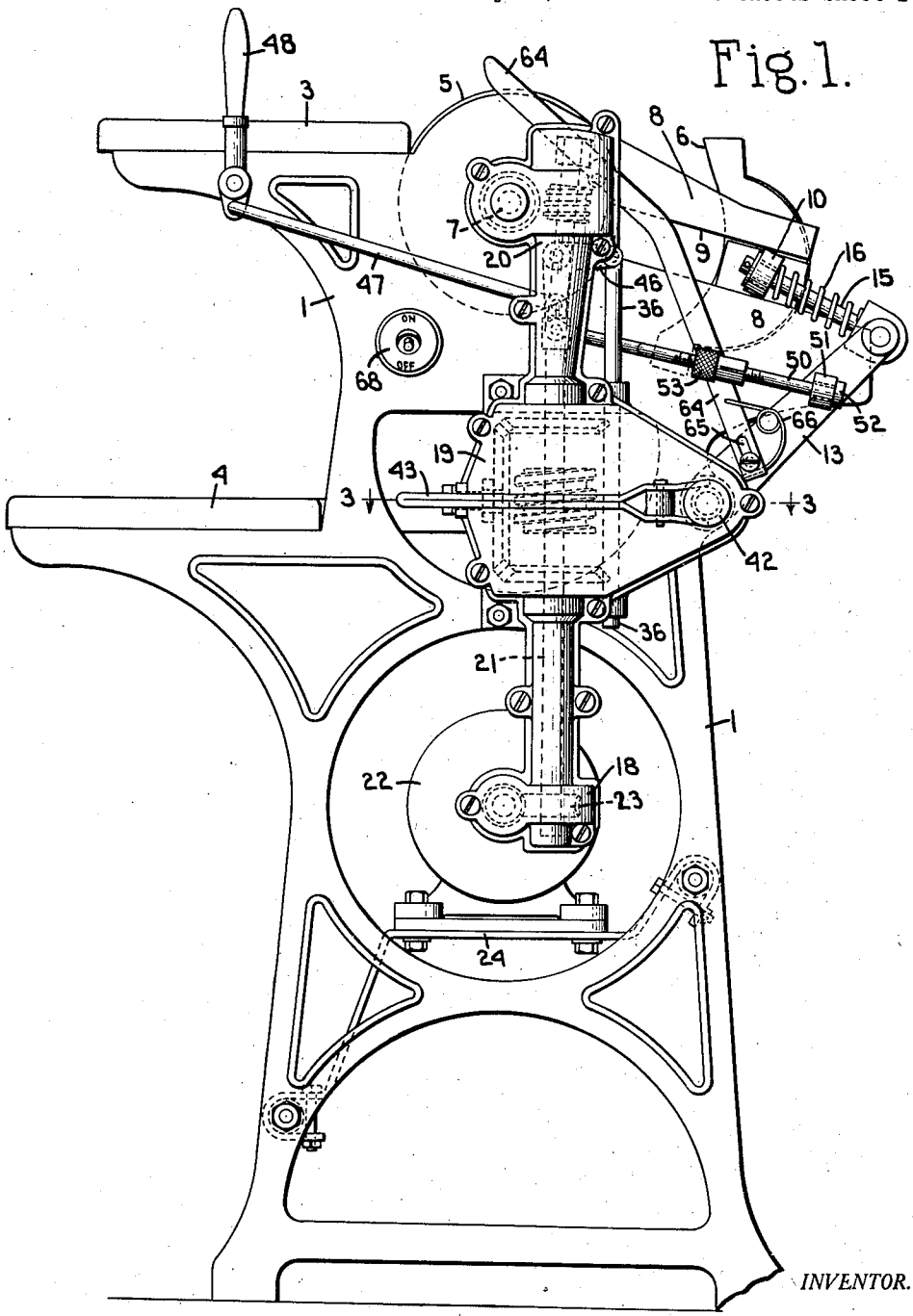
July 6, 1926. 1,591,316

L. B. IGLAUER

IRONING MACHINE

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Fig. 1.



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IRONING MACHINE

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Fig. 2.

