

Oct. 4, 1927.

1,644,133

H. HOWE

FOLDING TABLE

Filed Oct. 16, 1924

3 Sheets-Sheet 1

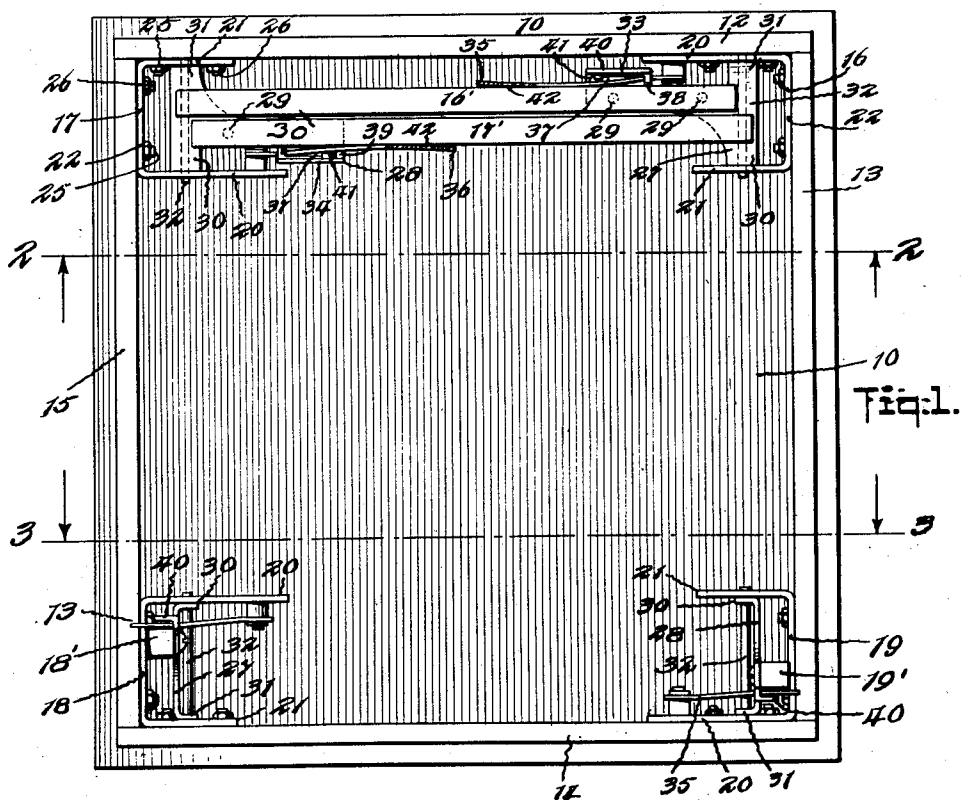


Fig. 1.

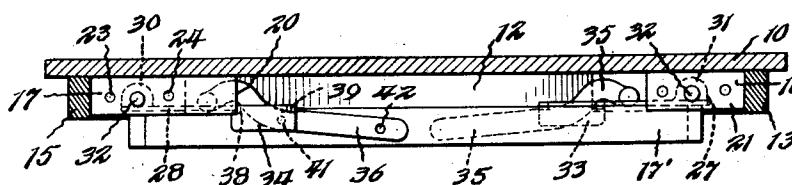
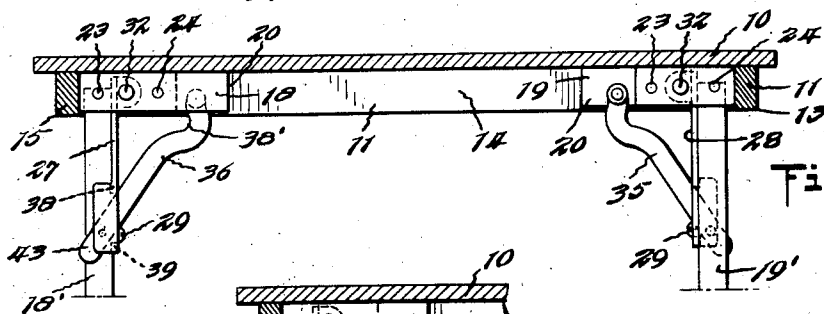


Fig. 2.



