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J. E. POINTON

1,936,027

LAUNDRY IRONING AND LIKE MACHINE

Filed Nov. 30, 1931

2 Sheets-Sheet 1

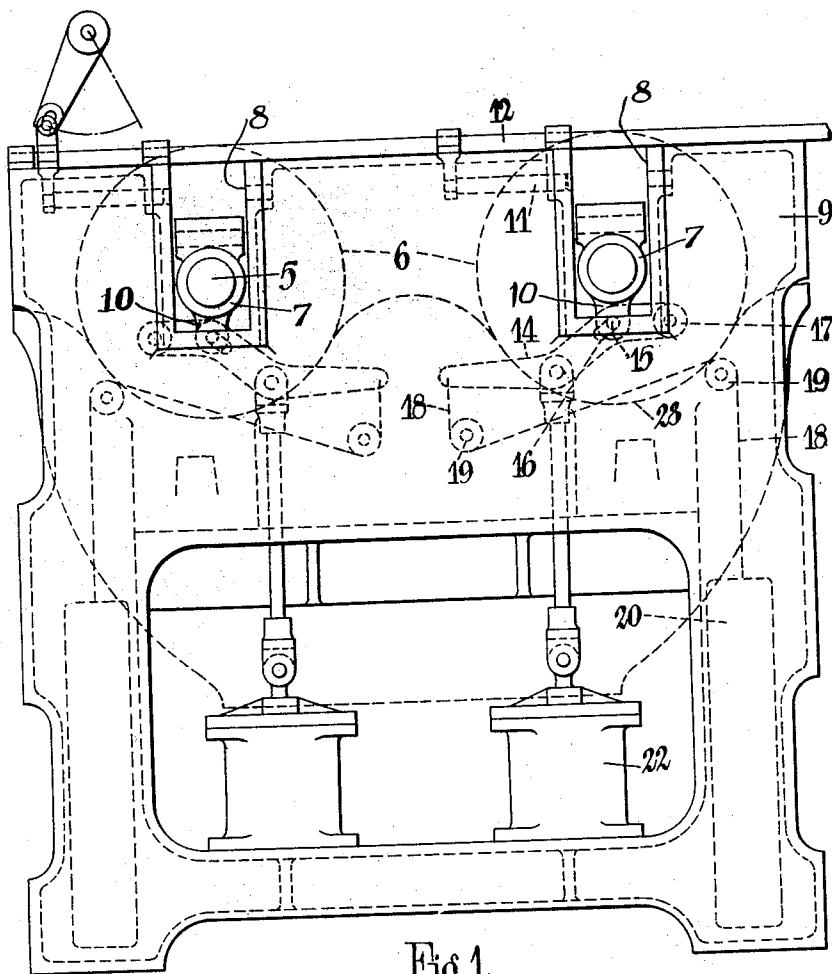


Fig. 1.

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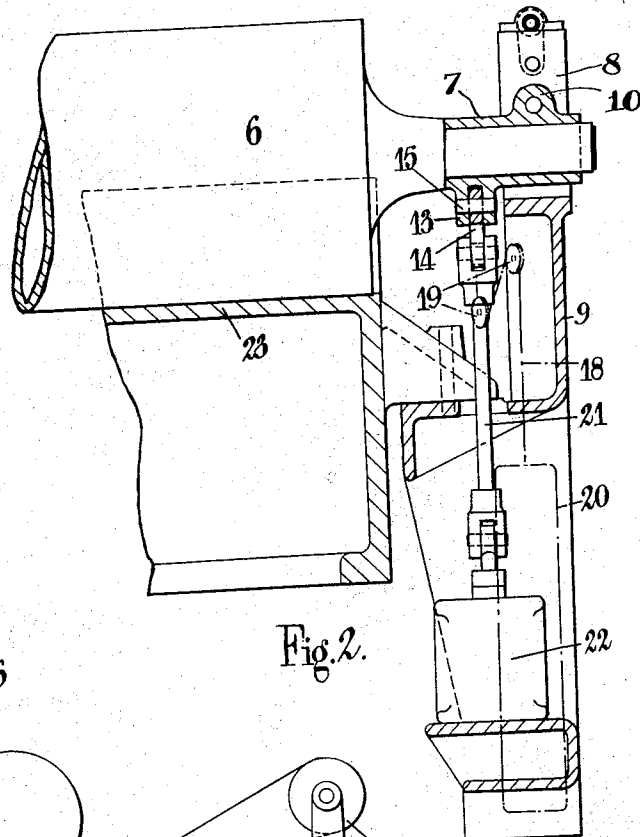


Fig. 2.

