Dec. 5, 1950 H. A. MITCHELL 2,533,173

FOLDING LEG TABLE WITH ACTUATOR MECHANISM

Filed March 26, 1947

FIG. 1

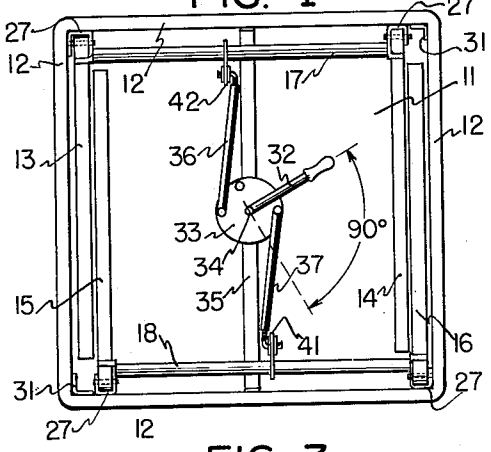


FIG. 2

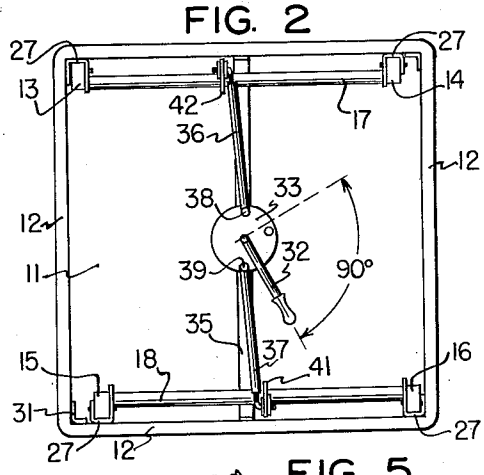


FIG. 3

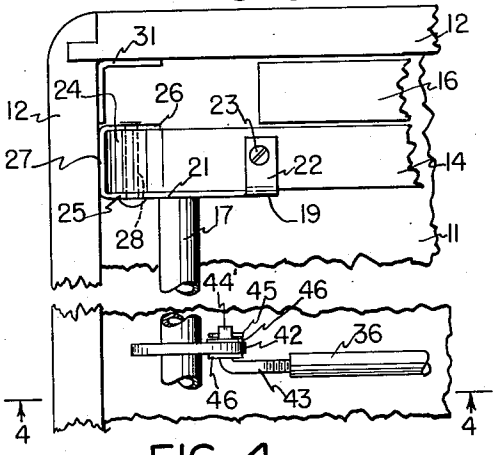


FIG. 5

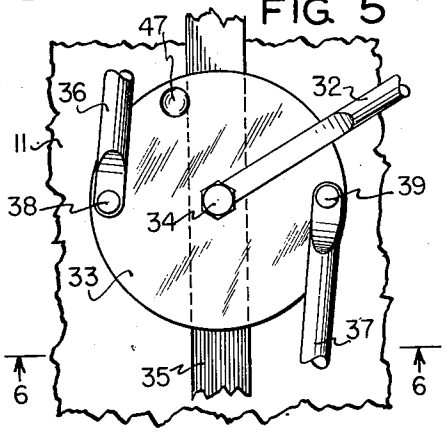


FIG. 4

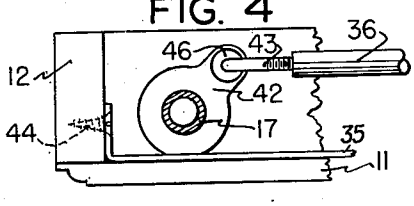


FIG. 6

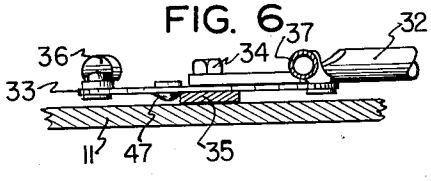
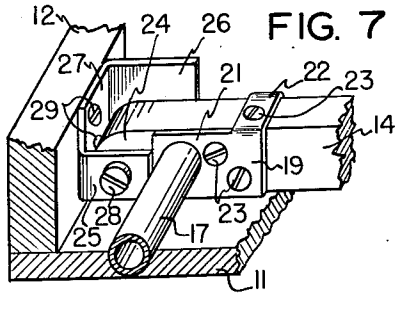


FIG. 7



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FOLDING LEG TABLE WITH ACTUATOR MECHANISM

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1 Claim. (Cl. 311—85)

1

This invention relates to what is known as folding-leg tables and has more particular reference to such tables designed to be used as a card table, a game table, and the like.

