

May 29, 1956

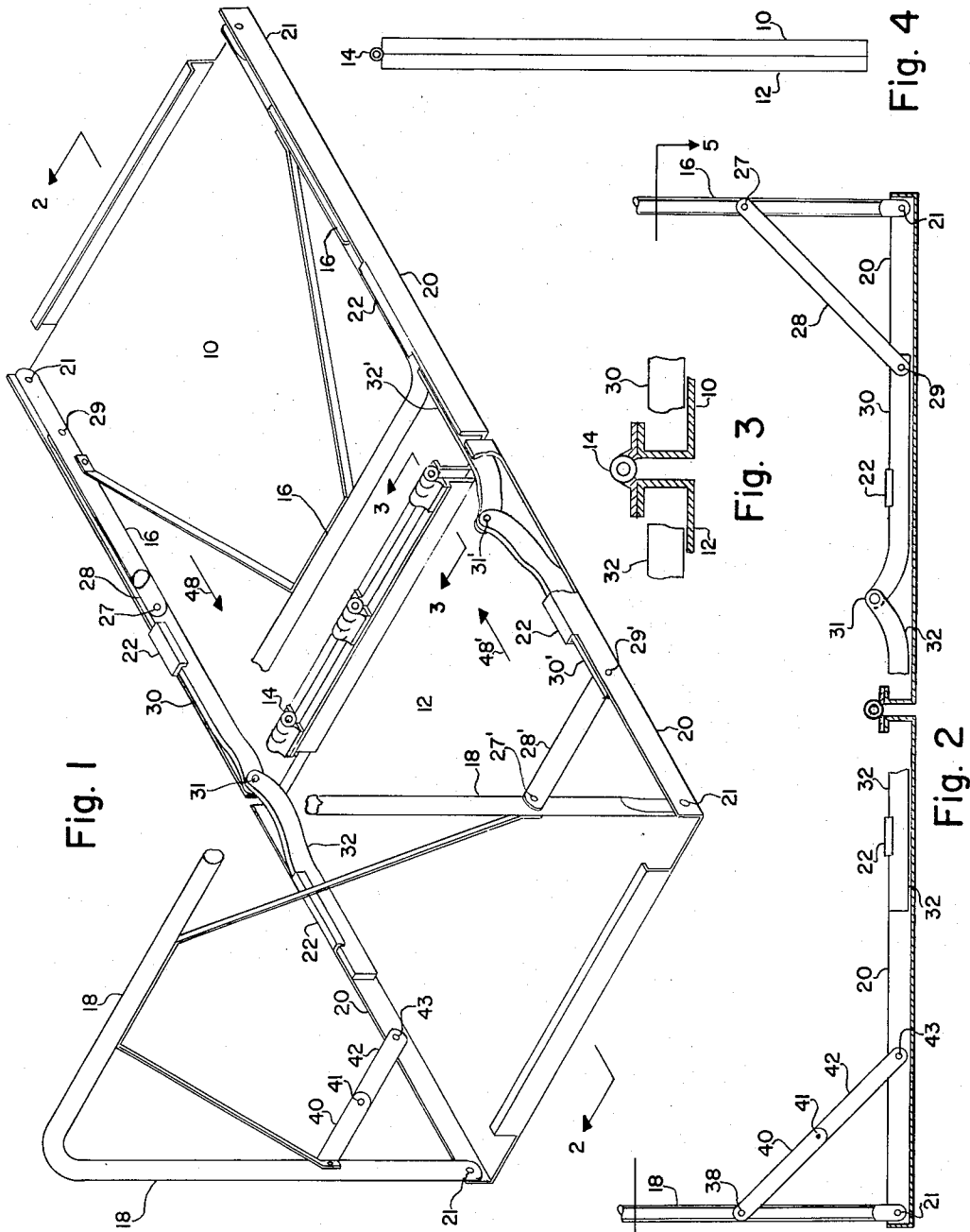
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2,747,956

