Feb. 26, 1929. 1,703,586

C. P. JAHNKE

FEEDING APPARATUS FOR IRONING MACHINES

Filed Aug. 15, 1927

Fig. 1

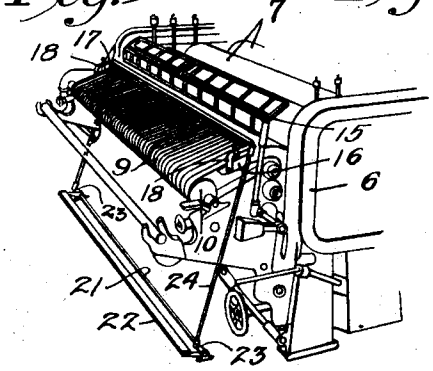


Fig. 5

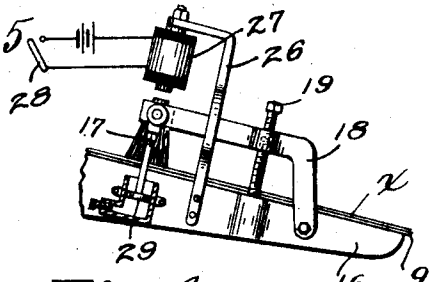


Fig. 4

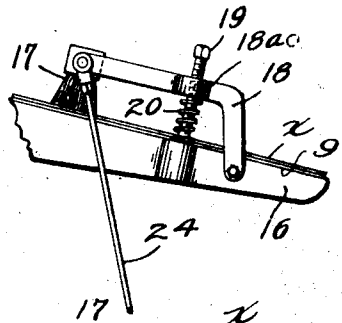


Fig. 2

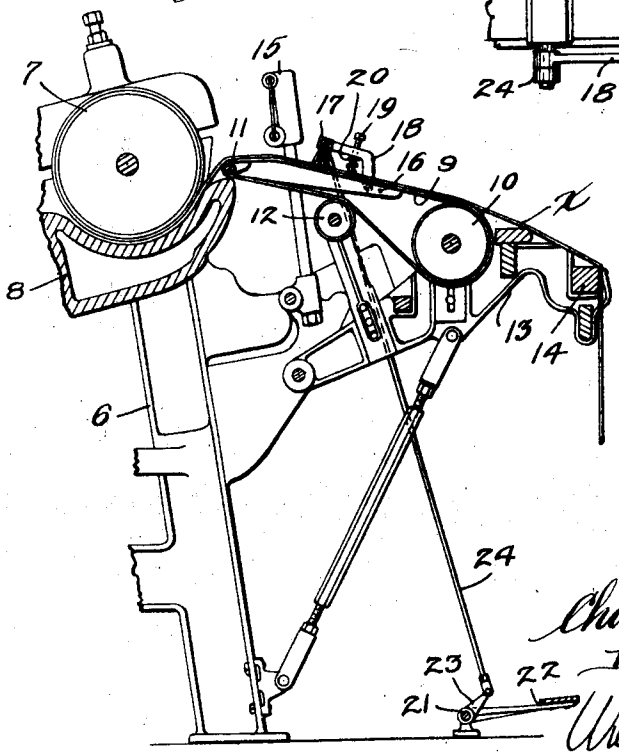


Fig. 3

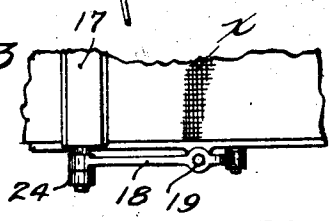
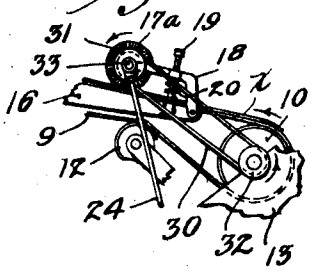


Fig. 6



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UNITED STATES PATENT OFFICE.

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FEEDING APPARATUS FOR IRONING MACHINES.

Application filed August 15, 1927. Serial No. 213,001.

This invention relates to apparatus for use in connection with flat work, ironing machinery and especially to apparatus for evenly feeding the linen or other material to the ironing rollers.

In commercial ironing machinery now in use the linen is usually fed to the ironing rolls by means of an apron of the endless belt type and an operator usually stands at each side of the feeding end of the machine, stretching the linen across the apron to start the same, and as the forward edge of the linen is engaged between the rolls and the steam chest the operators hold the rear edge of the linen by the corners to tension and smooth the same. The forward edge of the article of linen is usually disposed upon the apron in a straight line and comes out of the machine properly ironed, but the rear edge of the article held in the manner above described is usually curved or arched and comes out of the machine in that manner. This is especially true of large articles, such as sheets, tablecloths, bed spreads, and the like. The curving or arching, moreover, often causes small wrinkles in the articles of linen.

