

June 23, 1942.

J. W. STEELE

2,287,646

IRONING APPARATUS

Filed Dec. 10, 1938

3 Sheets-Sheet 1

Fig. 1.

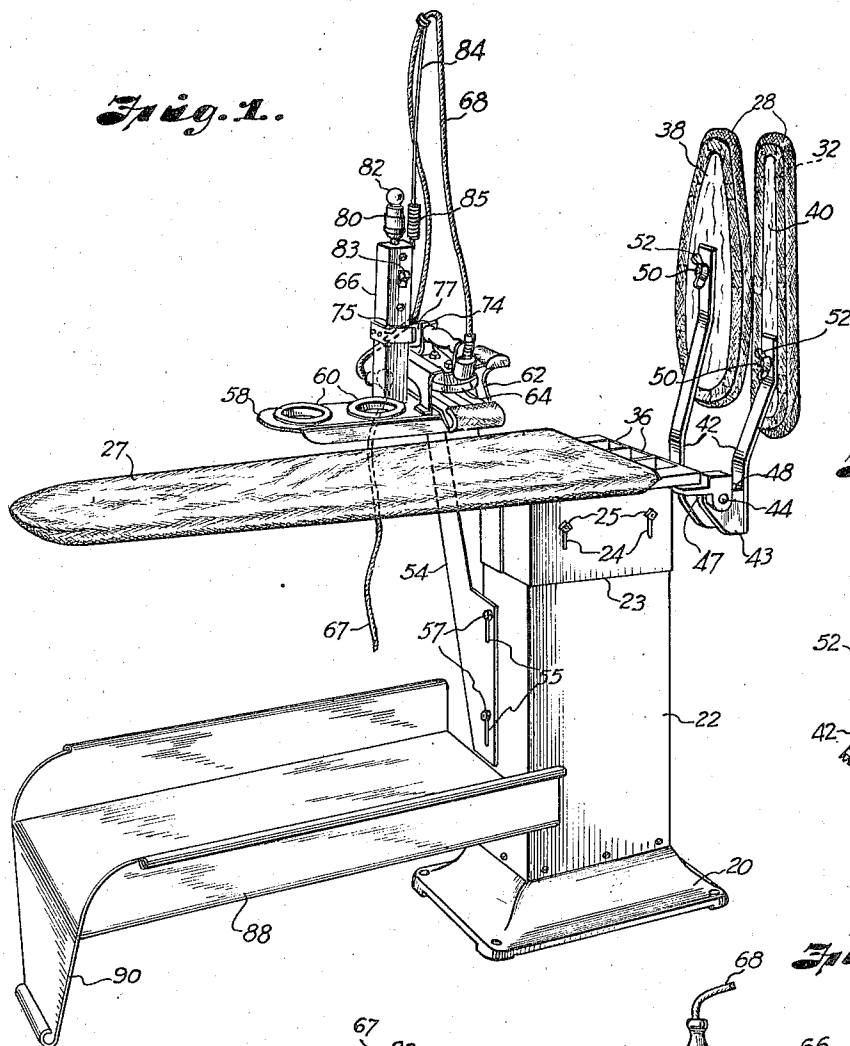


Fig. 10.

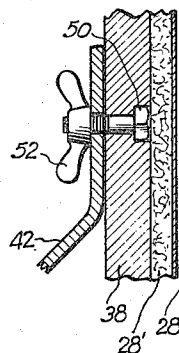


Fig. 9.

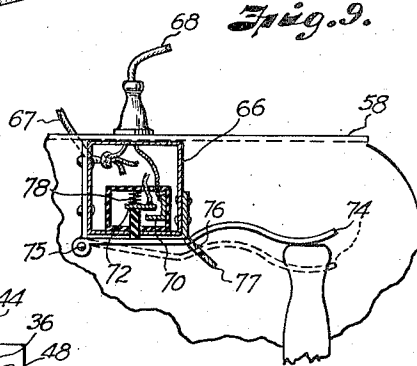
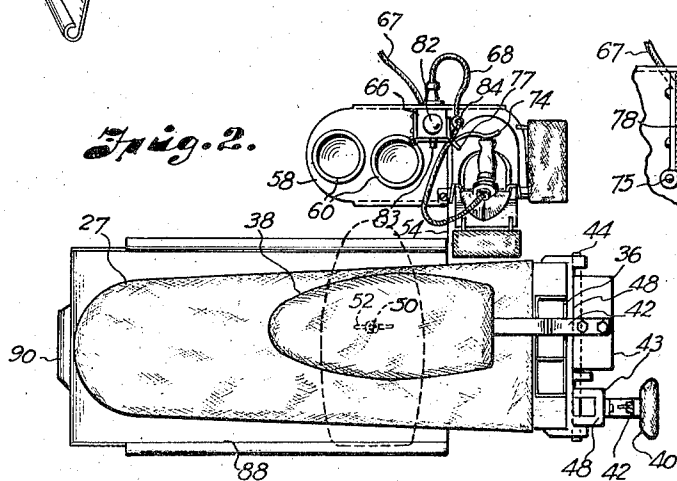


