March 1, 1949. N. K. BROWN 2,463,082

FOLDING TABLE LEG LOCK

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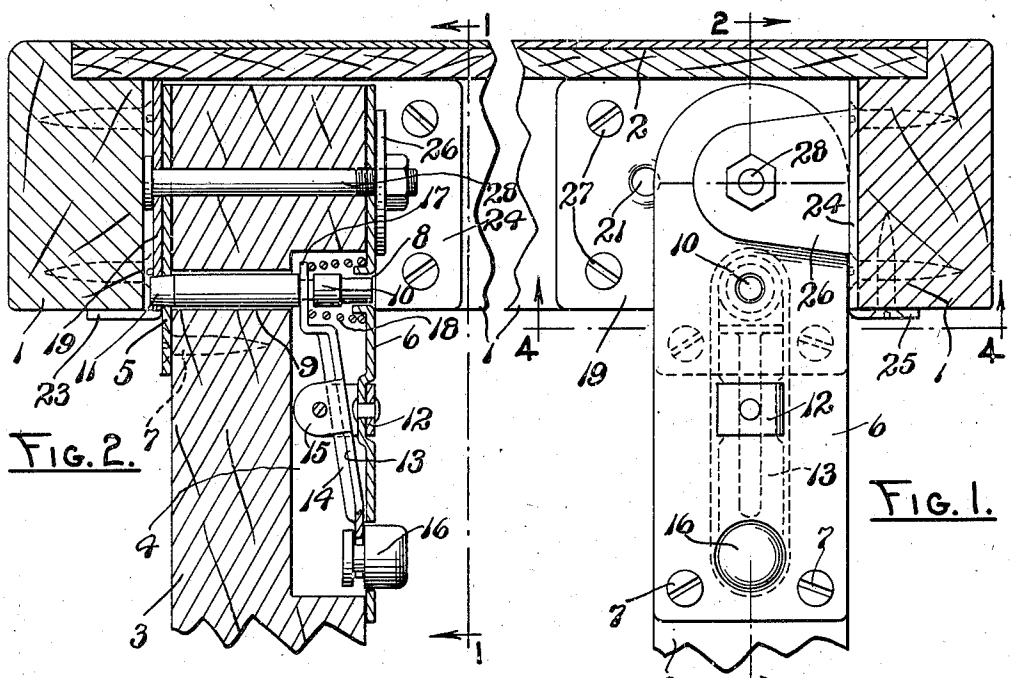


FIG. 2.

FIG. 1.

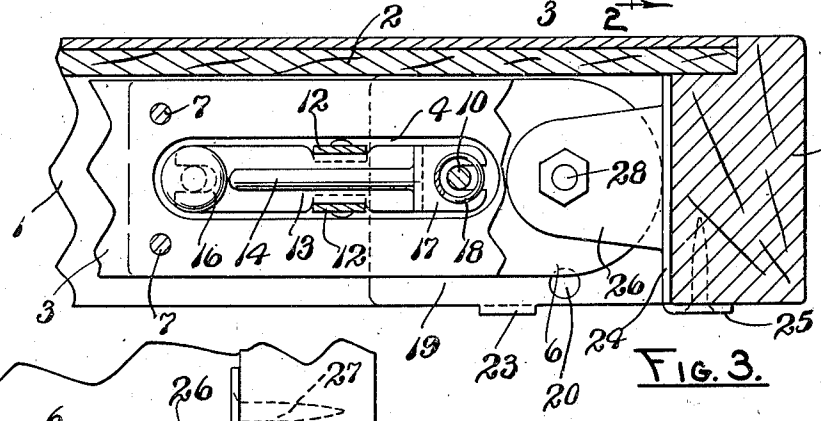


FIG. 3.

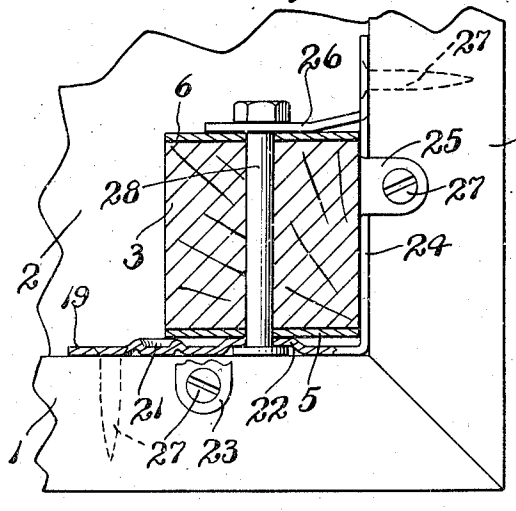


FIG. 4.