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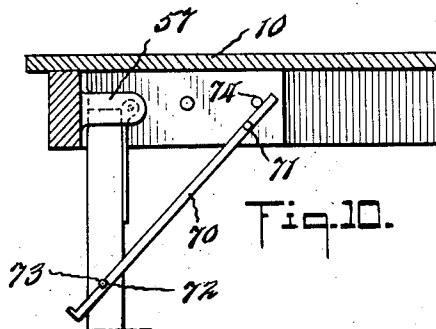
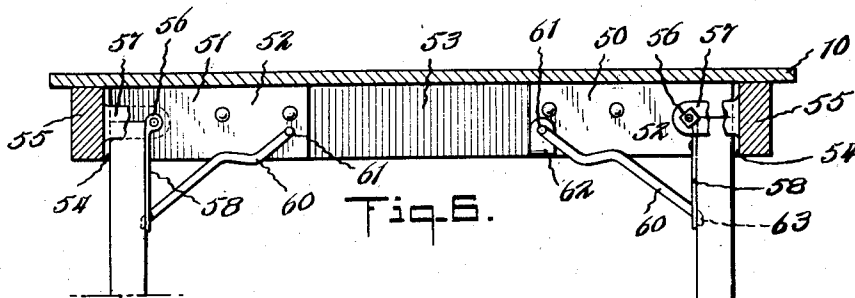
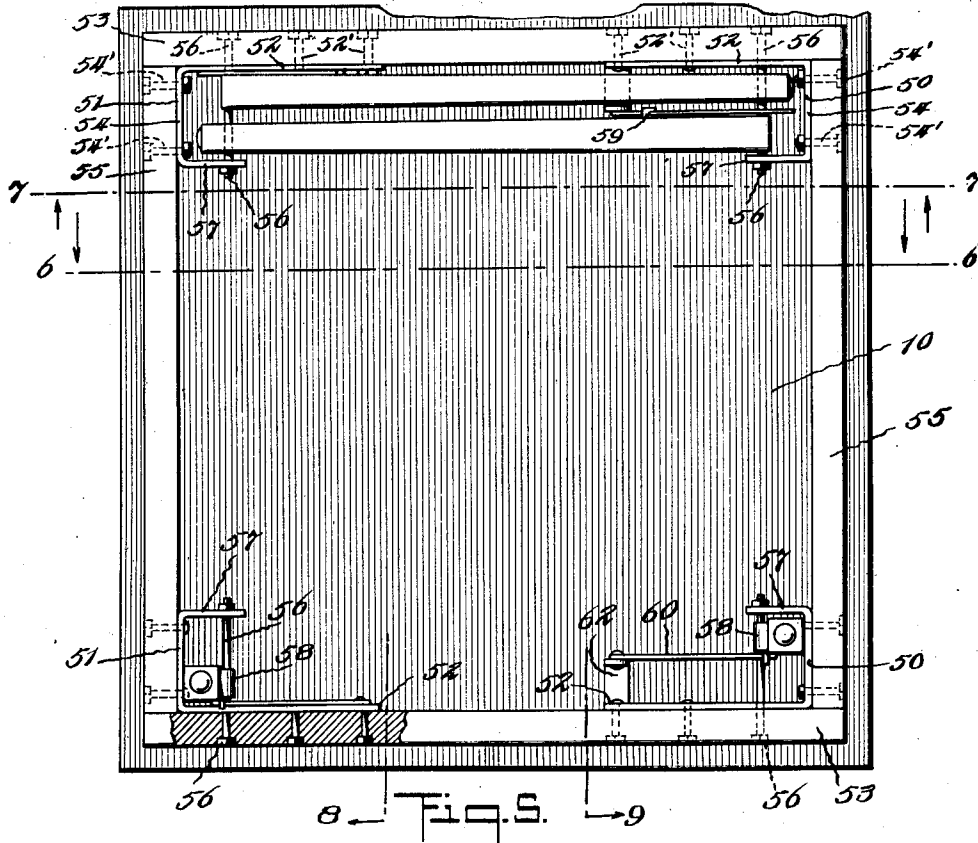
1,644,133

