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FOLDING TABLE WITH PAIRED LEGS

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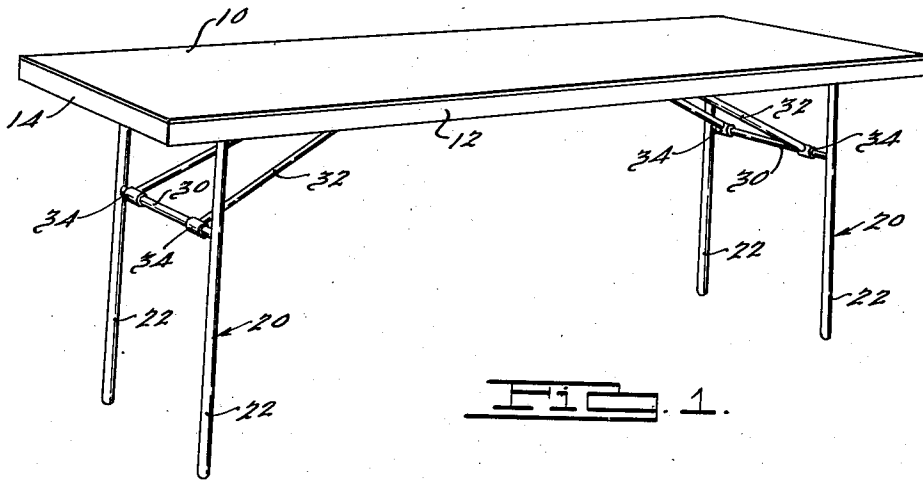


FIG. 1.

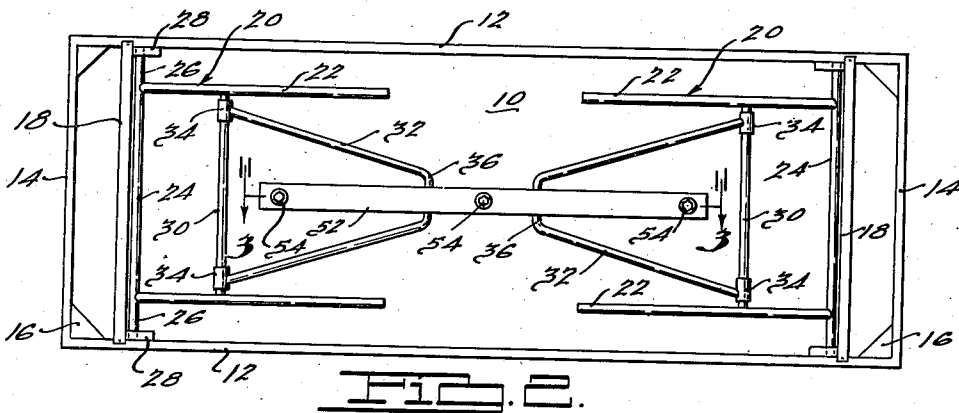


FIG. 2.

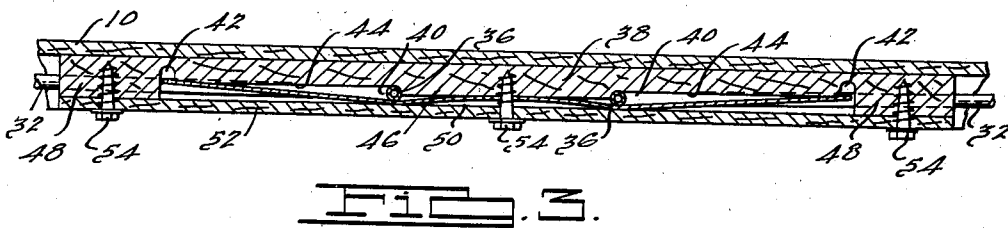


FIG. 3.

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FOLDING TABLE WITH PAIRED LEGS

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5 Claims. (Cl. 311-88)

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This invention relates to new and useful improvements in folding tables.

An important object of the present invention is to provide a folding-table construction which eliminates the necessity of using hinges to fasten the supporting legs to the top of the table.

Another object of the invention is to provide a folding-table construction wherein the supporting legs are fastened to the top in such manner that there are no bolts or other fastening means projecting above the top of the table.

Still another object of the invention is to provide a folding-table construction having a novel means for holding the supporting legs in either folded or extended position.

Yet another object of the invention is to provide a folding-table construction in which the means for holding the supporting legs positioned with respect to the top is readily manually releasable.

