Dec. 23, 1941. R. E. MAXANT 2,267,245

IRONING MACHINE

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Fig. 1.

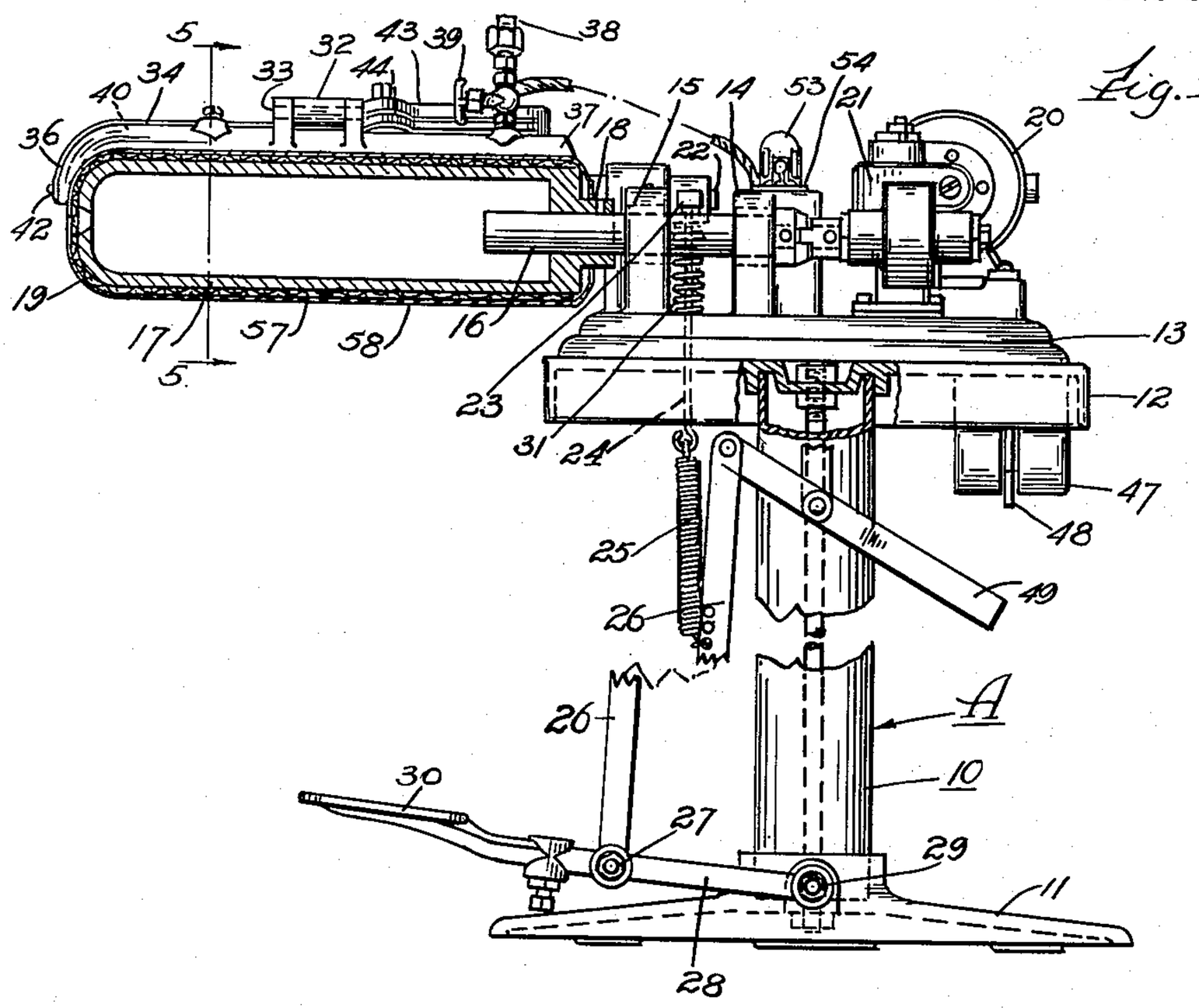

Fig. 2.