The main object of my invention is to provide a simple but highly efficient feeding apparatus working in co-operation with the feeding apron which will cause the article ironed to be uniformly tensioned and fed evenly to the roll througout its entire length, positively preventing the article from wrinkling as well as causing the article when ironed to have rectilinear edges on all sides.

It is a further object of my invention to provide in a feeding attachment for ironing machinery, smoothing and tensioning apparatus for engaging the article in co-operation with the usual feeding apron as it is fed into the machine, whereby an even pressure will be exerted on all parts of the article smoothing the same and causing the same to be perfectly fed to the ironing rolls.

It is another object to provide apparatus of the class described, which may be easily operated and controlled preferably by the foot of the operator.

A still further object is to provide efficient feeding and smoothing apparatus for ironing machinery which may be readily installed on commercial machinery now in use without reconstruction or alteration of said machinery.

These and other objects and advantages of the invention will be apparent from the following description made in connection with the accompanying drawings wherein like reference characters refer to similar parts throughout the several views and in which,

Fig. 1 is a perspective view of the forward or feeding end of a form of commercial ironing machine having a simple embodiment of my invention operatively mounted thereon;

Fig. 2 is a longitudinal vertical section of the forward end of the machine shown in Fig. 1, having my apparatus attached thereto;

Fig. 3 is a plan view of a portion of the smoothing and tensioning brush applied in connection with the feeding apparatus;

Fig. 4 is a side elevation of the same;

Fig. 5 is a diagrammatical view of a slightly modified form of the invention; and

Fig. 6 is a side elevation of a slightly different form of my invention, wherein the brush or smoothing element is driven in the reverse direction to the travel of the apron.

As illustrated, my invention is applied to a commercial ironing machine of standard type having the heavy upright frame 6, the ironing roll 7, journaled therein co-operating with the steam chest 8 and having mounted at its forward end the usual apron structure. As shown, this apron structure comprises a plurality of endless ribbons 9 trained over a relatively large ribbon feed roller 10 and a relatively small roller 11 disposed at the forward end of the machine proper and adjacent the forward roller. The endless ribbons 9 are tensioned by passage over a tensioning roller 12. The ribbon feed roller 10 and tensioning roller are shown journaled in a forwardly extending bracket 13 which also supports the usual shake out bar 14. Above the rear end of apron 9 and disposed forwardly of the machine proper is mounted a finger guard 15 of usual type swingable on a rock shaft and connected with operating mechanism for stopping the machine. Feed board brackets 16 are provided at each side and beneath the rear portion of the apron.

My feeding apparatus as illustrated in Figs. 1 to 4 inclusive comprises an elongated transversely disposed brush 17 of any suitable type, swingably disposed above and across the ribbons 9 of the apron and preferably situated forwardly of the finger guard 15. Brush 17 is mounted between a pair of L-shaped arms 18, the shorter and rearward ends of which are pivoted to said feed board brackets 16. Arms 18 are swingable on horizontal axes. It will be seen that brush 17 is mounted in po-

sition to contact material fed into the machine. Arms 18 are provided with threaded eyes 18ª in which adjustable stop bolts 19 are secured. Bolts 19 depend from arms 18 and their lower extremities engage the upper edges of the feed board brackets 16 limiting the downward position of the brush 17. Coiled springs 20 surround bolts 19 and are interposed between the under side of arms 18 and feed board brackets 16 adapted to yieldingly hold the brush in raised position a short distance above the top of the feeding apron. The movement of arms 18 is so slight that springs 20 need only be loosely disposed about adjustable stop bolts 19.

As illustrated in Figs. 1 and 2, a pedal operating mechanism is provided comprising a horizontally pivoted rock shaft 21 journaled forwardly of the forward end of the machine and having pedal 22 rigidly secured thereto. A pair of rocker arms 23 rigidly secured to shaft 21 adjacent the ends thereof are connected with the outer portions of the brush arms 18 by means of links or rods 24. It will be noticed that my pedal structure as shown extends across the entire front of the machine for the convenient manipulation of the operators.

Operation.

The operation of the form of the invention illustrated in Figs. 1 to 4 inclusive, may be briefly described as follows:

Two operators, one at each side of the feeding end of the machine place the linen on apron 9 taking care to draw the corners of the forward edge thereof taut to make a rectilinear edge. One of the operators then depresses the pedal 22, putting the requisite amount of tension on the linen through brush 17, in co-operation with the traveling ribbons 9 and smoothing the linen in its movement into the rolls. It will be seen that brush 17 will smooth the articles evenly and uniformly and will moreover apply the requisite tension in such a manner that it will be unnecessary for the operator to hold the lower corners of the article. The position of bolt 19 may be obviously varied to adjust the position or engagement of the brush 17 against the linen. The pedal 22 is, of course, released by the operator simultaneously with the application of another article to the apron.

