

May 12, 1953

M. T. ULRICH
KNOCKDOWN TABLE

2,638,394

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2 Sheets-Sheet 1

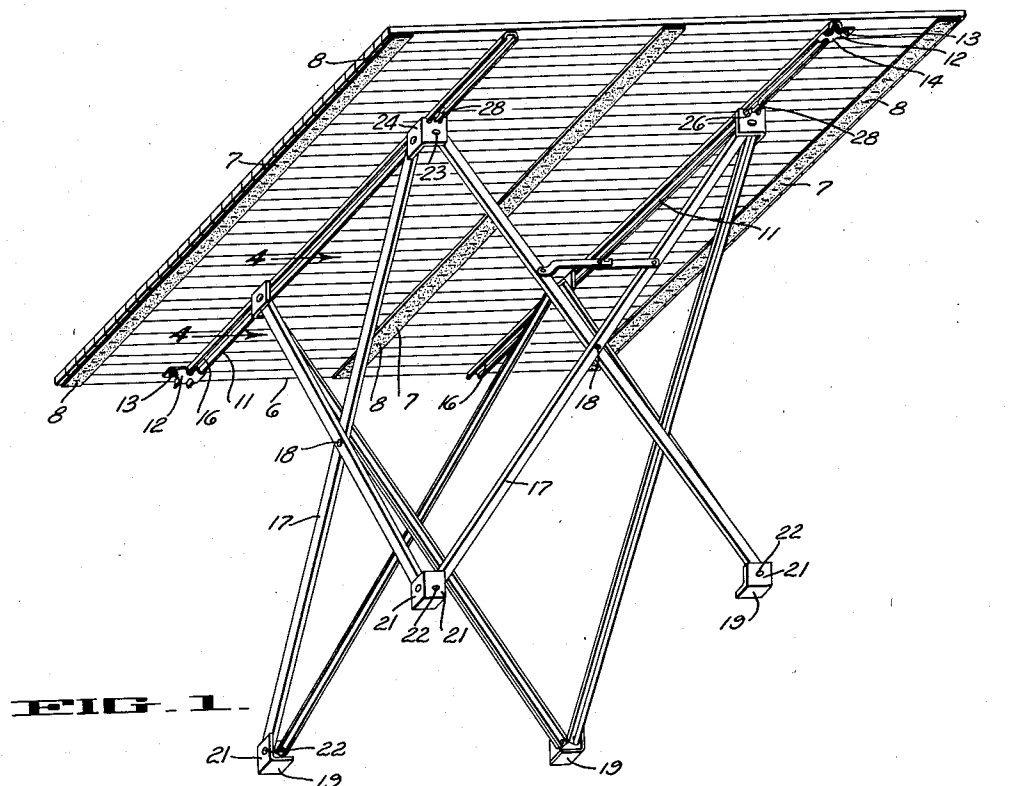


FIG. 1.

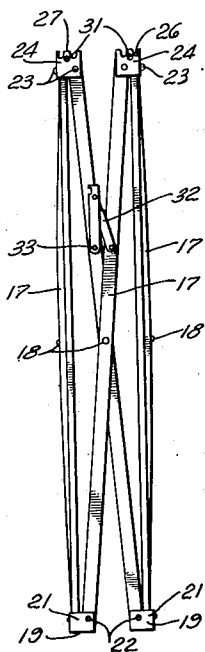


FIG. 2.

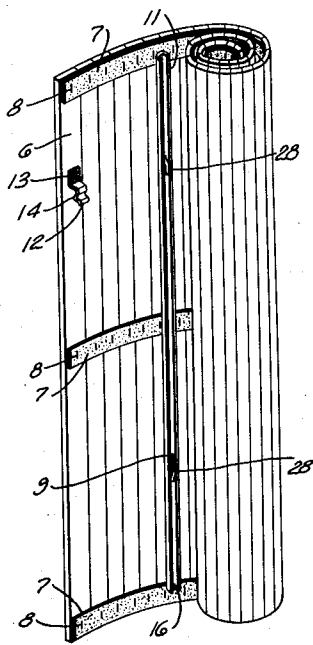


FIG. 3.