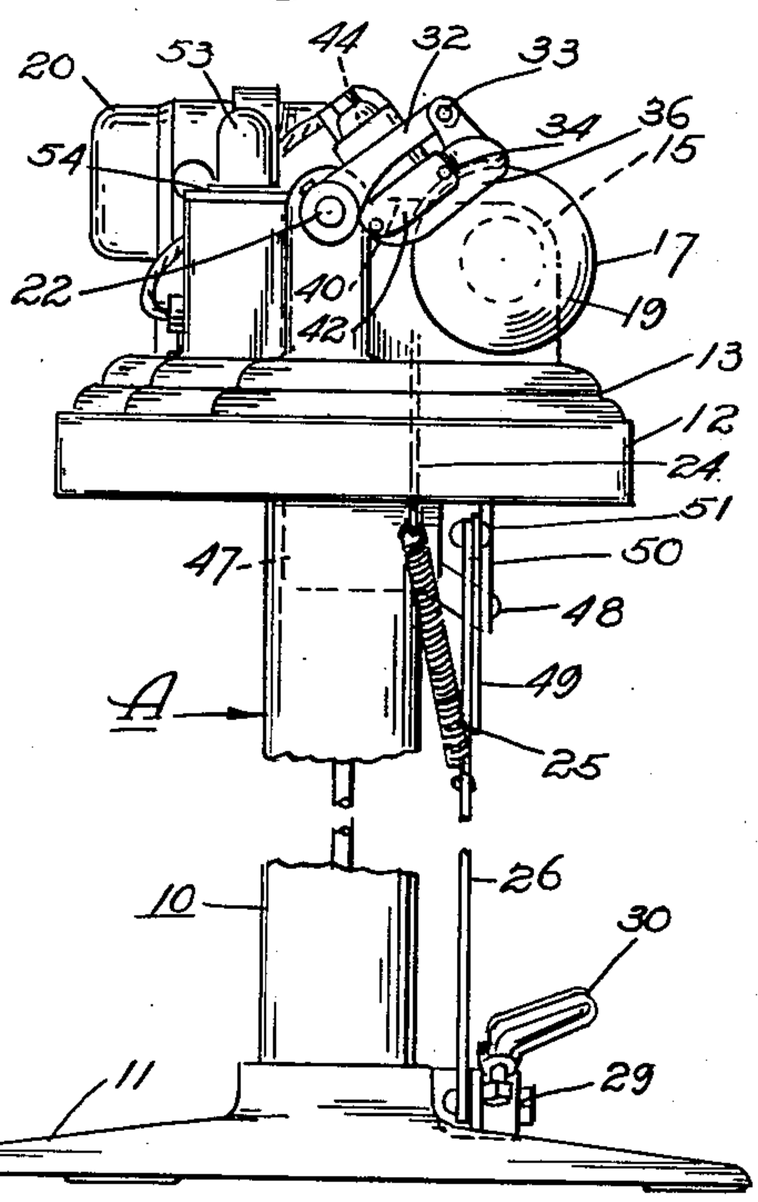

Fig. 3.

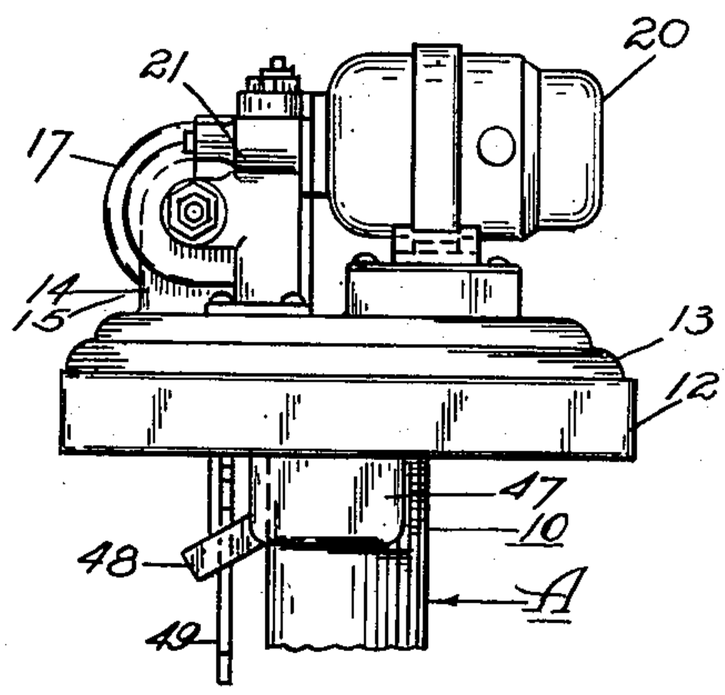

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Fig. 4.