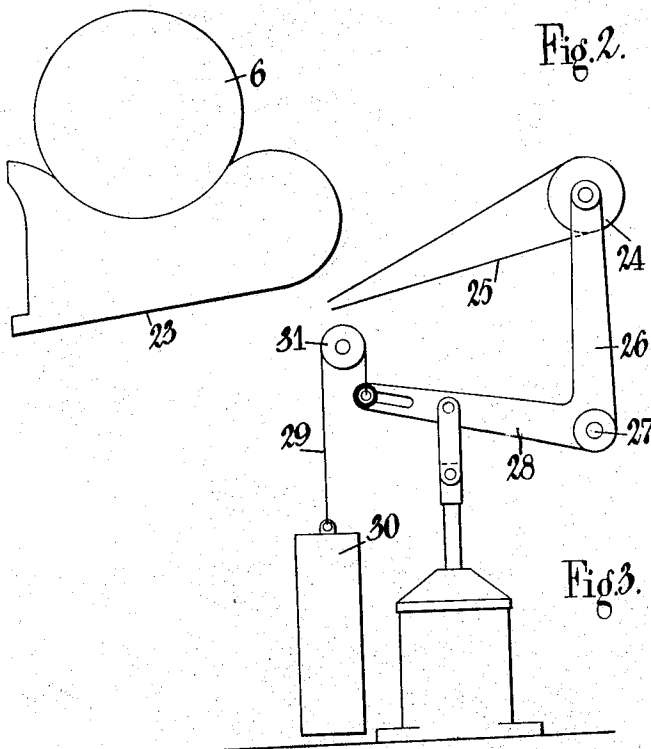


Fig. 3.

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UNITED STATES PATENT OFFICE

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LAUNDRY IRONING AND LIKE MACHINE

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 1931

10 Claims. (Cl. 68—9)

This invention relates to laundry ironing and like machines and is more particularly applicable to ironing machines of the type employing a plurality of padded rollers in association with a steam-heated bed and wherein fluid pressure cylinders are utilized to raise the rollers from their beds.

An object of the present invention is to provide improved means for adjusting and maintaining the pressure of the rolls with respect to their beds or cooperative members.

A further aim of the invention is to provide an improved and simplified device which will preclude an operative from exerting an undue pressure or a pressure exceeding that of a predetermined value upon the rollers while permitting any variations of intermediate pressure to be exercised.

The invention comprises the provision of a weight (or spring) tending to cause a roller to be pressed upon its bed or co-operative member with the predetermined pressure, and the provision of fluid pressure means adapted to counteract the effect of the weight (or spring) upon the roller and adjustably to reduce the pressure exercised by the weight (or spring) or to move the roller into an inoperative position.

According to the preferred form weights are adapted to act upon the roller bearings through levers which are also subject to the controlled action of single-acting fluid pressure pistons.

In order to avoid the necessity of maintaining the fluid pressure when the rolls are raised off their beds a latch or bolt device may be employed to take the weight of the rolls.

The invention in addition to being applicable to ironing rollers, may be applied to apron or other rollers to control the tension upon aprons, ribbons or like feeding means.

In the accompanying drawings:—

Figure 1 is a side elevation of a part of a multi-roll ironing machine.

Figure 2 is a corresponding part section.

Figure 3 is a detail view showing the application of the conveying means to the bands of an ironing machine.

In carrying the invention into effect according to one convenient mode, as applied by way of example to an ironing machine having a plurality of rollers co-operating with corresponding beds, the trunnion or shaft 5 of each roller 6 has at its ends a sleeve member 7 which is slidable in vertical slots 8 in the frame 9 of the machine. As the sleeves and weight and fluid pressure means are the same for each roller and each end of

a roller, it will only be necessary to describe the devices associated with the end of one roller. The sleeve 7 above described is provided, preferably at its upper side, with an apertured lug 10 which when the roller is raised to a certain position registers with a transverse bolt 11. The bolts for the roller ends on one side of the machine may be connected to a common operative bar 12 so that the bolts may be shot together, if desired.

The sleeve in the portion below the trunnion, is provided with a pair of lugs 13 between which a double cranked lever 14 is positioned. The lugs carry a laterally extending pin 15 which engages in slots 16 in the lever. One end of the cranked lever is pivoted at the fixed point 17 in a convenient position on the frame of the machine while the other end has attached to it a wire cable or chain 18 which passes around suitable guide pulleys 19 to a weight 20. This weight is calculated, taking into account the leverage at which it acts upon the roller, to draw down or cause the roller to be pressed upon its bed according to the maximum pressure desirable. Intermediate the end of the lever to which the weight is attached and the point at which the lever acts upon the trunnion sleeve, the connecting rod 21 of a single-acting piston is secured.

