

(No Model.)

2 Sheets—Sheet 1.

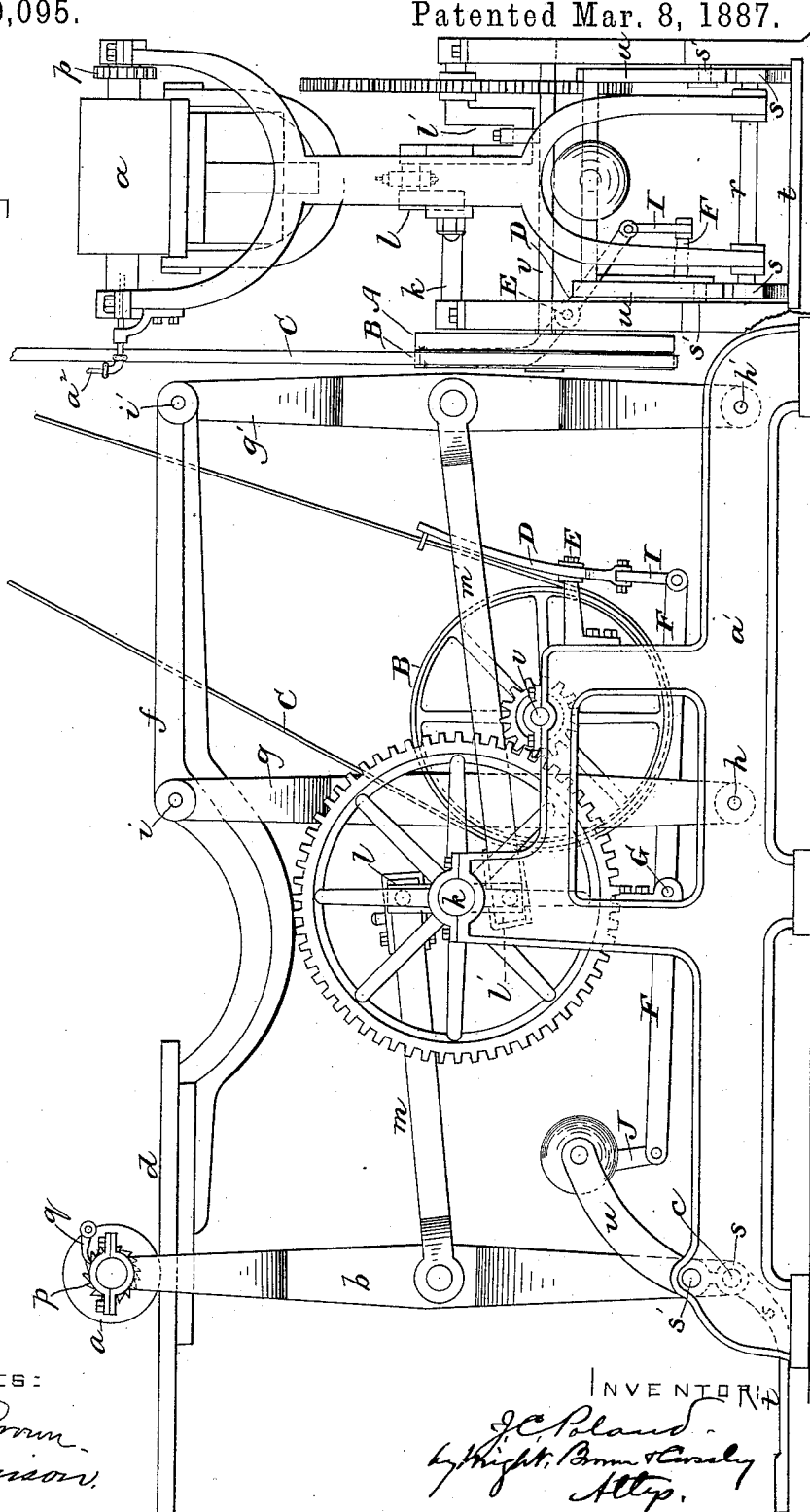
J. C. POLAND.
IRONING MACHINE.