Fig. 2.



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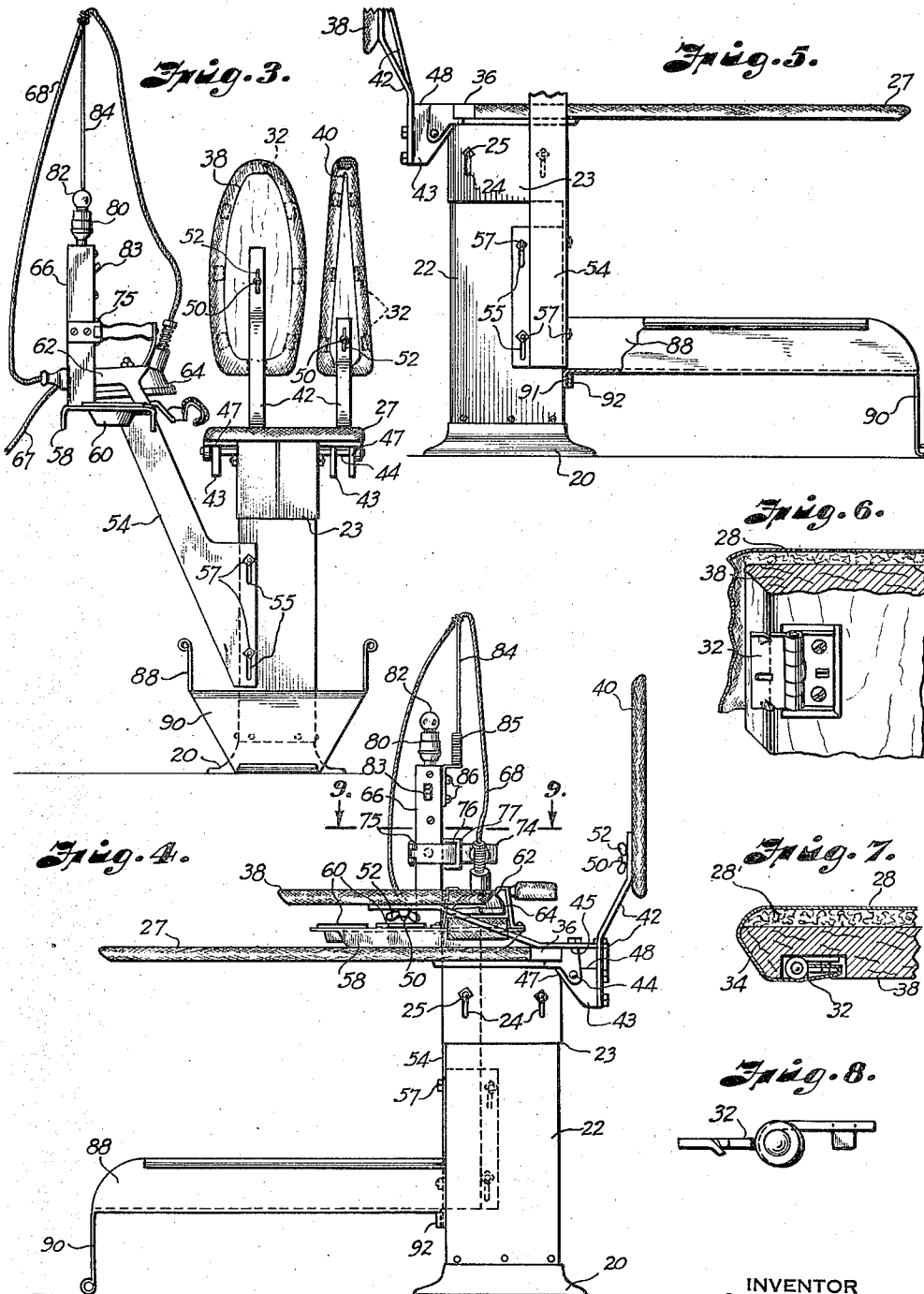
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

Fig. 11.