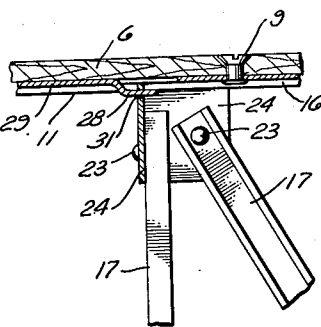


FIG. 4.

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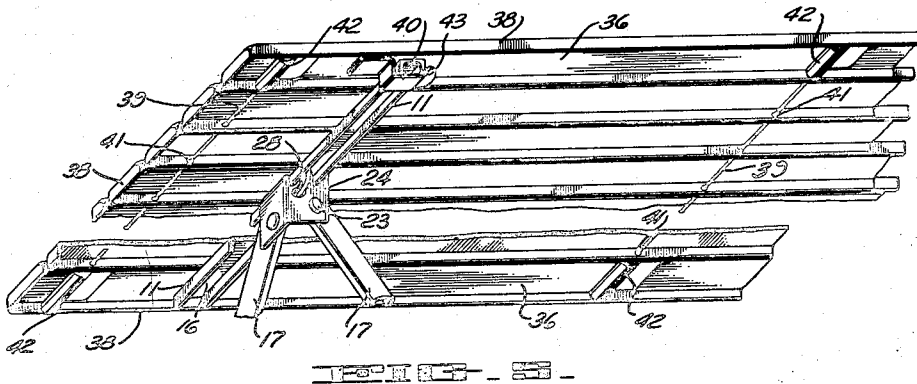
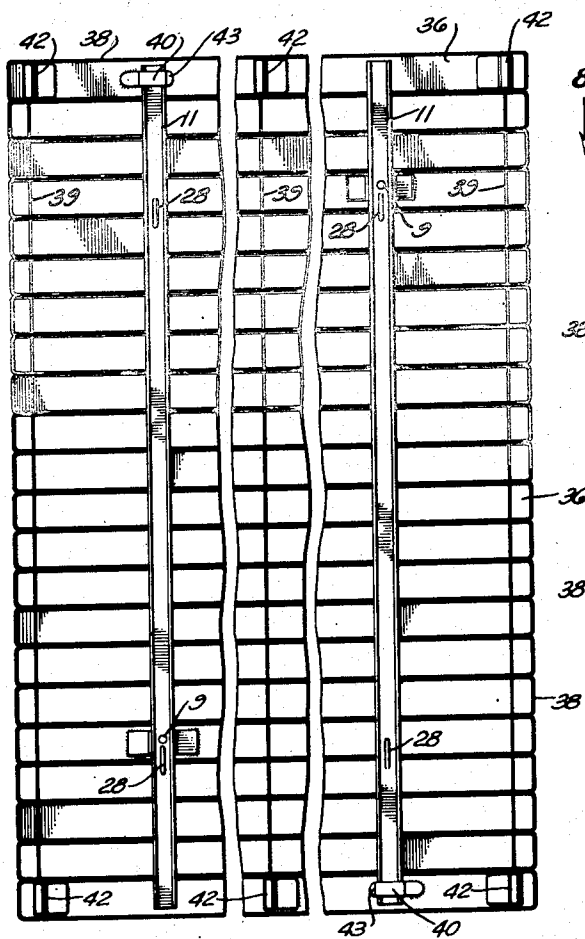
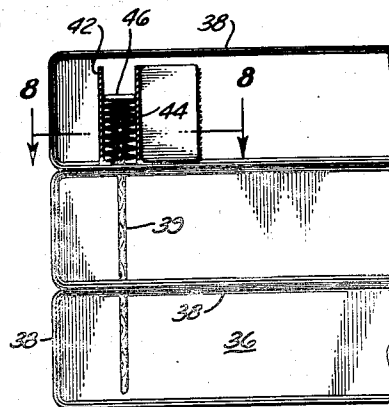
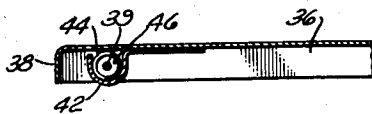
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KNOCKDOWN TABLE

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Application June 28, 1949, Serial No. 101,849

3 Claims. (Cl. 311-78)

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This invention relates to articles of furniture in the nature of tables which may be readily taken apart or condensed to occupy but a fraction of the volumetric space taken up by the article in its useful assembled or expanded condition.

