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D. C. STEINWEDEL

3,151,580

IRONING TABLE

Filed Jan. 16, 1961

FIG-1

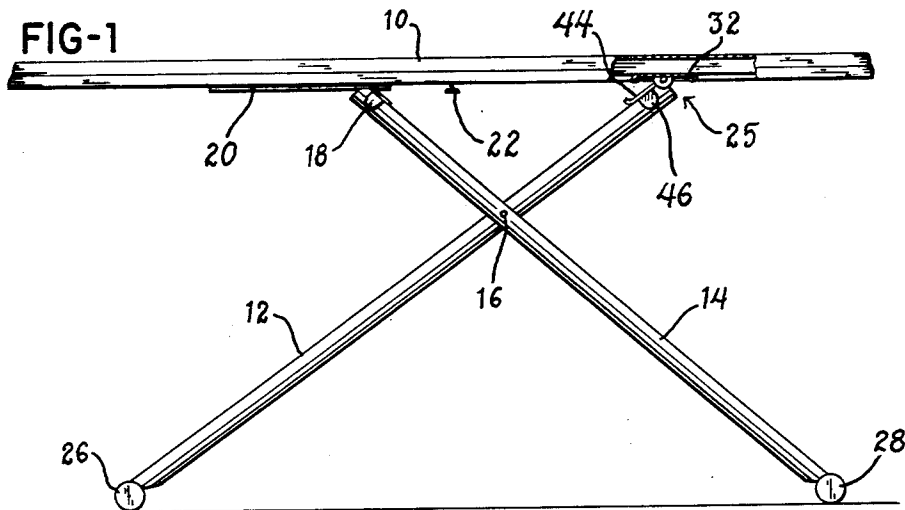


FIG-2

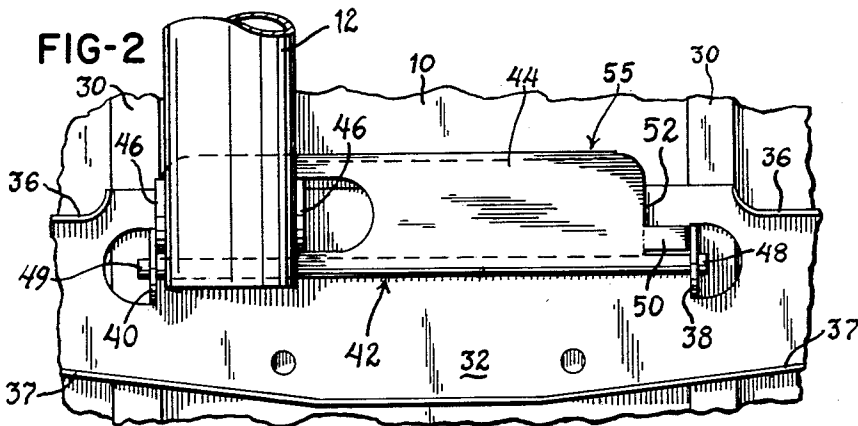


FIG-3

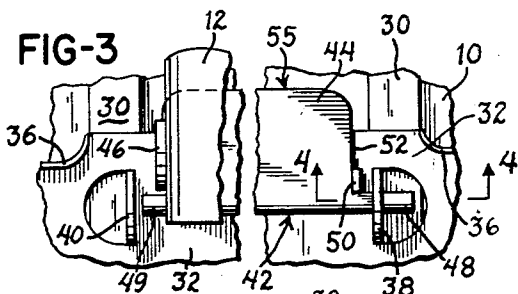


FIG-4

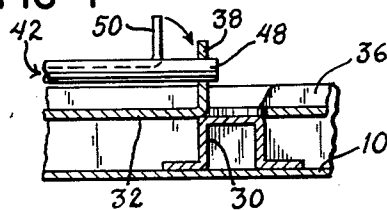
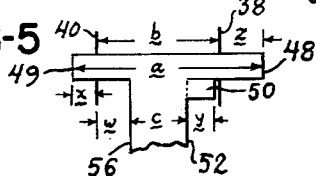


FIG-5



INVENTOR.
DELMAR C. STEINWEDEL

BY

Marshall, Biebel, French & Bugg
ATTORNEYS

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3,151,580

IRONING TABLE

Delmar C. Steinwedel, Seymour, Ind., assignor to Seymour Tool & Engineering Co., Seymour, Ind., a corporation of Indiana

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1 Claim. (Cl. 108—119)

This invention relates to ironing tables of adjustable height and more particularly to a hinge assembly for pivotally connecting a leg of the table to the under carriage thereof.

In ironing tables adapted to be positioned at various heights according to the need of the user, provision is made for affixing the tubular legs to the underside of the table by means of a hinge arrangement which allows pivotal movement of the legs with respect to the surface of the table as the legs are moved to lower the table or to fold the legs for storage. The usual leg construction includes a pair of pivotally connected crossed legs, one of which has a fixed hinge connection to the underside of the table and generally to the rear thereof, and the other leg being pivotally connected to the underside of the forward end of the table. The rear leg, which is attached to the front of the table, normally travels in a guideway and means are provided for locking the table at any desired height by a lock-mechanism operative with the guideway to position the table securely at various heights.