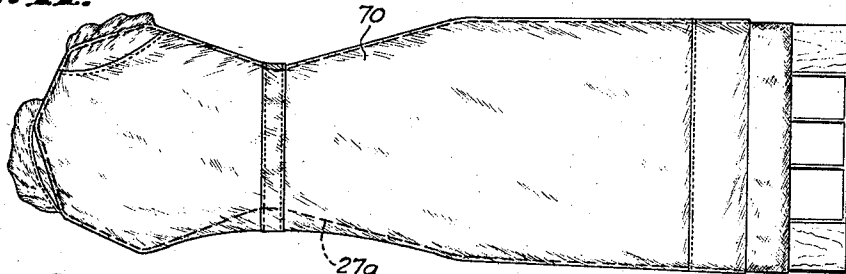


Fig. 12.

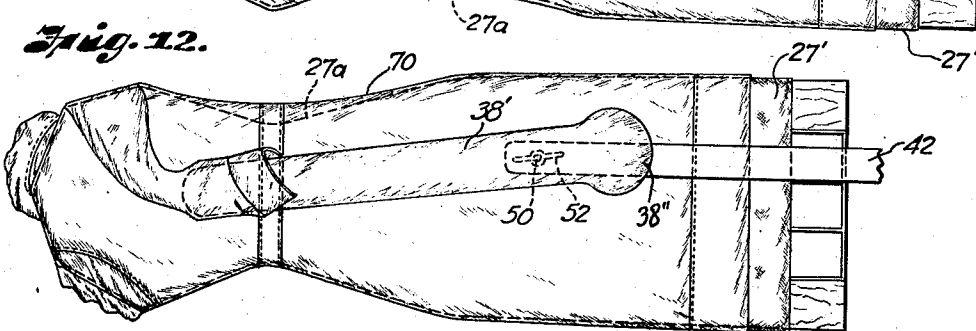


Fig. 13.

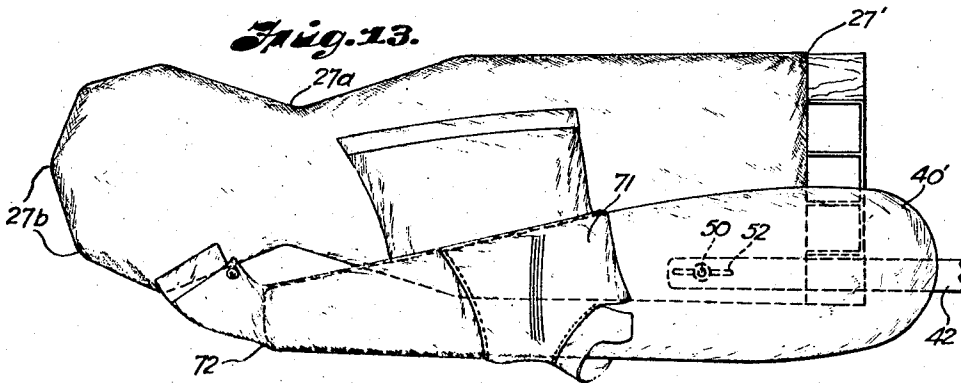
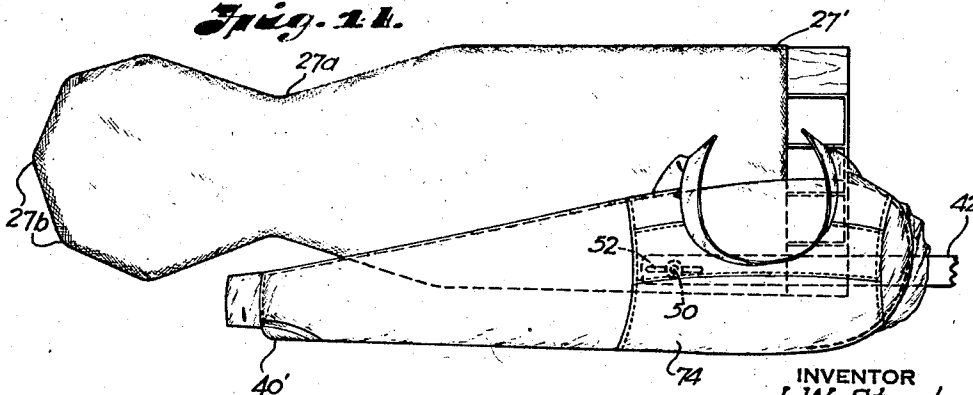