A further object of the invention is to provide a folding-table construction wherein the supporting legs can be easily and quickly moved between folded and extended positions.

A still further object of the invention is to provide a folding-table construction wherein the table is essentially rigid when the supporting legs occupy extended positions.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the drawing forming a part of this specification and wherein like numerals are employed to designate like parts throughout the same,

Fig. 1 is a perspective view showing a folding-table construction embodying the invention;

Fig. 2 is a bottom plan view thereof; and,

Fig. 3 is an enlarged, fragmentary, longitudinal sectional view taken on the line 3-3 of Fig. 2.

In the drawing, wherein for the purpose of illustration is shown a preferred embodiment of the invention, the numeral 10 designates a table top of more or less conventional shape and construction. The top 10 conveniently can be made of plywood and preferably is made from a single piece of material. The top 10 here shown by way of illustration is generally rectangular in shape and is nailed or otherwise fastened on a generally rectangular frame which comprises a pair of parallel, longitudinal side members 12 and a pair of transverse end members 14. Generally triangular pieces 16 are provided at the corners of the frame to strengthen and reinforce the same, and transverse reinforcing members 18 extend transversely across the top 10 adjacent and parallel to

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the end frame members 14. Preferably, the members 18 are recessed into the side frame members 12, as best shown in Fig. 2.

The top assembly hereinabove described is relatively light in weight but at the same time is sufficiently strong and rugged to withstand the handling and abuse to which it is subjected in use. This construction is suitable for a top of the size and shape here shown, but it may be varied according to the exigencies of the particular situation. The top may be of any desired size and may have any suitable shape.

The instant invention is concerned primarily with the foldable supporting structure for the top assembly and with the manner in which the supporting structure is assembled on and correlated with the top assembly. Tables of the type here shown are used extensively by hotels for banquet purposes or whenever extra tables are required. Also, the tables of this type are widely used by department stores for extra counters and the like. It is essential that tables of this type be foldable so that they can be stored compactly when not in use, and it is exceedingly desirable that tables be light in weight so that they can be easily handled. Also, it is essential that the tables when erected, be rigid. The supporting structure here shown is mechanically simple and it can be manufactured relatively inexpensively. This is important, since it gives the maker a manufacturing advantage in a highly competitive field.

More particularly, I provide a support 20 adjacent each end of the table and, since these supports are identical, a detailed description of one will suffice. The supports 20 preferably are made of tubular metal parts which are welded or otherwise fastened solidly together.

Each support 20 comprises a pair of parallel leg elements 22 which are connected at one end to a transverse member 24. The leg elements 22 are spaced so as to lie between and parallel to the side frame member 12, and the transverse element 24 is formed with laterally projecting journal portions 26 which are rotatably supported by bearing blocks 28 fastened to the side frame members 12. A second transverse element 30 joins the leg element 22 intermediate the ends of the latter. The second transverse element 30 is disposed parallel to the transverse supporting element 24 and preferably is located closer to the attached ends of the legs than to the free ends thereof. From the above it will be readily apparent that the leg or supporting assemblies 20

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can be swung on the journals 26 between folded positions (Fig. 2) and extended positions (Fig. 1).

In order to hold the leg assemblies either in extended or in folded position, I provide each assembly with a generally U-shaped latch member 32. Sleeves 34 on the ends of the latch members 32 surround the transverse leg elements 30 and provide pivotal connections between the supporting leg structures and the latch members 32. The bight portions 36 of the latch member 32 overlie a catch bar 38 which extends medianly along the undersurface of the top 10 and is located substantially midway between the supporting structure 20. Each latch member 32 is adapted to occupy either one of two positions indicated generally at 40 and 42 in Fig. 3 on the catch bar 38.

When the supporting structures 20 are folded, the bight portions 36 of latch members 32 occupy the positions 40, and when the supporting structures 20 are extended, the bight portions 36 occupy the positions 42. When the supporting structures 20 are moved between raised and folded positions, the bight portions 36 slide along the lands 44 which connect the two positions 40 and 42. Both the middle portions 46 of the catch bar 38 (i. e., that portion of the bar between the two positions 40) and the end portions 48 thereof are embossed to extend below the lands 44.

