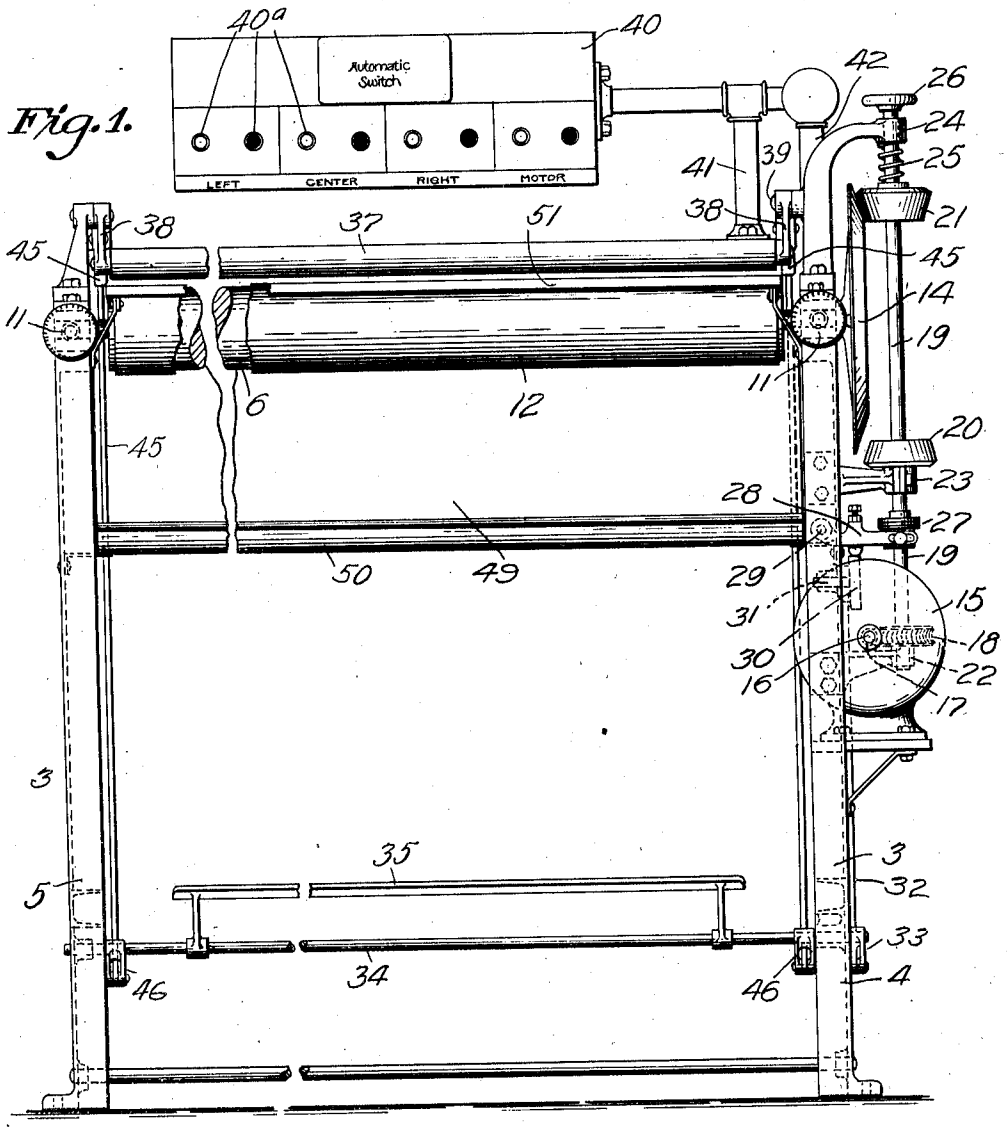
Oct. 12, 1926. 1,602,972

F. F. FORSHEE

IRONING MACHINE

Filed Feb. 19, 1921 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

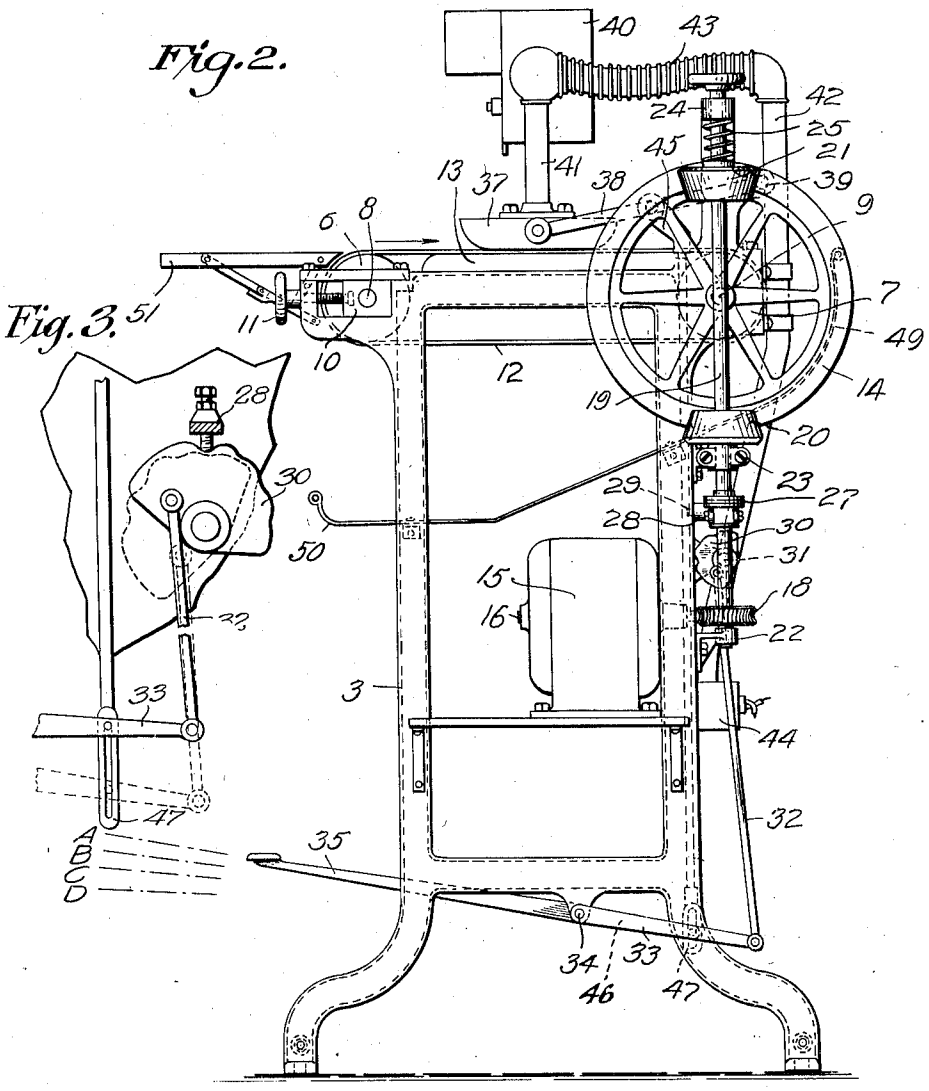


Fig. 3.

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UNITED STATES PATENT OFFICE.

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IRONING MACHINE.

Application filed February 19, 1921. Serial No. 446,389.

My invention relates to ironing machines and it has particular relation to the structure and to the controlling mechanism thereof.

One object of my invention is to provide such controlling mechanism for a machine of the above indicated character that all movements necessary to the successful operation of the machine shall be effected by means of a single actuating mechanism.

Another object of my invention is to provide an ironing machine that shall have an improved mechanism for adjusting the position of the heated ironing member.

Another object of my invention is to provide an improved mechanism for controlling the direction of movement of the conveyor.

Briefly, my invention comprises so mounting the ironing member and so actuating the conveyor member that, when the controlling lever is disposed in certain predetermined positions, the movement of the conveyor is effected, and, when moved to certain other predetermined positions, movement of the ironing member is effected.

Heretofore, it has been customary to iron clothes by moving them between a rotating roll and a heated ironing shoe. The position of the shoe with respect to the roll is controlled by movement of a tray or shelf which may be moved by the hands of the operator. The operation of the roll is stopped by stopping its driving motor.

According to my invention, a single foot lever controls not only the direction of rotation of the conveyor, but, also, the position of the ironing shoe.

In the accompanying drawings, Figure 1 is a front elevational view of an ironing machine constructed in accordance with my invention.

Fig. 2 is a side elevational view of the machine illustrated in Fig. 1, and

Fig. 3 is a detail of a cam and cooperating parts.

In the drawings, I show an ironing machine comprising a frame 3 consisting of two spaced upright standards 4 and 5, constituting the sides of the machine. Extending intermediate the standards 4 and 5 and journalled therein, are disposed two rotatable rollers 6 and 7, mounted upon the shafts 8 and 9 respectively. The shaft 8 is mounted within bearing blocks 10 which, in turn, are slidably mounted in suitable guideways in the frame members 4 and 5. A threaded means 11 is provided for moving the roller 6 with respect to the roller 7.