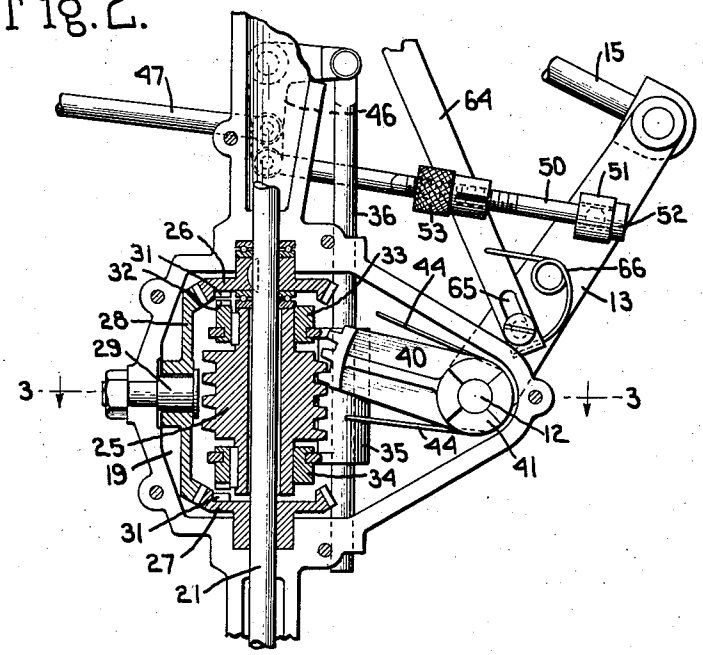
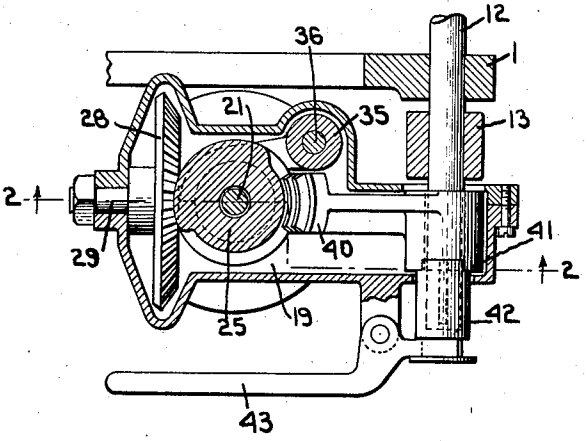


Fig. 3.



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Fig.4.

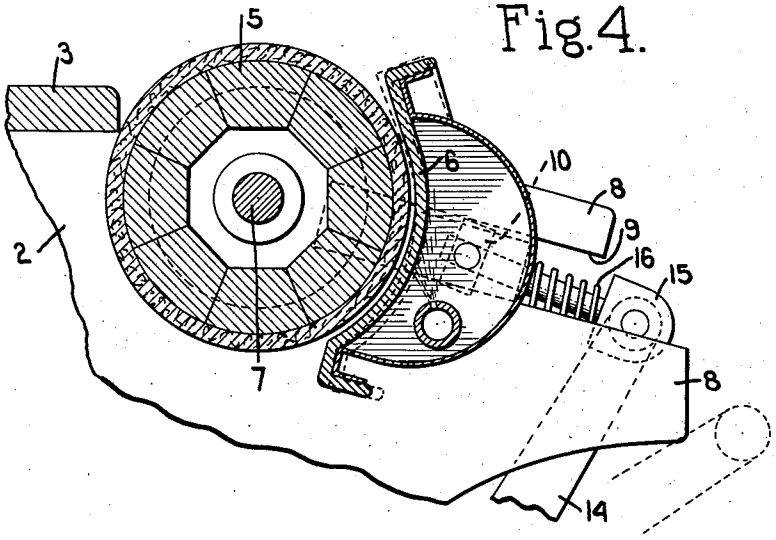


Fig.5.

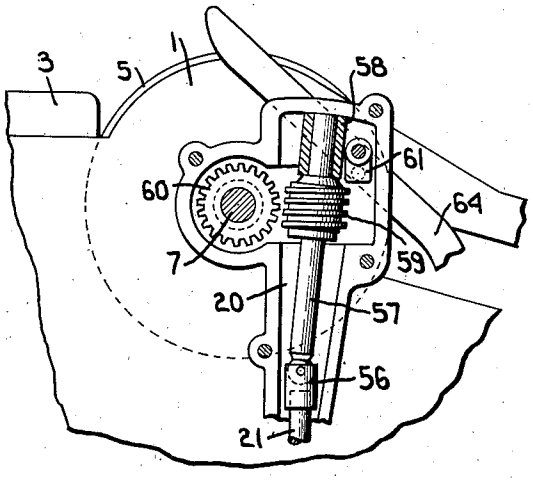
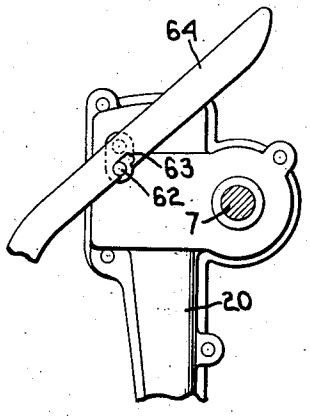


Fig.6.



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UNITED STATES PATENT OFFICE.