The front leg is affixed to the underside and generally to the rear of the table in such manner that it is free to pivot as the table is lowered, raised or folded. Due to the fact that the movement of the front leg with respect to the axis of the table is pivotal only and not axial as is the case with the rear leg, it is desirable to provide a simple and easily installed hinge assembly which will maintain the front tubular leg securely positioned to the underside of the table while allowing pivotal movement thereof.

Thus it is a primary object of this invention to provide a novel, easily installed hinge assembly including a hinge member for pivotally affixing a tubular leg of an ironing table to a normally stationary hinge bracket member while maintaining the hinge member essentially immovable laterally of the hinge bracket.

Another object of this invention is the provision of a hinge assembly having at least one deformable tab thereon for securing the hinge member to the hinge bracket whereby the hinge member is free to pivot about an axis and fixed substantially to eliminate lateral movement with respect to the hinge bracket.

A further object of this invention is the novel method of assembling a pivotal hinge member to a fixed hinge bracket by permanently deforming a tab subsequent to the insertion of the hinge pins within the bracket whereby the hinge member is pivotally secured to the bracket and lateral movement of the hinge member within the bracket is substantially eliminated.

Other objects and advantages of the present invention will be apparent from the following description, the accompanying drawings and the appended claim.

In the drawings—

FIG. 1 is a somewhat schematic view of an ironing table with which the present invention is concerned, broken away in part to show the location of the novel hinge assembly;

FIG. 2 is an enlarged view of the hinge assembly as viewed from the underside of the ironing table;

FIG. 3 is a view similar to FIG. 2, with parts thereof broken away showing the first step in the assembly of the hinge member to the hinge bracket;

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FIG. 4 is a view partly in section and partly in elevation taken generally along with the line 4—4 of FIG. 3; and

FIG. 5 is a schematic view of a modified hinge assembly incorporating the principles of the present invention.

Referring to the drawing, which shows a preferred embodiment of the present invention, FIG. 1 is an overall view of an ironing table having a metal, wood, or preferably perforated metal top 10 mounted on front and rear legs 12 and 14, respectively. The rear leg 14, which crosses the front leg 12 and is pivotally attached thereto at 16, is secured to the front portion of the table by spot welding the tubular leg to a bracket assembly 18 or affixing the leg to the bracket by other suitable means. This bracket assembly is adapted to travel in a guideway 20 provided on the underside of the table allowing axial movement of the rear leg along the axis of the table while permitting a slight rotation of the leg as the height of the table is adjustable by the conveniently located control handle 22.

The front leg 12 is affixed to a pivotal bracket assembly generally designated 25 located to the rear of the ironing table 10. The lower end of the tubular leg 12 is provided with cup-shaped frictional bumpers 26 of rubber or other suitable elastomer to prevent movement of the board while being used and minimize scratching of the floor, while the cross leg (not shown) affixed to the bottom end of rear leg 14 is provided with a pair of rollers 28 (one being shown) for facilitating movement of the ironing table during the height adjustment or when it is in the collapsed position. Details of the roller assembly 28 and the manner in which the cross legs are affixed to the front and rear legs are disclosed in a co-pending application Serial No. 82,874, filed of even date herewith and assigned to the same assignee as this application.

The details of the pivotal bracket assembly 25 are shown in FIG. 2 wherein this assembly is being viewed from the underside of the ironing table 10. Permanently affixed, as by spot welding or other suitable means, to the reinforcing ribs 30, which extend the length of the ironing table, is a hinge bracket 32 provided with flanges 36 and 37 to provide lateral support for the ironing board 10. The hinge bracket 32 is similar in construction to that disclosed in the United States Patent 2,766,537, issued October 16, 1956, to R. C. Pruitt.

Projecting from the hinge bracket 32, formed of stamped metal sheet, are a pair of spaced hinge bracket tabs or lugs 38 and 40 which are arranged in generally parallel relationship. Each of the hinge bracket tabs, or lugs is provided with a central aperture for receiving the hinge pin, generally designated 42, which is formed along one surface of the hinge body 44 as by bending one edge of the sheet thereunder to form a circular cross-section pin. It is of course understood that the hinge pin could be provided along any portion of the width of the hinge body by suitable means as for example spot welding a rod thereto. The rear leg 12 is secured to the hinge body by a hinge-leg connection 46 which is spot welded or secured thereto by other suitable means. Located along one side of the hinge body and proximate hinge pin 48 is a deformable tab 50 which serves to position the hinge body 44 and maintain it essentially immovable laterally of said hinge bracket between the lugs 38 and 40.

The distance between the hinge bracket lugs 38 and 40 should be such that it equals the width of hinge body 44 and the length of the deformable tab 50 extending from the edge 52 of the hinge body to the inside edge of hinge bracket 38. Constructed in this manner, the entire hinge member, which is designated by the general reference number 55, is free to rotate about hinge bracket 32 but any substantial lateral movement thereof is prevented. This represents a preferred embodiment of the present

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invention, although it is understood that some slight lateral movement of the hinge member 55 with respect to the hinge bracket 32 may be allowed providing such movement will not permit the hinge pins from being withdrawn from the hinge bracket tabs.