FOLDING SECTIONAL TABLE OR THE LIKE

Filed May 19, 1954

4 Sheets—Sheet 1



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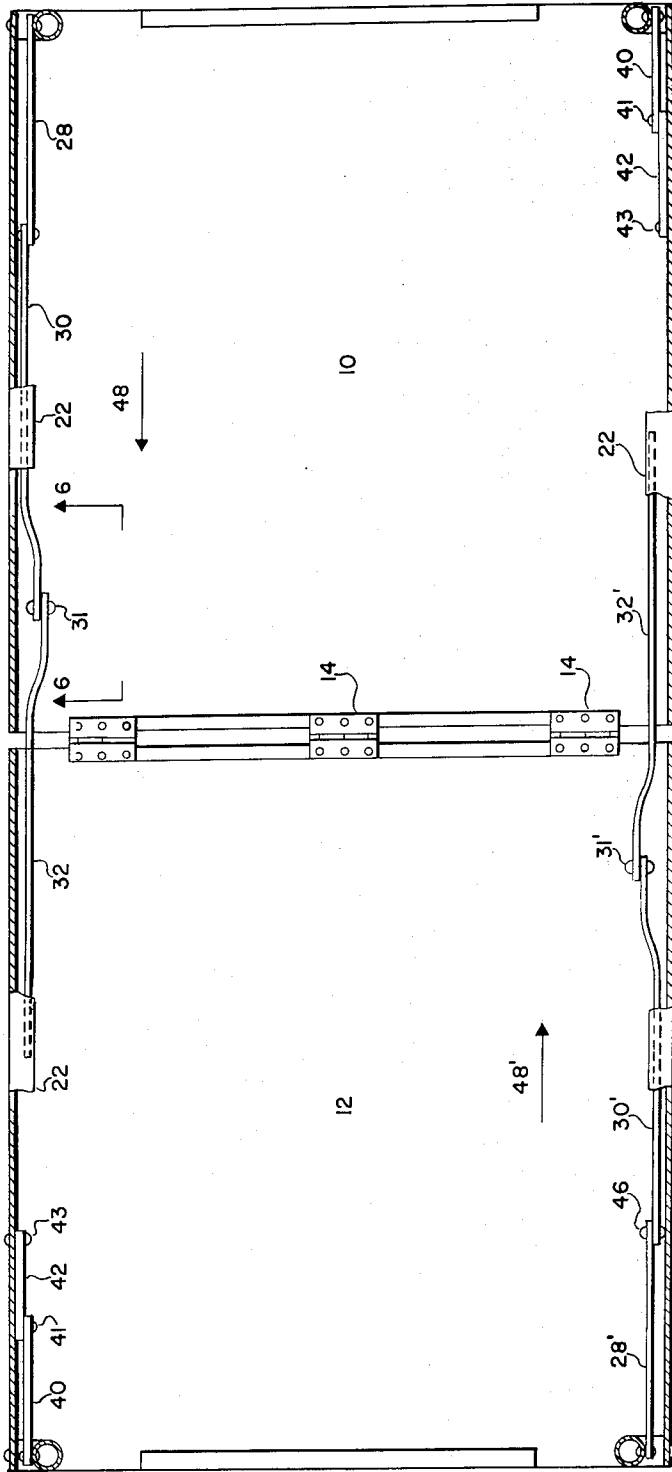