A movable, pliable endless belt 12 passes over the rollers 6 and 7, and is driven by the latter. Intermediate the rollers 6 and 7 is disposed an ironing board 13 which is continuously engaged by the movable belt 12.

The shaft 9 of the roller 7 is provided, at one end, with a relatively large friction gear 14 adapted to drive the same. The driving mechanism consists of a motor 15 having a shaft 16 provided with a worm 17. The worm gear 17 drives a worm wheel 18 which is splined to a vertically extending longitudinally movable shaft 19. Upon the shaft 19 are mounted two spaced friction driving gears 20 and 21, disposed substantially diametrically opposite with respect to the large gear 14.

The shaft 19 is provided with a journal bearing 22 disposed below the gear wheel 18, a bearing 23 disposed between the gear wheel 18 and the driving wheel 20, and a top bearing 24 disposed above the driving gear 21. Between the gear wheel 21 and the bearing member 24 is disposed a coil spring 25, the function of which is to hold the shaft 19 normally in its lowermost position, that is, with the gear wheel 21 in driving engagement with the driven gear 14. The upper end of the shaft 19 is provided with a hand wheel 26 in threaded engagement with the shaft 19 and in contact with the bearing member 24, whereby the lowermost position of the shaft 19 may be adjusted at will.

Intermediate the bearing 23 and the worm wheel 18 is disposed a collar member 27 rigidly attached to the shaft 19. A yoke member 28, disposed in engagement with the member 27, is mounted upon the frame member 4 by means of a pivotal connection 29, and is adapted to raise or lower the shaft 19. The cam member 30, which is pivotally mounted upon the frame member 4 by means of a pin 31, is so disposed as to engage the yoke member 28, thereby actuating it. The cam member 30 is, in turn, actuated by means of a link member 32, pivotally connected to a lever 33, which, in turn, is rigidly attached to the shaft 34.

which is journaled in the frames 4 and 5. A foot lever 35 is rigidly attached to the shaft 34 in order to actuate the same.

The machine is provided with a heated ironing member 37 which is pivotally mounted upon link members 38 disposed at each end thereof which, in turn, are mounted upon the frame of the machine by means of a pivotal connection 39. The heating element, which is preferably of an electrical nature, is disposed within the member 37, and electrical connections pass therefrom to a control box 40, rigidly connected therewith by means of a pipe connection 41. The control box 40, together with the heated member 37, is connected to a pipe 42 mounted upon the main frame of the machine by means of a resilient connection 43. The pipe 42 is connected to an outlet box 44, which, in turn, is connected to an attachment plug (not shown). The control box 40 contains a plurality of switches 40*a* adapted to control the heating current of the member 37. The electrical connections and associated apparatus are of the type disclosed in my Patent No. 1,451,539, April 10, 1923, electric heating system for ironing machines.

A link 45 is pivotally connected to the link 38 and is attached, at its lower end, to a lever 46 by means of a pin-and-slot connection 47, the pin of which is rigidly mounted upon the lever 33.

The contour of the cam member 30 is such that, when there is no weight upon the lever 35, the shaft 19 is in its lowermost position, and the driving gear wheel 21 is in driving engagement with the relatively large gear wheel 14. Under these conditions, the lever 35 is in position A, which is its normal operating position, and at which time the roller 7 tends to move the belt 12 in the direction indicated by an arrow. When the lever 35 is moved into position B, the cam 30 is rotated to raise the shaft 19, thus disengaging the driving pinion 21 from the wheel 14 and causing the conveyor 12 to stop.

When the lever 35 is moved into position C, the cam is so rotated that the shaft 19 is raised further, causing the driving pinion 20 to engage the relatively large gear wheel 14, thus causing a reversal of the direction of movement of the belt 12. When the lever 35 is moved into the position D, the cam member is moved and the contour thereof is such that yoke member 28 is permitted to descend to again lower the shaft 19 to disengage the pinion 20 from the gear wheel 14, thus causing the belt 12 to stop.

In positions A, B and C, the pin-and-slot connection 47 permits the link 45 to be unmoved by movement of the cam. However, when the lever reaches the position D, the pin in the lever 33 engages the link 46, thus raising the ironing member 37 out of engagement with the belt 12.

The machine is also provided with a pressed-metal apron 49 which is adapted to catch the articles after they have been ironed and to return them to a tray 50 disposed in the front part of the machine in a position convenient for the operator thereof. A work table 51 is also provided at the forward end of the machine in such position that articles to be ironed may be placed thereon prior to ironing them. The member 51 is pivotally mounted so that, if desired, it may be lowered out of position.