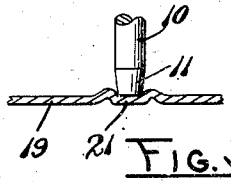


FIG. 5.

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FOLDING TABLE LEG LOCK

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1 Claim. (Cl. 311—99)

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This invention relates to and is in connection with a novel structure of folding leg for tables. The tables in general, to which the invention may be most usefully applied, are light tables, one example of which is card tables, square in outline with four corners, at each of which a supporting leg is mounted which, when the table is in use extends vertically in a downward direction from the table top, and when not in use and is to be put away, the legs are folded against the under side of the top and usually within the border frame members of the table.

My invention is directed to and has for its object and purpose the provision of a very practical, exceptionally sturdy and economical folding leg unit, one of which is readily secured at each corner of the table and inside the border frame at such corners. The folding leg unit is completely assembled before such attachment and when the attaching is done, it is by merely driving a number of screws into the table top frame members. Each leg when folded flat against the underside of the table is provided with means such that it is releasably held against accidental movement, but can be readily turned to vertical position, and in such vertical position is rigidly locked and held against disconnection or other undesired movement. Furthermore, the lock which is provided is manually operable to release the leg when wanted for return folding against the underside of the top.

Further objects and purposes of the invention are to provide a folding table leg structure made largely from flat metal, which is very economically produced by dies in large quantities, and all other parts are either stock parts or elements which are made by large quantity economical production on automatic screw or lathe machines.

An understanding of the invention may be had from the following description, taken in connection with the accompanying drawing, in which,

Fig. 1 is a vertical elevation and section, the section being taken on the plane of line 1—1 of Fig. 2 looking against the inner side of the folding table leg of my invention.

Fig. 2 is a vertical section on the plane of line 2—2 of Fig. 1 at right angles to the plane of the view shown in Fig. 1.

Fig. 3 is a fragmentary partial vertical section and side elevation at one corner of the table with the leg in its folded position.

Fig. 4 is a horizontal section and under plan on the plane of line 4—4 of Fig. 1, and

Fig. 5 is a fragmentary sectional view of the detail of structure for releasably holding a table leg in its folded position.

Like reference characters refer to like parts in the different figures of the drawing, and the sections are taken looking in the directions indicated by the arrows.

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A top to which the folding leg structure of my invention is applicable includes a rectangular frame having border side and end frame members 1, making an open frame which is covered at its upper side by a top 2. The detail of structure of the top is subject to considerable variation. Usually the top is inset in the upper inner portions of the frame members as shown, but is not necessarily of such construction insofar as the applicability and utility of my invention is concerned. The table legs 3, one at each corner, of wood or equivalent material, each at its inner side and a short distance below its upper end is provided with a vertical recess 4 which may be routed out. The recess is somewhat elongated and rounded at its ends, as in Fig. 3. At the outer side of the leg and extending from the upper end downwardly for a distance below the lower side of the adjacent frame member 1, a flat metal plate 5 is secured, and at the inner side a longer flat metal plate 6 is located, which reaches from the upper end of the leg a short distance below the lower end of the recess at 4 to cover it at its open side. Screws 7 secure the plates to the leg 3 near the lower ends of said plates.

The inner plate 6 at a point slightly above the plane of the lower sides of the frame members 1, has an opening 8 therein which is in alinement with a horizontal passage 9 extending from the bottom of the upper end of the recesses 4 through the leg 3; and the plate 5 has an opening of somewhat smaller diameter than the passage at 9 in axial alinement therewith. A locking bolt 10 in the form of a rod is slidably mounted in and passes through said passage 9 and is reduced in diameter at its inner end to be guided through the opening at 8, and is also grooved around it near the bottom of the recess 4. At its outer end it is tapered to provide a terminal end portion 11 of frustro-conical form.

Below the opening at 8, a U-shaped stirrup 12 has inwardly extending sides passing through slots in the plate 6 and into the recess 4, its outer side having a rivet or spot weld connection to the plate. A lever 13 of flat metal, at its intermediate portion is provided with a longitudinal rib 14 for strength, and at such intermediate portion, ears 15, one at each side edge of the lever, are turned to lie against and within the sides of the stirrup 12, with which they are pivotally connected to turn upon a horizontal axis when the leg is vertically extended, as shown in Fig. 2. The upper end portion of the lever terminates in a vertical slotted end 17, the slot receiving the inner reduced diameter part of the locking bolt 10. A coiled compression spring 18 is around the bolt 10 between such upper end portion 17 of the lever and the inner side of the plate, the metal of which, in forming the opening 8, is struck in-

wardly to form a guide around which the inner end of the coiled spring 18 is located.

