Feb. 15, 1938. A. W. MOLINARE 2,108,230

GUARD FOR SHOE OF IRONING MACHINES

Filed March 1, 1937

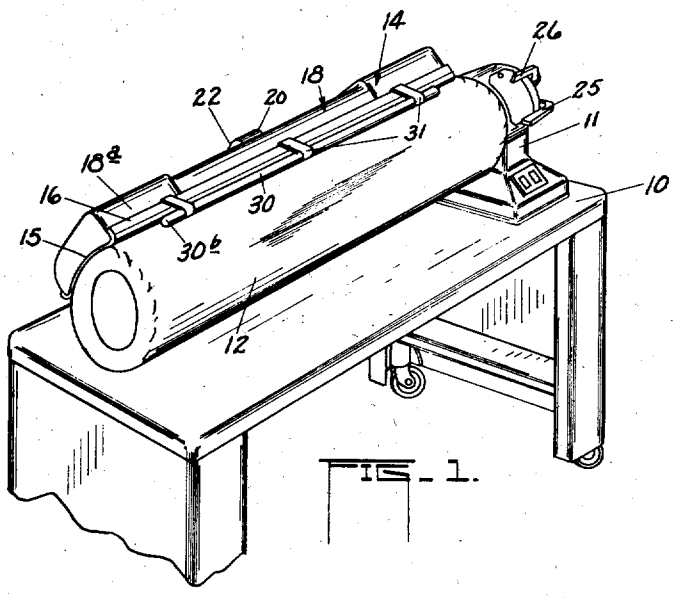

FIG. 1.

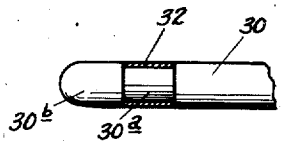

FIG. 4

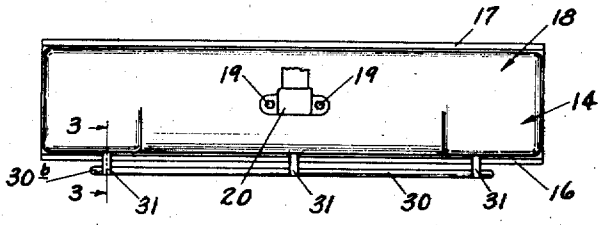

FIG. 2.

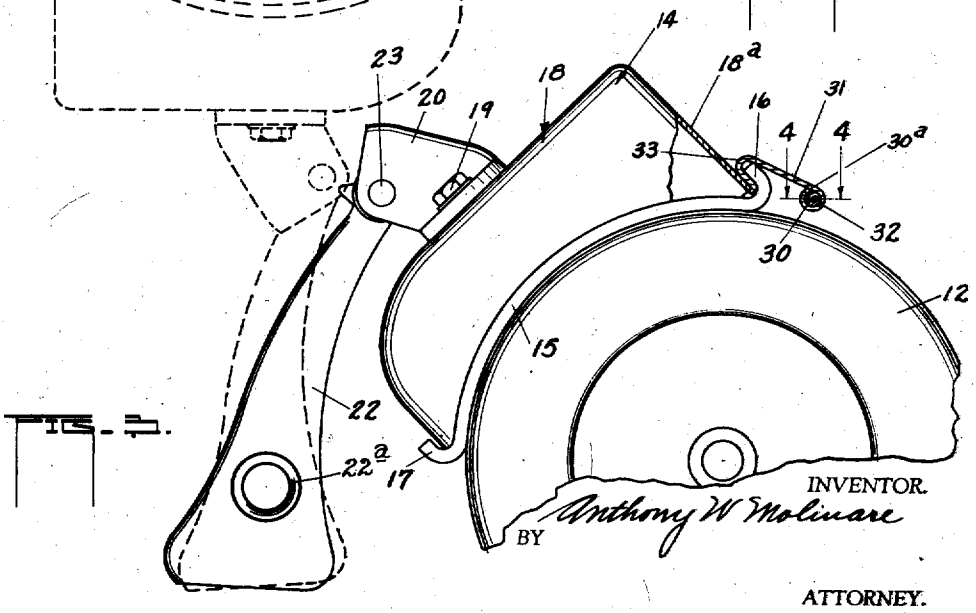

FIG. 3.

