May 31, 1932. J. E. BALES ET AL 1,860,644

FOLDING TABLE AND METHOD OF MAKING THE SAME

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Fig. 1

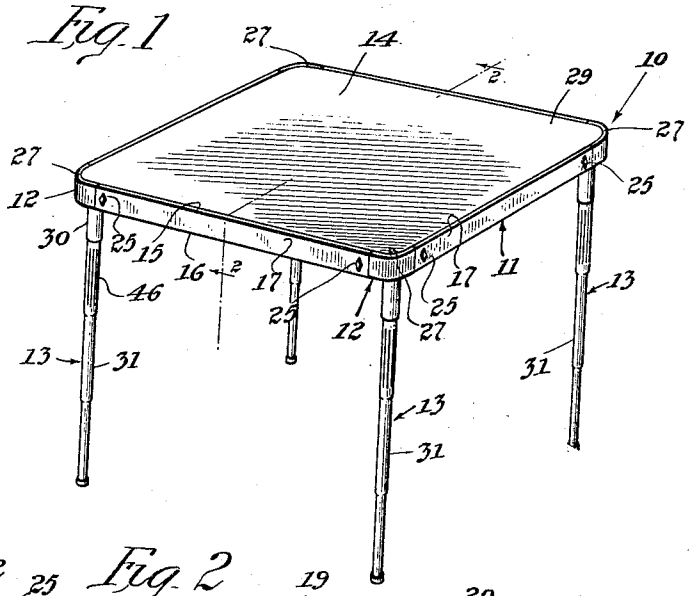


Fig. 2

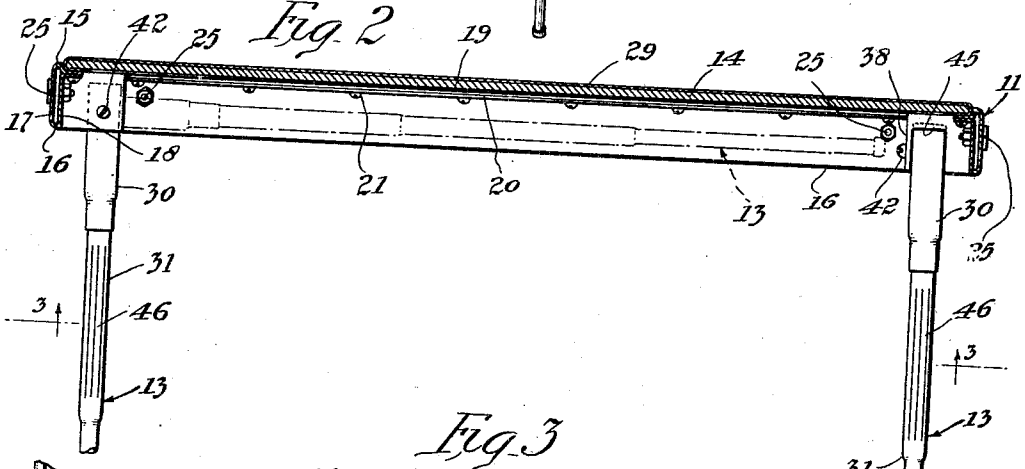
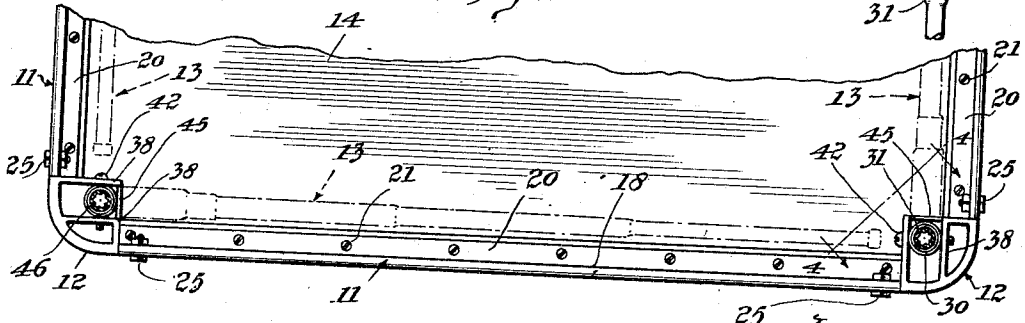


