

Jan. 24, 1933.

J. E. KALGREN

1,895,164

IRONING TABLE

Filed Aug. 28, 1931

3 Sheets-Sheet 1

Fig. 1

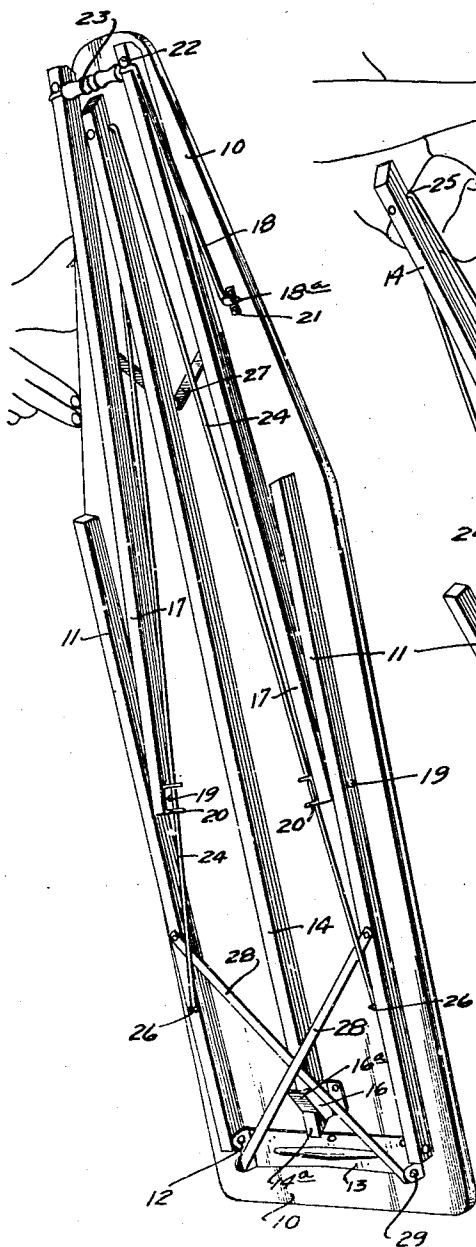
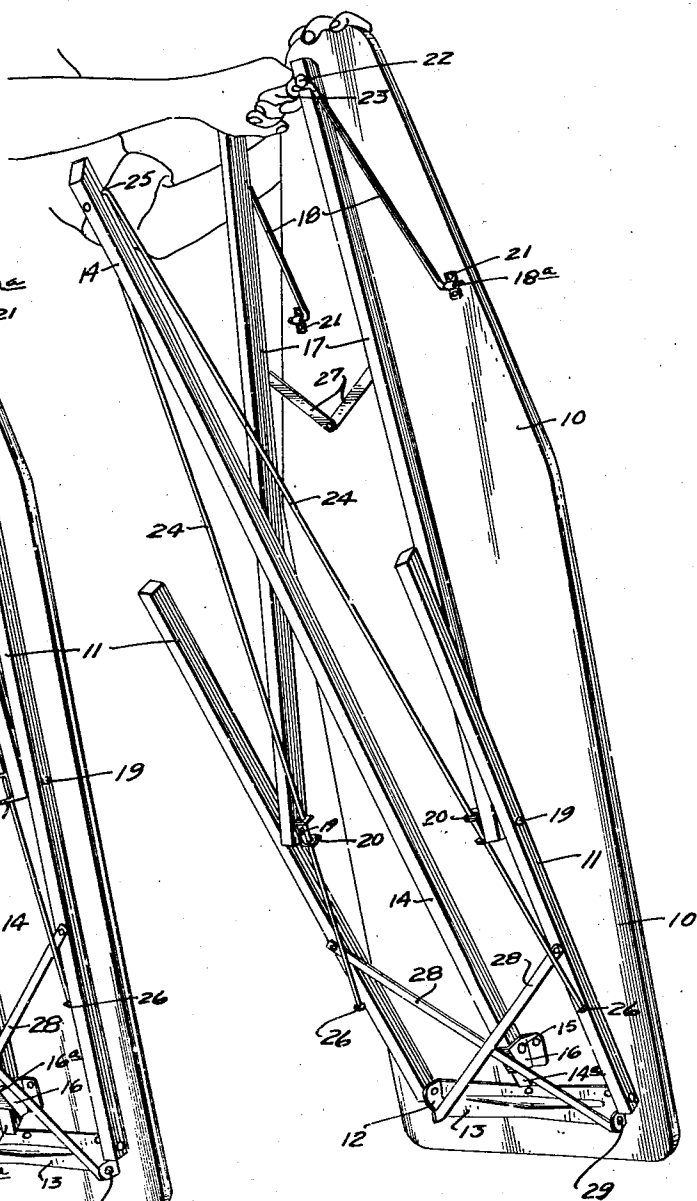


