March 23, 1937. A. D. CONVERSE 2,074,981

FOLDING TABLE

Filed Dec. 10, 1934 2 Sheets-Sheet 1

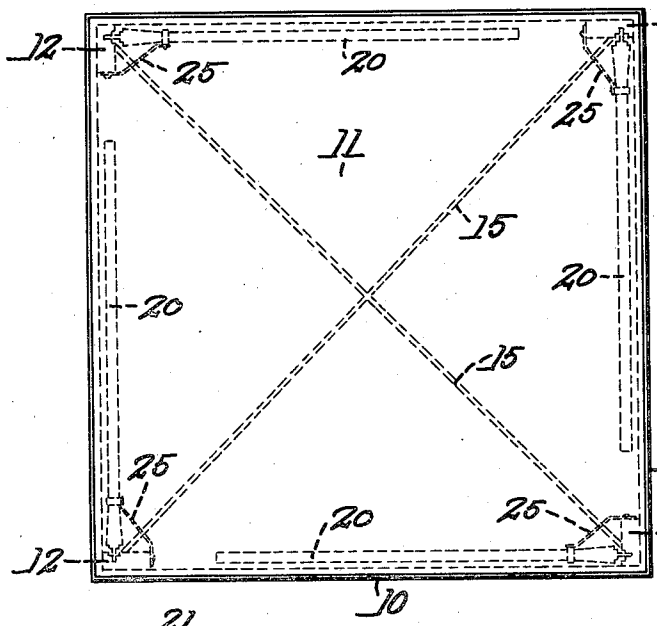


Fig. 1.

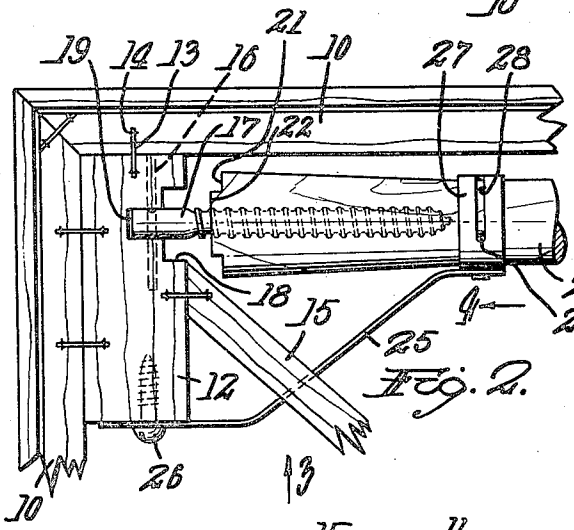


Fig. 2.

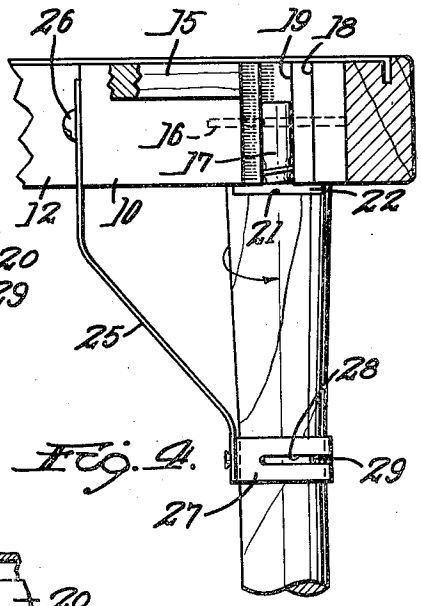


Fig. 4.

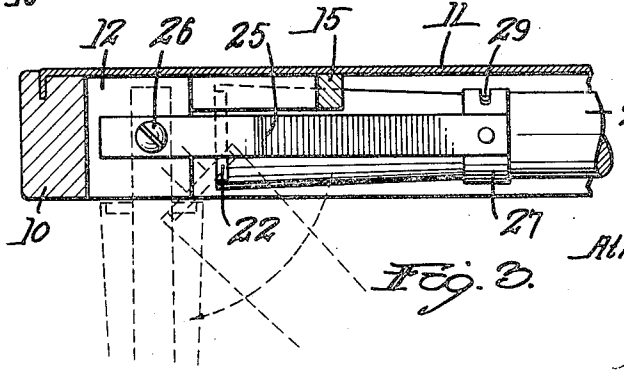


Fig. 3.

