United States Patent [19]

Greenberg

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[54] **FOLDING TABLE**

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[21] Appl. No.: **356,439**

[52] **U.S. Cl.** **108/133,** 108/132, 16/72

[51] **Int. Cl.** **A47b 3/00**

[58] **Field of Search** 108/133, 132, 131; 16/72

[56] **References Cited**

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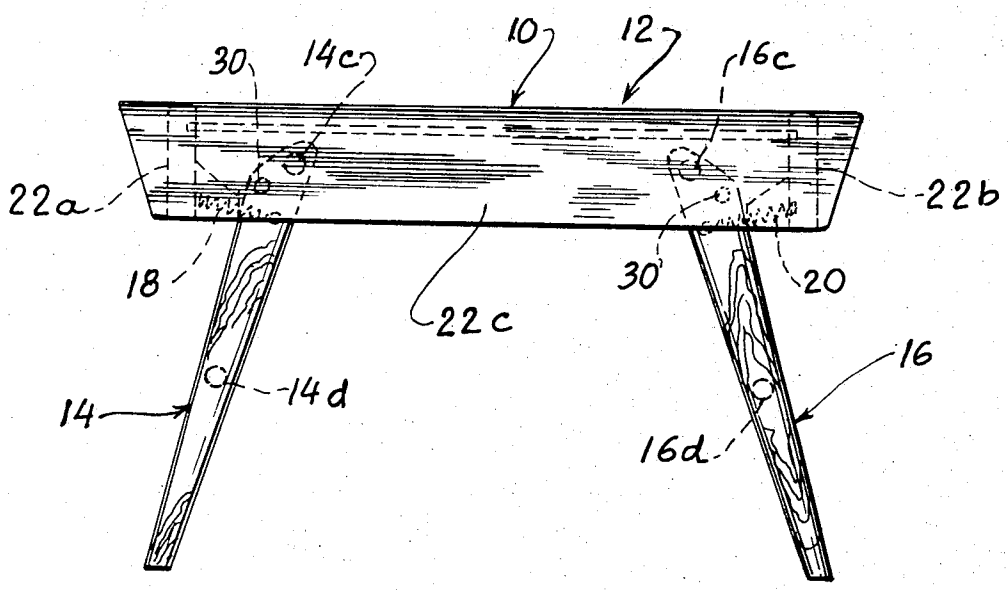
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Attorney, Agent, or Firm—Stoll and Stoll

[57] **ABSTRACT**

A folding table comprising a table top, a plurality of pivotally mounted leg assemblies, spring toggle means for holding the leg assemblies alternatively in generally vertical operative position and generally horizontal inoperative position, and finger-engageable means to move the leg assemblies into either of such positions while the table top is held between the hands in upright position.