Fig. 2



Inventor
John E. Kalgren
By his Attorneys
Merchant Kilgore

Jan. 24, 1933.

J. E. KALGREN

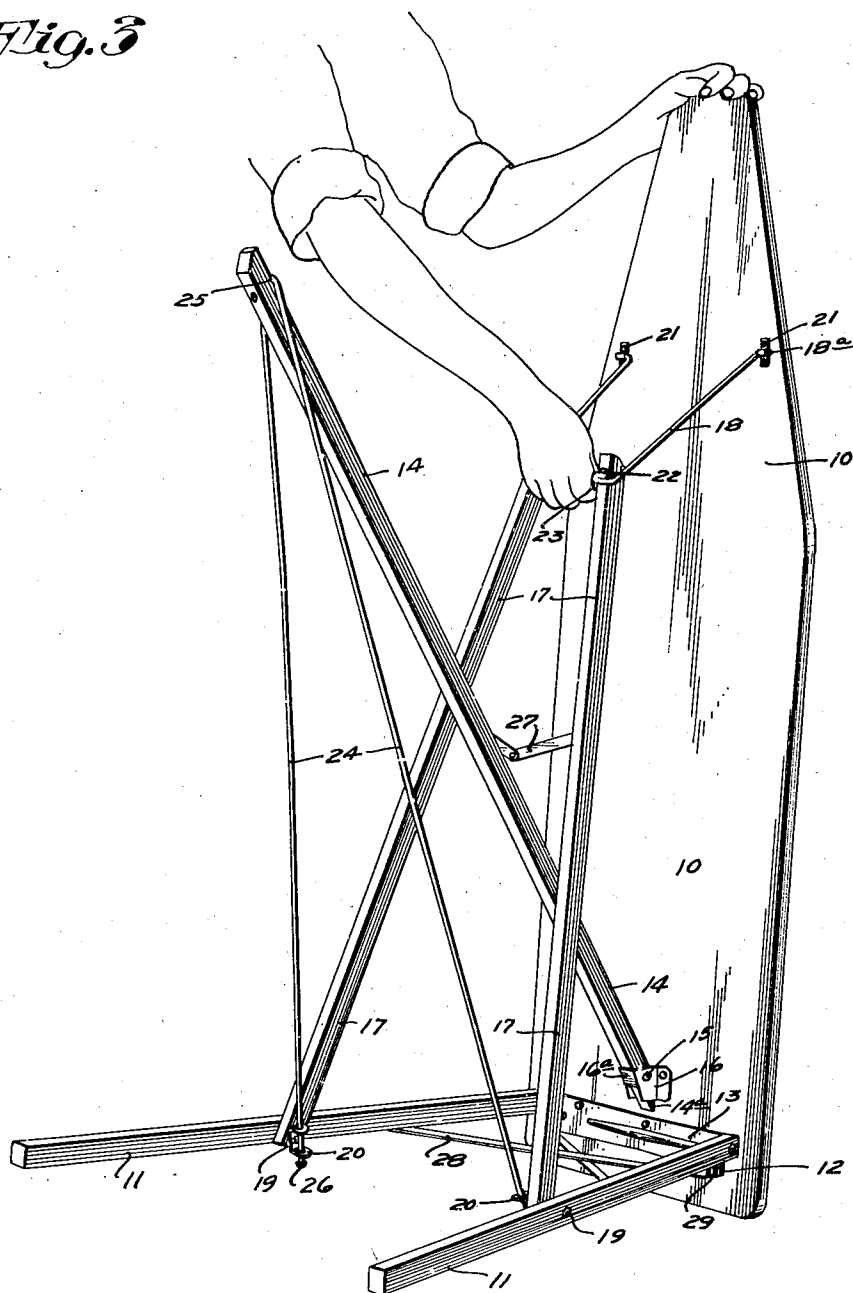
1,895,164

IRONING TABLE

Filed Aug. 28, 1931

3 Sheets-Sheet 2

Fig. 3



Inventor
John E. Kalgren
By his Attorney
Merchand & Sullivan

Jan. 24, 1933.