The leg is pivotally mounted upon and adapted to be releasably connected or locked to a bracket which, in turn, is permanently secured at the inner sides of the table frame members 1, one at each corner of the table. The bracket of sheet metal has a side or vertical flange 19, through which, at a proper position, an opening 20 is made, which will axially aline with the passage through the leg when the leg is turned to its vertical supporting position and through which the smaller free end part of the conical end portion 11 of the locking bolt 10 passes. It is to be understood that the openings in the plate 5 and in the flange 19 of the bracket when alined as in Fig. 2, are shaped to receive the conical end portion of the locking bolt so as to provide a snug seat and one which provides two thicknesses of metal with which the locking bolt engages.

The flange 19 also has an annular rib pressed therefrom to define a socket 21 in which the end of the locking bolt will be seated when the leg is folded against the under side of the table. It also is pressed to form a recess or depression 22 at the side of the flange 19 opposite the recess 21 to receive the head of a bolt used to pivotally connect the leg to the bracket. Said flange 19 at its lower edge has an outwardly turned horizontal lug 23 adapted to come against the under side of the adjacent table frame member 1.

The bracket also includes a second flange 24 of sheet metal at right angles to the flange 19, the outer side of which is flat and lies against the inner side of the other corner frame member, best shown in Fig. 4. It is also provided at its lower edge with an outwardly turned lug 25 to pass underneath the lower side of the table frame member 1 against which it is located, and there is also struck from the body of the flange 24 a large ear 26. Such ear 26 extends in substantial parallelism to the flange 19 and between it and the flange 19, the upper end portion of the table leg is located, with the ear 26 against the plate 6 and the flange 19 against the plate 5. Screws 27 passing through the flanges 19 and 24 near their free ends and also upwardly through the lugs 23 and 25 and driven into the table frame members 1, permanently secure the bracket at a corner of the table at the inner sides of the border frame members 1. A bolt 28 has a flat head received in the recess at 22 of the flange 19 and passes horizontally through the plate 5, leg 3, plate 6 and the ear 26, and has a nut threaded thereon at its inner end, thereby mounting the leg for a pivotal turning movement about the axis of the bolt.

When in folded position as in Fig. 3, the legs of a table lie flat against the under side of the top and are within the border frame of the table. The tapered end portion 11 of the locking bolt 10 is seated in the seat at 21 (Fig. 5). Each leg is thereupon releasably retained against accidental disconnection, but by a force supplied at the outer end of a leg to turn it about the bolt 28, the end of the bolt 10 may be pulled over the surrounding annular rib of said recess and the leg turned to vertical position. When the end of the locking bolt reaches the opening 20 it will automatically engage therewith under the pressure of the spring 18, the leg being locked in such vertical position and very firmly and securely held in the keeper provided for the tapered end 11 of the bolt 10 by the two thicknesses of metal of the flange 19 and the plate 5, as shown in Fig. 2.

To release the leg for folding, the push button 16 which extends through the lower part of the plate 6 is pressed against to turn the lever about its pivot, thereupon moving the locking bolt 10 inwardly and releasing it from the keeper opening at 20, spring 18 being compressed. As soon as the release of the lock has taken place and the leg has been turned away from vertical, pressure upon the push button 16 may be removed and the locking bolt will ride against the flange 19 until it passes over the annular rib surrounding the recess 21, in which recess the end of the locking bolt is received.

The structure described is particularly sturdy in construction and rigid in the manner in which the leg is held in secure connection with the table top when a leg is moved to its vertical supporting position. It is impossible for the leg to accidentally fold. The manually operable mechanism for releasing the lock is housed within the recess at 4 and covered by the plate 6, the only projection, and that at the inner side of the leg, being the push button at 16. The structure is very practical and useful and has proven to be so in service.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

A folding table leg assembly comprising a plate having a detent receiving opening attached to a table, a table leg pivoted to said plate a distance from said opening and having a chamber opening at the side of the leg opposite from said plate, a second plate attached to said leg and covering said chamber, a detent plunger extending through said leg and into said chamber and removably entering said detent receiving opening, an annular groove in said plunger within said chamber, a lever located within said chamber and pivoted between its ends to said second plate, one end of said lever having a push button extending through an opening in said second plate and the other end of said lever being forked and straddling said plunger within said annular groove, a spring surrounding said plunger and seated between said second plate and said forked end of the lever and a depression in said first plate located at 90 degrees about the leg pivot from the detent receiving opening and adapted to receive the end of said plunger.

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