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FOLDING TABLE

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3 Sheets-Sheet 2



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1,644,133

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FOLDING TABLE

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3 Sheets-Sheet 3

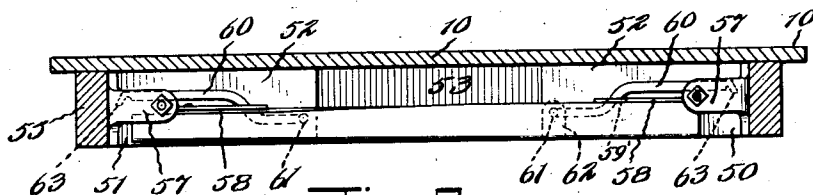


Fig. 7.

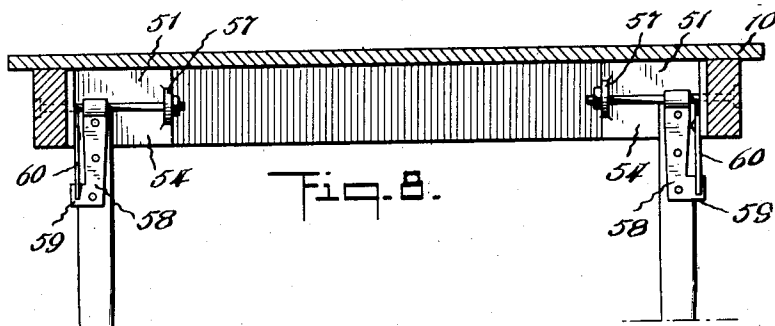


Fig. 8.

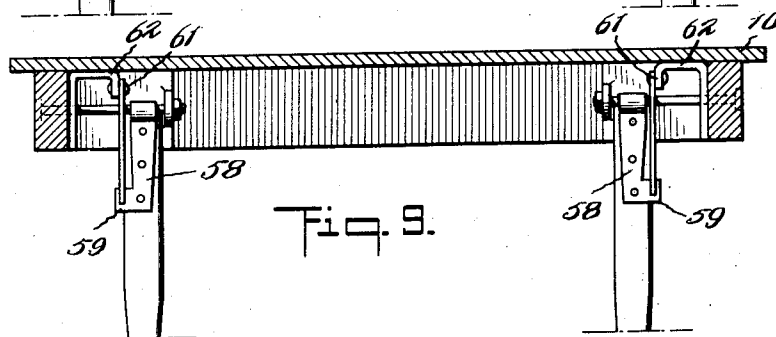


Fig. 9.

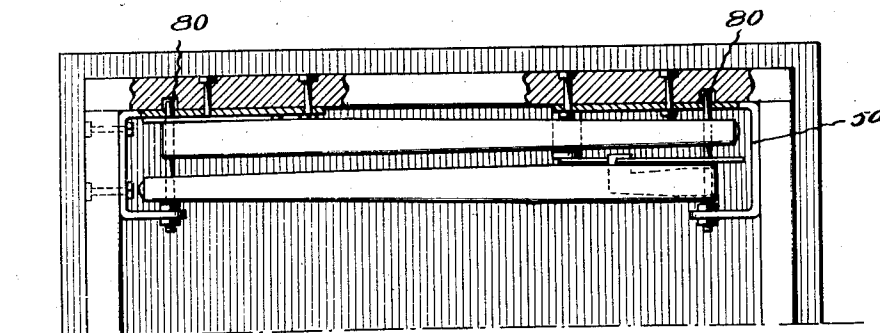


Fig. 11

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HAROLD HOWE, OF ORANGE, NEW JERSEY.