J. E. KALGREN

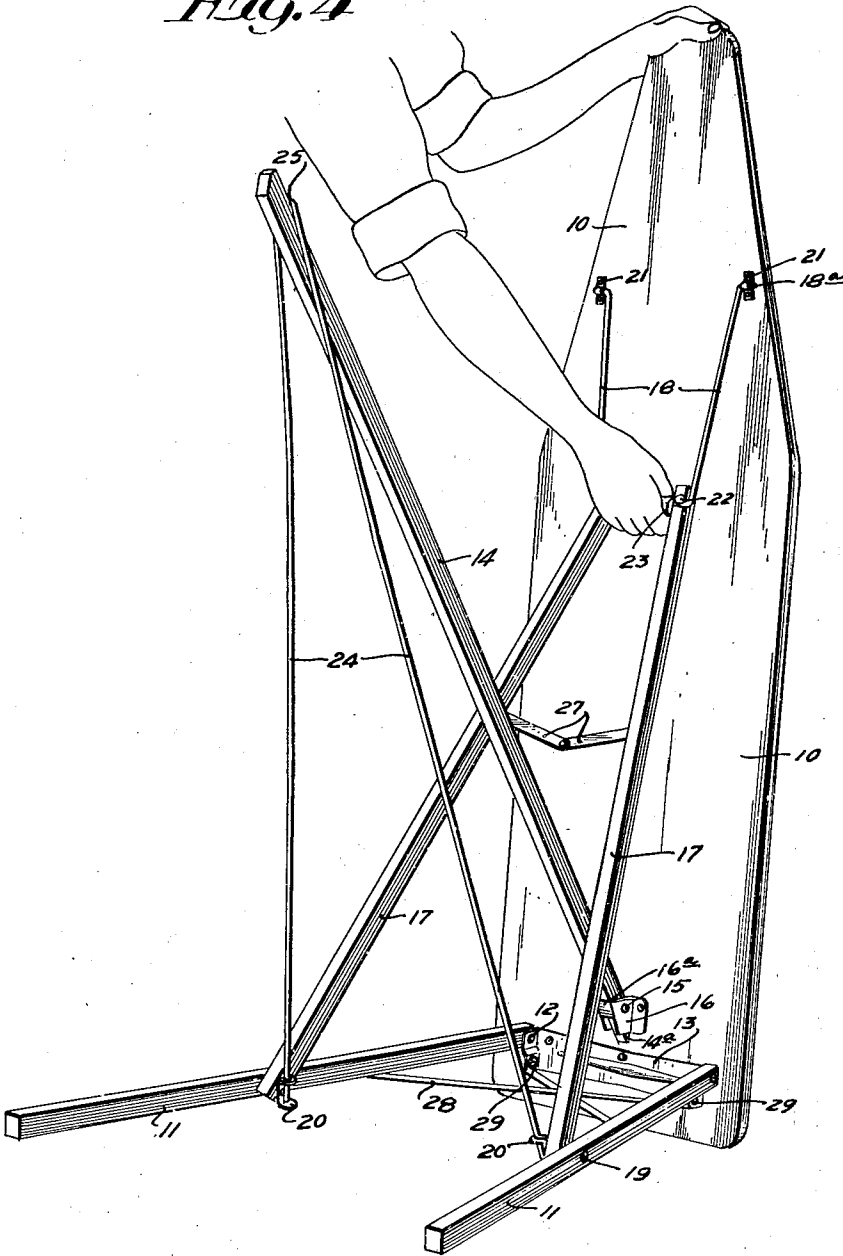
1,895,164

IRONING TABLE

Filed Aug. 28, 1931

3 Sheets-Sheet 3

Fig. 4



Inventor
John E. Kalgren
By his Attorneys
Mitchell Krigau

UNITED STATES PATENT OFFICE

JOHN E. KALGREN, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR TO J. R. CLARK COMPANY,
OF MINNEAPOLIS, MINNESOTA, A CORPORATION OF MINNESOTA

IRONING TABLE

Application filed August 28, 1931. Serial No. 559,890.

My present invention provides an improved ironing table of the folding leg type and has for its object to improve the same in points of quick and easy operation, rigidity, durability and small cost of production. Generally stated, the invention consists of the novel devices, combination of devices and arrangement of parts hereinafter described and defined in the claims. As a radical departure from ironing tables having folding leg structures, the present improved board is provided with folding board-supporting legs and co-operating supporting elements provided with a definite hand-piece exposed so that it may be rigidly engaged and the board-supporting elements being so connected that by one movement of the hand-piece, the legs and co-operating supporting elements will be automatically moved to and set in board-supporting positions, and conversely, by a reverse movement of the hand-piece, said parts will be automatically folded against the board. The term "automatically" is herein used in a broad sense to define a structure in which, by the movement of a hand-piece or definite fixed handle, the movements of the supporting legs to and from folded positions, will follow without the necessity of other manipulations. In ironing tables having folding legs, as hitherto constructed, there has been no definite fixed hand-piece, or no definite part that could be manipulated as an element, to set up the legs and fold the same against the board, and in fact, to set the legs and supporting elements in board-supporting position, has required successive manipulation of several different parts, and the order of manipulation it was necessary for the operator to be informed or to determine by considerable experiment.

