ARTICLE OF FURNITURE OF THE FOLDING TYPE

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This invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty therefor.

This invention relates to an improvement in an article of furniture of the type disclosed in my Patent No. 1,916,288 in which a common control means is provided which is adapted to act on leg moving means for moving one set of unitary leg members and then another set of unitary leg members into folded or operative position.

One of the important objects of my invention is to provide an improved folding, bracing, and leg moving mechanism for an article of furniture of the folding type such as a table or the like to overcome any possible failure of control over the movement of the legs of said article of furniture due to varying conditions and circumstances or wear of parts of the mechanism.

Another object of my invention is to provide an improved folding, locking, and leg bracing mechanism which is adapted to be easily and quickly applied to an article of furniture, to provide means for readily folding and unfolding the legs thereof and also rigidly bracing said legs when in an unfolded or operative position, and for locking said leg folding and unfolding mechanism including said legs in position as usage requires.

Another object of my invention is to provide a folding, locking and leg bracing mechanism for an article of furniture which is simple and positive in operation, cheap in construction and which is not liable to get out of order.

With the above and other objects in view, the invention specifically consists in features of construction, arrangement and operation of parts which will be described and claimed with reference to the accompanying drawings, in which:

Fig. 1 is a perspective of my folding table with the legs thereof in operative position, showing my invention applied thereto;

Fig. 2 is a front elevation of a portion of my improved leg folding, locking and leg bracing mechanism;

Fig. 3 is a perspective detailed view of one of the parts of my improved leg folding and unfolding mechanism;

Fig. 4 is a perspective view of a cam attached to one end of an operating lever used in carrying out my invention;

Fig. 5 is a bottom plan view of the table having my improved leg folding and unfolding mechanism applied thereto and illustrating one set of the legs of the table in operative position and the other set thereof in a folded or inoperative position; and

Fig. 6 is a cross-sectional view taken on line 6—6 of Fig. 5 looking in the direction of the arrows.

In the illustrated embodiment characterizing my invention (A) indicates generally an article of furniture here illustrated in the form of a table to which my invention may be applied for folding or unfolding the pairs of legs (1) and (2).

The table (A) comprises a top supporting frame (3) having dependent side rails (4) and (5) which are joined together at their ends by means of corner angle irons (6) which are attached to the side rails (4) and (5) by any suitable means, such as by screws (7). Extending transversely across the side rails (4) and suitably connected thereto at its ends is a stabilizing beam or cross-brace (8) which is parallel to and equidistant from the side rails (5). Mounted on the supporting frame (3) is a table top (9) which is suitably fastened to the rails (4) and (5) and the beam (6).

The legs (1) and the legs (2) are assembled into pairs by means of cross bars (10) which are fixedly secured each to its pair of legs by means of angle irons (11) securely fastened by screws (12) to both bar and legs. The angle irons (11) are pivotally connected at (13) to angle irons (14), having a depending portion (15) and an outwardly extending portion (16) fixedly secured by screws (17) or the like to the bottom of the side rails (4) and (5) at the corners of the table. The legs (1) and (2) are further secured to the cross bars (10) by fixed braces (18).

The legs (1) and (2) are braced perpendicular to the plane thereof by folding braces (19) and (20) comprising links (21) and (22) which are pivotally connected together at one end at (23). The other end of the links (21) is pivoted to the legs (1) and (2) at (24), while the other end of the links (22) terminates in a triangular offset portion (25) which is pivotally secured to a connecting bar (26) at (27), the bar being fixedly secured to the side rails (5) of the table in any suitable manner, such as by being bolted or riveted thereto.

A stop (28) is provided as an extension of the links (22) of the folding braces (19) and (20) to abut against the table side of links (21) and thus prevent the braces (19) and (20) from unfolding beyond a straight line.

Connecting rods (29) and (30) are provided between the triangular shaped offsets (25) of the
The control lever or handle (H) containing the pointed arch-shaped cam members (33) is connected by said cam members (33) to all of the side corner or leg moving means so that upon movement thereof the two legs (2) will be folded into inoperative position first and thereafter upon further movement of the control lever the two legs (1) will be folded to their inoperative position. This control lever comprises a substantially ball or U-shaped member (36) made of resilient material which is adapted to be sprung into a locked or latched position by means of latch members (37) and (39) connected to the bottom of the cross bar (8) and suitably spaced from each other.