An object of the invention is to provide a demountable table comprising but two components capable of being nested one within the other when in disassembled condition so as to produce a package having an aggregate bulk of minimized volumetric content.

Another object of the invention is to provide a table of the character described with separate support and roll-up top units which, although unusually light in construction, combine to produce an assembly possessing a high degree of structural strength, rigidity and stability.

A further object of the invention is to provide, in an article of the type referred to, improved construction affording a secure locking together of the relatively detachable parts of the structure so that rough handling, abnormal shocks or upsetting of the table will be unlikely to release the engagement between the parts.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

Referring to the drawing:

Figure 1 is a bottom perspective view of the table of my invention shown in erected condition.

Figure 2 is a side elevational view of the supporting stand shown in collapsed condition.

Figure 3 is a perspective view of the table top unit showing the latter in partially rolled up condition.

Figure 4 is an enlarged fragmental vertical sectional view taken substantially in the plane indicated by the line 4-4 of Figure 1 and illustrating one of the attachment locks between the table top unit and the supporting stand.

Figure 5 is a portional bottom perspective view of a modified form of table top together with a portion of the support unit.

Figure 6 is a bottom plan view of the modified table top with portions broken out to preserve space.

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Figure 7 is an enlarged bottom plan view of a portion of the modified table top.

Figure 8 is a vertical section taken on line 8-8 of Figure 7.

5 In the preferred form of my invention which is illustrated in Figures 1 through 4 of the drawings, I provide a table top unit comprising a plurality of slat members 6 grouped with their longitudinally relatively adjacent sides preferably in engagement so as to provide a planar area of the size desired. As here shown, the slats 6 are constructed of wood, preferably oak or other material in the hardwood class, although it is within the scope of the invention to use metal or other suitable material in the construction of the table top as will be hereinafter more fully described. Joining all of the slats 6 are hinge members here shown as fabric tapes 7 of which at least three are provided extending laterally of the slats along opposite edges of what is to be the underside of the table top and also at a point substantially medially of the ends of the slats. When wooden slats are employed, the tapes 7 are preferably joined to the former by use of a suitable flexible rubber base adhesive and to insure retention of the tapes in engagement with the slats, should separation of the adhesive connection occur, additional securing means are provided preferably comprising U-shaped staples 8 driven through the tapes and embedded in the slats. In the event that metal or other slats are employed, to which adhesive will not readily or securely bond, headed rivets may be substituted for the staples 8 as will be apparent to those skilled in the art. The described construction permits the table top, from its flat condition of Figure 1, to be convolutely rolled to form the compact cylindriform bundle shown in Figure 3.

Means are provided, operative when the table top is uncoiled to usable monoplanar condition, for engaging all of the slats so as to hold the table top against downward folding so as to support weighty objects which may be set on the upper or load-bearing surface thereof. Secured for pivotal movement to separate slats 6 adjacent diagonally opposite corners of the table top by rivet members 9, are separate stiffener rails 11 extending entirely across the width of the table top in directions laterally of the slats. Spring metal clips 12, each secured to a slat spaced from the pivot members 9 and secured by screws 13 or the like are provided for frictionally engaging the stiffener rails and yieldably holding the latter in relative parallelism in their aforesaid operative positions laterally of the slats.

Preferably, the stiffener rails are formed of metal and in the interests of lightness may possess angle or channel bar cross-sectional form, the latter shape being preferable and shown in the drawing. In view of the channel shaped character of the rails, the clips 12 are each formed at their free ends with humped portions 14, adapted, when the rails are moved pivotally into engagement with the clips to ride over the confronting flange of the rails and thereafter to snap into the bosom 16 of the bars to retain the latter in releasable engagement with the clips. When the stiffener rails are in their operative positions of Figure 1, the table top will be held thereby against downward flexing, the tape hinges 7 serving to resist substantial upward flexing. However, upon releasing the rails from their respective holding clips 12, the former may be swung about their pivot elements 9 to positions overlying and paralleling the slats to which they are positively attached, thus permitting the table top to be rolled into its cylindrical condition as shown in Figure 3.