With the definite hand-piece arranged for operation as above indicated, and as herein-after more fully disclosed, the hand-piece presents itself as the operating element just as clearly as does the bail on a pail. The invention also involves numerous novel features whereby it accomplishes the above stated objects and produces an ironing table of high commercial value.

In the accompanying drawings, which il-

lustrate a commercial form of the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 shows an improved table with the legs and supporting elements folded against the board and with the board set in a desirable position for initial setting up of the legs by manipulation of the hand-piece;

Fig. 2 corresponds to Fig. 1, but shows the legs and co-operating supporting elements moved from folded toward set up position;

Fig. 3 is a perspective corresponding to Fig. 2, showing the legs and supporting elements forced nearly to board-supporting position;

Fig. 4 shows the legs and board-supporting elements completely set up for supporting the board, but with the board still upright.

The board or table top is indicated by the numeral 10 and as shown is of the customary form. A pair of rear legs 11 is hinged to the board for folding movements toward and from the board and for lateral spreading and approaching movements. These legs, as shown, are loosely pivoted to down-turned lugs 12 of metallic strap or cross bar 13 that is riveted or otherwise rigidly secured to the bottom of the rear end portion of the board.

A third or oblique leg 14, which, as shown, is formed by a single bar, is hinged to the rear portion of the board and arranged to be set in a forwardly inclined position. This oblique leg 14 is shown as pivoted at 15 to a hinge bracket 16 that is rigidly secured to the bottom of the board by rivets or otherwise. To limit the downward movement of the oblique leg 14, it is provided with a short end 14^a that is engageable with the bottom of the board, and the bracket 16 is provided with a transverse portion 16^a that engages the under edge of said leg 14 forward of its pivot.