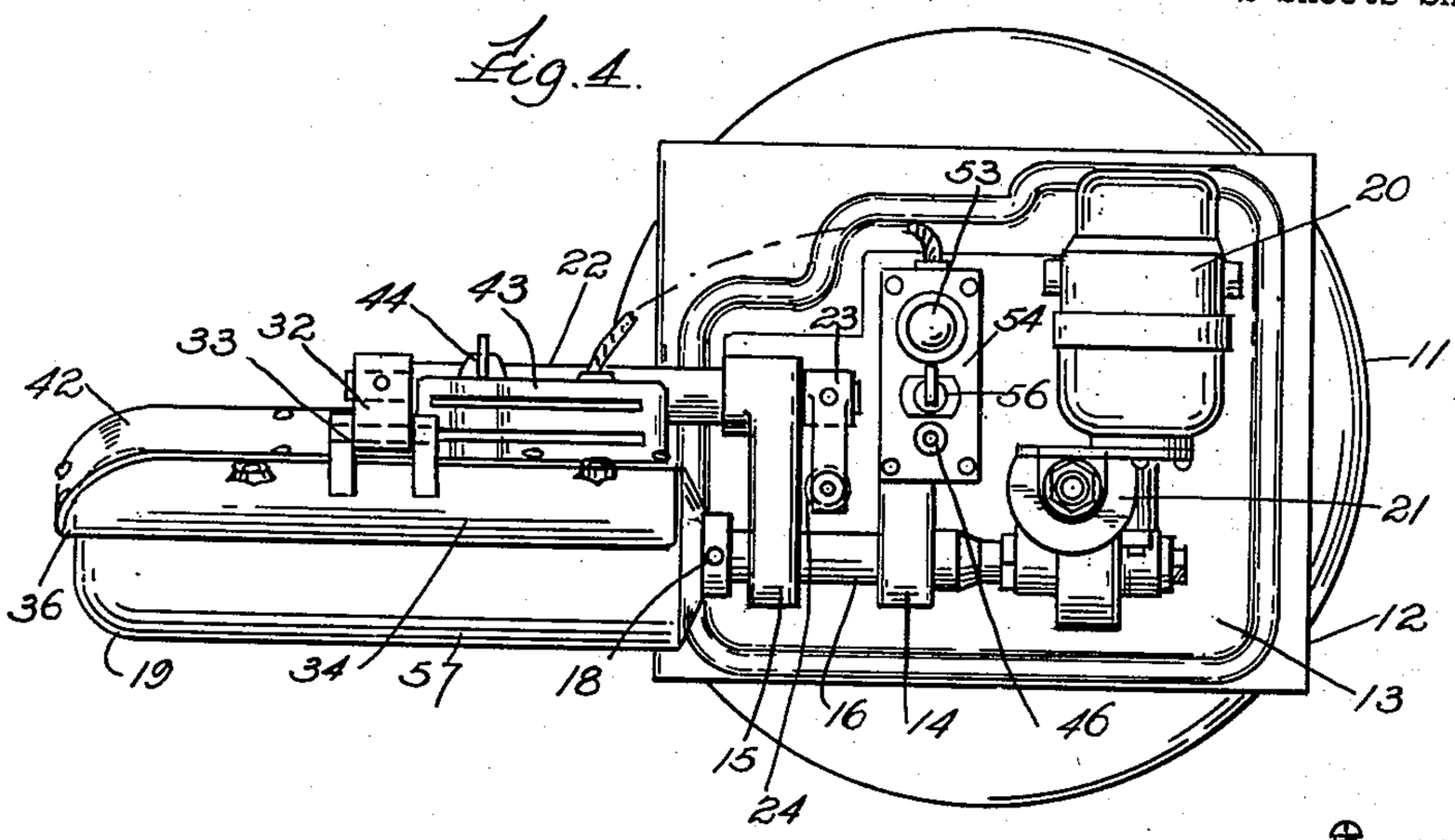
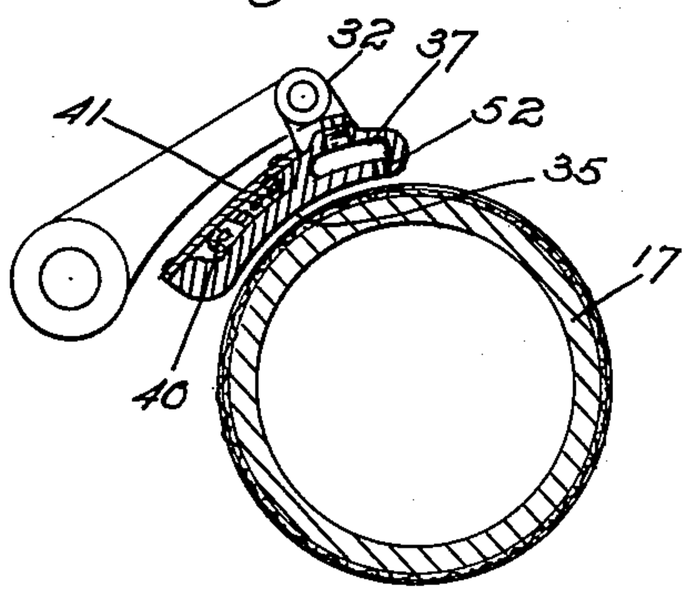