A friction bearing and guide member (39) is secured by screws (40) or the like to each of the side rails (5) of the table adjacent the arch-shaped cam member (33). Referring to Fig. 2 of the drawings, the friction bearing and guide members (39) comprise a U-shaped member (41), the legs (42) of which are bent at right angles to form feet (43) and (44), said feet being transversely extended to form flanges (45), the height of each (46) of said member being transversely curved to provide a working surface against which the sides of the arch-shaped cam member (33) adjacent thereto is adapted to contact when the cam members are operated by the control lever (H) for closing and opening the legs (1) and (2) of the table in its folded or extended position.

The friction bearing and guide members each provide a guide aperture through which the connecting rod (29) extends, said connecting rod (29) being adapted to be frictionally and positively held stationary by the guide aperture upon the operation of the cam members (33) by the control lever or handle (H).

To operate my device when the legs of the table are in an extended or operative position, I proceed as follows:

1. First grasp one of the sides of the table parallel to the leg axes and place the table in a sloping inverted position so that the extended legs will be away from me. Next with the other hand grasp the operating lever (H) near its middle, spring it away from the latch member (37) to release the operating lever therefrom and then swing it across the bottom of the table.

2. As the operating lever is swung, it rotates the cam members (33) upon the axes of rotation thereof across the transversely curved bight or arch (46) of the guide member (39), the connecting rods (29) being held stationary, the connecting rods (30) are forced against the triangular offset portion (35) of the folding braces (20) which rotate the folding braces (20) on their pivots (27) thus folding the pair of legs (2) on their axis (15) into inoperative position. On further movement of the operating lever (H) the rotating axis of the cam operating lever (H) changes from a stationary pivot (34) to a movable pivot (35) and further rotation of the cam members (33) by the operating lever (H) forces the rods (29) to move the linkages connecting them with the pair of legs (1) to fold the linkages into their folded or inoperative position upon the legs (2). The operating lever is then sprung into its latched position with the latch member (33) thus locking the legs (1) and (2) in their folded or inoperative position. To raise the legs from their folded position the movement of the operating lever (H) causes the pair of legs (1) which are uppermost to unfold first, after which the pair of legs (2) unfold. The lever (H) is then sprung into a latched position with the latch member (33) to lock the pair of legs (1) and (2) into their unfolded or operative position.

It will thus be seen that I have invented a highly novel, simple, and efficient article of furniture of the folding type which is well adapted for all the purposes which may have herein shown and described my device as comprising certain structural elements it is nevertheless to be understood that changes may be made therein without departing from the spirit or scope of my invention.

Having described my invention, what I claim as new and wish to secure by Letters Patent is:

1. An article of furniture comprising a frame having ends, a unitary leg member pivoted thereto at each end, common control means, leg moving means connected to said common control means and said unitary leg members, a friction bearing and guide member associated with certain of said leg moving means and connected to said frame, said common control means comprising a ball link and guide member provided with said friction bearing and guide member to operate said leg moving means upon the operation of said common control means.

2. An article of furniture comprising a frame having ends, a unitary leg member pivoted thereto at each end, common control means, leg moving means connected to said common control means and said unitary leg members, a friction bearing and guide member associated with certain of said leg moving means and connected to said frame, said common control means comprising a ball link and guide member provided with said friction bearing and guide member to operate said leg moving means upon the operation of said common control means.

3. An article of furniture comprising a frame having ends, a unitary leg member pivoted thereto at each end, common control means, leg moving means connected to said common control means and said unitary leg members, a friction bearing and guide member associated with certain of said leg moving means, said common control means comprising a ball link and guide member provided therewith contacting with said friction bearing and guide member to operate said leg moving means upon the operation of said common control means.

4. An article of furniture comprising a frame having ends, a unitary leg member pivoted thereto at each end and common means for folding first one unitary leg member and then the other unitary leg member into inoperative position.
upon continual movement of said means, said means comprising a control link having cam members provided thereon, collapsible braces, connecting rods pivotally connecting said collapsible braces to said cam members, each of said collapsible braces pivoted to its respective leg at one end and to said connecting rods and to said frame at the other end thereof, and friction bearing and guide members secured to said frame, said friction bearing and guide members having a guide aperture provided therein for guiding certain of said connecting rods and a bearing surface contacting with said cam members upon the operation of said control link.

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