Inventor-
Atherton D. Converse
By Attorneys

Southgate Fay & Hardy

March 23, 1937. A. D. CONVERSE 2,074,981

FOLDING TABLE

Filed Dec. 10, 1934 2 Sheets-Sheet 2

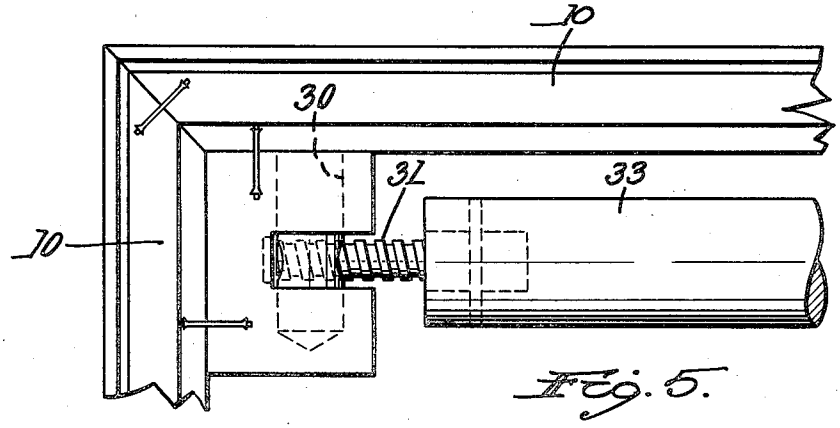


Fig. 5.

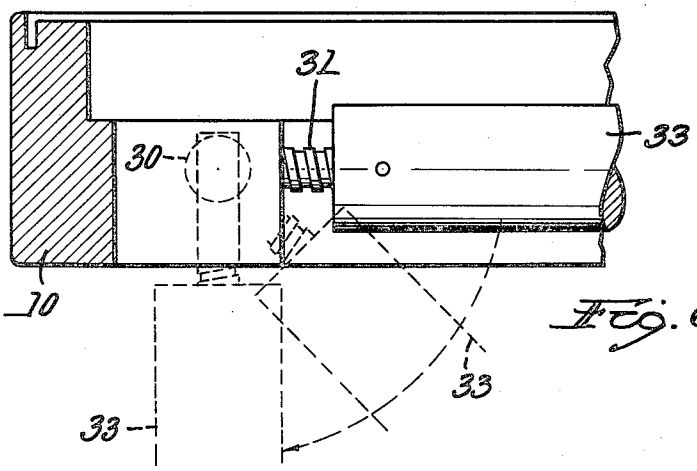


Fig. 6.

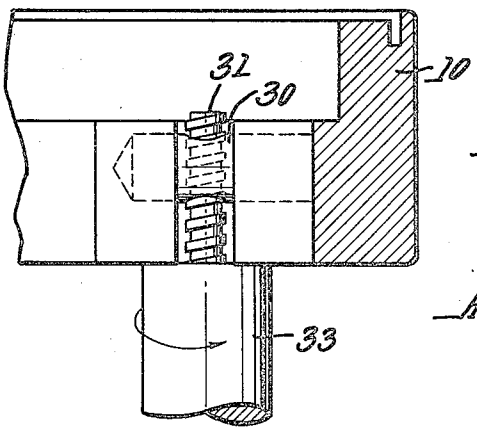


Fig. 7.

Inventor
Atherton D. Converse
By Attorneys
Southgate Fay & Hawley

Patented Mar. 23, 1937

2,074,981

UNITED STATES PATENT OFFICE

2,074,981

FOLDING TABLE

Atherton D. Converse, Winchendon, Mass., assignor to Dorothy T. Converse, Winchendon, Mass.

Application December 10, 1934, Serial No. 756,767

11 Claims. (Cl. 311—111)

This invention relates to a folding table, particularly adaptable for use as a card table but, of course, capable of general use for furniture.