FOLDING TABLE.

Application filed October 16, 1924. Serial No. 743,864.

The present invention relates to folding tables and is more particularly directed to an improved card table. It is to be understood, however, that the invention may be otherwise applied, as for example, to banquet tables, swinging tables or the like.

Tables of the type to which the present invention particularly relates are generally provided with a rectangular wooden frame which supports the table top and from which the folding legs are carried. As lightness of weight and compactness of folding are desirable features in this type of table it is important that they be constructed of small but substantial parts. According to the usual construction the legs of such tables are pivoted directly to a wood top, pieces of wood attached to top, or to the wooden frame. This arrangement results in a comparatively weak table which is likely to loosen in use and become unsteady. Such tables must be handled very carefully, for they are easily broken.

The present invention on the other hand contemplates a table wherein the strains are practically all taken up by metal parts and wherein the wooden parts are attached to the metal parts in a secure manner to reduce and practically eliminate the liability of breakage or loosening of the parts.

The present invention also contemplates the provision of all metal units which may be assembled together independently of the wooden parts of the table and then attached in the corners of the table frame to carry the legs so that they may be folded underneath the table or moved to a position to support the table.

Another object of the invention is to provide all metal units of the type above referred to which may be interchangeably attached in the various corners and yet stagger or off-set the legs so that they will fold alongside one another, or along the sides of the table.

Another object of the present invention is to provide a table leg and support with bracing means so disposed that the entire strain taken up by the bracing means is assumed by metal parts, irrespective of whether the brace is under tension or compression, thereby relieving the wooden parts of excessive strains.

Another object of the present invention is to provide a folding table wherein the heavy strains are assumed by metal parts so that

lighter and less expensive wooden frame parts may be employed.

In the accompanying drawings several of the many possible embodiments of the present invention are shown for purposes of illustration, it being understood that the invention may be embodied in various forms.

In these drawings:

Fig. 1 is an inverted plan view of a folding table made in accordance with the present invention and showing two of the legs folded and two of the legs opened;

Fig. 2 is a section taken on line 2—2 of Fig. 1 in the direction of the arrows, and showing the legs folded;

Fig. 3 is a section taken on the line 3—3 of Fig. 1 looking in the direction of the arrows and showing the legs opened;

Fig. 4 is a fragmentary sectional view, similar to Fig. 3, showing a slightly modified form of attaching device for the leg;

Fig. 5 is an inverted plan view of a modified form of folding made in accordance with the present invention, and showing two of the legs folded and two of the legs opened;

Fig. 6 is a section taken on the line 6—6 of Fig. 5 looking in the direction of the arrows, showing the legs opened;

Fig. 7 is a section taken on the line 7—7 of Fig. 5 looking in the direction of the arrows, showing the legs folded;

Figs. 8 and 9 are sections on the lines 8—9 respectively, of Fig. 5, taken in the direction of the arrows and showing the legs opened;

Fig. 10 is a view similar to Fig. 6 illustrating a modified form of brace; and

Fig. 11 is an inverted plan view of another modified form of construction.

Referring to the form of construction illustrated in Figs. 1, 2 and 3 it will appear that the table top 10 which may be of any suitable material, for example, multiple-ply veneer covered with cloth, if desired, is attached to a rectangular under-frame 11 composed, as here shown, of four wooden strips 12, 13, 14 and 15. Metal corner members 16, 17, 18 and 19 are attached in the corners of the wooden under-frame and each of these members pivotally supports a leg of metal or wood. These legs are arranged in pairs 16'—17' and 18'—19'.