The manner of assembling the hinge member to the hinge bracket 32 is shown in FIGS. 3 and 4, wherein continuity of reference numerals has been maintained. The deformable tab 50 is positioned, prior to assembly of the hinge member 55 to the hinge bracket 32 in a plane perpendicular to the surface of the hinge body 44 as shown in FIG. 4. The tubular leg 12 preferably has previously been affixed to the hinge body between the wing hinge connections 46. With the deformable tab 50 so positioned, hinge pin 48 is inserted into the aperture provided by hinge bracket 38. Since the tab is essentially perpendicular to the plane of hinge body there is sufficient distance between the edge 52 of the hinge body and the inside edge of the hinge bracket to allow lateral movement of the hinge assembly towards the bracket 38, thereby providing clearance for inserting the hinge pin 49 into the hinge bracket tab 40.

The hinge bracket 24 is then moved laterally, in a left hand direction as viewed in the drawings, until the wing connection 46 contacts the hinge bracket tab 40. With the parts positioned as shown in section in FIG. 4, the tab 50 is deformed until it extends in a plane coinciding generally with the plane of the hinge body 44 with the free end of the tab 50 just clearing the inside surface of hinge bracket 38 and almost in abutting relation thereto.

Accordingly, the deformable tab serves to provide a small amount of clearance space between the end section 52 of hinge body 44 and the hinge bracket tab 38, thereby allowing hinge pin 49 to be aligned with the aperture of hinge bracket tab 40. After the tab 50 has been deformed to the plane of hinge body 44, this clearance is essentially eliminated and the hinge member 24 is fixed with respect to the hinge bracket 32 preventing substantial lateral movement of the former with respect to the latter but allowing rotation of the hinge member with respect to the bracket.

Should such a hinge assembly as is disclosed herein be employed in constructions where some amount of lateral movement of the hinge member with respect to the bracket is permitted, then it is possible to provide for rotation of the hinge member with respect to the bracket by constructing a hinge member as follows.

Assuming as shown in FIG. 5 wherein like reference numerals are used to designate like parts, that the distance between the terminal ends of the hinge pins 48 and 49 is a and the distance between the hinge bracket tabs 38 and 40 is b , and the distance between the side edges of the hinge body is c , then the distance between the side 52 of the hinge body 44 and the edge of the deformable tab 50 is y . If the distance y is smaller than distance x , the distance between hinge bracket tab 40 and hinge pin 49, then y must be greater than x or the hinge pin 49 will be free to move out of the bracket tab 40. Similarly, if w is the distance between bracket tab 40 and the one edge 56 of the hinge body, and z is the distance between the hinge bracket tab 38 and the end of hinge pin 48, then z must be greater than w or hinge pin 49 will be free to move out of bracket tab 38.

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It is also possible in accordance with the principles of this invention to modify the forms shown in FIGS. 2 and 4 to include a deformable tab of length w along the side 56 thereby preventing lateral movement of the hinge member with respect to the hinge bracket. The same result is accomplished with the use of a single tab as shown in FIG. 2, which represents a preferred embodiment. Moreover, it is understood that a deformable tab need not be formed adjacent the hinge pin 42 but could be formed along any portion of the hinge body provided a portion of the tab 50 engages a portion of the hinge bracket tabs.

While the forms of apparatus herein described constitutes preferred embodiments of the invention, it is to be understood that the invention is not limited to these precise forms of apparatus, and that changes may be made therein without departing from the scope of the invention which is defined in the appended claim.

What is claimed is:

An ironing table of the type described comprising a table member supported by a first and second leg, a hinge assembly including a hinge bracket fixed to the underside of the table, first and second relatively thin hinge bracket tabs arranged in generally spaced parallel relationship and extending from said bracket in a plane generally perpendicular to the plane of said bracket, each tab being provided with an aperture therein, a hinge member including a hinge body having a hinge pin along one side thereof, said hinge pin forming a continuation of said body and having a generally circular cross-section and positioned within the apertures of said tabs, said apertures in said tabs being spaced vertically from said bracket to maintain said hinge member spaced from said bracket by providing engagement and support of said hinge pin by said hinge bracket tabs only, a deformable tab projecting laterally from one edge of said hinge body and in generally parallel spaced relation to said hinge pin, said deformable tab including a face spaced a relatively small distance from said first tab, said first tab including sufficient material surrounding said aperture such that said deformable tab is in abutting relation along the entire face thereof during rotation of said hinge body through an arc of about 90°, said deformable tab cooperating with said hinge bracket tabs to maintain the edge of said hinge body opposite said deformable tab in abutting relation to said second tab while maintaining said hinge member in fixed axial relationship to said hinge bracket, means integral with said hinge body for securing one of said legs thereto for pivotal movement therewith, and said hinge bracket tabs cooperating with said hinge pin and deformable tab to provide a hinge assembly capable of withstanding force exerted thereon during use of said ironing table while allowing pivotal movement of said one leg and preventing excessive axial movement thereof.

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