Fig. 14.



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2,287,646

IRONING APPARATUS

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Application December 10, 1938, Serial No. 244,972

1 Claim. (Cl. 38—134)

This invention consists in certain improvements in ironing equipment, particularly such apparatus as is employed in laundry operation.

An important object of the invention is to consolidate the parts comprising the ironing equipment used by a single operator into as limited space as possible in order to minimize the movements necessary to be made by the operator, and also to locate the iron and other accessories in such a way as to standardize the movements executed by the operator in the use of those devices.

For carrying out these primary purposes of the invention, I provided a main ironing board which is equipped with an arm for supporting the iron and other accessories in such relation as to be conveniently accessible to the operator, and also in entirely spaced relation to the main ironing board so as not to obstruct or limit the use of the ironing surface thereon in any way for ironing purposes, and thereby enable a main ironing board of shorter length than the conventional design to fulfill all the essential requirements of such portion of the equipment. The said supporting arm and the ironing board are both made adjustable with reference to the main supporting structure, and the main ironing board is further provided with a plurality of accessory boards mounted for movement into and out of ironing position over the main board, and also separately adjustable with reference to their supporting means to further obtain any desired relative position of either board in its operative or ironing position.

In adapting the equipment for use with an electric iron, the invention further provides electric heating connections having means of automatically shutting off the current from the iron so long as the latter is not in use, as well as means for independently cutting off the current through the supply connection and also indicating whether or not the supply connections are connected with the service outlet.

It is a still further object of the invention to provide a main and auxiliary ironing board of new and improved design for introducing greater efficiency and speed in different phases of laundry ironing and finishing operations.

Other objects or purposes of the invention will appear in the course of the detailed specification.

With the foregoing objects in view, the invention will now be described by reference to the accompanying drawings illustrating apparatus found especially adapted for the embodiment of the proposed improvements, after which those features and combinations deemed to be novel

and patentable will be particularly set forth and claimed.

In the drawings—

Figure 1 is a perspective view showing an ironing board construction embodying the present features of improvement;

Figure 2 is a plan view of the same on a slightly smaller scale and with one of the auxiliary boards lowered into operative position;

Figure 3 is an end elevation of the construction as illustrated in Figure 1;

Figure 4 is a front elevation of the construction illustrated in Figure 2;

Figure 5 is a rear elevation with portions broken away;

Figure 6 is an enlarged detailed view showing a portion of one of the auxiliary boards with one of the hinge fastening devices used for securing the padding and cover or sheeting to the board;

Figure 7 is a cross sectional detail view of the same;

Figure 8 is an end view of one of said fastening devices;

Figure 9 is a horizontal sectional view representing a section taken on a line 9—9 of Figure 4;

Figure 10 is a sectional detail view showing the provision for pivotal mountings of the auxiliary boards on their supporting arms;

Figure 11 is a plan view of a modified form of the main ironing board, with a garment applied thereto as in the ironing operation;

Figure 12 is a similar view, with a modified form of one of the auxiliary boards lowered for sleeve-ironing;

Figure 13 is a modification similar to Figure 12 but showing a modified type of the other auxiliary board in operative position for sleeve-ironing; and

Figure 14 is a view similar to Figure 13 showing another method of using the auxiliary boards, in the ironing of shirts.

Floor space in the ironing and finishing departments of all up-to-date laundry establishments is always at a premium, due not only to the necessity of providing room for all the accessory equipment for each ironing station, but also on account of the space taken up by the appliances used for carrying and transporting the garments as these are being handled or treated in their course through the ironing and finishing department. While it is desirable to save floor space, from the standpoint of that consideration alone, it is obviously much more important to design the ironing equipment in

such a way as not only to save floor space but also to reduce as much as possible the necessity on the part of the operator for moving from one point to another about the apparatus, for unnecessary movement of the sort waste both time and labor, not to mention the expense of maintaining unduly large pieces of equipment.

