardly to form an annular channel **27** having a depth slightly greater than the diameter of the legs. The lower flange **28** of the channel **27** is bent upwardly to form detents **29** at four points spaced 90° circumferentially of the table top. The upper surface of each detent is spaced from the underside of the table top a distance slightly less than the diameter of the legs. The underside of the outer end of the section **21** of each leg is deformed inwardly, as indicated at **30**, to permit each section **21** to be forced into the space between the detent **29** and the underside of the table top. The detents **29** and the deformed portions **30** of each leg section **21** are curved arcuately to facilitate interengagement and to prevent accidental displacement of any leg from said position.

In assembling the support structure with the table top, the sections **21** of the legs are inserted loosely into the channel **27**, and the section **21** of the fixed leg **12** is then moved into engagement with one of the detents **29**. It is desirable to secure the fixed leg **12** first because any movement of the fixed leg causes a corresponding movement of the core **15**. If any other leg is positioned with its deformed portion **30** in engagement with one of the detents **29** before the fixed leg **12** is so positioned, the subsequent movement of the fixed leg necessary to position it would move the core, to which it is welded. The movement of the core would throw any previously positioned leg out of position.

Securement of the fixed leg **12** in its support position also positions the core properly, and when the legs **11**, **13** and **14** are thereafter positioned each of them is moved rotationally about the longitudinal center of its intermediate section as an axis and the core does not move relative to the table top. As shown by the dash lines in FIG. 2 when any leg is in engagement with a detent **29** it is disposed radially of the table top and its outer end engages the channel **27** at the point thereof closest to the longitudinal axis of its intermediate section. The end sections **21** of the legs that are not disposed radially of the table top do not extend as far into the channel **27** and such legs may be freely rotated within permitted limits until each of them is engaged with one of the detents.

In the embodiment of FIG. 7 the end section of the leg is not deformed and a spring **31** is secured in the channel **27** by rivets **32**. The spring is disposed circumferentially of the back of the channel and the center portion of the spring is normally spaced from the back of the chanel. When the leg is moved rotationally about the axis of its intermediate section the end of the leg depresses the spring. When the leg passes clear of the depressed portion of the spring the spring snaps back to its initial position spaced from the back of the channel and engages the outer surface of the end of the leg to prevent accidental displacement thereof. The spring **31** may be a wide strip of resilient material having an opening therein to receive the outer end of the leg. If desired, each of the springs **31** may be replaced two separate springs oppositely disposed in the channel for engagement with opposite sides of the leg.

When the table is assembled with the top of each leg engaged by the spring, it may be disassembled easily and quickly, without tools, by depressing the spring adjacent any of the legs, except the fixed leg **12**, and rotationally moving the leg out of engagement with the spring. After the first leg is released, the other legs may be released in a similar manner. The fixed leg **12** cannot be released first because it cannot be moved without moving the core **15** and, if the other legs are engaged by the springs they prevent movement of the core.

Although the table support comprising four legs as described above is preferred, it should be understood that three or more legs may be used. In a structure having a different number of legs the core must have a cross

sectional shape that will hold the intermediate sections of the legs equidistant from the longitudinal center of the core, and the springs or detents would be spaced uniformly around the circumference of the table top. The intermediate section of one of the legs would be welded to the core as in the preferred structure. It is also possible to use the support with a flat table top not having a peripheral channel. Suitably shaped brackets could be secured to the underside of the table top and the springs for engaging the legs could be mounted on the brackets.

Although we have described a preferred embodiment of our invention in considerable detail, it will be understood that the description thereof is intended to be illustrative, as many of the details of structure may be modified or changed without departing from the spirit or scope of the invention. Accordingly, we do not desire to be restricted to the exact structure described.

We claim:

1. A table comprising a top and a support, said support comprising a core having a plurality of longitudinally extending grooves in its outer surface spaced equidistant from its longitudinal center, a leg having an intermediate section thereof fitting in one of said grooves and welded to said core a plurality of other legs each having an intermediate section parallel to said first mentioned intermediate leg section and fitting in said other grooves and clamping means holding said second mentioned intermediate leg sections in said grooves each of said second mentioned legs being capable of limited rotational movement about the longitudinal center of its intermediate section as an axis, and each of said legs being engageable with the underside of said table top to support it in a horizontal plane.

2. A table as recited in claim **1** in which said top has means on its underside engageable with the upper end of each of said legs to hold said legs in predetermined circumferential relationship to said top, each of said last mentioned means being spaced equidistantly circumferentially of said top.

3. A table as recited in claim **1** in which said table top has an inwardly directed annular channel below its top surface and each of said legs has a top section adapted to fit within said channel, said channel having means secured thereto for holding said top sections in predetermined relationship to said table top.

4. A table as recited in claim **3** in which said last mentioned means comprises a plurality of springs mounted in said channel and spaced equidistant circumferentially of said channel.

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