Fig. 3



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Fig. 4

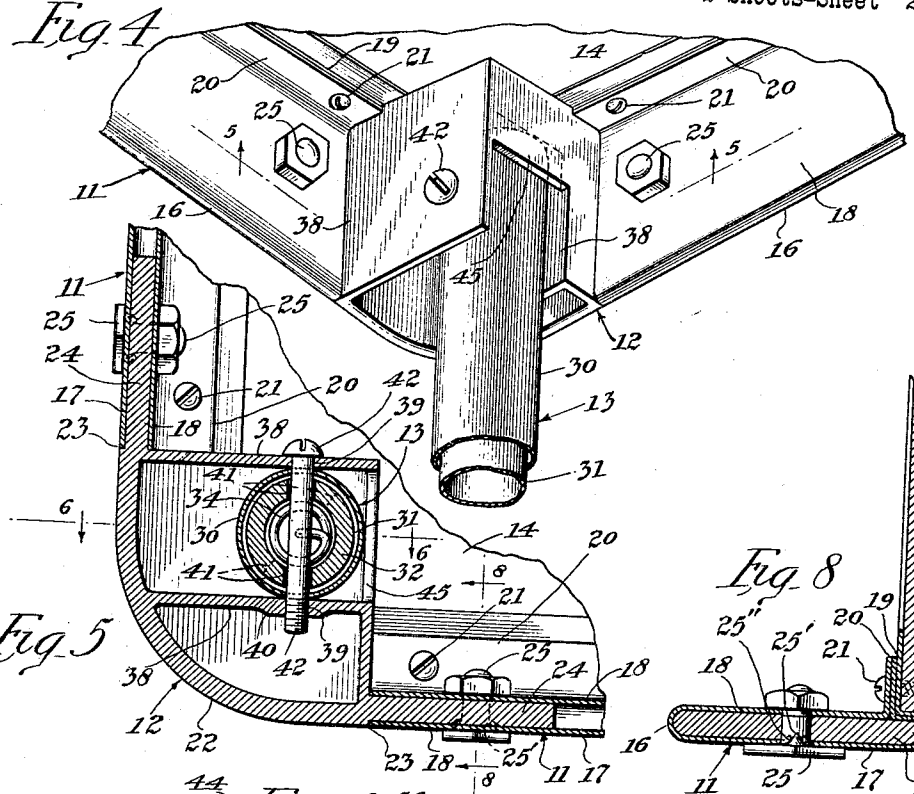


Fig. 5

Fig. 8

Fig. 6

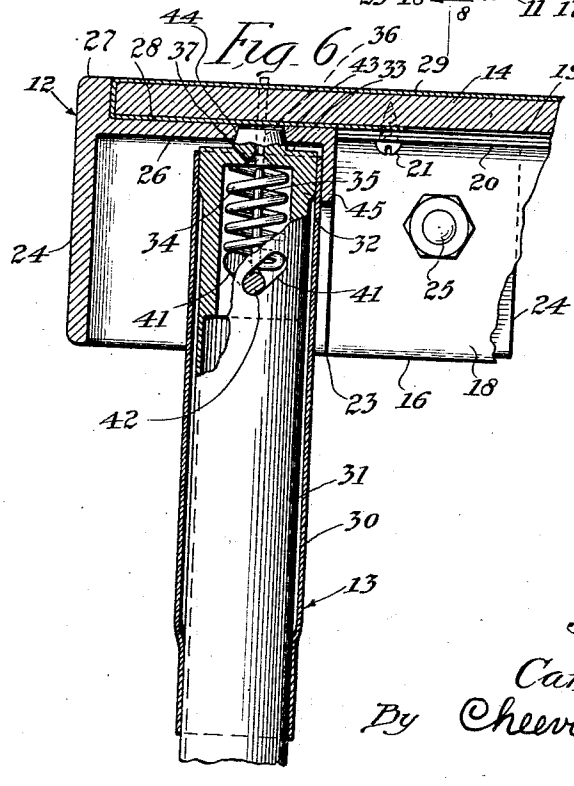
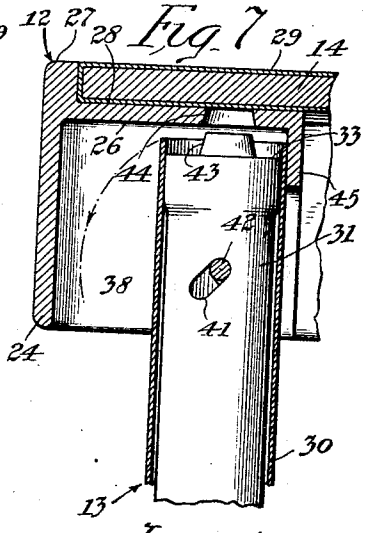