Fig. 5

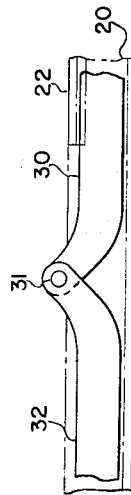


Fig. 6

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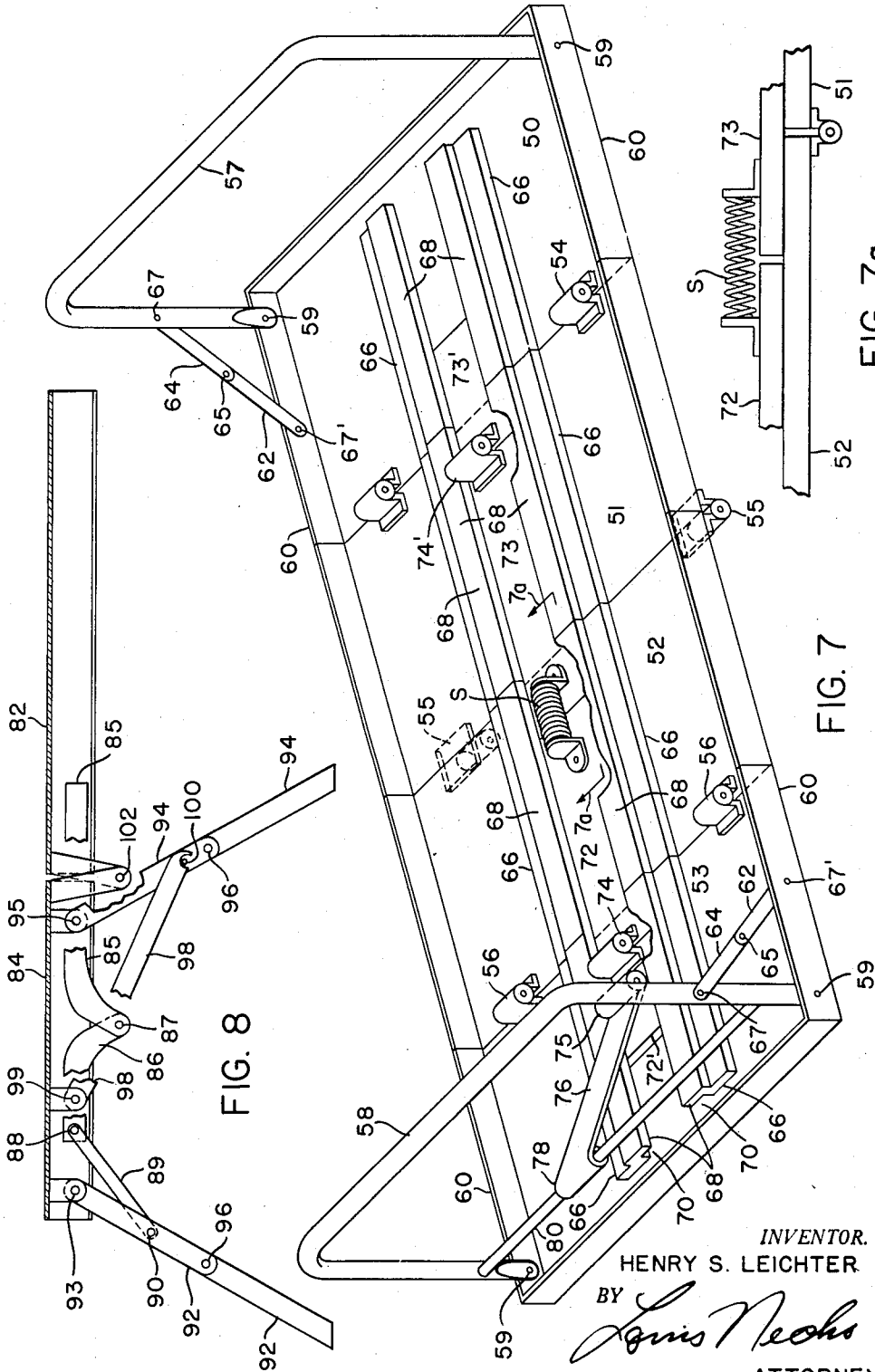
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4 Sheets-Sheet 3