The principal objects of the invention are to provide a piece of furniture having folding legs, each one independently pivoted on a horizontal axis and each one comprising a wooden portion and a screw constituting means for tightening up the leg in its expanded position; to provide simple and convenient means by which the leg can be clamped in its unfolded position by the rotation of the leg on its own axis; to provide means by which the leg will have to be turned only a part of a revolution to unclamp it and enable it to be swung to its horizontal folded position; to provide a brace for the leg connected with the leg itself in such a way that the leg can be turned on its own axis; to provide the leg with a stop for limiting its turning motion in one direction, and to provide a wooden block for supporting the leg and brace, one of these blocks being located at each corner of the table and constituting a means for strengthening the table and a less expensive means than has been the case heretofore.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a plan of a table constructed in accordance with this invention with the legs in folded position;

Fig. 2 is a plan view of one of the corners of the table with the cover removed, on enlarged scale, with the parts in the same position as in Fig. 1;

Fig. 3 is a side view looking in the direction of the arrow 3 of Fig. 2, showing in dotted lines two positions of the leg;

Fig. 4 is a view looking in the direction of the arrow 4 of Fig. 2, showing the leg extending downward and the function of the brace;

Fig. 5 is a view similar to Fig. 2 showing a modified form;

Fig. 6 is a view similar to Fig. 3 of the modified form, and

Fig. 7 is a view similar to Fig. 4, showing the leg in its upright position.

The invention is shown as applied to a table comprising a surrounding top frame 10 and a top 11 thereon. This frame preferably is of wood and each corner is provided with a block 12. These blocks are secured in position by a well known type of fastening clip 13, which is a piece of flat metal provided with lateral projections 14. These lateral projections converge toward each other at the bottom of this clip. These clips are driven in, as is well understood in this art, and by that action the projections 14 draw the two pieces of wood more firmly together and form a very tight and durable joint, especially when glued. They are used to fasten the block 12 to the pieces 10 of the top frame and also to secure a pair of cross pieces 15 to the blocks. These blocks constitute the sole means for supporting the legs of the table.

In the form shown in Figs. 1 to 4 there is a pivot stud 16 driven into the block 12 through a transverse passage in the end of a screw 17. This screw, therefore, is pivotally mounted in the block by means of the pivot stud 16. This screw, preferably, is threaded like a lag screw but any suitable kind of a screw can be used which will screw into wood.

For the purpose of receiving the top of the leg of the table, the block 12 is provided with a vertical recess 18 having a vertical slot 19 at its inner side for receiving the shank of the screw 17. This recess and slot extend from the top to the bottom of the block 12. It will be seen that the pivot stud 16 passes through the slot 19 preferably about half way between the top and bottom surfaces of the block 12.

The leg 20 is shown as of circular cross section, although it may be made in other forms, and at the upper end it is cut off on a plane 21 except for a rectangular projecting tenon 22 having also a flat plane upper surface. It is into the middle of this tenon that a hole is bored so that the screw 17 can be screwed into it, making its own screw threads and permitting the leg to be turned on the screw as an axis and therefore on the axis of the leg.

As shown in Fig. 3 the leg can be turned on the pivot stud 16 from horizontal to vertical position without any surface of the tenon 22 engaging any part of the block 12, the recess 18 being provided for that purpose. Therefore, when it comes to the lower dotted line position shown in Fig. 3, the top surface of the tenon 22 will be spaced slightly from the bottom of the block 12. Now, if the leg is turned on its axis through a quarter of a circle the top surface of the tenon 22 will be brought into fitting contact with the lower surface of the block 12, as shown in Fig. 4. The leg is held in position by the friction of these two wooden surfaces.

This constitutes an important feature of this invention. By the relative arrangement of the parts 18 and 22, and the mounting of the screw 17 in the slot 19, the leg of the table, chair, or other furniture can be folded when the leg is

unscrewed a quarter turn, leaving the parts in the position shown in Fig. 2. Also, by the relative arrangement of the same parts, this leg can be turned down to the lower dotted line position, shown in Fig. 3, because the tenon 22 is turned to normally the exact position to pass through the slot 18 when it is swung from one position to the other. This enables the leg to be folded and unfolded in the simplest manner possible. Furthermore, when the leg is brought to the lower dotted line position in Fig. 3, it can be turned 90° on its axis and tightened up fully as illustrated in Fig. 4 without the use of any fastening devices or break joints, which have been thought necessary to secure the leg in its extended or vertical position. The friction of the two wooden surfaces on each other, on the end grain of the wood, is sufficient to hold the leg firmly in position.