As here shown these corner members are each made out of a metal strip bent to U-shaped form, with one side 20 preferably longer than the other side 21. The sides

20—21 and the bottom 22 of the U are provided with pairs of bolt holes 23 and 24 adapted to receive pairs of bolts 25 and 26. The bolts pass through the two adjacent
 5 strips of the under-frame which go to make up the corner into which the corner member is mounted. The spacing of the pair of holes in the three parts of the U-shaped corner member is preferably the same so
 10 that the corner member may be mounted with either the shorter or the longer side adjacent the wooden under-frame as will appear from the method in which the pairs 16—17 and 18—19 respectively of the corner
 15 members are mounted in the corners of the under-frame. Hence these members may be mounted in any desired position in the under-frame. By making these corner members so that they are interchangeable in this
 20 manner the manufacturing expense is decreased materially. These corner members not only reinforce and hold together the under-frame but, according to the present invention, provide pivotal mountings for the
 25 swinging legs.

The form of leg-mounting shown in Figs. 1 to 3 inclusive includes T-shaped leg straps 27 and 28 which extend for a substantial distance along the inner sides of legs 16' and 17'. The legs and leg straps are attached together by bolts or screws 29. The free ends 30 and 31 of the T-shaped leg straps are bent at right angles, as shown in the lower part of Fig. 1, and are fitted in
 30 between the sides 20 and 21 of the corner members. A rod 32 is passed through the holes in the sides 20 and 21 and the bent ends 30 and 31 so that the leg strap may pivot relative to the corner member. The
 35 ends of the rod 32 may be upset slightly to prevent the rod from sliding out of place, or the rod may be held in the corner by any other convenient means. The leg strap may pivot on the rod, or the rod with strap attached may turn in the corner member.
 40 The portions of the leg straps which are attached to the legs are preferably oppositely off-centered relative to the sides of the U-shape corner member, so that the legs of the pair, when folded, may lie alongside one another as illustrated in the upper part of
 45 Fig. 1.

The lower ends of the leg straps, where they are attached to the legs are here shown
 50 as being provided with lateral extensions 33 and 34 for cooperation with diagonal curved braces 35 and 36. These lateral extensions are preferably substantially alike, being merely left and right, so that the legs 16' and 17' may lie close together when folded. This is shown in the upper part of Fig. 1. The braces 35 and 36 are pivotally mounted on the longer sides 20 of the corner members 16' and 17' respectively. These braces are
 55 preferably of curved outline somewhat as

shown in Figs. 2 and 3 and are arranged to pass through slots 37 in the lateral extensions of the leg straps, the ends 38 and 39 of these slots are adapted to engage the
 60 edges of the braces so that the braces are swung from the position shown in Fig. 2 to the position shown in Fig. 3 when the legs are unfolded, the ends 38 and 39 of the slot locking the brace just as pin 41 enters opening 42. The end 38 of the slot is adapted to
 65 rest inside the bend 38' in the brace as shown in Fig. 2 and to force the brace to the position indicated. The lateral extensions are bent over to provide a wall 40 which is spaced a short distance from the side of the leg and this wall is provided with an upwardly directed pin 41 to cooperate with an aperture 42 in the brace. If desired, the slot 37 may be given such a configuration
 70 that the brace is forced over the pin, or one may rely on the resiliency of the brace. The portion 43 of the brace may be pressed by the thumb to release the brace from the pin.

It will be noted that the construction above described is well suited for the purpose of providing an exceedingly rigid folding table. The sides 20 and 21 of the corner member are widely spaced and therefore provide spaced bearing points for the leg strap by which leg is pivotally anchored so
 75 that no wear or strain will be imposed upon the wooden frame. The corner members assume the load and reenforce the under-frame so that there is no tendency to twist the strips of the under-frame off the top or loosen the top of the frame. The construction also provides for attaching the legs of the metal leg straps in such a manner that the wooden members do not assume the stresses near the pivots. The strap and corner member together provide a rigid corner and distribute the load in such a manner that comparatively small stresses are placed upon the wooden parts. Since the diagonal brace operates solely between the metal corner member and the metal leg strap, one may obtain a very rigid corner with a short brace, and a low bracing point on the metal strap in view of the fact that the strap extends beyond the bracing point thereby
 80 economizing in the material of metal corner unit, as the frame is relieved of all the heavy strains by using the metal parts, one is able to use a less expensive wood without sacrifice in table strength.