It will be obvious from the foregoing description that, by my invention, I have provided a unitary type of control whereby all of the movements necessary to the successful operation of an ironing machine may be controlled from a single lever operated by the foot. It will also be apparent that I have provided a novel arrangement of parts and a novel driving connection.

I claim as my invention: —

1. In an ironing machine, the combination of a movable ironing shoe, means disposed to cooperate with the ironing shoe to perform ironing operations, a rotatable roll for actuating said cooperative ironing means, a bevel drive member directly connected to said roll, a pair of bevel drive members adapted to be engaged selectively with the first mentioned bevel drive member, a shaft for driving said pair of members, means for driving said shaft, a cam for moving the shaft longitudinally and means for moving said shoe, said shoe-moving means being connected to said cam whereby the relation of said pair of members to the first-mentioned member is varied on the movement of said shoe.

2. In an ironing machine, the combination of a movable shoe, means disposed to cooperate with the movable shoe to perform ironing operations, a rotatable roll for actuating said cooperative ironing means, a bevel drive member directly connected to said roll for rotating the same, a longitudinally movable drive shaft, a pair of bevel drive members on said shaft adapted on movement of said shaft to be engaged selectively with the first-mentioned member or both disengaged therefrom and means for moving said shaft longitudinally whereby the drive of the first-mentioned member, its stoppage and its reversal are effected, said means being connected to said shoe for moving the same.

3. In an ironing machine, the combination of a movable ironing shoe, means disposed to cooperate with the movable shoe to perform ironing operations, a rotatable roll for actuating said cooperative ironing means, a motor for actuating the roll, a control member movable by an operator and means operable on the movement of said member in one direction to couple said mo-

tor and said roll in drive relation and on a further movement of said member in the same direction to stop said roll.

4. In an ironing machine, in combination, a stationary and a movable ironing member, means for conveying articles to be ironed between the ironing members, a roll for operating the conveying means, a motor for rotating the roll, a control member movable by an operator and means operable on the movement of said control member in one direction to couple said motor in drive relation to said roll and, on a further movement of said member in the same direction, to reverse the direction of rotation of said roll.

5. In an ironing machine, the combination of an endless belt, a movable ironing shoe, a motor, means connectible to said motor for moving said belt along said shoe, a control member movable by an operator and means operable on the movement of said member in one direction to actuate the first-mentioned means and move said belt and on successive movements of said member in the same direction to stop said belt and then reverse its direction of movement.

6. In an ironing machine, in combination, a stationary and a movable ironing member, means for conveying articles to be ironed between the ironing members, a roll for operating the conveying means, a motor for rotating the roll, a cam, operator-controlled means for rotating said cam and means operable selectively by said cam to connect said motor in drive relation to said roll, disconnect said motor and reverse the direction of rotation of said roll.

7. In an ironing machine, the combination of a pair of rotatable rolls, an endless belt extending over said rolls, an ironing shoe movable into engagement with said belt, a cam, operator-controlled means for rotating said cam, a motor, and means operable selectively by said cam to connect said motor in drive relation to said rolls, disconnect said motor, and reverse the direction of rotation of said rolls.

8. In an ironing machine, in combination, a stationary and a movable ironing member, means for conveying articles to be ironed between the ironing members, a rotatable roll for actuating the conveying means, a motor for rotating the roll, means for controlling the operation of the roll, a single lever for operating the control means, said control means being adapted to cause forward or backward rotation or to stop the rotation of the roll as the lever is set in different positions, and means actuated by the lever when it is moved to operate said control means to effect relative movement of the ironing members.

9. In an ironing machine, in combination, a stationary and a movable ironing member, means for feeding articles to be ironed to the ironing members, a rotatable roll for actuating the feeding means, means for controlling the rotation of the roll, a lever for operating the control means, said lever being disposed for operation to effect the rotation of the roll in either direction and to stop the roll, and means operable by the lever as it is set in different positions to actuate the movable ironing member.

10. In an ironing machine, in combination, feeding means for articles to be ironed, means for actuating the feeding means, means for governing the operation of the feeding means, a stationary and a movable member for applying pressure cooperative with the feeding means to perform ironing operations, and a single control member for controlling the operation of the movable member and for reversing and stopping the feeding means.

In testimony whereof, I have hereunto subscribed my name this 3rd day of Feb. 1921.

FRANK F. FORSHEE.