The cylinder 22 in which the piston is located is supplied with fluid pressure, such as compressed air, through a control valve, the pressure being capable of raising the roller 6 against the action of the weight 20 into an inoperative position off its bed 23 and into the position in which it may be retained off the bed by the bolts 11. It will be appreciated that the employment of the bolts obviates the necessity of retaining the pneumatic pressure for long periods. By the manipulation of the control valve the maximum effect of the weight can be reduced and the desired degree of pressure below the predetermined maximum can be gauged and adjusted to a nicety.

It will be appreciated that the invention may be similarly applied to rollers around which the apron or feeding tapes of an ironing machine are supported so that the maximum of predetermined tension applied to the aprons is limited to that which can be exercised by a weight whilst any intermediate pressure can be established by the adjustment of the fluid pressure acting in opposition to the weight. Thus, referring to Figure 3, each end of the roller 24 for tensioning the apron or band 25 is carried by one arm 26 of a bell crank lever pivoted at 27. The other arm 28 of the bell

crank lever at its end is connected to a cable 29 attached to the weight 30, the cable passing over the pulley 31. Intermediate the point of attachment of the cable and the pivotal point 27 the arm 28 is linked to the piston rod 32 of the single acting cylinder 33.

The cable 29 is preferably connected to the arm 28 in an adjustable manner as by the bolt 34 which may be adjusted along the slot 35 so that the leverage to which the weight 30 is applied may be varied.

The connection of the cable 18 to the lever 14, Figures 1 and 2, may be similarly adjustable.

In lieu of weights, compression or tension springs may be utilized either directly or through the leverage to act upon the rollers to create the desired pressure.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A laundry ironing or like machine comprising a roller, a co-operating steam heated bed, a lever operatively connected to the roller, a weight for pressing the roller through the medium of the lever onto the steam heated bed and a single acting fluid pressure piston acting through said lever to counteract the effect of the weight.

2. A laundry ironing or like machine as claimed in claim 1 wherein the weight is connected to the lever by a cable, the point of connection being adjustable with respect to the fulcrum of the lever to vary the leverage.

3. A laundry ironing or like machine as claimed in claim 1, wherein a latch device is provided for maintaining the roller off the co-operative steam-heated bed.

4. A laundry ironing or like machine, comprising a steam heated bed, a pressure element co-operating with the bed, a weight for pressing said pressure element onto the bed, and fluid pressure means for counteracting the effect of the weight in order adjustably to reduce the pressure of said element against the bed or to move said element to an inoperative position.

5. A laundry ironing or like machine comprising a steam heated bed, a roller co-operating therewith, a weight for pressing the roller onto the

steam heated bed and fluid pressure means for counteracting the effect of the weight in order adjustably to reduce the pressure of the roller against the bed or move the roller to an inoperative position.

6. A laundry ironing or like machine, comprising a steam heated bed, a roller co-operating therewith, a trunnion for said roller, a lever pivoted on a fixed axis, an operative connection between the lever and trunnion, a weight coupled to said lever to force the roller against the bed, and fluid pressure means coupled to said lever for moving the roller away from the bed.

7. A laundry ironing or like machine, comprising a co-operating steam heated bed, a plurality of rollers co-operating with said bed, trunnions for said rollers, levers operatively connected to said trunnions, weights operatively connected to said levers for pressing the rollers on said bed, single acting fluid pressure pistons operatively connected to the levers for counteracting the effect of the weights, bolts for temporarily retaining the rollers off the steam heated bed, and means for simultaneously operating all the bolts.

8. In an ironing machine, a mounting for a roller adapted to permit movement of the roller in a path transverse to its axis, comprising an axle for the roller, levers operatively connected to the ends of said axle, weights operatively connected to the levers tending to move the roller in said path in one direction, and fluid pressure means operatively connected to the levers for moving the roller on said path in the opposite direction against the action of the weights.

9. An ironing machine as claimed in claim 8, wherein said roller comprises an ironing element which co-operates with a steam-heated bed, said weights tending to press the roller onto the bed by a movement of the roller in said transverse path.

10. An ironing machine as claimed in claim 8, wherein said roller forms a support for an endless conveyor band, said weights acting to tension said band by a movement of the roller in said transverse path.

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