The weight of the table is transferred to the legs through the metal parts and attaching means, instead of directly through wooden connections as is customary, as the point of attachment of the metal leg strap is spaced from the upper end of the leg, there is a minimum tendency to split or injure the leg, furthermore, there is no likelihood of warping of the wooden parts interfering with the operation of the table, or
 85 90 95 100 105 110 115 120 125 130

their wearing of wood on metal pins or the like.

The construction provides for the corner unit made up of the corner member, the leg strap and the brace. These corner units may be to a large extent identical, the only difference as here shown being in the right and left arrangement of the leg strap. They may be made up in factories adapted for metal working, assembled complete and finished ready for attaching to the table and legs. This operation could be carried out in a wood working factory where the table would be assembled and finished. The way in which the present table may be made provides a table which is much more rigid than those heretofore available, and at the same time without prohibitive increase in manufacturing cost. Tables which may be injured in transit, or otherwise, may be easily repaired.

In the modification shown in Fig. 4 the leg 44 is provided with a saw-cut or slit at the upper end to accommodate the leg strap 45. The leg strap and leg are bolted together in any convenient manner, and the brace is arranged to cooperate with the extension of the leg strap in the manner above described.

The construction shown in Figs. 5 to 9 inclusive is similar to that shown in Figs. 1 to 3. According to this form of the invention the U-shaped corner members are arranged in pairs 50—51. They may be made out of bent strap metal if desired. As here shown, the longer side 52 is fastened by bolts 52' to one side of a member 53 of the under-frame of the table, while the bottom 54 of the U is fastened by bolts 54' to the adjacent side member 55 of the under-frame.

A bolt 56 passes through the short side 57 of the corner member, the long side 52, and the adjacent piece of the under-frame. This bolt 56 provides a pivotal mounting for the leg strap 58 which extends down along the side of the leg and is fastened to it in any convenient manner. The bolt 56 and strap 58 may be permanently united as by welding, rivets, machine screws, or otherwise, and in that case the bolt will move back and forth in the metal corner member, or if desired, the strap 58 may be hinged on the bolt or the U member. In either case, the bearing points are between metal parts. The leg straps 58 have lateral extensions 59, shown more clearly in Figs. 8 and 9. These extensions are provided with slots 59' through which braces 60 are passed. The upper ends of these braces are pivotally supported from the longer side of the corner members. In the case of the corner members 51, shown at the left of Figs. 5 to 8 inclusive, the braces are directly pivoted at 61 to the longer side 52 of the corner mem-

ber. In the case of the corner members shown at the right of Figs. 5 to 7, inclusive and in 9, the corner members are provided with lateral bridging straps 62, and the braces 60 are pivoted to these straps. These braces are preferably curved or offsetted as indicated in the drawings so that when the legs are folded the braces will be moved into the position shown in Fig. 7, without locking in the slot before the legs are parallel with the frame. In this manner the braces are carried inside the underframe of the table and are held in this position when the table is folded. The parts are so arranged that some tension is imposed on the brace, by reason of its being bent slightly when the leg is opened. This flexing of the brace causes the lower end 63 to snap into place in the slot 59.

The legs are arranged in pairs in the same manner as those shown in Fig. 1. The mountings for the leg straps are so arranged that they may be folded alongside one another as indicated. The bridging member 62 for the brace is carried above the leg so as not to interfere with the folding of the table. When the legs are unfolded the brace is carried through the slot 59' and its lower end 63 drops into the lower part of the slot in the lateral extension 59 on the leg strap and thereby locks the leg in open position.