A leaf spring 50 extends across the middle portion 46 of catch bar 38 and the portions thereof which extend from the middle portion incline angularly toward the lands 44. A cover plate 52 overlies the spring 50. This plate extends the full length of the catch bar 38 and is fastened thereto by screws 54. One screw 54 is provided at each end of the catch bar 38 and one screw extends into the middle portion 46 thereof through the leaf spring 50.

In this connection, it will be observed that the two outer positions 42 are recessed into the catch bar 38 to provide notches in which the bight portions of latch members 32 engage. Also, it will be observed that the end portions of spring 50 engage the catch bar 38 at the juncture of the notched positions 42 and the lands 44. Further, the leaf spring projects across the notched positions 42 to retain the latch members therein. In order to assure a pressed engagement between the leaf spring 50 and the catch bar 38 at the juncture of notched positions 42 and lands 44 so that the leaf spring will hold the catch members solidly in the notches, the middle portion of the leaf spring is arched as shown in Fig. 3. Thus when the middle screw 54 is tightened, the arched middle portion of the leaf spring 50 is flattened and the spring is stressed so as to press the ends thereof upwardly against the catch bar 38.

From the foregoing, it will be readily apparent that when the supporting structures 20 are folded under the top 10 and the bight portions 36 of the latch members 32 occupy the inner positions 40, the inclined terminal portions of the leaf spring 50 resist outward movement of the bight portions along the lands 44. As a result, the leaf spring 50 holds the latch members 32 wedged tightly against the catch bar 38 and thus holds the supporting structures 20 in folded positions against the top 10. However, the pressure of leaf spring 50 against latch members 32 is yieldable and the supporting structures 20 can be readily swung manually outwardly to extended positions. As the supporting structures 20 are swung to extended positions, the bight portions 36 ride outwardly along the lands 44 against the action of

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spring 50. The spring 50 yields to permit movement of the latch member 32; however, as soon as the bight portions 36 enter the outer notched positions 42, leaf spring 50 resumes its normal position to hold the bight portions 36 in the notches 42. Thus in the latter position of supporting structures 20, the leaf spring 50 again acts to hold the bight portion 36 pressed solidly against the catch bar 38 and thus holds the supporting structures 20 solidly in extended position. Conversely, to return the supporting structures 20 to folded positions, it is merely necessary to press the latch members 32 downwardly against the action of spring 50 until the bight portions 36 disengage the notches 42. The supporting structures 20 can then be swung to closed positions. As the legs swing upwardly the latch members 32 slide inwardly along the lands 44 to the inner positions 40.

It may thus be seen that I have accomplished the objects of my invention. I have provided a table having supporting structures or legs which are movable between folded and extended positions. The supporting structures are held rigidly in both positions by mechanically simple yet highly efficient fastening means. The entire structure is relatively simple to maintain manufacturing costs at a minimum. At the same time, the table is sufficiently strong and rugged in construction to withstand handling and abuse to which it is subjected in use.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred example of the same and that various changes in the size, shape, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the appended claims.

Having thus described the invention, I claim:

1. A foldable table comprising a table top, foldable leg assemblies at opposite ends of said top and means for holding said leg assemblies in either extended or folded position including a bar secured to the undersurface of said top at substantially the middle thereof, said bar having a separate bearing surface for each of said leg assemblies and a notch at the outer end of each bearing surface, a separate latch element pivoted to each of said leg assemblies and slidable on respective bearing surfaces when said leg assemblies are moved between folded and extended positions, said latch elements entering said notches when the leg assemblies are fully extended to hold said assemblies in extended positions, and a leaf spring having an upwardly arched middle portion fastened to the bar between said bearing surfaces and having oppositely extending arm portions, said arched middle portion holding the inner ends of said arm portions spaced away from said bearing surfaces so as to accommodate the latch elements between said arms and said bearing surfaces at the inner ends of the latter and to position said arms so that they gradually approach said bearing surfaces toward the outer ends thereof and bear against such surfaces at the junctures thereof with said notches, said arm portions overlying said bearing surfaces and having freely movable terminal portions projecting across said notches, said arm portions being spaced below the inner ends of said surfaces so as to accommodate the latch elements therebetween and bearing against the outer ends of said surfaces so as to hold the latch elements in said notches.