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UNITED STATES PATENT OFFICE

2,108,230

GUARD FOR SHOE OF IRONING MACHINES

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Application March 1, 1937, Serial No. 128,325

7 Claims. (Cl. 38—60)

This invention relates to improvements in ironing machines of the type comprising a rotatable roll and a shoe mounted for cooperation with said roll for ironing or pressing fabric material such as wearing apparel, linen, etc. More particularly, the present invention relates to a novel provision of means for protecting and shielding the fingers of the operator from directly contacting the heated shoe of an ironing machine during the normal ironing operation on the machine.

In practically all ironing machines now on the market the shoe, which may be heated either electrically or by gas, is constructed and arranged so that its leading edge, which cooperates with the surface of the roll to provide a bight for the fabric for facilitating feeding it to the heated surface of the shoe, is exposed and unprotected. In some ironing machines, the shoe is supported on a horizontal pivot to permit swinging the shoe to dispose its operating face in an upright substantially horizontal position. Due to peculiarities of construction of present types of ironing machines the fingers of the operator frequently and inadvertently contact said leading edge of the shoe and become burned or seared by said shoe, during the process of feeding, guiding or adjusting the fabric in performing the proper ironing operation thereon. It may be readily appreciated that even experienced operators are not immune from the danger of contacting the exposed heated edge of the shoe. This danger frequently makes the operator timid in properly using the machine, and often results in producing an unsatisfactory ironing operation on the fabric due to improper feeding, guiding and adjustment of the fabric in the machine. Moreover, this defect of present types of ironing machines frequently results in the loss of sales of such machines, and particularly those machines which are sent out for trial use.

I am aware of an attempt that has been made to solve the foregoing difficulties by the provision of a strip of insulating material in direct contact with the leading edge of the shoe. This, however, has not proven satisfactory, because even insulating material when in direct contact with a heated shoe, at normal operating temperatures, becomes excessively hot and does not prevent burning or searing of the fingers of the operator. Moreover, due to such direct contact with the shoe the insulating material will in a short time char and disintegrate and may also become unsightly in appearance.

One of the objects of this invention is to provide a novel and improved guard or shield for the leading edge of an ironer shoe which effectively protects the fingers of the operator against burning during the process of feeding, guiding and adjusting the fabric material into contact with the heated ironer shoe.

Another object is to provide an improved form of shield of the character indicated which effectively prevents the fingers of the operator from being burned by contact with the leading edge of the shoe, and which is so constructed and arranged as to be disposed out of contact with the surface of the roll when said roll and shoe are in cooperating relation, so as not to obstruct the vision of the operator or act as an impediment to the feeding of the fabric material into contact with the ironer shoe.

A further object resides in the provision of a novel and improved form of protective means for the purpose indicated, and which terminates a substantial distance from one end of the shoe so as to afford free and unobstructed use of said end of the shoe for performing certain ironing operations that may only be accomplished practically on the end of the shoe, such as in ironing ruffles, collars and cuffs of shirts, etc.

Still another object resides in the provision of a novel and improved form of guard of the character indicated, together with means for mounting it in substantially parallel spaced apart relation to the leading edge of the shoe, and wherein said means is of such form as to permit quick and easy attachment of said guard to the ironer shoe in either the "field" or in the normal course of production of such ironing machines, without requiring any drilling or machining operations, or the use of additional fastening elements.

A still further object of this invention resides in the provision of an improved form of guard or shield for the leading edge of the shoe, which in addition to serving as a protective element to preclude burning of the fingers by contacting said leading edge of the shoe, also serves as a handle member which may be grasped by the operator for swinging the shoe about its pivot mounting to dispose its operating face in an upward substantially horizontal position.

And still another object of this invention is to provide a novel and improved form of guard of the character indicated which is practical, efficient, simple and durable in construction and which may be economically manufactured and applied to the ironer shoe.

Other objects and advantages of the present invention will be apparent from the following

description, taken in connection with the accompanying drawing, in which:

Fig. 1 is a perspective view of a table top type ironing machine having a shoe provided with guard means embodying the present invention.

Fig. 2 is a top plan view of an ironer shoe with my improved form of guard attached thereto.

Fig. 3 is an enlarged end view of the roll and cooperating shoe, with parts in section, taken as indicated at line 3—3 on Fig. 2, showing the construction and mounting for the guard constituting the present invention.