Extensive usage of this device has shown it to be highly efficient for the purposes intended and the sheets, table cloths, bed spreads, and other articles ironed by a machine supplied with my device come out in excellent shape with all edges thereof rectilinear.

In Fig. 5 is illustrated a device similar in all respects to the device previously described with the exception that it is operated by gravity in co-operation with a magnetic coil. As illustrated, hanger arms 26 are supported from the feed board brackets having angularly bent upper ends. Magnetic coils 27 are mounted from the upper ends of said hanger arms disposed above and substantially alined with the outer ends of brush arms 18 and are connected with a suitable source of electricity, a switch 28 being supplied in the circuit. In this form of the invention the brush head is formed of sufficiently heavy material to permit gravity to readily drop the same against articles traveling on the apron and to supply the requisite tension for smoothing the article and causing them to feed properly. A dash pot 29 may be supplied beneath the outer ends of arms 18 to check the violence of the downward movement of the brush. Obviously, when the circuit through coil 27 is completed, brush 17 will be lifted from engagement with the apron or article on the apron and held in elevated position through electromagnetism. The switch 28 will be of suitable structure to permit operation thereof by the feet and will be disposed forwardly of the feeding end of the ironing machine and preferably upon the floor for the convenient manipulation of the operator. When the circuit through coils 27 is closed brush 17 will, of course, be lifted from engagement with the apron or article upon the apron and will be held slightly elevated therefrom to enable another article of linen to be fed to the machine.

A slightly different form of the invention is illustrated in Fig. 6, being a trifle more complicated in structure, and preferably of slightly greater efficiency than the device previously described. In this form of the device the swingable brush arms 18 are identical with the brush arms in the first forms described and the depending adjustable stop bolts 19 are provided, adapted to engage the upper edge of the feed board brackets 16 to limit the downward movement of arms 18 and coiled springs 20 surround the depending ends of bolts 19 yieldingly holding the arms 18 in upward position when pressure is removed from pedal 22. The brush 17ª supplied in this form of the invention is of the rotary type having trunnions 33 journaled in the outer ends of arms 18. One of said trunnions 33 is provided with a pulley 31 drivably connected to a pulley 32 by means of endless belt 30, pulley 32 being rigidly connected with the shaft of the ribbon feed roller 10. There is such slight movement required in the operation of arms 18 that the endless belt 30 will suffice to connect rotary brush 17ª with the ribbon feed roller for driving, being in line of greatest tension when the brush is moving into engagement with the linen. Rod 24 connects the outer ends of arms 18 with the pedal operating mechanism (not shown, but which is identical with the operating mechanism shown in Fig. 2).

It will be seen that in the form of the invention just described brush 17ª is rotated in

the opposite direction from the movement of the articles into the machine, thereby smoothing the articles fed by the apron and evenly distributing the pressure thereupon, to cause the rear edge of the linen to assume a rectilinear line when ironed and to eliminate wrinkling.

From the foregoing description it will be seen that I have provided an extremely simple but highly efficient device overcoming the objectionable curving or arching of the rear edges of linen, as well as the wrinkling of the material in the process of commercial ironing.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of the invention.

What is claimed is:

1. In combination with the feeding apron of an ironing machine or the like, an elongated yielding element disposed transversely above said apron, means controllable by the foot of an operator for moving said element out of or into engagement with articles carried by said apron to smooth said articles and cause even feeding of the same to the ironing mechanism of said machine.

2. In combination with the feeding apron of an ironing machine or the like, an elongated yielding element disposed transversely above said apron, swingable arms supporting said elongated element and pivoted to said machine for swinging movement on substantially horizontal axes, and means controllable by the feet of an operator for moving said elongated element out of or into engagement with articles carried by said apron to smooth said articles and cause even feeding of the same to the ironing mechanism of said machine.

3. In combination with the feeding apron of an ironing machine or the like, an elongated brush disposed transversely above said apron having a pair of swingable arms pivoted to said machine on substantially horizontal axes and supporting said brush, pedal operating means for swinging said arms to move said brush in or out of engagement with articles carried by said apron, and adjustable means for limiting the downward movement of said arms.

4. In combination with the feeding apron of an ironing machine or the like, an elongated yielding element disposed transversely above said apron, resilient means for normally holding said element out of engagement with said apron, and means by which said element may be moved against said apron to smooth articles carried thereby to cause an even feeding of the same to the working members of said ironing machine or the like.

5. In combination with the feeding apron of an ironing machine or the like, a smoothing element disposed transversely above said apron, means for rotatably supporting said smoothing element with freedom for movement against or away from said apron, means for rotating said smoothing element, and means for moving the same into or out of engagement with articles carried by said apron to smooth said articles.

In testimony whereof I affix my signature.

CHARLES P. JAHNKE.