Another feature of this form of the invention is involved in a brace 25. This is a piece of sheet metal pivoted on a screw 26 in axial alignment with the pivot stud 16. This is, of course, pivoted to the end of the block 12 and, as it is a brace for the leg 20, it is bent over toward the leg and provided with an attachment 27 rigidly fixed to the brace. This, preferably, is a band encircling the leg and constituting a bearing for it so that the brace constitutes a positive means for holding the leg in rigid position at a distance from the pivot stud 16. An additional feature of this brace is that the band 27 is provided with a slot 28 and the leg itself with a stop pin 29. The end of the slot is so related to the pin that when the leg is unfolded, as shown in Fig. 4, the leg can be turned only until the pin 29 engages the end of the slot 28. In this position the rectangular tenon 22 is in the right position to pass through the end of the slot 28 when the leg is folded up against the underside of the table top. In other words, the leg cannot be intentionally or accidentally turned while unfolded into any position to prevent its being folded, provided the user turns the leg back to the stop before trying to fold it. After unfolding, the user has to turn the leg around so that this stop comes away from the end of the slot and, as a matter of fact, has to turn it 90° approximately.

In the form shown in the last three figures the conditions are very similar except that in this case an oscillatable pivot stud 30 is shown having a screw threaded passage through it for a screw 31 which is fixed positively and axially to the top of the leg 33. In this case the leg has to be unscrewed enough to permit the top of it to pass the corners of the block in swinging on its pivot. Therefore, when turned down to its vertical position, it may have to be turned throughout practically a whole revolution before it comes to a fastening position against the bottom of the block 30. In this case, however, the same principle is involved in having the block support the pivot stud and the screw between the pivot stud and the leg.

In both cases a material amount of economy is obtained by the new construction and a rigid support for the leg is secured not involving internal fastening devices such as have been employed heretofore.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:—

1. In a folding table, a leg base member secured to the table beneath the top, said base member having a plane lower surface and having a vertical recess extending inwardly from one side thereof, a leg having an upper end portion terminating in a plane top surface and pivoted to the base member at a distance from the lower surface of the base member, means by which the rotation of the leg on its axis will move the top surface of the leg into and out of engagement with said lower surface of the base member, means operative to swing the leg from erect to folded positions, the upper end portion of the leg being shaped to enter said recess in the base member as the leg is folded, but said upper leg portion in at least one dimension being wider than said recess whereby, when the leg is erect and is rotated to bring its top surface by said first-mentioned means into engagement with the base member, the wider dimension of the upper leg portion at the top surface will bridge said recess in the base member.

2. In a piece of furniture having a horizontal top, a leg having a flat top surface, a leg supporting element, a transverse pivot pin securing said leg supporting element beneath the horizontal top, said supporting element securing the leg for folding movement and with the flat top surface of the leg spaced from the transverse pivot, a stationary base member having a flat lower surface and positioned with said lower surface below the transverse pivot pin, means on said supporting element operative through rotation of the leg about its axis to adjust the leg when erect to and away from the lower surface of the base member, a recess extending inwardly from one side of the base member at right angles to the transverse pivot pin and making a cutout in the lower surface of said member, said recess being adapted to receive the upper portion of the leg as the leg is collapsed from its erect position, the upper portion of the leg adjacent the flat top in one dimension being wider than the recess, the wider part of the upper leg portion being adapted to engage the base portion on opposite sides of the recess when the leg is erect and rotated to bring its flat top into engagement with the lower surface of the base member.

3. In a table, the combination of a top frame, a block rigidly fixed in the corner thereof and having a vertical recess on one side thereof, a leg having a plane top surface and pivoted to said block at a distance from the lower surface of the block, said top surface having a projecting tenon so located as to pass through a part of said recess when the leg is turned from a horizontal to a vertical position, and means by which the turning of the leg on its axis will move it vertically.