1 Claim, 8 Drawing Figures



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SHEET 1 OF 2

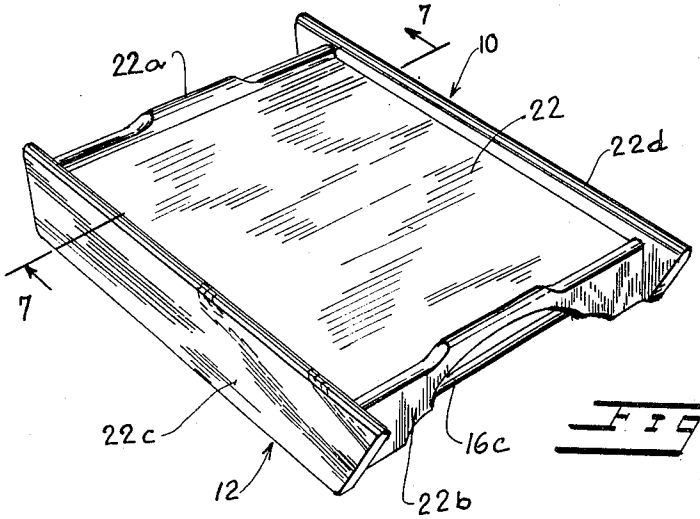


Fig. 1

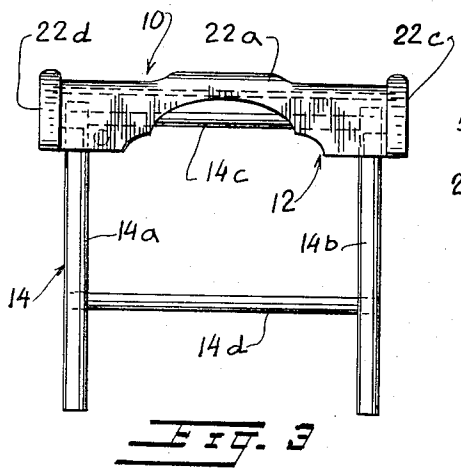


Fig. 3

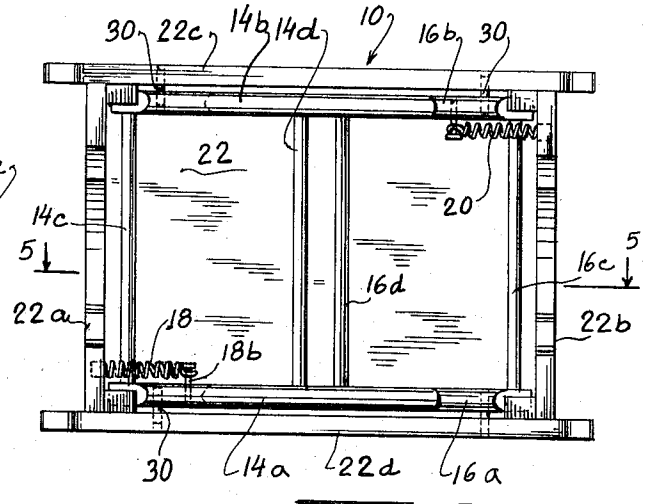


Fig. 2

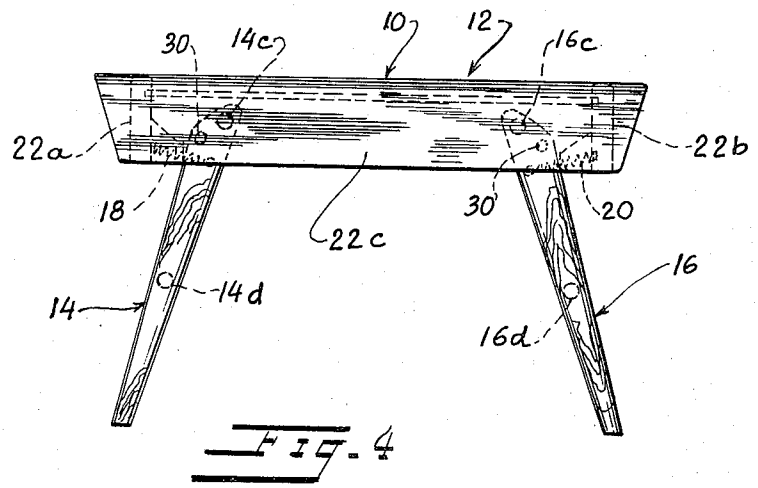


Fig. 4

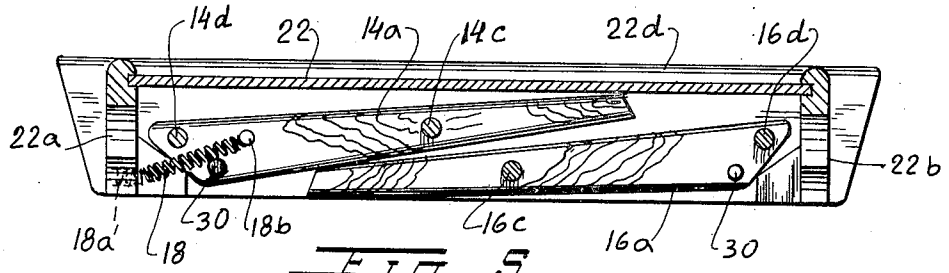


Fig. 5

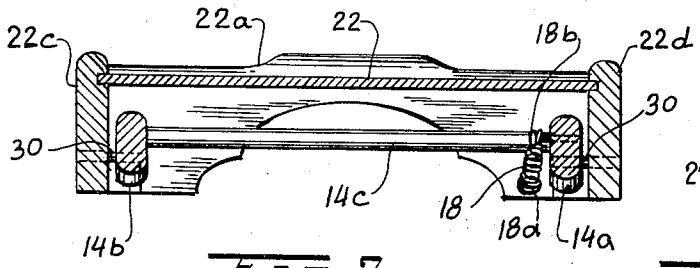


Fig. 7

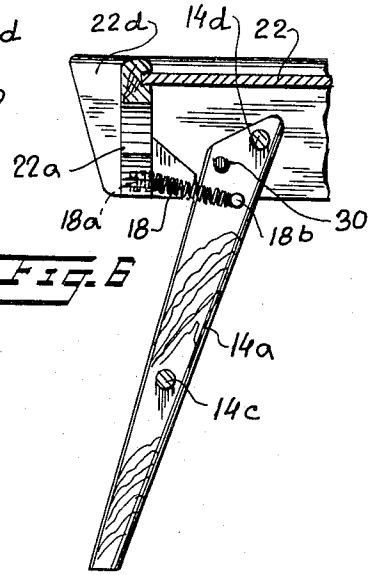


Fig. 6

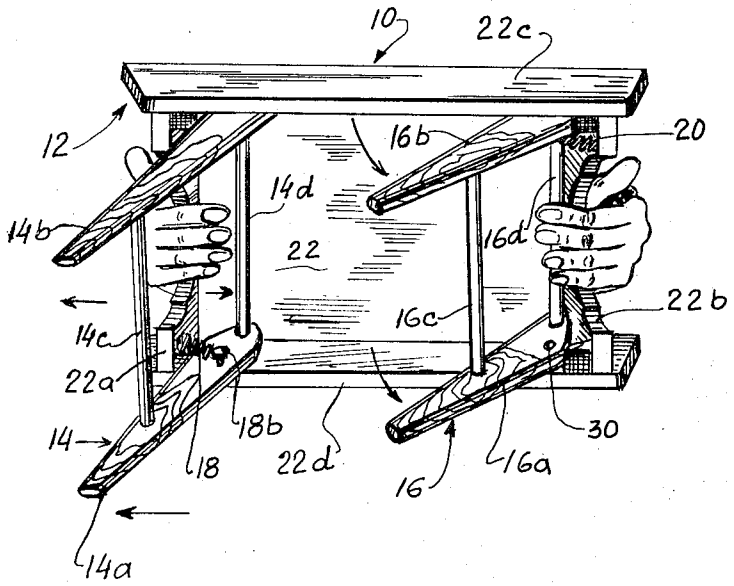


Fig. 8

FOLDING TABLE

BACKGROUND OF THE INVENTION

1. Field of the Invention.

Folding tables of the type generally used as cocktail tables, serving tables and the like. The invention is also applicable to other kinds of folding tables, regardless of the nature and purpose of their use.

2. Description of the Prior Art.

The closest prior art known to applicant consists of conventional folding tables wherein the legs or leg assemblies are held in their respective operative positions by means of latching or locking means. It is necessary, in moving the legs of folding tables from operative to inoperative position, to disengage a latch or unlock a locking mechanism. Illustrative of such prior art is Ritter U.S. Pat. No. 1,944,757, issued on Jan. 23, 1934. Another pertinent prior art patent is Benedict U.S. Pat. No. 310,245, which issued on Jan. 6, 1885. In this patent the folding legs are held in operative position by means of a locking detent, and a spring is employed to maintain the legs in locked position with respect to the detent. Still another pertinent prior art patent known to applicant is Wigell U.S. Pat. No. 2,684,883, issued July 27, 1954.

None of the prior art folding tables known to applicant is provided with folding legs which are biased in operative or inoperative position, as the case may be, by the use of spring toggle means.