Fig. 5.



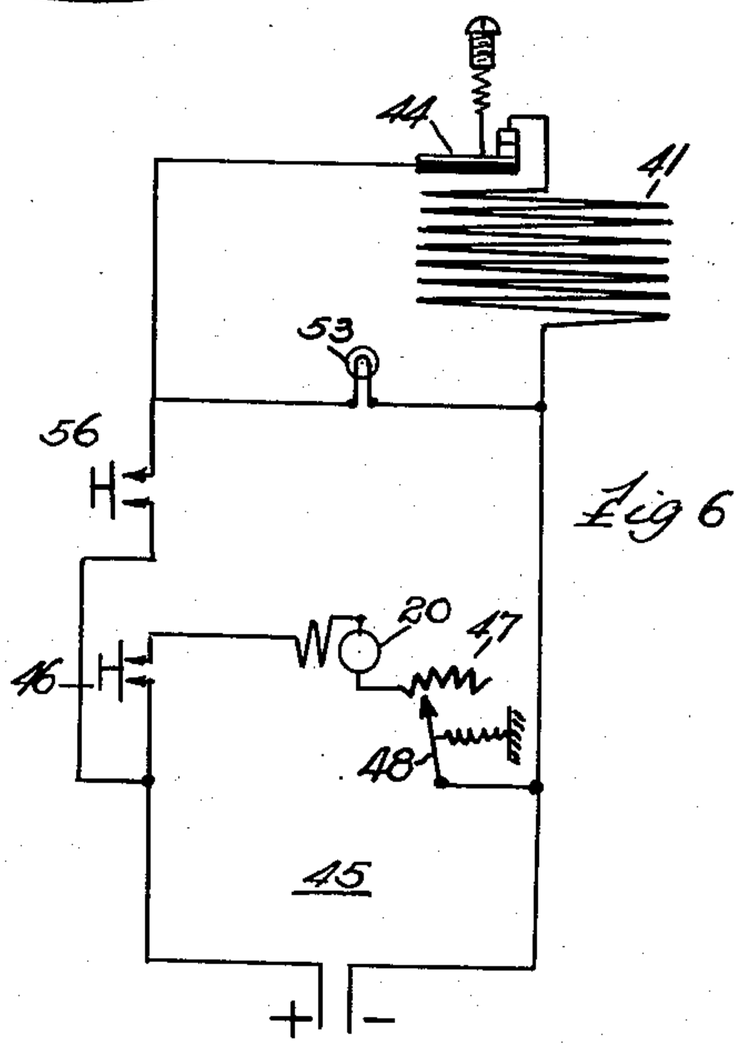


Fig 6

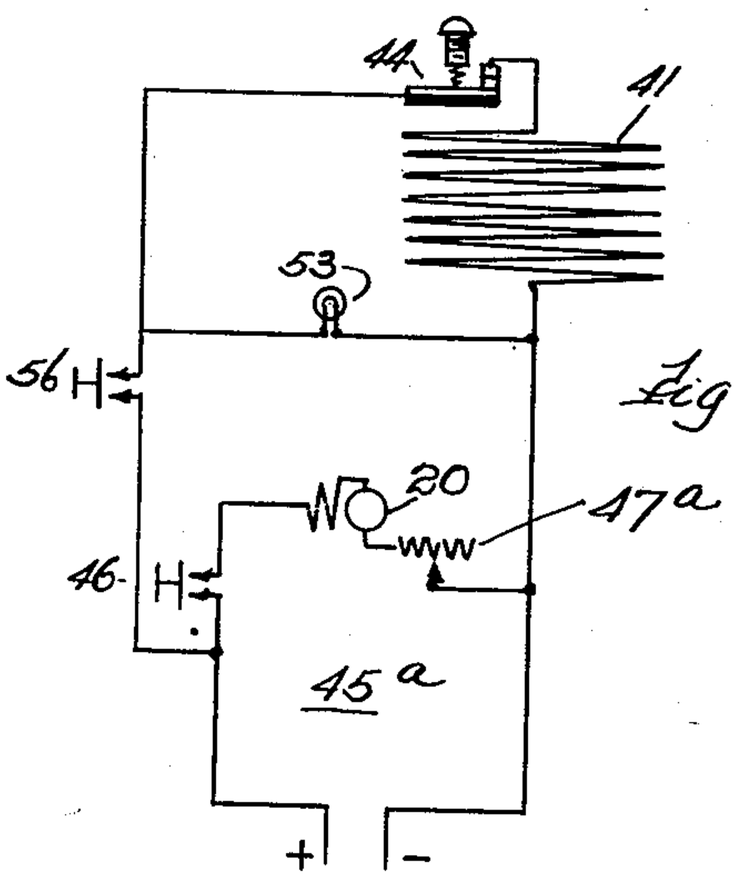


Fig. 7.

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Patented Dec. 23, 1941

UNITED STATES PATENT OFFICE

2,267,245

IRONING MACHINE

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Application December 29, 1939, Serial No. 311,675

3 Claims. (Cl. 38—60)

The invention relates to an ironing machine and more particularly to the class of ruffle ironers.

The primary object of the invention is the provision of a machine of this character wherein the ruffles or flutes created in articles, such as wearing apparel, bed coverings, window hangings or other articles, can be readily and conveniently ironed without deleting the ruffles and assuring smoothness to the material through the ironing thereof.

Another object of the invention is the provision of a machine of this character wherein the ruffles when being ironed will not be separated through tearing from the body of the article and at the same time such ruffles will be smoothly ironed and maintain their ruffle characteristic.

Another object of the invention is the provision of a machine of this character wherein the construction thereof is novel in its make-up being heated electrically and by steam for the successful pressing operation of such machine.

A further object of the invention is the provision of a machine of this character wherein the ironing operation is mechanical and under manual control, the heating being thermostatically controlled while the power for the driving of the machine is regulated by a rheostat, an electric power unit being adopted for the driving of said machine.

A still further object of the invention is the provision of a machine of this character which is simple in its construction, thoroughly reliable and efficient in operation, either pedestal or bench supported for the working thereof, strong, durable, economically operated and inexpensive to manufacture.

With these and other objects in view the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings which disclose the preferred embodiment of the invention and pointed out in the claims hereunto appended.

In the accompanying drawings—

Figure 1 is a front elevation partly in section of the machine, and constructed in accordance with the invention.