Fig. 4 is a transverse section through the mounting clip which supports the guard element, comprising a piece of elongated material of low heat conductivity, taken at line 4—4 on Fig. 3.

For purpose of illustration I have herein shown in the drawing a conventional type of ironing machine which includes a table-like supporting structure 10 on which is supported adjacent one end a housing 11 which may be understood to contain suitable driving mechanism. Supported and selectively driven at one end by said housing and mechanism is a horizontally disposed rotatable roll 12, extending over the top of said table. The outer surface of the roll is generally provided with one or more laminations of suitable resilient material or padding. Mounted for cooperation and coextensive with said roll is a longitudinally extending shoe 14 which may be understood to include a suitable electrically energized heating element (not shown). The ironer shoe illustrated in the drawing is of generally rectangular shape and includes a sole plate 15 the surface of which is arcuately formed in transverse direction, corresponding substantially to the contour of the external surface of the roll 12. The opposite longitudinal edges of said sole plate are bent upwardly to form up-standing flanges 16 and 17. The front edge of the sole plate of the shoe formed by the up-turned flange 16, constitutes what is termed in the art the "leading edge" of the shoe because it is the first portion of the surface of the shoe which contacts the fabric material in performing the ironing operation. It is to be understood that the heating element is associated with the sole plate in a usual manner and is enclosed within a housing or backing plate 18 which is formed with wall portions extending inside of and below the upper edges of the respective flanges 16 and 17 of the sole plate, as seen in Fig. 3 of the drawing. Said back plate is firmly attached to the sole plate by means of bolts 19 which simultaneously serve to secure a clevis bracket 20 to the top central portion of the back plate.

The ironer shoe which is substantially co-extensive with the roll 12 is supported on an up-standing lever 22, the upper end of which is pivoted on a horizontal axis to the clevis bracket 20 by a pin 23, the lower end of said lever 22 being mounted on a rock shaft 22a, the movement of which is controlled by the mechanism within the housing 11. In the ironing machine herein illustrated the mechanism enclosed within the housing 11 is preferably electrically driven by a suitable motor, (not shown), and is controlled by a lever 25 which, when depressed rocks the shaft carrying the lever 22 in a direction toward the roll 12 for bringing the shoe 14 into contact with the external surface of the roll 12, and this same adjustment of the control mechanism immediately upon proper positioning of the shoe 14, on the roll 12, causes rotation of said roll. A subsequent movement of the lever 25 first stops rotation of the roll 12 and then moves the shoe 14 out of contact therewith. The control lever indicated at 26 when manipulated disengages the drive connection to the roll 12 so that said shoe 14 and roll may be employed as a press type ironer.

For performing ironing operations on fabric material of certain form, such as, for example, puff sleeves of a dress, it is desirable to position the shoe 14 so that the operating surface of the sole plate 15 is disposed in an upwardly facing direction, such as indicated in dotted lines in Fig. 3. This is accomplished by rearward movement of the lever 22 through the control lever 25, so as to back the shoe 14 away from the roll 12 at which position of adjustment the shoe 14 may be swung about the pivot pin 23 to the dotted line position indicated in the drawing.

Mounted substantially parallel and in spaced apart relation to the leading edge of the ironer shoe is an elongated element 30 formed of material of low heat conductivity, such as wood or some material or composition having high heat insulating properties. The element 30 is rigidly attached to the shoe by means of a plurality of longitudinally spaced apart clips 31, preferably formed as metal stampings, which are constructed and arranged so as to support the elongated element 30 a substantial distance forwardly of the leading edge of the shoe at a position normally out of contact with the surface of the roll 12 when said shoe 14 is disposed in cooperating relation to said roll, as seen in Fig. 3 of the drawing. The clips 31 each include a curved end portion 32 which surrounds the element 30 while the opposite end of said clips are each formed with hook portions 33 adapted to extend over and around the upper edge of the flange 16 of the sole plate 15, and downwardly between said flange and the front wall 18a of the housing 18 and below the lower edge of said front wall 18a as seen in the drawing, for frictionally locking said clips 31 in fixed relation. As seen in the drawing the portions of the elongated member 30 surrounded by the end portions 32 of the respective clips are reduced in cross-sectional area as indicated at 30a, so that the edges of said clips abut against the shoulders formed by said reduced portion 30a of the member 30, and thereby preclude longitudinal shifting of said member in the clips.