A toggle-acting top brace connects the rear legs to the under side of the board 10. This top board comprises a pair of bars 17 and a bail 18. The above noted parts 10, 11, and 17, it is obvious, will be preferably made of wood, while the bail 18 is preferably made

from a piece of heavy wire. The rear ends of the bars 17 are pivotally connected to the intermediate portions of the rear legs 11 by rivets or bolts 19 which, in this preferred structure, also pivotally anchor pronged guide heads 20, and the purpose of which will presently appear. The legs of the bail 18 are provided with out-turned terminal ends 18^a that afford trunnions pivotally mounted in bearings afforded by metallic clips 21 riveted or otherwise rigidly secured to the bottom of the board 10. The cross bar of bail 18 is pivotally connected to the free ends of the bars 17 and this, as shown, is accomplished by seating the same in notches formed in the free ends of said bars and applying thereto the keeper-acting wide heads of the rivets 22 that are applied through the free ends of the bars 17 and in addition to the function noted, reinforce the ends of said bars 17 against splitting. A definite hand-piece preferably in the form a turned wooden sleeve 23 is applied on the cross bar of the bail 18 and as an additional function, holds the free end of the bar 17 properly spaced. The above noted elements 17 and 18 constitute a toggle connection between the rear legs and the board and afford a toggle that is not only strong against tension but rigid against lateral movements.

It will be noted that in all positions of the hand grip or piece 23, it is free of interference by all of the other leg elements, so that an operator may easily grip the hand piece for operation of the folding parts. In bringing this about it is important that the brace element is pivotally connected to the board and is of substantially less length than the distance between its pivotal connection with the board and the pivotal connection of the oblique leg with the board.

A tension-acting bottom brace connects the rear legs directly or indirectly to the free end of the oblique third leg 14. This bottom brace is preferably afforded by a small rod or heavy wire 24 bent upon itself into approximately V-shape, with its crotch pivotally seated in the free end of said leg 15 at 25 and with its arms passed loosely through perforations in the lugs of the guide head 20. At the extreme ends of the arms of the bottom brace 24, they are formed with stop heads 26 which, when the legs are set up to support the board, are stopped against the co-operating heads 20 so as to put the brace 24 under tension. Under folding action, the arms of the bottom brace 24 slide through the heads 20 to positions shown in Fig. 1. The numeral 27 indicates a light metallic toggle link connecting the intermediate portions of the bars 17 of the toggle-acting top brace. This toggle-acting link 27, while not an essential feature, is desirable under some circumstances and for a reason which will hereinafter be explained.

As an efficient means for causing the rear legs to spread when turned down to support the board, I preferably employ connections such as disclosed and claimed in my pending application S. N. 464,820, filed June 13, 1930, and entitled "Ironing board". These connections include transverse crossed rear leg braces or bars 28 which, at their lower ends, are pivotally connected to the intermediate portions of the legs 11 and at their upper ends are pivotally connected at 29, to down-turned lugs of the metallic cleat 12 at points considerably rearward of the pivotal connections between said lugs and the respective rear legs 11. With this arrangement, when the rear legs are folded against the board, they were drawn relatively close together so that they will be within the transverse dimensions of the board 10; but when said rear legs are turned down, they will be automatically spread so that their lower ends will be separated a distance greater than the width of the board.

This spreading of the legs as is well known, is desirable in order to fold the legs properly for shipment and storage and to give the wide base of stability to the board when supported by the legs.

Summary of operation

By reference to Fig. 1, it will be noted that when the legs are folded against the board, they are laterally within the width and longitudinally within the length of the board so that the board can be set on either end without bringing the legs or any of the supporting structure into engagement with the floor. Furthermore, it is important to note that in the folded position of the legs, the third or oblique leg 14 terminates short of the hand-piece 23 so that said hand-piece is exposed beyond the free end of the leg 14 where it is in prominent view and may be readily engaged with the hand and gripped with the operating hand while the legs are being moved from their folded position into the set-up position shown in Fig. 4. When the toggle connection 27 is not provided, it is advisable to position the board at a slight inclination, as shown in Fig. 1, so that the free end of the leg 14 will, in the initial unfolding action, drop outward of the hand-piece 23. When, however, the link 27 is provided the unfolding action can be started when the board is at any position and even when lying flat upon its back for said link will then cause the initial unfolding movements to carry the free end of the leg 14 outward of the hand-piece. In either case, the operator once gripping the hand-piece 23, may maintain his hold thereon while moving the legs and supporting elements from complete folded position shown in Fig. 1, through the intermediate position shown in Figs. 2 and 3, and into the position shown in Fig. 4; and obviously, the

folding of the legs may be accomplished by a reverse operation, that is, by a reverse movement of the hand-piece.