Fig. 7



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1,860,644

REISSUED

UNITED STATES PATENT OFFICE

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FOLDING TABLE AND METHOD OF MAKING THE SAME

Application filed August 9, 1929. Serial No. 384,582.

This invention relates to tables in general and particularly to that type of tables having legs which fold therebeneath during storage or when the table is not in use.

The primary object of the invention is to provide a new and improved table which has its rails made of sheet metal, the free ends of which are bent to provide a ledge to support the table top.

Another object is to provide a table having corner pieces which extend into the hollow ends of the table rails and are fastened thereto, the outside of the rails being flush with the corner pieces.

Another object is to provide a table having rails which are provided with bent legs extending from the inside thereof and below the top of the rails, which has corner members engaging the rails and provided with a flange the same level as the bent legs on the rails, and which has a top fitting between the rails and supported by the bent legs on the rails and by the flanges on the corner pieces.

Another object is to provide a table having folding legs which are automatically maintained in locked position when the legs are extended, and which may be unlocked when the legs are given a part turn.

Another object is to provide a folding table which has legs pivoted thereto, which is provided with interengaging means for locking the legs in extended position, and which has means for unlocking the legs when given a partial turn.

Another object is to provide a table having a support to which legs are pivotally attached, said legs comprising a sleeve portion and a leg portion, spring means being provided for urging the leg portion in one direction relative to the sleeve portion for locking the leg in extended position, and means for urging said leg in an opposite direction when said leg portion is given a partial turn.

A still further object is to provide a plurality of parts arranged in a novel and particular position and connected in a certain manner to provide a rigid and freely operating table.

Another object is to provide the method of making tables which consists in bending strips of sheet metal to provide rails having legs bent therefrom to support a table top, connecting said rails to corner pieces, fastening a top to said bent legs between said rails, and finally pivoting legs to said corner pieces.

Another object is to provide a method of confining an expansion spring in a table leg having a closed upper end which consists in providing a hole through the closed end, returning a free end of the spring through the spring and through a hole in the closed end, then inserting means through the leg next to the spring and away from the closed end to confine the spring between the closed end and the said means, and finally cutting off the free end of said spring where it extends through said end.

Numerous other objects and advantages will appear throughout the progress of the specification.

The invention comprises in general a table having rails which are made from a single strip of sheet metal. The rails are bent to provide inwardly extending legs which are perpendicular to the vertical plane of the rails. These legs are arranged below the table top substantially the same distance as the thickness of the top. Corner pieces have reduced ends which fit into the open ends of the rails and are fastened thereto so that the outside of the rails will be flush with the outside of the corner pieces. The corner pieces have parallel flanges provided on their bottoms to which legs are pivotally attached. The legs comprise a sleeve portion and a leg portion received in the sleeve portion. A spring is concealed inside of the leg portion, and fastening means extending through the flanges on the corner pieces and through the sleeve and leg portions confine the spring between the fastening means and the top of the leg portion. The leg portion is provided with diagonal slots for retracting the normally projecting pin or locking member on the end of the leg portion when the leg portion is given a partial turn. A socket is provided in each corner piece to receive this pin when the leg is in extended position. To fold the legs it is first necessary to give the

leg portion a partial turn which will bring the pin out of engagement with the socket.