LOUIS B. IGLAUER, OF CLEVELAND, OHIO, ASSIGNOR TO THE LAUNDRYETTE MANUFACTURING COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

IRONING MACHINE.

Application filed July 25, 1921. Serial No. 487,464.

This invention relates to ironing machines and has for its main objects the provision of a machine wherein the pressure upon the parts is created by the driving motor, thus decreasing the manual labor required; wherein the amount of this pressure can be instantly and easily adjusted; wherein the tension can be released instantly in case of accident; wherein the roller may be started and stopped automatically by the position of the shoe; and wherein the shoe and roller may also be moved toward and from each other for certain kinds of work without rotation of the roller. Another object is the provision of a machine wherein the shoe and roller may be separated more widely than in other machines, thus facilitating waxing or cleaning, decreasing the liability of accident, and enabling the pressing of articles not receivable in the usual machine; while further objects and advantages of the invention will appear as the description proceeds.

In the drawings accompanying and forming a part of this application I have shown one of the many physical forms in which my inventive ideas can be embodied. Fig. 1 is an end view of my improved ironer; Fig. 2 is a detail view of part of the operating mechanism corresponding to the broken line 2—2 of Fig. 3; Fig. 3 is a detail view of the same operating mechanism corresponding to the lines 3—3 in Figs. 1 and 2; Fig. 4 is a cross-sectional view taken through the roller and shoe; Fig. 5 is a detail view showing the roller-drive; and Fig. 6 is a view of the roller-drive mechanism taken from the direction opposite to that in Fig. 5.

Describing the parts by reference characters 1 and 2 represent the end-uprights or frame members which support the machine, 3 the feeding table, 4 the receiving table, 5 the roller, and 6 the shoe. The roller is carried on a shaft 7 which is preferably journaled in the uprights in immovable bearings, while the shoe is movable toward and from the roller through a considerable distance as shown in Figs. 1 and 4. To effect this the rear of each upright is formed with a pair of parallel arms 8—8, defining between them a slot 9 in which is located a block 10 carried by the adjacent end of the shoe. These arms are preferably inclined downwardly from the roller so that the shoe, when released, may tend to fall away therefrom, and the slots are preferably slightly wider than the blocks so that the shoe may have a limited rocking movement as shown in dotted lines in Fig. 4, so as to facilitate the insertion and discharge of bulky articles, such as folded sheets and towels.

Journaled in the end-uprights below the shoe is a horizontal rock-shaft 12 having at its ends the arms 13, 14 to which are pivoted the eye-bolts 15, 15 whose shanks pass loosely through pivoted studs 17 carried by the blocks 10, 10, tension springs 16, 16 being interposed between said blocks and the heads of the bolts.

Secured to the outer face of the upright 1 is a hollow, vertically-elongated, gear box having three chambers therein, indicated at 18, 19, and 20, and journaled in this box is an upright drive-shaft 21 operatively connected to a motor 22 by the worm gears 23 contained in the lowermost chamber, 18. This motor is supported by a shaft 24 carried by the upright 1.

Inside the chamber 19 the shaft 21 is surrounded by a worm 25 and by two similar bevel gears, 26 and 27, at opposite ends of the same which mesh with an idle bevel-gear 28 journaled on a stud 29 carried by the chamber wall. Thrust bearings 30, 30 are interposed at both sides of the gear 26 which is located above the worm, and one of the gears 26 or 27, preferably gear 26, is secured to the shaft 21 so as to rotate therewith, the other being free. The inner faces of these gears are formed with clutch teeth 31, 31, adapted to cooperate with companion teeth 32 carried by the slidable clutch-spools 33, 34 which are mounted on the reduced ends of the worm 25. These spools are splined to the worm so as to rotate therewith and are swiveled to a slidable yoke 35 carried by the vertically reciprocable rod 36. The worm is located at one side of the end of the shaft 12 which projects through one side of the chamber 19, and loosely mounted on this shaft is the toothed sector 40 which meshes with the worm. The hub of this sector is formed with clutch teeth 41 adapted to be engaged by the complementary teeth of a clutch-spool 42 which is slidably splined on the end of the shaft 12 and operated by the lever 43. Springs 44, 44 carried by the sector 40 serve to force its teeth into engagement with the worm 25 in case it be moved so far in either direction as to become disengaged therefrom.

The upper end of the rod 36 is attached to the horizontal arm of a bell-crank-lever 46, whose vertical arm has two connections, one by means of the rod 47 to the control lever 48 which is mounted in any convenient position as for example at one end of the feeding-board 3; the other consisting of the rod 50 whose end passes slidably through the swivel-block 51 carried by the arm 13 and terminates in the head 52. An intermediate portion of the rod 50 is threaded for the reception of the adjustable stop-nut 53.