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4 Sheets-Sheet 4

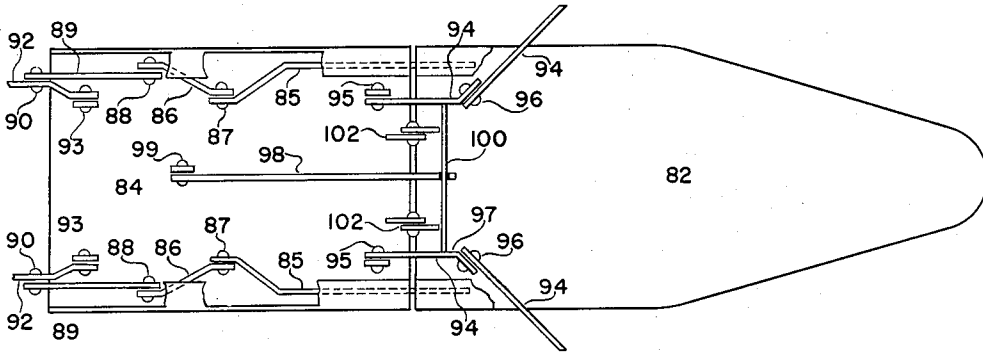


Fig. 9

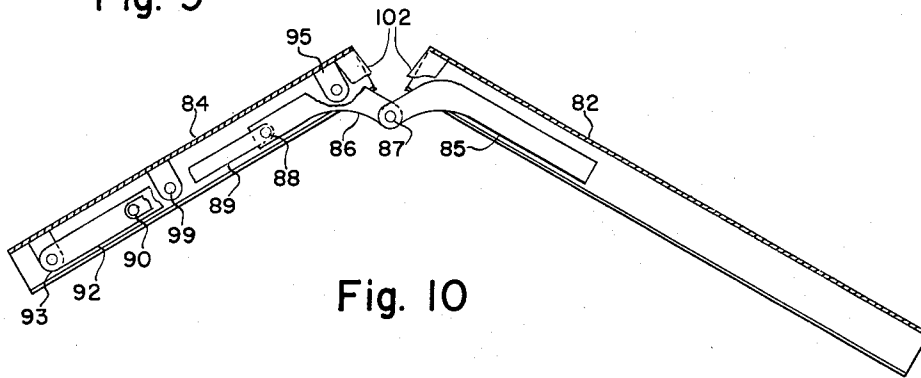


Fig. 10

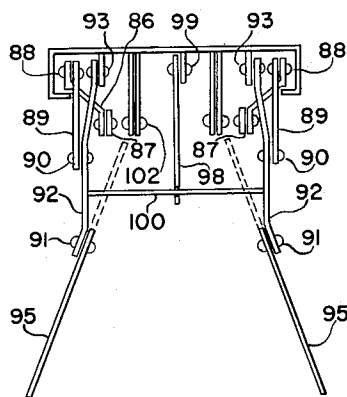


Fig. 11

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2,747,956

FOLDING SECTIONAL TABLE OR THE LIKE

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Application May 19, 1954, Serial No. 430,802

3 Claims. (Cl. 311—89)

My invention relates to a folding table of the general type disclosed in Patent No. 1,378,178 issued to G. J. Korn on May 17, 1921.

The main object of the invention is to produce an improved table of the type set forth.

A further object is to produce an improved table the top of which may be made in two or more sections and all the parts of which are permanently interconnected and substantially automatic in their operation.

A still further object is to produce an improved construction which can be incorporated in, or applied to, appliances other than tables, such as foldable trays, ironing boards, and other work surfaces which are to be collapsed or folded for storage or transportation.

These and other objects are attained by my invention as set forth in the following specification and as shown in the accompanying drawings in which:

Fig. 1 is a bottom perspective view of a two-section folding table embodying my invention with one leg erected and with one leg folded.

Fig. 2 is a sectional view looking in the direction of line 2—2 on Fig. 1 but showing the parts as they would appear when both legs are erected.