The accompanying drawings illustrate a selected embodiment of the invention and the views therein are as follows:

Fig. 1 is a detail perspective view of the improved table.

Fig. 2 is a detail sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a detail bottom plan section on the line 3—3 of Fig. 2.

Fig. 4 is a detail sectional view of an inside corner on the line 4—4 of Fig. 5.

Fig. 5 is a detail sectional view on the line 5—5 of Fig. 4.

Fig. 6 is a detail sectional view on the line 6—6 of Fig. 5 showing the leg in extended locked position.

Fig. 7 is a similar view showing the leg in receded or unlocked position.

Fig. 8 is a detail sectional view on the line 8—8 of Fig. 5.

Referring to the drawings, 10 designates generally a table having rails 11, which are fastened to corner pieces 12. Legs 13 are pivotally connected to the corner pieces 12, and a top 14 is recessed between the rails and supported by the rails and the corner pieces.

The rails 11, Fig. 8, are made from a single strip of sheet metal and bent to provide the top and bottom 15 and 16 and the sides 17 and 18 respectively. The free edges 19 and 20 extend below the top edge 15 of the rail a distance substantially equal to the thickness of the top 14, and are substantially perpendicular to the normal vertical plane of the rail. Screws or other fastening means 21 extend through the free edges or legs 19 and 20 and engage the top 14.

The corner pieces 12, Fig. 5, have rounded outer edges 22 and are recessed at 23 to provide the reduced legs 24. These reduced legs fit into the end of the rails and are fastened thereto by means of bolts or other fastening means 25. The bolts 25 have an ornamental front face and are provided with teeth 25′ and force the metal of the rails into a corresponding depression 25″ formed in the legs 24 of the corner member. When the bolt 25 is tightened the sides 17 and 18 of the rails are forced against the flange 24 causing the outer face of the side 17 of the rails to seat in the reduced portion of the corner piece and be substantially flush with the outside thereof. These corner pieces have an inwardly extending flange 26, Figs. 6 and 7, which is located below the top edge 27 of the corner pieces a distance substantially equal to the thickness of the top 14. These flanges have their top edges 28 substantially flush with the top of the edges or legs 19 of the rails 11. The top 14 which may be of laminated construction and having a decorative leather or other similar covering 29 is recessed between the rails and corner pieces and supported by the legs 19 and 20 of the rails and the flanges 26 of the corner pieces.

The legs 13, Figs. 4 to 7, are made up of a sleeve portion 30, and a leg portion 31 which telescopes with the sleeve portion 30. A fitting or other member 32 having a closed top 33 is securely fastened to the leg portion and carries a coiled expansion spring 34. The spring 34 has a straight free end 35 which is integral with the bottom coil of the spring and returns upwardly through the center of the spring. The spring is located in position by dropping it into the bottom of the leg when the leg is in inverted position. The free end 35 extends through a hole 36 provided in the top 33 of the member 32. The hole 36 may be countersunk at 37 to facilitate the straight free end 35 of the spring in finding the hole 36. The corner members 12 have integral spaced arms 38 formed on the bottom thereof and have oppositely alined circular holes 39, Fig. 5. The sleeve 30 is also provided with oppositely alined circular holes 40, while the leg portion 31 and the member 32 are provided with diagonal slots 41. The legs 13 are mounted between the arms 38 and pivoted thereto by means of a bolt or other fastening member 42 which passes through the circular holes 39 and 40 in the arms and sleeve respectively and through the diagonal holes or slots 41 in the leg portion 31 and the member 32.