One of the objects of the invention is to provide an improved folding-leg table characterized by its novel operating means whereby all the legs may be simultaneously swung to a folded or an unfolded position by quick and easy operation of a hand lever.

Another object of the invention is to provide a table of the character described in which the hand lever is associated with leg-connected links and a mounting disk in such manner as to lock the legs both in the folded and the unfolded positions upon being moved to such positions by operation of the handle.

Another object is to provide an improved folding leg table with actuator mechanism designed to give rigidity and to operate the legs in pairs from one position to another, and to accomplish this with a construction which may be manufactured at a comparatively low cost.

Another object is to provide a folding-leg table of the character described having improved means for adjustment of one set of legs with respect to the other to effect the desired operating and locking relation of the legs.

Another object is to provide an improved folding leg table with actuator mechanism metal parts for mounting and operating the legs on a table top whereby the metal parts as a hardware unit may be sold to manufacturers who make the table top and legs, for quick and easy embodiment in a complete table structure.

The invention will be better understood by reference to the following description when considered in connection with the accompanying drawings, in which

Figure 1 is a view looking at the bottom side of a folding-leg table embodying my invention, showing the legs locked in the folded position;

Figure 2 is a similar view but showing the legs locked in the unfolded position;

Figure 3 is an enlarged fragmentary view of Figure 1 showing a leg mounting and the adjustment connection abovementioned;

Figure 4 is a sectional view taken on the section line 4—4 of Figure 3;

Figure 5 is an enlarged fragmentary view of the hand lever and connecting rod mounting shown in Figure 1;

Figure 6 is a sectional view taken on the section line 6—6 of Figure 5; and

2

Figure 7 is a fragmentary perspective view of the leg mounting shown in Figure 3.

The table top may be of any suitable construction, preferably having a top 11 and marginal depending apron portions 12. Usually the table top is of wood and the apron corners are reinforced in part by the leg mountings. Two of the legs 13—14 are connected as a unit by means of a cross-bar 17. The other two legs 15—16 are similarly connected by a cross-bar 18. Preferably each cross-bar is in the form of a metal tube welded at each end to an attachment plate 19 which has flat portions 21 and 22 in angular relation seating against adjoining sides of the adjacent leg and fixedly secured thereto by suitable screws 23. The top end portion 24 of each leg fits between opposed flat members 25—26 of a bracket 27 and is pivotally attached thereto by a bolt 28. Suitable screws 29 secure each bracket 27 to the inner side of an apron portion 12. As shown in Figure 1, one bracket 27 of each pair is seated in a corner firmly against the adjoining apron portions so as to brace the corner. The bracket 27 at the opposite end of each such pair is spaced inwardly from the adjoining angular apron to allow space for the adjoining leg of the other pair. Angle brackets 31 are secured by suitable screws in the open corners of the apron portions to strengthen these corners. The foregoing gives a strong and substantial mounting for the pairs of legs, at low cost, well adapted for the raising and lowering operations.