Where apparatus of this character is equipped with electrically heated irons, some disadvantages have arisen due to overheating of the iron and other faults, according to the type of iron used. In the case of irons having a heat control switch, this requires constant attention on the part of the operator, who may neglect to manipulate the switch properly or even forget it altogether, thus overheating the iron or underheating the iron. One particular disadvantage of underheating the iron, for example, is that it slows down the work compared to working with a properly heated iron, for it is the hot iron which speeds up the operation by requiring rapid ironing strokes on the part of the operator.

A type of electric iron, called the cordless iron, requires the operator to place it back upon a stand for reheating, and while it has some advantages it is still subject to the objection that regardless of the fact that the iron is hot to begin with, it nevertheless is gradually cooling off during the time it is in use.

One important purpose of the present improvement therefore is to provide for maximum efficiency of the ironing device throughout its actual operation, doing this by reversing the principle of the so-called cordless iron, i. e., by maintaining the electric heating current in circuit through the iron during all the time it is in use, and automatically cutting off the heating current when the iron is not in use by causing said circuit to be broken automatically and simultaneously with the setting of the iron on its stand, in inoperative position. The loss of heat by the iron in this position, on its stand, is less rapid and of course much less serious than during the ironing operation, and as soon as the iron is lifted off the stand the heating current is restored to the iron and maintained throughout the period of operation until the iron is again placed on its stand.

Referring now to the drawings in detail, the improved construction is illustrated as comprising a pedestal structure consisting of a base portion 20 carrying an upright member 22 upon which is adjustably mounted a top portion 23 having slots 24 for adjustably securing said top portion to the upright member 22 by means of clamping screws 25. This top pedestal portion carries the main ironing board member 27 provided with the usual sheeting 28 for enclosing padding material 28' and said sheeting and padding material being conveniently and neatly secured in place by the hinge fastening and tensioning devices 32 (such as those described more fully in my Patent #1,895,495).

The top pedestal member 23 is provided with a plurality of tray receptacles 36 extending across the corresponding end of the main ironing board 27, for spools, pins, or other supplies, and at the same side of the pedestal structure are pivoted auxiliary ironing board members 38 and 40, as shown in Figures 1-4. The board 40 is designed for sleeve ironing purposes, and the board 38 is somewhat larger and of a shape suitable for the ironing of the smaller garments, and both are equipped with padding 28' and sheeting mate-

rial 28, secured by means of fastening devices 32, the same as on the main board 27.

Preferably the edges of the ironing boards are formed with an undercut bevel 34 (see Figures 6 and 7), for a purpose hereinafter explained, and the fastening devices 32 are moreover mounted in countersunk relation, at least on the auxiliary boards (as shown in Figure 7), to prevent any snagging of the light, flimsy silk garments which are ordinarily finished on these auxiliary boards.

The boards 38 and 40 are mounted for swinging adjustment upon the ends of supporting arms 42 suitably counterweighted as at 43, the counterweighted ends of which arms are mounted upon a pivot rod 44 carried by the pedestal portion 23, whereby the boards may be swung into either horizontal or operative position (see the board 38 in Figure 2), or into vertical or inoperative position (see the board 40 in Figure 2). The connection between the arms 42 and each of said boards 38 and 40 is also of an adjustable character comprising a bolt 50 forming a pivotal mounting for the board (see Figure 10), and a wing nut 52 for securing the board in any desired angular position with reference to the axis of the bolt.

The construction of the counterweight elements 43 is such as to provide nose portions 47 projecting sufficiently forward of the pivot rod 44 to provide limiting stops supporting the boards 38 and 40 in vertical inoperative position (Figures 1 and 3), as well as stop portions 48 at the opposite side of the pivot rod 44 for limiting engagement with the top portion 23, thereby serving to support said arms 42 and their boards in horizontal or operative position (Figures 2 and 4); and it will be noted also that the supporting arms 42 are bent or offset to elevate the auxiliary boards above the main board 27 when in operative horizontal position; and being attached to the middle portions of the auxiliary boards, this leaves both ends of these auxiliary boards free and unobstructed for use in applying the garments thereto in the ironing operations, in all positions of adjustment of the board.