A pin 43 is formed on the top 33 of the member 32 and engages a socket 44 provided in the flange 26 of the corner members. The spring 34 is confined between the top 33 of the member 32 and the bolt 42 and normally urges the pin 43 into its socket or seat 44. This pin and socket engagement is caused by the spring urging the leg portion upwardly toward the top of the leg, movement of the leg portion being limited by the length of the diagonal slots 41. When the spring is arranged in the upper end of the leg with its free end 35 extending through the hole 36, tension is applied to the spring by pulling the free end 36 to contract the spring. The leg is then arranged between the arms 38, and the bolt 42 inserted in place, after which the free end of the spring is cut off. It is understood, of course, that the legs are pivoted in place and the end of the spring cut off before the top is fastened in position. In order to release the pin 43 from its socket 44 the leg portion 31 is given a partial turn causing the leg portion to move back into the sleeve due to the engagement of the diagonal slots with the bolt 42. When the leg is released the spring again causes the leg portion to attain normal position, movement of the leg portion being limited by the vertical length of the diagonal slots. The leg is thereby always in position to be readily locked when it is in extended position, and is quickly unlocked by giving the leg portion 31 a partial turn.

A stop or shoulder 45 is formed between the arms 38 and engages a part of the leg when it is in extended position to limit the movement thereof and to provide a bearing surface for steadying the leg when it is in extended position. The stop is properly spaced with reference to the pin and socket so that when the pin is in the socket there will be no chance of the sleeve to swing about its pivot. The pin 43 and the socket 44 may be provided with beveled sides, as clearly shown in Figs. 6 and 7, to permit free locking and unlocking engagement.

It is understood, of course, that the sleeve 30 may be made polygonal instead of circular, as shown, and that the entire upper end of the leg may fit into a corresponding socket instead of using the smaller conical pin 43 engageable with the smaller socket 44.

The legs are provided with a decorative portion 46, Figs. 1 and 2, such as fluting or knurling to decorate the legs and make the table more attractive and also to increase the firmness of the grip of the operator on the table leg to bring the pin 43 out of engagement with its socket.

The invention provides a table which is rigid and durable, which can be shipped "knocked down", and which can be readily and economically manufactured and assembled. The construction of the rails and the novel manner in which they are connected to the corner members eliminate welding and permit the parts to be rigidly held together by means of a few screws and bolts. The bolts 25 bite into the metal of the rails and force the metal into a recess provided in the corner members. By merely taking out the bolts 25 the rails and corner members may be quickly taken apart. The legs may be manufactured at a very low cost and may be easily manipulated for bringing them into locked or unlocked position. The method of constructing the table and inserting the spring in position permits the table to be constructed of few and simple parts.

Changes may be made in the form, construction and arrangement of the parts without departing from the spirit of the invention or sacrificing any of its advantages, and the right is hereby reserved to make all such changes as fairly fall within the scope of the following claims.

The invention is hereby claimed as follows:

1. A table comprising hollow sheet metal rails having inwardly projecting free edges intermediate the top and bottom of said rails, corner members connected to said rails and having a flange extending in the same plane as said edges, and a top supported by said flanges and edges.

2. A table comprising sheet metal rails having projecting edges below the top and below the bottom of said rails, corner members connected to said rails and having a flange extending in the same plane as said edges, and a top supported by said flanges and edges and flush with the top of said rails and the top of said corner members.

3. A table comprising tubular sheet metal rails, said rails each having a pair of free ends, the free ends having projections bent inwardly from the inner surfaces of the rails intermediate the top and bottom edges of the rails, connecting members, legs on said members and received in the tubular ends of said rails, and a top mounted on said projections, the upper surface of said top being flush with the upper surfaces of said rails.

4. A table comprising hollow rails made of sheet metal, integral projections extending inwardly from said rails, means connecting said rails and having a portion extending into the ends thereof, said means being recessed to receive said rails, and a top carried by said projections.

5. A table comprising straight sheet metal rails having hollow ends, integral corner pieces connecting said rails, said corner pieces having reduced portions which extend into said hollow ends, and means for fastening said rails to said corner pieces.

