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METAL IRONING BOARD
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Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

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This invention pertains to ironing boards or tables and is for a board or table made of sheet metal instead of wood as is the usual practice.

Ironing boards or tables of conventional form comprise a wooden member or board approximately four and one half feet long, one and one quarter feet wide, and they taper in width from a point intermediate the ends toward one end. The board is commonly supported on a folding stand in such manner that the tapered end portion projects entirely clear of the stand, there being one leg unit adjacent the wide end of the board and another leg unit about the middle of the board, the tapered end thus constituting an overhang over which certain articles of apparel such as skirts, dresses, slips, and the like may be placed in such manner that only one thickness of cloth is ironed or pressed at a time. The weight in such a board weighs from about seven and a half to nine and a half pounds.

Due to the fact that wooden boards are subject to warping and splitting, this tendency being aggravated by the repeated heating and steaming of the wood and the subsequent drying of the wood that occurs in the regular use of the board, and also because such boards are subject to recognized fire hazard, attempts have been made to provide a metal substitute. In order to compete commercially with wooden boards, a metal board should be of the same approximate cost as the wooden board. It must not be materially heavier than a wooden board and it must be equally solid and rugged, and the provision in a light sheet metal structure of inexpensive design of the necessary rigidity against transverse and longitudinal bending has not heretofore been commercially accomplished.

According to the present invention there is provided a table or board surface which is strong enough to resist deflection under all reasonable conditions of use at least as well as if not better than wooden boards of comparable dimensions and which may be commercially manufactured in a price range competitive with wooden boards and which, while strong and rigid for its intended purpose, is made of light gauge sheet metal and has a weight comparable to a wooden board.

This is accomplished by forming a sheet of metal to the desired shape and dimensions and attaching to the under face thereof a channel-like reinforcing element also of light sheet metal and further providing means to resist transverse bending of the structure. The invention may be more fully described by reference to the accompanying drawings in which:

Figure 1 is a perspective view of the cover sheet of the board prior to the assembly thereof with the reinforcing member;

Figure 2 is a perspective view of the reinforcing member that fits within the structure shown in Figure 1;

Figure 3 is a longitudinal vertical section through the assembled board;

Figure 4 is a top plan view of a portion of the completed board, part of the cover sheet being broken away to show the underlying structure;

Figure 5 is a transverse vertical section on the plane of line V—V of Figure 4;

Figure 6 is a bottom plan view of one of the transverse tension-distributing members to which the supporting stand is secured; and

Figure 7 is an inverted bottom plan view showing a modification in which means is provided for electrically heating the board.

In the drawings, the board structure illustrated comprises a cover sheet 2 having the shape of a conventional ironing board and having a downwarly turned flange 3 entirely around the edge thereof. One end of the cover sheet tapers in width, the tapered portion being designated 2a and the opposite end is somewhat rounded, this portion being designated 2b. Although the cover sheet is made of relatively light gauge commercial sheet metal, it has some rigidity by reason of the peripheral flange 3, and this is enhanced by forming an inwardly rolled edge 4 on the bottom of the flange.

Secured to the under surface of the cover sheet 2 is a reinforcing member 5 comprising a number of reversed longitudinally extending channel elements that are co-extensive with the area of the board. This reinforcing member consists of a piece of light gauge sheet metal pressed to provide a series of longitudinally extending inverted channel elements 5a and reversed channel elements 5b, the side flanges 5c of two adjacent elements 5a being also the sides of the intervening upright channel elements 5b. The channel elements 5a have flat web portions 5d between the two side flanges forming a relatively wide flat supporting surface for the cover sheet which overlies and contacts with these web portions. The cover sheet is spot welded to the webs of the inverted channels at frequent intervals. While the inverted channels 5a provide longitudinal rigidity to the structure, the longitudinal rigidity is much greater by reason of the intervening upright channel
portions. This is due to the fact that each upward channel, being rigidly secured to the cover sheet, forms, with the cover sheet, a box-like girder, the web of the channel being below the neutral axis of the girder so formed.

Thus, while inverted channels 9 are necessary to provide a wide area of support for the upper sheet 2, the upward channels provide in a thin sheet metal structure of this kind an important reinforcement against longitudinal bending by reason of forming with the cover sheet, parallel box-like girders or trusses with a web of metal in each girder or truss below the neutral axis of the truss.