To the rear side of the pedestal is secured an accessory supporting arm 54 extending in upward rearwardly inclined position and having slots 55 for accommodating securing bolts 57 whereby the upper end portion of the arm 54 may be secured at varying levels as well as in spaced relation to the rear side of the main ironing board 27, thus leaving the latter free and unobstructed for the ironing operation throughout its full length, as clearly illustrated in Figures 1-3. The upper end of the arm 54 is provided with a horizontal platform 58 accommodating a series of removable trays 60 for accessory purposes (such as water, brushes, moistening devices, etc.); it also provides a support for an iron holder such as a stand 62 for an electric iron 64 of the character shown in my Patent No. 2,227,916, dated January 7, 1941.

Associated with the arm 54 and platform 58 is an upright member 66 provided with a safety switch device for the electric iron 64, as particularly shown in Figure 9. An electric cord 67 is connected with the source of electric current supply and also with the ironing cord 68, and both cord 67 and 68 are connected with switch or cut-out contacts comprising a fixed contact 70 and a movable contact 72 carried by a movable arm 74 pivoted at 75 and projecting through an opening 76 in a keeper 77 into position for engage-

ment by the iron when the latter is thrust into the stand 62. The arm 74 is normally actuated by a spring 78 in a direction to engage the contacts 70 and 72 and thus close the heating circuit through the iron as long as the same is in use in the ironing operation, but to interrupt or cut off the heating current whenever the iron is thrust into the stand 62 (i. e., is not in use for ironing), as represented in Figure 9. As a further safety measure the upright member 66 carries a socket 80 for a signal light bulb 82 together with connections including the said light in the circuit with the iron cord 68 as controlled by the manual switch 83 and in advance of said cord 68, so that the operator not only is provided with a positive control for the circuit to the iron by means of said switch 83 but may always observe whether the current has or has not been turned on through said switch, ready for use by the iron. The cord 68 for the iron is shown as attached to the upper end of a rod or wire 84 having a helical coil 85 intermediate its ends, the lower end of said member 84 being attached by screws 86 to the upper portion of the upright 66 (see Figure 4). This construction provides a flexible supporting means for the iron cord and is adapted to permit all operative movements as well as to maintain the cord in an entirely out-of-the-way position, when the iron is not in use, as represented in Figures 1-4.

As a temporary support for garments during the ironing operation, a receptacle 88 of trough shape, and having a supporting leg 90 at its outer end, is arranged below and parallel with the main ironing board 27, the inner end of the receptacle 88 having a lip or flange 91 adapted to hook into a band or strap 92 projecting from the front side of the upright pedestal portion 22 (see Figures 1, 4, 5).

The advantages of an ironing apparatus having the foregoing construction may be set forth as follows. The provision of the adjustable pedestal structure obviously enables the operating level of the ironing board surfaces to be conveniently varied to suit the particular preference of the operator, and the level of the accessories carried by the arm 54 may likewise be adjusted by manipulation of the adjusting screws 57, as will be readily understood. The accessories, including the electric iron, which are carried on the supporting arm 54, are thus all maintained at a convenient point and level at one end of the main ironing board 27; and since all the accessories carried by the platform 58 on said arm 54 are spaced sufficiently away from the board 27 so as to leave the sides of the board entirely unobstructed throughout its length, the length of the main board may be kept at a minimum, i. e., is not required to be any longer than the principal dimension of the garment being ironed.

The compactness of the ironing apparatus is further promoted by the provision of the pair of movable auxiliary boards 38 and 40 of different size and design, and also mounted for adjustment for carrying out any and all of the ironing operations which cannot be performed on the main board 27. That is to say, either of the boards 38 and 40 may be used independently, and also separately adjusted into any position with reference to the pivot bolts 40 and 50, so that the auxiliary boards may be entirely reversed in position, or located at any desired angle on being swung down into horizontal operative or ironing position. By thus limiting and reducing the area or space within which the necessary ironing

operations may be performed, so that the main board 27 may be likewise of minimum length for the purpose, it is apparent that the foot movements of the operator are likewise kept down to a practical minimum, and very much below that required for the standard ironing board or apparatus used in laundry operations. Moreover, the reversibility of the auxiliary boards 38 and 40, with their different end formations, provides in conjunction with the end of the main board 27, a diversity of that many (i. e., five) different edge contours for meeting the various requirements in the ironing of different garment portions as well as different types of garments.