Figure 2 is a side view of the same.

Figure 3 is a view looking toward the other side.

Figure 4 is a top plan view.

Figure 5 is a transverse sectional view through the ironing shoe of the machine.

Figure 6 is a diagrammatic detailed view of the electric wiring arrangement for the machine. (Pedestal.)

Figure 7 is a diagrammatic detailed view of the electric wiring arrangement for the hand controlled bench machine.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail A designates generally the ironing machine constructed in accordance with the invention and as a preferred form comprises a pedestal 10 having the proper sized base 11 which in this instance is circular although it may be of any other shape and of any size required.

At the upper end of the pedestal 10 is a substantially rectangular shaped table top-like head 12 forming a support or bed for a casting creating a base 13. This base 13 is provided with spaced upstanding bearings 14, 15 respectively, both having journaled therein a horizontally disposed rotatable operating shaft 16 to which is detachably connected an elongated cylindrical mandrel in the nature of a roller 17 of hollow type, the connection being had at 18. The mandrel 17 extends outwardly beyond one side of the bed 12 to be clear of the latter and has its outermost end rounded or half spherical shaped as at 19 for a purpose presently described.

The base 13 has properly located and fixed thereon an electric motor 20 while this base also carries a casing 21 between the said motor and the shaft 16 for reducing gear connections (not shown) joined with the motor and the shaft 16 for the driving of the mandrel 17 thereby.

In the bearing 15 rearwardly with respect to the shaft 16 for the mandrel 17, is a rocking shaft 22 which at the end of the same that protrudes between the bearings 14 and 15 has fixed thereto a lever 23 with which is joined a link 24 having flexible adjustable coupling at 25 with a pull rod 26. This rod 26 is pivoted at 27 to a treadle 28 swingable on a horizontal pivot 29 connecting it to the pedestal 10 at the base 11 thereof. The treadle carries a laterally disposed foot tread-pedal 30. The link 24 between the base 13 and the level 23 has surrounding it a coiled expansion spring 31 for automatically lifting the said lever 23 when pressure is relieved from the treadle 28 which is foot operated.

The shaft 22 at its outer end has fixed thereto a throw arm 32 which is pivoted at 33 to an ironing shoe 34 of concavo convex formation through the elongated extent thereof and the concaved working face 35 of the said shoe sub-

stantially conforms to the periphery of the roller 17 while the outer end of this shoe 34 is provided with a rounded outer closed end 36 conforming to the rounded end 19 of the said roller 17. The shoe is formed interiorly thereof with a steam chest 37 which is supplied with steam through a steam conduit or pipe 38 leading from any suitable source of suitable supply. The pipe or conduit is fitted with a cut-off valve 39 for regulating the supply of steam to the chest 37.

Within the shoe 34 is a recess 40 for containing an electric heating element 41, the latter being properly insulated and is confined within the recess 40 by a removable cover plate 42. This cover plate 42 is built with a housing 43 for an electric thermostat 44, the heating element 41 being included in the electric circuit 45 having the motor 20 therein and also the thermostat 44. The circuit 45 and 45a is opened and closed by a hand operated switch 46 and further included in this circuit 45 is a rheostat 47 provided with a control arm 48 arranged in the path of movement of a rocker arm 49 pivoted in a hanger 50 and also pivoted at 51 to the pull rod 26 which is actuated by the treadle 28.

The steam chest 37 communicates with jet apertures 52 formed through the concaved working face 35 of the shoe 34 so as to jet or spray steam upon the work when being ironed upon the roller 17 by the ironing shoe 34 and in this way moistening the work for the smooth ironing and the removal of creases during the working of the machine.

The circuit 45 has arranged therewith an electrically lighted lamp or bulb 53 rising from a switch box 54 on the base 13 and is visible through a windowed cage 55 about such lamp or bulb. To control the current supply to the lamp or bulb 53 there is provided a hand switch 56 being a part of the equipment of the switch box 54.

The roller 17 is equipped with a fabric covering 57 being readily removable therefrom and such covering conceals within a padding 58 for the roller 17.