The member has substantially the shape and dimensions of the cover sheet, one end portion being tapered as shown, some of the channel elements having their ends cut off on an angle. In this way the ends of the channel elements abut against the downwardly turned flange 3 of the cover sheet and the rolled edge of this flange folds under the ends of the channel elements. By having the ends of the channel elements extend almost to or against the flange 3 of the cover sheet, a full support is given to the cover sheet throughout its length. The member 3 between the taper at one end and the rounded portion at the other has lateral flanges 8 with turned-down edges 7 that lie against the down-turned flange 3 at the sides of the cover sheet, the rolled edge of the cover sheet extending under the lateral flanges 8. It will be understood that in assembling the structure the reinforcing member 3 is placed against the underside of the cover sheet before the edges of the cover are rolled in.

The reversed series of channels imparts a great longitudinal rigidity to the structure even though the material used is light gauge metal and the inverted channels are close enough together and are sufficiently wide and slab to provide a support for the cover sheet such that in use the cover sheet will remain flat. In order that the structure will have transverse rigidity, tension distributing bars may be secured to the bottom of the reinforcing member. In the drawings there are two of these bars 9 extending upwards from the bottom of the reinforcing member, the bars being spot welded to the webs of each of the upward channel elements. The bars may be regarded as the bottom chords of a truss, the cover sheet providing the top chord. Two of the bars, in conjunction with the flange around the edge of the cover sheet, are adequate to make the board rigid in a crosswise direction.

The bars 9 are formed of slightly heavier gauge metal than the cover sheet and reinforcing member. They may carry ears to which the legs of a folding stand are attached, the upper portions of such legs being indicated at 9. Thus the bars 9 serve the dual function of providing transverse rigidity and providing for the attachment of a stand to the light gauge metal board structure.

It frequently happens that ironing boards when stored away are stood on end. In order to erect the board from being bent at its ends when this happens, a rib 10 is pressed into the flange 3 around the wide end of the board and a similar rib 12' is pressed out of the flange at the front end of the board. These ribs not only stiffen and reinforce the flange portions over which they are formed, but they provide a projection on which the board will rest if it is placed vertically on a floor and thereby prevent the flange from becoming bent. These ribs are of particular importance in providing a projection for the top edge of the board where it bends down into the flange. The longitudinal edges of the cover sheet along the main surface of the board will of course be reinforced by the downwardly turned edge 7 so that it is unnecessary to provide any reinforcing rib along the sides of the board.

As previously stated, the construction herein described enables the board to be assembled from relatively thin gauge sheet metal. The board therefore is quite light and of a height comparable to the weight of a wooden board of the same dimensions. It can be cheaply assembled and can therefore be made to sell in a price range competitive with wooden boards. It is more durable than a wooden board in that it is not affected by the absorption and drying out of moisture nor by heat. It is completely rigid in both a longitudinal and a transverse direction. It cannot twist or warp.

If desired there may be another cross member 11 as shown in Figure 7 with an electrical connector plug 12 into which an electric element may be attached. Electric heating elements connecting with the contacts of this plug may be placed in some of the channels in the board structure, these elements being designated 10. Through the provision of means for heating the board, garments or other articles being pressed may be dried out more quickly than where the heat of the iron alone is relied upon.

While I have illustrated and described one particular embodiment of my invention, it will be understood that various changes and modifications may be made within the contemplation of my invention.

I claim:

1. An ironing board comprising a flat top member of light gauge sheet metal having one tapering end portion, said top member having a downwardly turned flange around the periphery thereof, a reinforcing member secured to the underside of the top member and substantially co-extensive in area therewith, said reinforcing member having a series of longitudinally extending alternate inverted and upward channels therein which are co-extensive with the length of the top member, the inverted channel portions of the reinforcing member being united to the top member at intervals throughout the length thereof, the reinforcing member being shaped to conform to the shape of the top member whereby the channels in the portion of the reinforcing member which provide the tapered end portion are cut diagonally of their width at the tapered end portion, said reinforcing member having a side flange thereon which bears against the interior of the flange on the top member to strengthen said last-mentioned flange, the ends of the channels of the reinforcing member terminating in proximity to the flange along the tapered end portion of the top member to reinforce the said last-mentioned flange, the flange having an embossed rib and one end of the top member projecting outwardly therefrom and adapted to support the board when standing on end with said flange above the floor.

2. An ironing board comprising a top sheet of relatively light gauge sheet metal having a down-turned peripheral flange, and a reinforce-
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3. In an ironing board, a sheet metal top having a down-turned peripheral flange, and a rib projecting outwardly from said flange at one end of the top, said rib serving when the board is stood on end on a support, to space the flange above the support.

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