4. In a piece of furniture, the combination of a horizontal table top frame, a block secured in the corner thereof, said block having a vertical recess on one side, a horizontal pivot stud back of said recess, a screw adapted to swing on the axis of said stud and projecting from it at right angles to the axis of the stud, and a leg having a projection entering said recess into which said screw is centrally inserted, said leg being adapted to turn on its own axis to advance it or retract it toward and from the pivot stud.

5. In a table, the combination of a horizontal frame for the table top, a wooden block securely fixed in the inner corner of said frame and having a side recess, a horizontal pivot stud carried solely by the block, a metal screw connected with

said pivot stud and adapted to be swung on the axis thereof but arranged perpendicular to the stud, and a leg connected to said screw and having a tenon at the top movable in said recess, said leg being rotatable on its own axis, the screw extending centrally with respect to the top of the leg, said leg being located far enough from the stud so that the leg can be turned on the axis of the stud into a position in which the top of the leg substantially engages the bottom of the block, whereby, the leg can be turned on its own axis to tighten it against the bottom of the block and firmly secure the leg to the block.

6. In a table, the combination of a top frame, a block fixed in the corner of said frame, a vertical recess in the side of the block, a vertical slot at the bottom of the recess, a horizontal pivot stud extending across the slot, a non-rotatable screw pivoted on said stud, a table leg into the center of the top of which the screw extends, the table leg being rotatable on the screw on the axis of the leg, the leg having a projection at the top located in such position that, when the leg is turned on the screw into a position in which the projection can enter the slot, the leg can be turned to vertical position with the top of the projection directly under the bottom of the block and the leg can then be screwed up on its own axis to tighten the top of the projection against the bottom of the block to hold the leg firmly in its vertical position against the block.

7. In a piece of furniture, the combination of a top frame, a block rigidly fixed in the corner thereof and having a vertical recess on one side thereof, a leg having a projection at the upper end thereof and pivoted to said block at a distance above the lower surface of the block, said projection being so located as to pass through a part of said recess when the leg is turned from a horizontal to a vertical position, and means for preventing the turning of the leg beyond a position in which the projection is capable of passing through a portion of said recess.

8. In a piece of furniture, the combination of a top frame, a leg supporting element pivoted to swing about a horizontal axis, a leg on said supporting element adapted to be swung about the horizontal pivot between folded and erect positions, a base member having a flat lower surface, means for adjusting the leg toward and away from said lower surface upon rotation of the leg on its axis, a brace swinging with the leg pivotally mounted with respect to the top frame on the same axis as the pivot of the leg support, and attaching means permanently holding the lower portion of the brace to the leg and permitting the leg to rotate on its axis independently of the brace.

9. In a piece of furniture, the combination of a top frame, a screw pivoted to swing about a horizontal axis, said screw entering the top of the leg on the axis of the leg, whereby the leg can swing bodily on said horizontal axis and can also turn on its own axis, a brace pivotally mounted with respect to the top on the same axis as the screw, and an attachment on the brace so engaging the leg as to allow the leg to be turned on its axis, for holding the leg against displacement.

10. In a piece of furniture, the combination of a horizontal frame for the top, a block located in the inner corner of the frame, a horizontal pivot stud carried by the block, a screw pivotally mounted on the stud to swing on a horizontal axis, a table leg into the top of which the screw extends, whereby the leg can swing on the axis of said stud and can turn on its own axis, and a strengthening brace pivoted on the block on the same axis as said stud and having a ring surrounding said leg to hold it from wabbling.

11. In a table, the combination of a frame for supporting a top, a table leg connected with the frame to be swung bodily on a horizontal pivot and also connected so that it is capable of being turned on its own axis, a brace pivotally connected with the table top, a band surrounding the leg and fitting it to permit the leg to turn on its axis, the band having a slot therein, and a stop pin carried by the leg in said slot, the end of the slot being so located as to cooperate with the pin and prevent the turning of the leg beyond a predetermined position.

ATHERTON D. CONVERSE.