In the use of the machine, the material to be ironed in piece form carrying a ruffle at the edge thereof is fed into the machine when operated to pass over the roller 17 which moves the material for the feeding thereof and by operating the treadle 28 the shoe 34 will be pressed into working position for ironing and also the pressing of the ruffle present thereon. This ruffle is engaged by the rounded or half-spherical end 19 of the roller 17 and the curved end 36 of the shoe 34 so that by pressure of this shoe against the said ruffle, it will be smooth and perfectly ironed without possibility of the tearing of the ruffle during the ironing period thereof and also will avoid the unshaping of the ruffle formations present in said ruffle, the latter being devoid of any pleats or creases as might occur and do occur when hand pressing the ruffle.

The thermostat 44 is manually set for the automatic working thereof at a determined temperature and such thermostat controls the heating element 41 within the shoe 34 and in this way avoids any possibility of damaging the material ironed during the working of the machine, particularly by the overheating of the ironing shoe. The electric current supply through the circuit 45 is regulated by the rheostat 47, its control being had by the engagement of the arm 49 with the member 48 of said rheostat. The movement of the arm 49 is had by operation of the treadle 28. The member 48 is automatically brought to normal position after actuation by the arm 49 in any desirable manner and this rheostat regulates the speed of operation of the motor 20.

The action of the spring 31 when pressure is relieved from the treadle 28 causes the automatic lifting of the shoe 34 away from the roller 17 so that the work ironed can be readily removed from this roller 17 after the pressing operation.

The ironing operation both of the material forming the article and the ruffle present thereon is carried forth through electric heating and also steam heating and the moistening of such article during the operation by steam jetting as hereinbefore set forth. The ironing operation is simply carried out, the material to be ironed being entered between the shoe and the roll. Pressure upon the foot treadle first has the effect of pressing the shoe upon the roll, and with further pressure the rheostat is engaged, starting the motor that turns the roll. As the roll is covered with a jacket of rough canvas or drill cloth, the roll carries with it the material to be ironed. Steam is turned on by means of the needle valve, and electric heat by means of the switch. The steam removes excess starch and takes wrinkles out of the material; friction against the roll, brought to high temperature by electricity, completes the ironing process. Since the steam is controlled by the needle valve and the electric element by the switch, operation of these is independent of the movement of the motor and roll or mandrel, which are controlled by the rheostat.

What is claimed is:

1. An ironing machine having a rotatable mandrel, an ironing shoe swingable to and from the mandrel and conforming to the shape of the latter, a rounded end outermost of said mandrel and partially covered by said shoe when the latter moves close thereto, means for electrically heating the shoe, means controlling the heating means, means for delivering steam to the shoe, a jetting side formed with the shoe for delivering steam in the direction of the mandrel, means for regulating the supply of steam to the shoe, means for operating the shoe, means for rotating the mandrel and means for regulating the speed of operation of the last-named means and cooperation with the means for operating the shoe.

2. An ironing machine having a rotatable mandrel, an ironing shoe swingable to and from the mandrel and conforming to the shape of the latter, a rounded end outermost of said mandrel and partially covered by said shoe when the latter moves close thereto, means for electrically heating the shoe, means controlling the heating means, means for delivering steam to the shoe, a jetting side formed with the shoe for delivering steam in the direction of the mandrel, means for regulating the supply of steam to the shoe, means for operating the shoe, means for rotating the mandrel, means for regulating the speed of operation of the last-named means, cooperation with the means for operating the shoe and means for moving the shoe to a normal position away from the mandrel.

3. An ironing machine having a rotatable mandrel, an ironing shoe swingable to and from the mandrel and conforming to the shape of the latter, a rounded end outermost of said mandrel and partially covered by said shoe when the latter moves close thereto, means for electrically

heating the shoe, means controlling the heating means, means for delivering steam to the shoe, a jetting side formed with the shoe for delivering steam in the direction of the mandrel, means for regulating the supply of steam to the shoe, means for operating the shoe, means for rotating the mandrel, means for regulating the speed of operation of the last-named means, cooperation with the means for operating the shoe and means for moving the shoe to a normal position away from the mandrel and coacting with the means for operating the said shoe.

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