Fig. 3 is an enlarged sectional view looking in the direction of line 3—3 on Fig. 1.

Fig. 4 is a reduced end elevational view showing the table in fully folded, or closed, position.

Fig. 5 is a sectional view looking in the direction of line 5—5 on Fig. 2.

Fig. 6 is an enlargement of the parts bracketed by arrows 6—6 on Fig. 5.

Fig. 7 is similar to Fig. 1 but showing another embodiment of the invention.

Fig. 7a is an enlarged elevational view of the parts bracketed by arrows 7a—7a on Fig. 7, showing details of construction.

Fig. 8 is a side elevational view showing the application of the invention to an ironing board.

Fig. 9 is a bottom plan view of Fig. 8.

Fig. 10 is a fragmentary view, partly in section and partly in elevation showing the manner in which the ironing board of Figs. 8 and 9 is folded.

Fig. 11 is a left hand elevational view of the ironing board of Figs. 8 and 9, showing the same in the erected position.

The embodiment of Figs. 1 to 5 shows the invention as applied to a folding table the top of which is made of two sections 10 and 12 which are hinged together as at 14.

The table top sections 10 and 12 are provided at their outer ends with supporting legs 16 and 18 which are hinged to pendent side flanges 20 as at 21. The side flanges 20 are preferably bent over to provide guide channels 22 which will be hereinafter referred to.

In order to provide for rigidly supporting the table top sections when they are in the coplanar position of Figs. 1 and 2, I provide two, diagonally opposed, hinged,

sectional slide bars which are slidable longitudinally of the table top sections by the movement of the legs 16 and 18 relative to the table top sections 10 and 12. As best shown in Figs. 1, 2 and 5, one side of leg 16 is pivotally connected, at 27, to one end of a link 28, the other end of which is pivoted at 29 to the adjacent end of slide bar section 30. The other end of slide bar section 30 is hinged, at 31, to the adjacent end of slide bar section 32.

Similarly, the diagonally opposite side of leg 18 is pivotally connected, at 27', to one end of a link 28', the other end of which is pivoted at 29' to the adjacent end of slide bar section 30'. The other end of a slide bar section 30' is hinged, at 31', to the adjacent end of slide bar section 32'. It will be noted that the opposite slide bars move in the guide channels 22 above described or their equivalent.

In order to lock the legs in the erected position of Fig. 2, the other diagonally opposed sides of legs 16 and 18 are pivotally connected at 38 to the adjacent ends of links 40, the other ends of which are hinged at 41 to the adjacent ends of a links 42 the other ends of which are pivoted at 43 to the pendent side flanges 20. Links 40 and 42 are conventional in structure and operation and need not be further described.

The operation of the structure thus far described is as follows:

When the legs are moved to the erected position, links 28 and 28' move from the folded position, in which they lie parallel to the adjacent pendent side flanges 20, to the position of Figs. 1 and 2, and pivots 29 and 29' which connect links 28 and 28' to slide bar sections 30 and 30' will move away from each other or toward the opposite ends of the table. This movement of pivots 29 and 29' moves the diagonally opposed slide bars in opposite directions so as to bring the slide bars to the position best seen in Fig. 5 in which the slide bar sections 32 and 32' straddle or extend across the junction of sections 10 and 12. In this position slide bar sections 32 and 32' provide rigid support across the hinge line of the table top sections and prevent the table top from collapsing or sagging in the middle.

When the legs are folded flat against the underside of the respective table top sections 10 and 12, pivots 29 and 29' move toward each other, or in the direction of arrows 48 and 48' in Fig. 5, to bring hinges 31 and 31' of the slide bars into alignment with hinge 14 of the table top sections. This permits folding of the table into the carrying or storing position of Fig. 4.

It will be seen from the foregoing that mere erection of the legs into the position of Fig. 2 automatically moves the slide bar sections 32 and 32' across the hinge line of table top sections 10 and 12 and vice versa. It will also be seen that this arrangement produces a relatively light structure and a relatively rigid support. Also the construction is not expensive to make, assemble, or operate.