A modified form of table top is shown in Figures 5 through 8 in which the slats 36 comprising the table top are made of sheet metal. Each slat is preferably formed with flanges extending downwardly from the edges thereof to provide a peripheral skirt 38 which extends completely around the slat, and to support the slats in monoplanar relation, the stiffener rails 11, heretofore described are utilized. Clips 40 are secured by suitable means to releasably engage the free end of the stiffener rail 11. The clips 40 are similar to the clips 12 of Figure 3 but utilize a bent over end portion or lip 43 instead of the hump 14 of the clip 12 to resiliently hold the rails in engagement with the clips. The slats are held against relative displacement by means of a plurality of wires 39 which pass through axially aligned apertures 41 in the skirts 38 and which are disposed to traverse the entire table top perpendicular to the longitudinal axes of the slats. Although only two wires are shown in the drawing, it is apparent that any suitable number of such wires might be employed depending on the size of the table.

Means are provided to secure the wires to the table top, and as here shown, such means include housings 42 attached to the underside of each of the end slats and in which are disposed compression springs 44 axially aligned with the wires 39. The inner end of each spring is held in position by a portion of the skirt 38 while the outer end is engaged by an axially displaceable disk 46 which is attached to the wire end. In this manner, when the table top is in its operative or flat condition, the tension imposed on the wires by the springs 44 will urge the slats towards each other forming a top with substantially no spaces existing between adjacent slats. On the other hand, when it is desired to dismantle the table, there will be sufficient flexing of the springs to permit the rolling of the slats.

As part of the table structure is provided a unitary supporting stand engageable in expanded condition with the pre-conditioned planar table top and serving in collapsed condition as an enclosing package for the table in its rolled form so as to protect the latter against crushing or other damage and to form with the table top a bundle of the smallest practical volumetric content. The entire supporting stand, in the interests of maximum strength and minimum weight and bulk is constructed of metal, the major parts preferably being made of the same structural

material as the stiffener rails 11. The stand, in horizontal cross-sectional form, constitutes a quadrilateral figure each vertical side of which is composed of a pair of diagonal bars 17 which are relatively medially intersected and provided, at such intersection, with a connecting pin or rivet 18 forming a pivot about which the connected bars may swing. The lower ends of the coupled bars forming each side of the stand are connected with the adjacent ends of the bars of the immediately intersecting sides by suitable foot members, here shown as sheet metal clips having horizontal base portions 19 from adjacent sides of which rise vertical flanges 21 attached by rivets 22 or other live pivot elements to the ends of the bars 17. The upper ends of the bars 17 are similarly pivotally attached, by pins or rivets 23 to angle clips, both flanges 24 of which are disposed in planar normal relation to the underside of the table top. One flange of each upper clip laterally traverses a stiffener bar 11 of the table top and is provided with notches 25 for the reception of the bar flanges thereby providing, between the notches 26, an integral tab portion 27 of each clip adapted to conform with and enter the bosom of the bar. Means is provided for detachably connecting each upper clip to the adjacent stiffener bar preferably comprising, and as here shown, an integral tabular spur 28 struck out from the web 29 of the stiffener bar into the bosom of the bar and arranged to slidably enter a latch aperture 31 formed in the tab portion 27 of each upper clip. Suitable holding means, here shown as medially hinged links 32 interposed between pairs of the leg bars 17 are provided for locking the upper clips in engagement with the table top stiffener bars with sufficient security to resist any disconnection of the latch structure regardless of the severity of shocks or rough handling that may be imposed on the table. As will be seen in Figures 1 and 2 the links 32 are each pivotally secured to the respective leg bars by rivets 33 and in their extended or locking position are disposed generally perpendicular to the direction of movement of the spurs 28 into their cooperative apertures 31.