The upper end of the shaft 21 projects into the chamber 20 and is there provided with a universal joint 56 to which is connected a shaft-extension 57 whose free end is journaled in a slidable block 58 in such wise as to be movable toward and away from the shaft 7, so as to engage and disengage the worm-gears 59, 60 with which these shafts are provided. This bearing is moved by a cam 61 whose pivot projects outside the gear-box and is provided with a crank 62 adapted to receive the notch 63 of the latch 64, whose opposite end is attached to the arm 13. This attachment includes a lost-motion connection such as the slot 65, and a yielding member, such as the spring 66, so as to compensate for varying tension adjustments and also to enable the gears 59 and 60 to mesh together properly.

The operation of the machine is as follows:

Assuming the parts to be in the position shown in Fig. 1, the shoe being heated in any convenient way such as by steam, gas, or electricity, the motor is started by turning the switch 68. The clutch 42 is secured to the shaft 12 and the latch 64 to the crank 62. The handle 48 is now tipped toward the operator, thereby raising the rod 36 and connecting the worm 25 with the gear 26, which drives the sector 40 downwardly and swings the arms 13, 14 inwardly, carrying with them the shoe 6. This exerts an increasing pressure upon the springs 16, 16 until the engagement of the block 51 with the stop-nut 53 returns the handle 48 to its initial position and disconnects the worm from its driving member, leaving the shoe under a predetermined tension depending upon the adjustment of the stop 53. The approaching movement of the arm 13 also causes the latch 64 to rock the cam 61 and start the rotation of the roll 5, thus putting the machine fully into operation and preventing burning of the goods or padding. When it is desired to release the tension, the handle 48 is rocked in the opposite direction, connecting the worm with the other of said bevel gears; or if this should be too slow because of any accidental occurrence, such as the catching of the operator's fingers by the roll, the tension can be released instantly by shifting the lever 43, the shoe receding to a distance determined by the adjustment of the rod 50 which now acts only as a stop. This emergency clutch is also of use in case the motor should stop while the machine is in use, either by reason of overload, burning out, or failure of current, which would lead to scorching or igniting the clothing unless provision were made for releasing the shoe.

It is also possible with this machine to press men's garments or the difficult parts of ladies' garments which cannot safely be run through such a machine in the ordinary way, merely by holding the latch 64 out of engagement with the crank 62 so that the roll will not be turned as the pressure is applied.

In case the machine be operated with the emergency clutch 42 disconnected there will be nothing to stop the rotation of the worm 25 and as a consequence the sector 40 will merely run off the end of this worm after which the worm will rotate idly, sufficient clearance having been provided to permit this. As soon as the direction of this rotation is reversed the sector becomes reengaged by the action of the springs 44, thus enabling the re-engagement of the clutch 42 when this sector reaches the proper position.

It will be understood that many changes can be made in the design, arrangement, and construction of this machine within the scope of my invention. I do not limit myself to a construction wherein the roll is fixed and only the shoe is movable; I do not limit myself to the described means for supporting and guiding the shoe; I do not restrict myself to the particular mechanism for moving the shoe or operating the roll; and in general I do not confine the protection sought hereby in any wise except as specifically recited in my claims or necessitated by the state of the prior art.

Having thus described my invention what I claim is:

1. In an ironing machine, the combination, with a shoe and a roller mounted for relative movement, one toward and away from the other, of mechanism including a spring and a reversible gearing for effecting such movement, a motor for driving said roller, manually controlled means for connecting said motor to said mechanism, automatic means for disconnecting said mechanism when a predetermined tension has been imposed upon said spring, and manually controlled means for disconnecting said shoe from said mechanism to permit separation of the shoe and roller independently of said motor.

2. In an ironing machine, in combination, a pair of spaced frame members having parallel slots, a roller journaled in line with said slots, a shoe having part of its surface concavely cylindrical and having blocks at

its ends which slide in said slots, said blocks being narrower than said slots whereby said shoe may have a limited rocking movement, and means for moving said blocks simultaneously along their respective slots.

3. In an ironing machine, in combination, a pair of spaced frame members, a roller journaled in said frame members, a shoe carried by said frame members at one side of said roller and movable laterally towards and from said roller, a rock-shaft journaled in said frame members and having arms, operative connections between said arms and shoe, said connections including springs, a motor carried by said frame, mechanism whereby said motor may rotate said shaft in either direction, means for automatically disconnecting said motor from said mechanism and holding said shaft stationary when a predetermined tension has been placed upon said springs and manual means for releasing said rock-shaft to relieve the tension of said spring independently of said motor.

In testimony whereof, I hereunto affix my signature.

LOUIS B. IGLAUER.