The table top sections can be made of a relatively light, rigid sheet metal, the legs can be made of light rigid pipe, and the slide bars can be made of rigid but light material such as an aluminum magnesium alloy.

If desired separate guides can be provided for the slide bars instead of bending the opposite side flanges 20 to form guide channels 22.

In Figs. 7 and 7a, I show another embodiment in which the table top is made in four sections 50, 51, 52 and 53, which are hinged together at 54, 55 and 56 whereby sections 50 and 53 can be folded against sections 51 and 52, respectively, and, by rotation about the axes of hinges 54 and 56, whereby the undersides of sections 51 and 52 can be folded against each other, by rotation

3

about the axis of hinge 55, as viewed in Fig. 7. The outer, or end, table sections 50 and 53 are provided with legs 57 and 58 which are pivoted, as at 59, to the pendent side flanges 60 of the table top sections. Each of these legs is provided with diagonally opposed conventional locking devices each of which is formed of two link 62 and 64 which are hinged together at 65 and the opposite ends of which are pivoted at 67 and 67' to side flange 60 and to legs 57 and 58 respectively. When this construction is to be used in an automobile, or in bed, or for a picnic with the people sitting on the grass, each of the legs 57 and 58 is made in one piece, as shown, and its height is made slightly less than the length of adjacent table top sections 50 or 53 measured in the direction of the length of the table. If this embodiment is to be used as a standard height table, each of the legs can be made of sections, hinged together, with the height of each section slightly less than the length of the adjacent table top section 50, or 53. This permits the sectional legs to be folded upon themselves before they are folded against the table top sections.

In order to provide support for the table top sections when they are in the co-planar position of Fig. 7, the underside of each of these sections is provided with a number of spaced strips 66 which are secured to the undersides of the table top sections and the juxtaposed portions 68 of which are spaced from the underside of the table top sections to provide sectional guide channels 70 for receiving a sectional slide bar formed of sections 72 and 72' and 73 at 73'. Section 72 is hinged to section 72' and 74, section 73 is hinged to section 73' at 74' and the adjacent ends of section 72 and 73 are connected by means of a spring S or its equivalent.

In order to move the slide bar back and forth longitudinally of the underside of the table top sections, slide bar section 72' is pivotally connected at 75 to one end of a link 76 the other end of which is pivotally connected at 78 to a transverse brace 80 carried by leg 58, as clearly shown in Fig. 7. By this arrangement, when leg 58 is moved to the erected position, the slide bar sections will be moved to the left, as viewed in Fig. 7, so that the junctions or hinges of the slide bar sections will be to the left of the hinges of the table top sections.

As will be seen from Figs. 7 and 7a, slide bar section 72 now straddles the hinge line of table top sections 52 and 53, slide bar section 73 straddles the hinge line of table top sections 51 and 52, and slide bar section 73' straddles the hinge line of table top sections 50 and 51. When leg 58 is folded flat against the underside of adjacent table top section 53, the slide bar sections are moved to the right, as viewed in Fig. 7, until their junctions or hinges register with the hinges of the table top sections which can now be folded about their respective hinges.

When made on a small scale, the modification shown in Fig. 7 is a particularly well adapted for use in an automobile or for use in bed because it can be stretched out to provide an elongated table top for eating or for reading or for writing and because it can be folded into a small compact package for transportation and storage.

In Figs. 8 to 11 the invention of Fig. 1 is embodied in an ironing board made of two sections 82 and 84 hinged together at 102 and adapted to be folded against each other in the manner shown in Fig. 10. In this construction, two spaced, parallel slide bars are used along the underside of the opposite longitudinal edges of section 84. Each of the slide bars is formed of two sections 85 and 86 which are hinged together at 87. The outer, or left hand of each slide bar section 86, as viewed in Fig. 8, is pivoted at 88, to one end of a link 89 the other end of which is pivoted, at 90, to one of the legs 92. The legs 92 are pivoted at 93, to the corresponding end of ironing board section 84.