The first effect of moving the hand-piece from the position shown in Fig. 1 is to force the rear legs backward until the stops on the bottom tension member 24 are brought against the head 20 and further movement in the direction indicated causes the bottom tension member 24 to pull the oblique leg 14 down or outward to its limit as permitted by the stop element 14^a and 16^a, above described. This limits the rearward movement of the rear legs and under such swinging movement the rear legs are spread apart all under the manipulation of the hand-piece and the resulting actions that automatically take place. Of course, the greatest tension is put upon the parts when the toggle-acting top brace 17—18 is on its dead center and there will be a slight decrease in the maximum tension when the toggle is buckled against the board, as shown in Fig. 4. Nevertheless, when positioned as shown in Fig. 4, all of the supporting parts of the table will be under such tension that the support is given great rigidity and the top brace will be held thereby buckled against the board, against accidental dropping and without the use of a latch or lock of any kind. From the above, it is evident that the positioning of the rear and oblique or third leg of the table and also the spreading of the rear legs follows automatically from one definite movement of the hand-piece from the position shown in Fig. 1, into the position shown in Fig. 4, and that the folding of the legs against the board and the contraction or drawing closer together of the rear legs, follows automatically from a reverse movement of said hand-piece from a position shown in Fig. 4 back to a position shown in Fig. 1. Also it is evident that the hand-piece is always prominently displayed where it may be easily gripped and so that no shifting of the hand from one element to the other of the supporting structure is required for complete movements of the supporting legs from folded to board-supporting positions, and conversely.

The drawings of this application show a commercial ironing table, the practicability of which has been thoroughly demonstrated. It is made up of comparatively few parts, all of simple character capable of being produced at a minimum of cost combined in such a way as to provide a light, strong, durable and rigid structure.

What I claim is:

1. An ironing table comprising a top board, rear legs pivoted to said board for swinging movements toward and from said board, another leg element pivoted to said board, and cooperating pivotally connected brace elements pivotally connected to said board and to said rear legs, one of said ele-

ments providing an unobstructed cross bar at the pivotal connection between said brace elements free of interference by said other leg element in all of its positions so as to enable an operator free access thereto for grasping the same, said bar being swingable from a position adjacent the board on one side of its connection therewith to a position adjacent the board on the opposite side of said connection, whereby in one position of the cross bar the board brace elements and rear legs are automatically set in board bracing and supporting positions, and in the other extreme position said brace elements and rear legs are folded against the board.

2. The structure defined in claim 1 in which said pivotally connected brace elements comprise a pair of bars and a bail, the cross bar of said bail extending between and pivotally connected to said bars adjacent the free ends thereof.

3. The structure defined in claim 1 in which a tubular hand-grip is mounted on the cross bar.

4. The structure defined in claim 1 in which the length of the brace element pivotally connected to the board is substantially less than the distance between its pivotal connection with the board and the pivotal connection of said other leg element with the board.

5. An ironing table comprising a top board, rear legs pivoted to said board for pivotal movements toward and from the board, a toggle-acting brace comprising a pair of bars pivotally connected to said legs and an approximately U-shaped member pivotally connected to the board the transverse portion of which extends between and is pivotally connected to the forward extended spaced ends of said bars providing a hand-grip piece between said bars, said legs and U-shaped member being pivotally connected to the board at such points and the brace elements being of such length that when the legs are turned down from the board the toggle-acting brace will be buckled by said U-shaped member against the bottom of the board to support the same.

In testimony whereof I affix my signature.

JOHN E. KALGREN.