It will be apparent that the matter of assembling the heat insulating element 30 and the clips with the shoe may be simply and quickly accomplished in the normal production and assembly of the shoe by merely inserting the clips in proper place prior to the mounting and assembly of the shoe housing or backing plate 18 on the sole plate 15 by which the former is attached to the latter by means of bolts 19. Likewise in the "field" it is a simple matter to attach this novel form of protective element by merely removing the bolts 19 so that the housing 18 may be temporarily disconnected from the sole plate 15 to permit positioning of the hook ends 33 of the clips 31 after which the shoe housing or back plate 18 is replaced and again attached to the sole plate.

It will now be apparent from the construction herein disclosed that the novel form of guard embodying this invention will definitely serve as a protector to prevent direct contact with the heated "leading edge" of the shoe in the normal process of ironing fabric wherein it is usually

necessary for the operator to manipulate the fabric for positioning, guiding and adjusting the same for insuring proper ironing thereof. In such machines as herein disclosed the fabric material is first placed upon the surface of the roll 12 and the rotation of said roll feeds the fabric over the operating face of the sole plate 15 of the shoe for ironing the same, and obviously as the fabric is being fed into contact with the shoe it frequently is necessary to guide it or straighten it out so as to avoid creases or wrinkles being ironed into the fabric or for preventing distortion of the fabric. By disposing the guard member in a manner as shown in the drawing, said guard element will not in any manner impair the vision of the operator in properly feeding, guiding and adjusting the fabric, nor will it in any way obstruct or impede the passage of the fabric into contact with the shoe 14.

The insulating guard element 30, as seen in the drawing, terminates a distance short of the left-hand end of the shoe so as to expose said end of the shoe for freely performing certain ironing operations upon various types of articles, such as wearing apparel, without any possible obstruction by the guard element. As is well known, ironing of certain parts of various wearing apparel may only be accomplished practically at the end of the shoe and roll. For purposes of appearance and simplicity in assembly I prefer to form the guard element 30 of such dimensions that it is spaced substantially equal distance from the respective ends of the shoe 14, and to insure against the possibility of the material being ironed from becoming snagged or caught on the ends of the element 30 said ends are rounded off as indicated at 30^b.

Although I have herein shown and described the present invention in association with a particular type of ironing machine, manifestly it is equally adaptable to other types of ironing machines wherein equally satisfactory results may be obtained, such as in machines wherein the rotatable roll is moved into contact with a fixed shoe. It will also be apparent that various other means may be employed for attaching the heat insulated element 30 to the shoe in spaced apart parallel relation to the leading edge thereof. I do not, therefore, wish to be understood as limiting the present invention to the precise form herein disclosed, except as it may be so limited in the appended claims.

I claim:

1. In an ironing machine, the combination with a rotatable roll, an ironer shoe mounted for cooperation with the roll and having means for heating said shoe; of an elongated element comprising a piece of material of low heat conductivity disposed substantially parallel and in spaced-apart relation to the leading edge of the shoe to form an air passage between said leading edge of the shoe and said elongated element, said elongated element being disposed in close proximity to the roll to protect the fingers of the operator from contacting said leading edge of the shoe in the normal ironing operation, and means for rigidly securing said elongated piece of material to the shoe in such spaced relation thereto.

2. In an ironing machine, the combination with a rotatable roll, an ironer shoe mounted for cooperation with the roll, and having means for heating said shoe; of an elongated element comprising a piece of material of low heat conductivity disposed substantially parallel and in spaced-apart relation to the leading edge of the shoe to form an air passage between said leading edge of the shoe and said elongated element, said elongated element being disposed in close proximity to the roll to protect the fingers of the operator from contacting said leading edge of the shoe in the normal ironing operation, and means for securing said elongated piece of material to the shoe in such spaced relation thereto, said means being constructed and dimensioned to support said elongated piece of material out of contact with the roll when the shoe is positioned in cooperative relation to said roll.

3. In an ironing machine, the combination of a rotatable roll, an ironer shoe mounted for cooperation with the roll, said shoe including heating means therefor, a sole plate, formed at its leading edge with an up-turned flange, and a back plate connected to the sole plate and enclosing the heating means, said back plate having a front wall portion disposed inside of and extending below the upper edge of said flange, an elongated element of low heat conductivity disposed substantially parallel and in spaced-apart relation to the leading edge of the shoe, and means for securing said element to the shoe in such spaced-apart relation, said means including a plurality of longitudinally spaced-apart clips connected to said element and each having a hook portion adapted to extend over the upper edge of said flange of the sole plate and downwardly and under the lower edge of said front wall portion of the back plate.