The ironing board section 84 is provided at its other end with legs 94 which are pivotally mounted on the

4

underside of this section as at 95. If desired, legs 92 and 94 may be provided with extensions 96 which are foldably connected as at 97. For further support, a latch arm 98 is pivoted to the underside of the ironing board section 84 as at 99 and is detachably engageable with a pin 100 on leg 94.

When legs 92 are moved to the erected position of Fig. 8, links 89 are moved to the left, as viewed in Figs. 8 and 9, so as to move the hinges 87 of slide bar sections 85 and 86 to the left of hinge 102 of ironing board sections 82 and 84. In this position, slide bar sections 85 will straddle the junction of ironing board sections 82 and 84 and will rigidly support ironing board section 82.

When legs 92 are folded up against the underside of ironing board section 84, links 89 will move to the right, as viewed in Figs. 8 and 9, so that hinges 87 of the slide bar sections register with the hinge 102 of the ironing board sections 82 and 84. This permits folding of the ironing board in the manner suggested in Fig. 10.

It will be seen that in all embodiments, a supporting hinged sectional slide bar is associated with the underside of a sectional foldable working surface; that the slide bar is moved back and forth across the underside of the work surface by the folding, or by the erection, of a folding leg hingedly secured to, and serving to support, said surface, and that, when the leg is in its erected position, the hinge of the supporting bar is moved out of registration with the hinge of the working surface whereby the bar provides a rigid support for the working surface and that, when the leg is folded against the working surface, the hinge of the slide bar is moved into registration with the hinge of the working surface whereby the working surface and the supporting slide bar may be folded about a common axis.

What I claim is:

1. In combination, a working surface made of at least two hinged body sections, at least one leg pivotally connected to the free end of one of said body sections and movable to a folded position in which it extends parallel to and abuts said one body section and to an erected position in which said leg is substantially normal to and supports said one section, a supporting bar slidably mounted on the underside of said working surface, said bar being made of at least two portions hinged together, and means pivotally connecting one end of one of the portions of said bar to said leg in such a manner that the movement of said leg into its erected, supporting position moves the hinge of said bar portions out of registration with the hinge of the body sections of said working surface, and so that the movement of said leg into its folded position moves the hinge of said bar portions into registration with the hinge of said body sections.

2. A foldable table, or the like, comprising a plurality of body sections, a first hinge means foldably connecting each of said body sections, a guide carried by the underside of each of said body sections, a supporting member slidable in said guide, said supporting member being formed of a plurality of portions, a second hinge means foldably connecting the portions of said supporting member together, a supporting leg, means foldably connecting said leg to the underside of one of said body sections near a free end thereof, a link pivoted at one end thereof to said leg at some distance from the junction of said leg with said one body section and pivoted at its other end to the adjacent end of the adjacent portion of said supporting member, the length of said last mentioned portion of said supporting member being such that, when said leg is moved to its erected position, said second hinge means is moved, in one direction to a point out of registration with said first hinge means, and when said leg is folded against the underside of said table, said second hinge means is moved in the opposite direction into the registration with said first hinge means.

3. For use in connection with a foldable body formed of at least two sections and hinge means connecting said

5

sections whereby said sections may be moved into an operative co-planar position and to an inoperative folded position, aligning guides on the undersides of said body sections, a supporting bar slidable in said guides, said bar being made of at least two portions and hinge means 5 connecting said bar portions, said bar portions being movable to a first position in which the hinge means of said bar portions and the hinge means of said body sections coincide whereby said body sections and said bar portions may be folded by rotation about a common axis, 10 said bar being also movable to a second position in which

6

the hinge means of said bar portions is out of registration with the hinge means of the body sections and one of said bar portions traverses the hinge of said body portions.

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