SUMMARY OF THE INVENTION

The present invention comprises a folding table consisting of a table top and a plurality of pivotally mounted leg assemblies and spring toggle means for biasing and holding the leg assemblies in either generally vertical operative position or generally horizontal inoperative position. In the preferred form of this invention, each folding table is provided with a pair of oppositely disposed leg assemblies, each leg assembly consisting of a pair of legs supported in fixed positions relative to each other by means of cross-bracing. In such case, only a single spring toggle means is needed for each leg assembly, that is, only two spring toggle means for four legs. The invention is equally applicable to folding tables with four separately operable legs, each of which is pivotally secured to the table top and each of which is provided with its own individual spring toggle means. In such case the table would, of course, have four separate spring toggle means for its four separate legs.

The basic advantage in the present invention over conventional and prior folding tables resides in the fact that there is no need for latching or locking means in a folding table made in accordance with the present invention and, consequently, there is no need to unlatch or unlock the legs or leg assemblies when swinging them from operative to inoperative position, or vice versa. Combined with this feature is the speed and ease with which the legs can be swung from operative to inoperative position or vice versa by use of finger pressure while holding the table between the palms of the hands.

In the operation of a folding table made in accordance with this invention, all that need be done is to manually overcome the spring tension which holds the legs or leg assemblies in their respective operative or inoperative positions. This is a quick, simple and easy operation which may be performed whether the table

legs are projected in operative position or retracted in inoperative position. Stated differently, this arrangement makes it possible to swing the legs into either position while holding the table top between one's hands. It is not necessary to support the table by other means while latching or locking means are actuated. Thus it is entirely feasible to carry and use the table, with its legs retracted, as a serving tray or the like, and, when desired, it is equally feasible to lower the legs into supportive positions in order to convert the tray into a cocktail table or the like. This would be done by holding the ends of the table top between the palms of the hands while using the fingers to engage crossbars on the leg assemblies and to cause said leg assemblies to swing into operative or inoperative position, as the case may be, against the spring toggle action.

BRIEF DESCRIPTION OF THE DRAWING

FIG. **1** is a perspective view of a folding table made in accordance with the present invention, said table being shown in folded condition.

FIG. **2** is a bottom view of said folded table.

FIG. **3** is an end view thereof, when extended to operative position.

FIG. **4** is a side view of said table when extended in operative position.

FIG. **5** is an enlarged longitudinal section on the line **5—5** of FIG. **2,** showing the leg assemblies of the folding table in retracted position.

FIG. **6** is a fragmentary sectional view of the left-hand end of the folding table, as viewed in FIG. **5,** but showing the leg assembly of that end extended to operative position.

FIG. **7** is an enlarged transverse section on the line **7—7** of FIG. **1.**

FIG. **8** is a perspective view showing how the folding table is held between the hands in order to retract or extend the legs.

DESCRIPTION OF PREFERRED EMBODIMENT OF THE INVENTION

The invention is illustrated in the accompanying drawing, wherein folding table **10** made in accordance with the principles of this invention comprises a table top **12,** a pair of leg assemblies **14** and **15,** respectively, and a pair of spring toggle means **18** and **20,** respectively. It will be observed that the table top comprises a horizontal board **22** or the like, a pair of end members **22*a*** and **22*b***, respectively, and a pair of side rails **22*c*** and **22*d***, respectively. The precise configuration of these end members and side rails is not significant in relation to the present invention, and what is shown in the drawing should be understood as being merely illustrative.

Leg assembly **14** comprises a pair of generally parallel legs **14*a*** and **14*b*** and a pair of cross-braces **14*c*** and **14*d*** between them. By the same token, leg assembly **16** comprises a pair of generally parallel legs **16*a*** and **16*b*** and cross-braces **16*c*** and **16*d*** between them. It will be seen that cross-braces **14*c***, **14*d***, **16*c*** and **16*d*** perform two functions: They serve as connecting members between the legs so that each pair of legs may function and move as a single assembly; and they serve as handles by which the leg assemblies may be actuated to swing them into either operative or inoperative position.