4. In an ironing machine, the combination of a rotatable roll, an ironer shoe mounted for cooperation with the roll, said shoe including heating means therefor, a sole plate, formed at its leading edge with an up-turned flange, and a back plate connected to the sole plate and enclosing the heating means, said back plate having a front wall portion disposed inside of and extending below the upper edge of said flange, an elongated element of low heat conductivity disposed substantially parallel and in spaced-apart relation to the leading edge of the shoe, and means for securing said element to the shoe in such spaced apart relation, said means including a plurality of longitudinally spaced-apart clips each having a portion substantially surrounding a portion of the element, said surrounded portion having a reduced cross-section to prevent longitudinal shifting of said element, and each having a hook portion adapted to extend over the upper edge of said flange of the sole plate and downwardly and under the lower edge of said front wall portion of the back plate.

5. In an ironing machine, the combination with a rotatable roll, an ironer shoe mounted for cooperation with the roll and having means for heating said shoe; of an elongated heat insulating member disposed substantially parallel and in spaced-apart relation to the leading edge of the shoe to form an air passage between said shoe and said member, said member being disposed in close proximity to the roll to protect the operator from contacting said leading edge of the shoe in the normal ironing operation, said member terminating at one end a substantial distance inwardly from the corresponding end of the shoe to permit free access to said end of the shoe for performing certain ironing operations, and means for rigidly securing said member to the shoe in such spaced-apart relation.

6. In an ironing machine, the combination with a rotatable roll, an ironer shoe mounted for co-

operation with the roll and having means for heating the shoe; of a guard for the leading edge of the ironer shoe comprising an elongated body disposed in substantially parallel spaced-apart relation to the leading edge of the shoe to form an air passage between said shoe and said body, said body being disposed in close proximity to the roll to prevent injury to the fingers of an operator in normal operation of the machine, and means for rigidly securing said body to the shoe in such spaced-apart relation.

7. In an ironing machine, the combination with a rotatable roll, an ironer shoe mounted for cooperation, with the roll and having means for heating the shoe; of a guard for the leading edge of the ironer shoe comprising an elongated body disposed in substantially parallel spaced-apart relation to the leading edge of the shoe to form an air passage between said shoe and said body, said body being disposed in close proximity to the roll to prevent injury to the fingers of an operator in normal operation of the machine, and means for rigidly securing said body to the shoe in such spaced-apart relation, said securing means being constructed and dimensioned to support said body out of contact with the roll, when the shoe is in cooperative relation to said roll.

ANTHONY W. MOLINARE.

CERTIFICATE OF CORRECTION.

Patent No. 2,108,230. February 15, 1938.

ANTHONY W. MOLINARE.

It is hereby certified that error appears in the above numbered patent requiring correction as follows: In the grant, line 6, title of invention, for "GUARDS FOR SHOE OR IRONING MACHINES" read GUARDS FOR SHOES OF IRONING MACHINES; page 3, second column, line 8, claim 2, before "securing" insert the word rigidly; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 5th day of April, A. D. 1938.

(Seal)

Henry Van Arsdale,
Acting Commissioner of Patents.

operation with the roll and having means for heating the shoe; of a guard for the leading edge of the ironer shoe comprising an elongated body disposed in substantially parallel spaced-apart relation to the leading edge of the shoe to form an air passage between said shoe and said body, said body being disposed in close proximity to the roll to prevent injury to the fingers of an operator in normal operation of the machine, and means for rigidly securing said body to the shoe in such spaced-apart relation.

7. In an ironing machine, the combination with a rotatable roll, an ironer shoe mounted for cooperation, with the roll and having means for heating the shoe; of a guard for the leading edge of the ironer shoe comprising an elongated body disposed in substantially parallel spaced-apart relation to the leading edge of the shoe to form an air passage between said shoe and said body, said body being disposed in close proximity to the roll to prevent injury to the fingers of an operator in normal operation of the machine, and means for rigidly securing said body to the shoe in such spaced-apart relation, said securing means being constructed and dimensioned to support said body out of contact with the roll, when the shoe is in cooperative relation to said roll.

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