2. A foldable table comprising a table top, fold-

able leg assemblies at opposite ends of said top and means for holding said leg assemblies in either extended or folded position including a bar secured to the undersurface of said top at substantially the middle thereof, said bar having a separate bearing surface for each of said leg assemblies and a notch at the outer end of each bearing surface, a separate latch element pivoted to each of said leg assemblies and slidable on respective bearing surfaces when said leg assemblies are moved between folded and extended positions, said latch elements entering said notches when the leg assemblies are fully extended to hold said assemblies in extended positions, a leaf spring having an upwardly arched middle portion fastened to the bar between said bearing surfaces and having oppositely extending arm portions, said arm portions overlying said bearing surfaces and having freely movable terminal portions projecting across said notches, said arm portions being spaced below the inner ends of said surfaces so as to accommodate the latch elements therebetween and bearing against the outer ends of said surfaces so as to hold the latch elements in said notches, and means engaging said spring arm at the junctures of said arched portion and said arm portions to hold the arm portions in pressed engagement with said bar.

3. A foldable table comprising a table top, foldable leg assemblies at opposite ends of said top and means for holding said leg assemblies in either extended or folded position including a bar secured to the undersurface of said top at substantially the middle thereof, said bar having a separate bearing surface for each of said leg assemblies and a notch at the outer end of each bearing surface, a separate latch element pivoted to each of said leg assemblies and slidable on respective bearing surfaces when said leg assemblies are moved between folded and extended positions, said latch elements entering said notches when the leg assemblies are fully extended to hold said assemblies in extended positions, and a leaf spring having an upwardly arched middle portion fastened to the bar between said bearing surfaces and having oppositely extending arm portions, said arm portions overlying said bearing surfaces and having freely movable terminal portions projecting across said notches, said arm portions being spaced below the inner ends of said surfaces so as to accommodate the latch elements therebetween and bearing against the outer ends of said surfaces so as to hold the latch elements in said notches, a cover plate fastened to the bar and bearing against said spring at the junctions of said arched middle portion and said arm portions in such manner as to cause inward flexing of said spring and thereby place said spring under tension to hold the arm portions in pressed engagement with said bar.

4. A foldable table comprising a table top, foldable leg assemblies at opposite ends of said top and means for holding said leg assemblies in either extended or folded position including a bar secured to the undersurface of said top at substantially the middle thereof, said bar having a separate bearing surface for each of said leg assemblies and a notch at the outer end of each bearing surface, a separate latch element pivoted to each of said leg assemblies and slidable on respective bearing surfaces when said leg assemblies are moved between folded and extended positions, said latch elements entering said

notches when the leg assemblies are fully extended to hold said assemblies in extended positions, a leaf spring having an upwardly arched middle portion fastened to the bar between said bearing surfaces and having oppositely extending arm portions, said arm portions overlying said bearing surfaces and having freely movable terminal portions projecting across said notches, said arm portions being spaced below the inner ends of said surfaces so as to accommodate the latch elements therebetween and bearing against the outer ends of said surfaces so as to hold the latch elements in said notches, a cover plate fastened to the bar and bearing against said spring at the junctions of said arched middle portion and said arm portions in such manner as to cause inward flexing of said spring and thereby place said spring under tension to hold the arm portions in pressed engagement with said bar, and means for controlling the pressure exerted by the cover plate against the spring whereby to regulate the tensioning of said spring.

5. A foldable table comprising a table top, foldable leg assemblies at opposite ends of said top and means for holding said leg assemblies in either extended or folded position including a bar secured to the undersurface of said top at substantially the middle thereof, said bar having a separate bearing surface for each of said leg assemblies and a notch at the outer end of each bearing surface, a separate latch element pivoted to each of said leg assemblies and slidable on respective bearing surfaces when said leg assemblies are moved between folded and extended positions, said latch elements entering said notches when the leg assemblies are fully extended to hold said assemblies in extended positions, a leaf spring having an upwardly arched middle portion fastened to the bar between said bearing surfaces and having oppositely extending arm portions, said arm portions overlying said bearing surfaces and having freely movable terminal portions projecting across said notches, said arm portions being spaced below the inner ends of said surfaces so as to accommodate the latch elements therebetween and bearing against the outer ends of said surfaces so as to hold the latch elements in said notches, a cover plate fastened to the bar and bearing against said spring at the junctions of said arched middle portion and said arm portions in such manner as to cause inward flexing of said spring and thereby place said spring under tension to hold the arm portions in pressed engagement with said bar, and a screw extending upwardly through said cover plate and the arched middle portion of said spring and into said bar, said screw holding the middle portion of said cover plate pressed against the spring to tension the latter and to maintain the arm portions of the spring in pressed engagement with the bar.

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