It will be noted that the construction of the supporting stand permits the latter to be expanded or contracted radially between an open position wherein the upper clips may be registered and engaged with their latch elements, and a closed position wherein the respective vertical sides of the supporting stand, after release of the upper clips from the latch elements 28, may be caused to radially approach each other to assume positions substantially as illustrated in Figure 2. When the table top has been taken down and formed into its rolled condition as shown in Figure 3, the roll may be placed axially vertically within the supporting stand as the latter is being radially collapsed. It will be therefore seen that with the supporting frame snugly engaging the outer peripheral surface of the rolled table top, the former will serve as a protective enclosing case for the more fragile table top. It will also be seen that the nesting of one component within the other will provide a bundle of the utmost compactness which will occupy, in storage, a volumetric area of minimum size.

I claim:

1. A demountable table comprising, in combination, a plurality of slat members contiguously arranged to form a substantially flat table top, hinge elements connecting adjacent slat members, and by means of which the table top may be coiled

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into a cylindriform bundle, at least one vertically flanged stiffener rail engaged with one of said slat members and movable relative thereto from a position paralleling the latter slat member to a position traversing others of the slat members to hold the table top against substantial flexure, means on one of the others of said slat members for releasably engaging said stiffener rail to hold the latter in said position traversing the slat members, a radially contractible supporting frame of generally rectangular cross-sectional form each side of which comprises a pair of crossed and pivotally engaged leg bars, clips pivotally engaged with and connecting the leg bars of each side of the supporting frame with leg bars of the adjacent sides thereof, said clips having notches therein for receiving the flanges of said stiffener rail so as to lock the supporting frame in engagement and against relative movement to the stiffener rail in one direction, tabs on said clips lying adjacent said stiffener rail, said tabs having latch apertures therein, and spur latch elements carried by said stiffener rail and engageable in the latch apertures of the clips for holding the supporting frame and stiffener rail against relative movement in another direction.

2. A demountable table, comprising in combination, a plurality of slat members contiguously arranged to form a substantially flat table top, strips of flexible tape secured to and traversing said slat members on one side thereof and forming hinge elements connecting adjacent slat members and by means of which the table top may be coiled into a cylindriform bundle, a vertically flanged stiffener rail mounted for pivotal movement on one of said slat members and movable relative thereto from a position paralleling the latter slat member to a position traversing others of the slat members to hold the table top against substantial flexure, a spring clip member carried by one of said others of the slat members and frictionally engageable with the stiffener rail for releasably holding the latter in its position traversing the slat members, a radially contractible supporting frame of generally rectangular cross-sectional form each side of which comprises a pair of crossed and pivotally engaged legs bars, clips pivotally engaged with and connecting the leg bars of each side of the supporting frame with leg bars of the adjacent sides thereof, said clips having notches therein for receiving the flanges of said stiffener rail so as to lock the supporting frame in engagement and against relative movement to the stiffener rail in one direction, tabs on said clips lying adjacent said stiffener rail, said

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tabs having latch apertures therein, and spur latch elements carried by said stiffener rail and engageable in the latch apertures of the clips for holding the supporting frame and stiffener rail against relative movement in another direction.

3. A demountable table comprising, in combination, a plurality of slat members contiguously arranged to form a substantially flat table top, strips of flexible tape secured to and traversing said slat members on one side thereof and forming hinge elements connecting adjacent slat members and by means of which the table top may be coiled into a cylindriform bundle, a vertically flanged stiffener rail mounted for pivotal movement on one of said slat members and movable relative thereto from a position paralleling the latter slat member to a position traversing others of the slat members to hold the table top against substantial flexure, a spring clip member carried by one of said others of the slat members and frictionally engageable with the stiffener rail for releasably holding the latter in its position traversing the slat members, a radially contractible supporting frame of generally rectangular cross-sectional form each side of which comprises a pair of crossed and pivotally engaged leg bars, clips pivotally engaged with and connecting the leg bars of each side of the supporting frame with leg bars of the adjacent sides thereof, said clips having notches therein for receiving the flange of said stiffener rail so as to lock the supporting frame in engagement and against movement relative to the stiffener rail in one direction, tabs on said clips lying adjacent said stiffener rail, said tabs having latch apertures therein, spur latch elements carried by said stiffener rail and engageable in the latch apertures of the clips for holding the supporting frame and stiffener rail against relative movement in another direction, and a medially hinged link pivotally engaged at its respective ends with leg bars of said supporting frame for holding the spur latch elements in engagement with said latch apertures.

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