May 25, 1943. H. M. RUMBAUGH 2,320,306

IRONER

Filed March 28, 1940

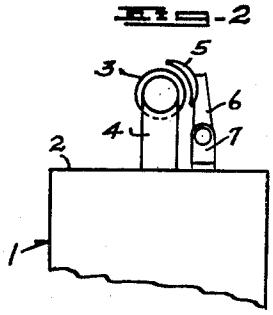


Fig-2

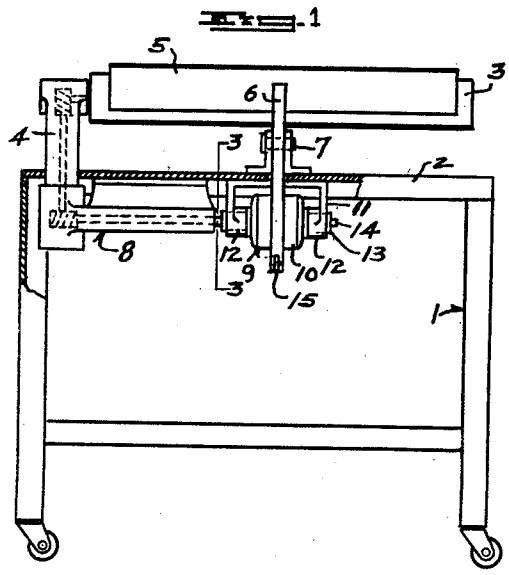


Fig-1

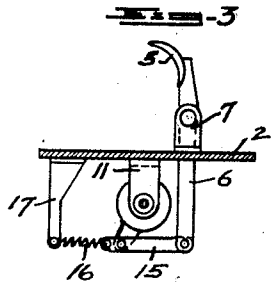


Fig-3

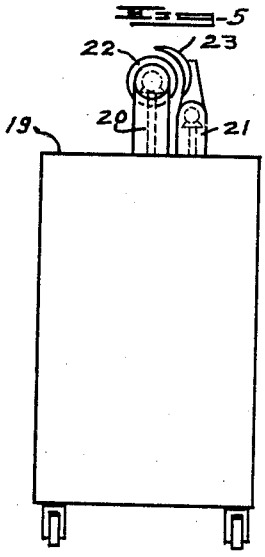


Fig-5

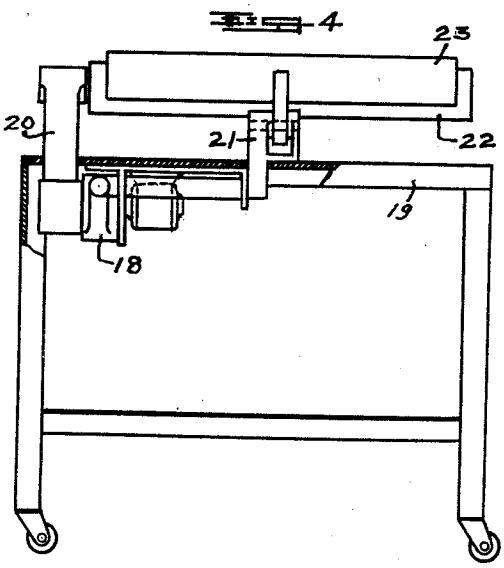


Fig-4

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UNITED STATES PATENT OFFICE

2,320,306

IRONER

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Application March 28, 1940, Serial No. 326,424

1 Claim. (Cl. 38—61)

My invention relates to improvements in an electrically heated, power operated, mangle type ironer, and important objects and advantages thereof are to provide an ironer of the character described, which will facilitate and expedite ironing operations, which is conveniently operable for efficiently doing all types of ironing work, which is particularly adaptable for making for the greatest simplicity in ironing shirts, which is open at both ends, which is simple in its construction and arrangement, durable and efficient in its use, compact, attractive in appearance and comparatively economical in its manufacture, operation and use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the novel construction, combination, and arrangement of parts herein specifically described and illustrated in the accompanying drawing, but it is to be understood that the latter is merely illustrative of an embodiment of the invention, and that the actual needs of practice and manufacture may require certain mechanical variations from the embodiment shown. It is, therefore, not intended to limit the invention to the disclosure thereof herein illustrated, but rather to define such limitations to the scope of the claim hereunto appended.

In the drawing wherein like numerals of reference designate corresponding parts throughout the several views:

Figure 1 is a rear elevational view, partly in section, of an ironer constructed in accordance with the invention.

Figure 2 is a fragmentary end view thereof.

Figure 3 is a sectional view on line 3—3, Figure 1.

Figure 4 is a rear elevational view, partly in section, of a modified form of ironer.

Figure 5 is an end view of the modified form of the device.

Referring in detail to the drawing, my improved ironer comprises a table 1 provided with a top 2 having openings therein. A padded, cylindrical ironing roll 3 extends horizontally parallel to the table top 2 in spaced relation and above the latter. The ironing roll is supported from one end only by a transmission housing 4 rising through one of the openings 4, which is disposed vertically and secured to the table top.

Features of the invention reside in the diameter of the ironing roll 3, and in the relative size and arrangement of the associated housing 4 supporting said ironing roll. The latter is of a comparatively small diameter, and such reduction of the roll diameter is provided for the important purpose of allowing the sleeve of a shirt to be drawn over the ironing roll, or in other words, the ironing roll may be conveniently inserted within the shirt sleeve.