Each leg is pivotally fastened by means of a pivot pin **30** to one of the side rails **22***c*, **22***d* of the table top. Pins **30** of each pair of legs constituting a single assembly are, of course, axially aligned, so that each said leg assembly pivots about a common axis. It will also be noted that spring **18** is secured by means of fastening element **18***a* to end member **22***a*, and the opposite end of the spring is secured by means of fastening element **18***b* to one of the legs **14***a*, **14***b*. The precise locations of fastening elements **18***a* and **18***b* on end member **22***a* and leg **14***a* or **14***b* are determined by the necessities of a toggle action. That is, when the leg assembly **14** is in its generally vertical operative position, spring **18** is disposed on one side of adjacent pivot pin **30**. When the leg assembly is swung upwardly to generally horizontal position, substantially parallel to the table top, spring **18** is moved to the opposite side of said pivot pin. Stated differently, spring **18** moves across the pivotal axis of the leg assembly when said leg assembly is swung from projected to retracted position or vice versa. In either position of the leg assembly, pivot pin **30** and the two points (fastening elements **18***a* and **18***b*) at which the spring is secured to the table top (end member **22***a*) and the leg assembly (leg **14***a* or **14***b*) define the three points of a generally isosceles triangle, the pivot pin **30** constituting its apical angle and the two fastening points of the spring constitute the base angles.

It will, of course, be understood that a truly geometrical isosceles triangle is not required in this invention. It may be that a stronger tension force would be desired for holding the leg assemblies in projected operative positions than in holding them in retracted inoperative positions. It may also be found desirable to lessen the effect needed to swing the leg assemblies from their retracted to their projected positions. These and other requirements may necessitate a different placement of the ends of the spring from the base angles of an isosceles triangle. Where the spring forces are balanced equally, as between the projected and retracted positions of the leg assemblies, the spring will move equal distances on opposite sides of the pivot pin. What has specifically been said regarding spring **18** and leg assembly **14** also applies to spring **20** and leg assembly **16.**

It will be noted that the legs are tapered on one side along their respective lengths, such that when the leg assemblies are folded over into retracted positions one upon the other, the tapered sides of the legs will juxtapose. The non-tapered sides of the legs will thereby assume generally parallel positions. This tapered configuration of the legs makes for a more compact arrangement when the legs are folded over into their respective retracted positions.

The foregoing is illustrative of a preferred form of this invention, and it will be understood that variations thereof are fully contemplated within the broad scope of the appended claims.

I claim:

1. A folding table, comprising:

a. a table top,

b. a pair of leg assemblies pivotally connected to said table top,

c. said leg assemblies being swingable about their respective pivotal axes between a generally vertical operative position and a generally horizontal inoperative position, and

d. spring toggle means for holding said leg assemblies in either of said positions,

e. said spring toggle means comprising a coiled tension spring,

f. said tension spring being connected at one end to the table top,

g. said tension spring being connected at its opposite end to its associated leg assembly below the pivotal axis thereof,

h. whereby the tension spring moves across said pivotal axis when the leg assembly is pivoted between its said vertical and horizontal positions,

i. each leg assembly comprising a pair of legs and cross-bracing between them,

j. whereby said pair of legs and said cross-bracing constitute an integral unit, integrally movable about a common axis extending through both legs,

k. there being a single spring toggle means connected to said integral unit,

l. the cross-bracing of each leg assembly including a cross-bar which is secured to the upper ends of the two legs of said leg assembly, above its pivotal axis,

m. said cross-bar, pivotal axis and spring connection with the leg assembly defining a three-point isosceles triangle pattern, wherein the pivotal axis represents the apex and the cross-bar and spring connection represent the base angles,

n. said cross-bar being situated adjacent the table top and end members provided adjacent said table top with hand grip cutouts allowing said cross-bar to be engageable by the fingers of one hand when the table top is held by the palm of the same hand,

o. whereby each leg assembly can be manually swung into operative or inoperative position while the table top is held in horizontal position.

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