6. A table comprising sheet metal rails having hollow ends, a corner piece connecting said rails, said corner piece having a depression therein and a part which extends into said rails, and means for fastening said rails and corner piece together and for causing the metal of the rails to be pressed into the depression.

7. A table comprising hollow sheet metal rails having inner and outer walls, corner pieces having reduced ends, the reduced ends received in the hollow ends of said rails between the inner and outer walls, the body portion of said corner pieces being flush with the outer walls of said rails, fastening means passing through said corner pieces and through the inner and outer walls of said rails, a pair of legs bent from the inner walls of each of said rails, a flange on said corner piece, a top carried by said legs and flange and flush with the top of said rails, and fastening means passing through both of said bent legs and engaging said top.

8. A table comprising sheet metal rails having free edges, the free edges being bent inwardly and providing extending legs arranged above and below the bottom and top respectively of the rails, corner pieces having reduced ends received in the ends of said rails to make the outside thereof flush with the body of the corner pieces, a top recessed in said rails and supported by said legs, fastening means for said rails and corner pieces and for said legs and top, and legs pivoted to said corner pieces.

9. A table comprising sheet metal rails having bent free edges extending therefrom

below the top of said rails, corner pieces engageable with said rails and flush with the outside thereof, a top supported by said edges and said corner pieces, a leg pivoted to said corner pieces, means for limiting the movement of said leg as it is brought to extended position, and means for locking said leg in extended position.

10. A table comprising sheet metal rails having bent free edges extending therefrom below the top of said rails, corner pieces engageable with said rails and flush with the outside thereof, a top supported by said edges and said corner pieces, a leg pivoted to said corner pieces, means for limiting the movement of said leg as it is brought to extended position, means for locking said leg in extended position, and means to unlock said leg to return it to folded position by giving said leg a part turn.

11. A table comprising a top, sheet metal rails having the free edges thereof bent outwardly from the normal plane of the rails and below the top of said rails a distance equal to the thickness of the top, corner pieces having reduced ends extending into the ends of said rails to make the outside of said rails flush with the outside of said corner pieces, flanges integral with said corner pieces and level with the bent edges of the rails when the rails and corner pieces are fastened together, bolts passing through said rails and corner pieces, said top recessed between said rails and having its top surface flush with the upper edges of said rails and corner pieces, legs pivoted to said corner pieces, means for limiting the movement of said legs, means for locking said legs in extended position, and means controlled by turning the leg for releasing said locking means.

12. A table comprising corner members having depressions therein, rails fittingly engaged by said corner members, and ornamental fastening means for fastening the rails to the corner members, said fastening means having a lip thereon for forcing the metal of said rails into said depression when said fastening means are tightened in position.

13. A table comprising a sheet metal rail, means arranged in said rail and having a depression therein, fastening means for fastening the rail to said means, and means for causing the last named means to force the metal of a rail into said depression.

14. A table comprising sheet metal table rails, corner pieces connecting said rails, fastening means for fastening said rails to the corner pieces, said corner pieces having depressions therein, lips on said fastening means for forcing the metal of the rails into the depressions when the fastening means are tightened, and legs pivotally connected to said corner pieces.

15. A table comprising a sheet metal rail, a corner piece connected to said rail, an extension on said corner piece and extending into the rail, said extension having a depression therein, fastening means for fastening the rails to the corner pieces, means on said fastening means for causing the metal of said rails to be forced into said depression during tightening of the tightening means, and a leg fastened to said corner pieces.

16. A table comprising a sheet metal rail, a corner piece connected to said rail, an extension on said corner piece and extending into the rail, said extension having a depression therein, fastening means for fastening the rails to the corner pieces, means on said fastening means for causing the metal of said rails to be forced into said depression during tightening of the tightening means, a leg fastened to said corner pieces, means for limiting the movement of said leg as it is brought to extended position, means for locking said leg in extended position, and means to unlock said leg to return it to folded position by giving said leg a part turn.

In witness whereof we have hereunto subscribed our names.

JAMES E. BALES.
CARL T. CHRISTENSEN.