The perimeter and transverse area of the housing 4 is the same or preferably less than the perimeter and transverse area of the ironing roll, so that the sleeve of a shirt may be bunched or gathered together around and over said housing after the sleeve has been drawn over the ironing roll. It will be apparent that in allowing the shirt sleeve to be shifted around and along said roll and housing, the shirt may be conveniently manipulated to best position the yoke portions and sleeves of the shirt upon the ironing roll to facilitate and expedite the ironing operations of said shirt portions in the most efficient manner. The use of an ironing roll of comparatively small diameter is in no way detrimental to its effectiveness in doing straight or any other type of ironing work. On the contrary it is advantageous in that the associated heating device and ironing shoe 5 is of a corresponding size, resulting in the economical reduction of heat requirements for maintaining said heating shoe 5 at the proper ironing temperature, and further in augmenting the ironing pressure and in permitting the increase of the rotating speed of the iron roll to thereby facilitate and expedite ironing operations.

The heating shoe 5 is of the conventional construction and is carried, rearwardly of the ironing roll 3, at the upper end of an operating lever 6. The latter is pivotally supported, as at 7, on the table top 2, and depends and projects through a slot provided therefor in said table top, said lever supporting the ironing shoe above the table.

The entire operating mechanism 8 for the ironer, excepting the transmission housing 4 with the transmission elements within the latter and the operating lever 7 portion above the table top 2, is disposed at and secured to the lower or underside of the table top. Such positioning of the operating mechanism is a most important feature of the invention, for, taken in conjunction with the stated construction and arrangement of the transmission housing 4, it leaves the ironing roll 3 open or without impediment at both ends. The ironing work may obviously be shifted any distance longitudinally along the ironing roll between the latter and the associated heating shoe 5, whereby ironing operations are greatly facilitated with the utmost convenience.

The operating mechanism 8 includes a second housing mounting the first housing, an electric motor 9, which embodies a cylindrical casing fixed to the stator 10 of said motor. The motor is carried by an inverted, substantially U-shaped suspension bracket 11, which latter is fixed against the under side of the table top 2 at approximately the center of the latter and directly forward of the depending portion of the operating lever 6.

The suspension bracket 11 is provided at its lower ends with bearings 12, in which latter the motor casing or stator bearings 13 for the motor shaft 14 are respectively journaled for rotation. This arrangement permits the rotation of the casing or stator in its suspension in the suspension bracket 11, but in no way interferes with the normal rotation of the motor rotor in the stator, in the usual manner, when driving the operating mechanism 8 during ironing operations. The operation of the motor 9, through the operating mechanism 8, drives the ironing roll 3, and the movement of the stator 10 actuates the operation of the heating shoe 5 in the manner to be described.

The motor stator or casing 10 is operatively joined to the lower end of the operating lever 6 by a connecting member 15, as clearly illustrated in Figure 3, or in any other suitable manner. A spring 16 is joined with the forward end of the connecting member 15 and with an arm 17, which is fixed to and depends from the underside of the table top 2. The normal action of the spring 16 returns and maintains the operating lever 6 and the heating shoe 5 carried by the latter in the inoperative or released position.

In practice, the operation of my improved ironer is as follows: As soon as the electric current is turned on, the motor 9 is of course energized for operation in the usual manner. The rotation of the motor rotor is momentarily retarded due to the connection of the motor shaft 14 with the operating mechanism 8. The motor stator or casing 10, being journaled for rotation in the suspension bracket 11, will shift in partial rotating direction by the action of the energized motor, to thereby actuate the operating lever 6 until the heating shoe 5 is forced to the ironing position against the ironing roll 3. The motor stator is securely held against further movement by the action of the energized motor, and thereafter the motor will function in the usual manner to operate the ironing roll. So long as the motor is energized, the heating shoe 5 will be held in the ironing position, but when the motor is deenergized, the action of the spring 16 will shift the motor stator to return and maintain the heating shoe in the inoperative or released position. It will be understood that the means mounting the casing provides for reactive angular movement about the axis of the motor shaft to actuate the lever to move the shoe towards the roll when the motor is energized and when the rotation of said shaft is opposed.

It will be apparent that, in employing the motor stator movement to actuate the operation of the heating shoe 5, in the manner stated, the construction and arrangement of the involved operating mechanism is efficiently increased and greatly simplified, relatively to the complicated operating apparatus of conventional types of operating mechanisms now in use for analogous purposes.

In the modification of the device, illustrated in Figures 4 and 5, a conventional type of operating mechanism 18 of certain makes of ironers now on the market, is employed. The operating mechanism 18 is disposed horizontally and positioned and secured to the underside of the table top 19, instead of being positioned vertically above the table top in the conventional manner and common usage in ironers now in use. Suitable transmission elements, respectively indicated at 20 and 21 are, of course necessary and provided to operatively join the mechanism 18 with the ironing roll 22 and heating shoe 23, respectively.

The purpose and advantage of changing the position of the conventional operating mechanism 18 is that, the cumbersome structure of the mechanism is positioned so as not to impede or interfere with ironing operations, and leaving both ends of the ironing roll open to thereby facilitate all types of ironing work.

What I claim is:

In an ironer of the character described, a table including a top having openings therein, a cylindrical ironing roll of comparatively small diameter, a first housing rising through one of said openings and supporting said roll above said table, a drive for the roll within the housing, the transverse area of said housing being less than the transverse area of said roll, a heating and ironing shoe, an operating lever rising through the other opening and supporting said shoe above said table, an operating mechanism for said drive and said lever, said mechanism provided with a second housing mounting said first housing and being disposed below the top of said table, said mechanism including an electric motor provided with a shaft actuating the roll drive and having a casing operatively joined with said lever, said casing being fixed to the stator of said motor, and means mounting said casing for reactive angular movement about the axis of said shaft to actuate the lever to move said shoe towards said roll when the motor is energized and when the rotation of said shaft is opposed.

HUGH M. RUMBAUGH.