The leg operating means comprises a hand lever 32 fixed in a radial relation to a metal disk 33 which in turn is pivoted at its center by a bolt 34 to a metal strap 35, and opposed links 36 and 37 pivotally connected at their inner ends to the disk 33 diametrically thereon at points 38 and 39, respectively, and pivotally connected at their outer ends to arms 41 and 42, which in turn are welded to the cross-bars 18 and 17 respectively. The strap 35 which seats against the underside of the table top as shown in Figure 6, extends entirely across said underside and has upturned ends which are fixed by screws 44 to opposite apron portions as shown in Figure 4. This strap 35 establishes a fixed base connection between opposite sides of the table top and also a solid base for the metal disk mounting. The arms 42 may be stamped metal welded to the cross-bars. At least one of the links such as 36 has an adjustable connecting member 43 threaded into its outer end and suitably connected to the arm 42 as by having its end 44' turned laterally and

passed through an opening in said member. A cotter pin 45 through the end 44' retains it against displacement and washers 46 aid in maintaining the parts in operative relation. A stop member 47 fixed to the disk 33 and projecting above the disk is arranged to engage against an edge of the strap 35, as shown in Figure 6, to releasably lock the parts with the legs in the folded position shown in Figure 1. The operating parts are arranged so that by sufficient pressure on the hand lever 32 in a clockwise direction in the Figure 1 position, the stop member 47 will be displaced by spring of the disk and strap 35 until said member is disengaged from its locking position and permits movement of the hand lever to the unfolded or extended position shown in Figure 2. This lowers the legs to the unfolded or upright supporting position and moves the ends 38 and 39 to a past center locking position. In the final movement to this locking position the links 36—37 put the operated parts under compressive stress, yieldingly forcing the legs against the end plate 27 of the supporting brackets when the legs reach the fully lowered position. This produces a snap action when the ends 38—39 move past center, which action is effective in locking the legs in the lowered position. By sufficient pressure on the hand lever in the opposite direction the links 36—37 are released from said locked position and upon continued movement of the hand lever the legs will be swung to the raised position and locked in such position by engagement of the member 47 against the remote edge of the strap 35. It will be observed that the projection 47 is located near the periphery of the disk and that when the hand lever 32 is moved in a counterclockwise direction to swing the leg units to the folded position as described, the projection 47 will be forced into engagement with the strap 35 which normally lies in the plane of the projection. As seen in Figure 6 the projection 47 is beveled on opposite sides so as to present opposed camlike faces, with the result that by continued pressure on the handle 32 in said counterclockwise direction the projection 47 will be forced to ride under the strap 35 against the yielding resistance of the disk and the strap. When the projection reaches the far side of the strap it will engage in somewhat of a snap action over the edge of the strap. This action occurs when the leg units are swung to the folded position and this engagement of the projection 47 with the edge of the strap locks the leg units in such folded position.

It is believed that the foregoing conveys a clear understanding of the objects prefaced above, particularly with respect to the simplicity of the parts and the ease and convenience with which the hand lever may be operated to move the legs from one position to another and to lock the legs in each such position. The construction of the metal parts is such as to permit of manufacture at a comparatively low cost, considering the functions for which they are designed. Also the metal parts are such as to permit of selling them as a hardware unit, to furniture manufacturers who make the table proper.

While I have illustrated in the drawings a preferred embodiment, it should be understood that changes may be made in details of construction without departing from the spirit and scope of the invention as set forth in the appended claim.

I claim:

A folding-leg table comprising a table top, legs at opposite sides of the table mounted on the underside of the table top to swing as a unit between folded and unfolded positions, a metal strap extending across the table at the under side thereof and fixed to the table, a disk member mounted on the under side of said strap centrally thereof to rotate about a center axis, a hand lever fixed to the disk member, link members each pivotally connected at one end to the disk member at a side thereof diametrically opposite from the other, means pivotally connecting the opposite end of each link member to a leg unit at one side of the table and in a manner to swing such legs between said positions upon rotative movement of the disk member in opposite directions by operation of the handle, said link members and connecting means being arranged to releasably lock the legs in the unfolded position when the disk member is operated to carry the pivotally connected ends of the link members beyond a dead-center relation, and a cam face projection on the top side of the disk arranged to engage the strap and be displaced with respect thereto during the final movement of the disk member when it is operated to move the leg units to the folded position and to yieldingly engage an edge of the strap when the leg units have been moved to said folded position whereby to yieldingly lock the leg units in such position.

HARRY A. MITCHELL.

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