While the arrangements shown in the drawings may be regarded as more desirable for right hand operators, the left hand operator is not particularly handicapped in the use of the same arrangement, as such an operator can step to the opposite or rear side of the main board 27 for such operations as the operator cannot execute so readily at the front of the apparatus; and moreover, by adjusting or reversing the auxiliary boards 38 and 40, this enables most of the necessary operations to be executed at the front of the apparatus by either a right hand or a left hand operator.

Another novel structural feature which is deemed to be a distinct feature of improvement is the undercut bevel around the margins of the ironing boards, which enables the working surface of the board to be positioned into ironing relation to various portions of the garment much more snugly and effectively than the plain edge type of board heretofore in general use.

The provision for supporting the iron and its connections in the most efficient working relation to the board as well as for regulating the heating of the iron to conform exactly with the working requirements, is also deemed to constitute a very valuable and useful improvement in this type of apparatus. The iron is accommodated in its most advantageous and convenient relation for the operator and the heating cord maintained continuously in an out-of-the-way position; and moreover, the iron heating current is in circuit with the iron all the time during the periods that the iron is in operations, i. e., off the stand, for as soon as the iron is returned to the stand the current is automatically shut off by the automatic switching device above described. In addition the provision of a signal light 82, which always glows as long as the current remains available for the iron cord connection by way of the switch 83, provides a safeguard against the operator inadvertently shutting down the apparatus without either throwing said switch 83 or disconnecting the supply cord 67 from the current supply outlet.

In Figures 11 to 14, the construction shown represents a modified form of the main ironing board, 27', as well as modifications of the forms of auxiliary boards 38' and 40', and the manner in which such modified forms of construction are adapted to facilitate the ironing and finishing operations of the garments.

In the usual operation, the first step in the ironing of a garment is carried out on a press, and as the garments have various peculiarities in shape and gathered contours the operator who hand-irons and finishes the garments has difficulty in ironing these portions of the garment (which must be finished after the operation of the press) when attempting to carry out those operations with the usual continuously-round end contour and the substantially straight sides of a board, like the main board 27. In such a

conventional form of board, the operator, of course, is obliged to manipulate the yoke and collar portions of the garment around a continuously-rounded edge having no projections or angles to get into the tucks or corners, so that the garment must be repeatedly shifted, for which purpose the body or skirt of the garment is either draped over the free end of the main ironing board or requires a bunglesome operation and the bunching of the body of the garment on the main surface of the board for carrying out the adjustments of the collar and yoke portions. This not only involves extra labor and time for the repeated shifting of the garment, but also has the effect of undoing to a very great extent all of that portion of the ironing work that has already been carried out on the press, making it necessary for the operator to retouch all those portions which have been mussed up by the manipulation necessary to iron the other portions not done on the press.

As shown in Figures 13 and 14, the sides of the main ironing board 27' are of angular and constricted contour adjacent to its outer or free end, as indicated at 27a, and the extreme outer or free end of the board is likewise of broken or angular contour as indicated at 27b, instead of the continuously-rounded end contour of the board 27 as shown in the previous views. Such an outline for the sides and end of the board facilitates both the handling or "laying" of the garment upon the upper face of the board as well as the convenient and efficient finishing of the collar and yoke portions of the garment with a minimum of effort and lost motion due to repeated shifting of the garment, as will now be explained.