Fig. 10 shows a modified form of the present folding table according to which the brace 70 is pivoted at 71 to the corner member of the table and its lower end is notched as shown at 72 to cooperate with a pin 73 carried on the legs of the table. The upper end of the brace extends beyond the pivot and is adapted to engage a projection 74 carried by the corner member. The parts are so arranged that the brace is bent slightly so as to hold the pin in the notch.

The modified form of table shown in Fig. 11 may be constructed substantially the same as shown in Figs. 5 to 9 inclusive. In this form the bolt 80 on which the leg strap is mounted, is carried directly in the metal corner members instead of passing through the wooden underframe. The bolt may be held in place in any convenient manner. It will, of course, be understood that the showing of a square table is merely for purposes of illustration. The invention is adapted for use on tables of any shape and having any number of legs.

While the various forms of the invention here illustrated show the legs folded parallel with one another in pairs, it is of course to be understood that many features of the invention may be applied to tables in which the legs may be folded alongside all four of the strips of the underframe.

I claim:

1. A corner unit for folding tables, comprising a U-shaped metal member, a leg

strap pivotally carried between the sides of the U, the lower end of the leg strap being slotted, and a brace passing through the slot and pivoted to one side of the U-shaped member.

2. In a folding table, in combination, a top, an underframe, a metal member provided with a pivotal mounting for a leg strap, a leg attached to the strap, and a brace pivotally mounted on the metal member, said strap extending beyond the side of the leg and being slotted, to receive the free end of the brace.

3. In a folding table, a top, an underframe composed of wooden strips, a plurality of pairs of legs, mounting means for each of the legs of the pair, said mounting means including interchangeable corner members fastened to both the strips forming the corresponding corner of the underframe, metal straps attached to the legs to so dispose the legs, that, when folded, they lie alongside one another, and diagonal braces cooperating with the corner members and leg straps.

4. In a folding table, a top, an underframe composed of wooden strips, a metal corner member fastened to both of the strips of a corner of the underframe, said corner member having two spaced slides, a wooden leg, a second metal member fastened to the upper end of the leg and extending to and contacting with the sides of the corner member and means, for swingingly mounting the extension on the second metal member between the sides of the corner member, the spacing of the sides of the corner member being substantially greater than the width of the leg whereby the bearing points of the mounting means are widely spaced thereby increasing the rigidity of the corner.

5. In a folding table, a top, an underframe composed of wooden strips, a metal corner member fastened to both of the strips of a

corner of the underframe, said corner member having two spaced sides, a wooden leg, a second metal member fastened to the upper end of the leg, and means contacting with the spaced sides for swingingly supporting the second metal member and leg between the sides of the corner member, said second member extending along a substantial length of the leg and being fastened thereto at widely separated points to increase the rigidity of the corner.

6. In a folding table, a top, an underframe composed of wooden strips, a metal corner member having two spaced sides and fastened to both of the strips of a corner of the underframe so as to reinforce the same, a wooden leg, and a metal anchorage for the wooden leg, said anchorage being pivotally carried in the opposed sides of the corner member and rigidly attached to the wooden leg so that stresses adjacent the pivot are taken by metal parts.

7. In a folding table, a top, an underframe composed of wooden strips, a metal corner member having two spaced sides and fastened to both of the strips of a corner of the underframe so as to reinforce the same, a wooden leg substantially narrower than the spacing of the sides of the corner member, means for pivotally mounting the wooden leg in the corner member, said mounting means including a metal anchorage attached to the upper end of the leg and extending a substantial distance along the leg and having pivot portions spaced so as to be adjacent the sides of the corner member and pivoted thereto, and a brace cooperative with the other end of the anchorage.

Signed at New York city, in the county of New York, and State of New York, this 15th day of October, 1924.

HAROLD HOWE.