Figures 11 and 12 show different stages in the operation of ironing a fitted garment, such as a nurse's uniform. The garment is placed upon the main board 27', with the collar and yoke or upper portion applied to the free end of the board and the skirt portion of the garment spread upon the main surface of the board. This results in the waist portion of the garment conforming more or less to the angular sides or constricted portion 27a of the board. With the garment placed or laid substantially centrally upon the board, most of the back, both above and below the waist can be ironed as well as most of the sleeves, by the use of one of the auxiliary boards, such as the board 38', as represented in Figure 12. The garment is then shifted sidewise, first toward the operator as in Figure 11, drawing the garment (by partial stages) around the board to complete one half of the garment, then in the other direction (as in Figure 12) or away from the operator, by similar stages to complete the other half of the garment. In each of these movements or shifts, the neck and yoke portions are drawn up against the angular edges 27b which are obviously adapted to conform fairly accurately to the shape and outlines of the garment, or sufficiently close thereto to facilitate the ironing of those portions without the laborious shifting to obtain the numerous different positions necessary for carrying out the ironing with the usual shape of the board. In fact, with a board 27' of approximately the shape illustrated and using an auxiliary board 38' for the sleeves, it is found that the number of "lays" required for completely ironing a garment of the type referred to is reduced to around a third of the number ordinarily needed for such a garment.

It is here that a great advantage and important saving are demonstrated due to the fact that the ironing of the sleeves is carried out by means of the auxiliary board while the rest of the garment remains on the main board, in contrast to the usual work of trying to iron the sleeves with one hand while holding the rest of the garment in the other hand or on the arm—an awkward process and difficult to execute without mussing the sleeves and requiring a retouching of some portions of the garment that have already been finished on the press.

Figures 13 and 14 illustrate operations involving the use of the other auxiliary board 40', this board being of a shape well suited for household or family use, as well as for laundry operations. In Figure 13, the garment 71 is shown as applied to the board by thrusting the smaller end of the board into the sleeve by way of the armpit opening, for carrying out the ironing of half of the yoke and the main portion of the sleeve, for which purpose the garment is shifted around the board in a manner similar to that above explained with reference to the garment 70. By this method it is also possible to iron garment sleeves having a peculiar gather forming a crook in the sleeve (as indicated at 72); after which the ends of the sleeve may be finished on the board 38', as represented in Figure 12.

In this connection it may be pointed out that the board 38' may be made of the relatively slender design shown, to adapt it not only for sleeve ironing but also special small work such as infants' garments; and one end of said board is somewhat enlarged and of rounded shape as indicated at 38'' for such work as the finishing of puffs in sleeves and the like—the design of the board facilitating its being thrust through the sleeve in such a way as to bring said puff portions around the part 38'' of the board, thereby making it possible to iron those portions smoothly.

The auxiliary board 40' is particularly adapted for the work of shirt-ironing. One of the hardest tasks for the housewife is the ironing of shirts, which are difficult to lay on the ordinary board in such a way as to enable them to be ironed and shaped properly for wearing comfort, particularly if they happen to get stretched due to being wet while undergoing the ironing process. Figure 14 illustrates how this work is greatly simplified by the application of the shirt 74 to the board 40', after the collar and cuffs have been touched up on the main board. That is, the shirt is fitted to the board 40' so as to bring the smaller end within one of the sleeves and its other end inside the yoke of the shirt. The yoke is thus easy to iron, and likewise the sleeves—thereby avoiding double-thickness ironing of the sleeve as is done when ironed flat on the main board. Of course trousers legs could be ironed in a similar manner.

As a matter of fact, one of the important advantages gained by the improved construction is the elimination of any ironing of a garment when laid with two thicknesses together, which is always objectionable because of the fact that it is practically impossible to avoid the formation of puckers and creases in the bottom layer, when ironed in that fashion.

A further advantage which is possible with the improved construction is the fact that it enables the ironing method or process to be not only greatly simplified for the operator, but also to be standardized for each type or class of garment, whereby the work can be completely outlined or

prescribed, as to "lays" and shifts of the garment, their number and the sequence to be followed in executing them, for each type or style of garment, thus making for both economy and speed throughout the operation.

Having thus described my invention, what I claim to be new and desire to secure by Letters-Patent is:

Ironing apparatus comprising a support for a main ironing board, a horizontal transverse pivot rod adjacent to the top of said support, an auxiliary ironing board provided with an arm composed of parallel end portions and an intermediate diagonal portion connecting said end

portions, one of said end portions being provided with a counterweight portion pivotally mounted on said rod and the other end portion of said arm being secured to the under face of said auxiliary ironing board whereby the latter may be swung into horizontal and spaced parallel relation to the upper face of the main board, said counterweight portion of the arm being pivoted in eccentric relation to said rod for holding the arm normally in upright inoperative position, and stop means at said pivoted end portion of the arm for limiting the movement thereof into either horizontal operative position or upright inoperative position.

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