No. 359,095.

Patented Mar. 8, 1887.

Fig. 2.

Fig. 1.



WITNESSES:

A. H. Brown.
A. D. Harrison.

INVENTOR

J. C. Poland
By Wright, Brown & Conely
Atty.

(No Model.)

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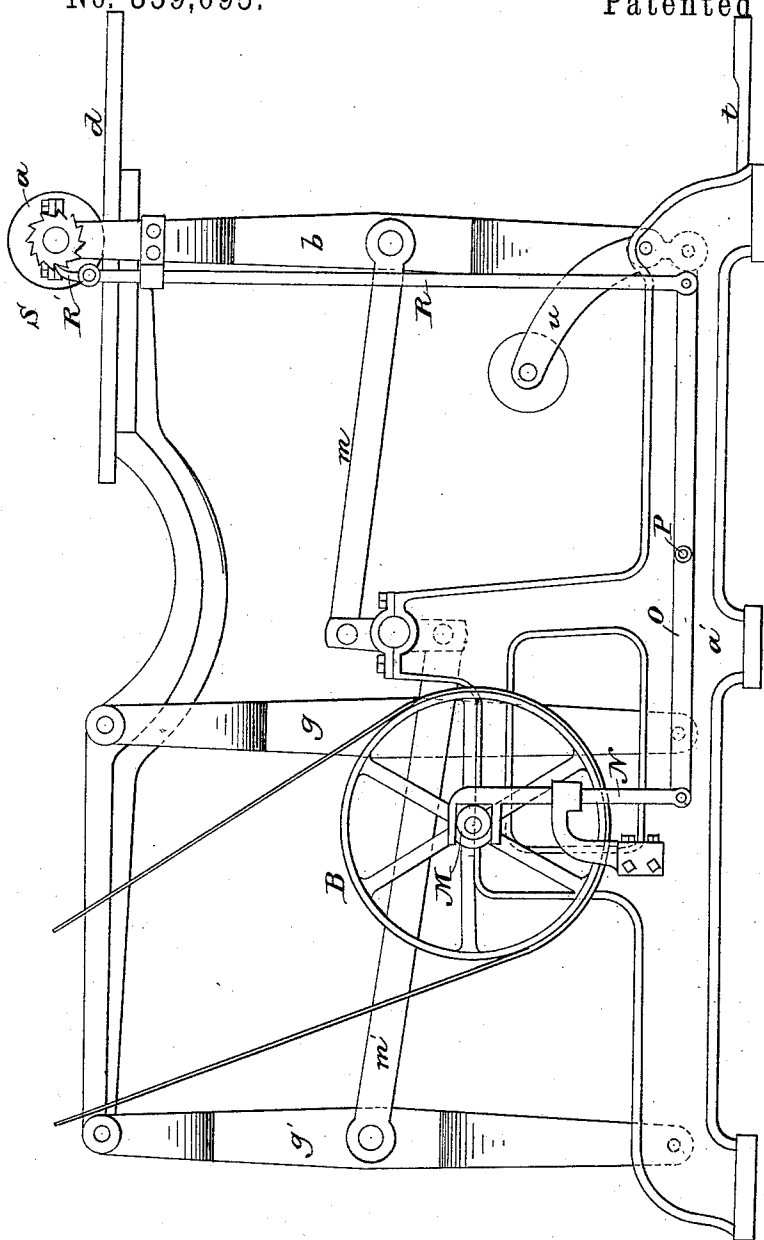


Fig 3

WITNESSES:

A. H. Brown
A. D. Harrison

INVENTOR:

J. C. Poland
by Wright, Brown & Cooley
Attys.

UNITED STATES PATENT OFFICE.

JOHN C. POLAND, OF BOSTON, MASSACHUSETTS.

IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 359,095, dated March 8, 1887.

Application filed December 4, 1885. Serial No. 181,624. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. POLAND, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Ironing-Machines, of which the following is a specification.

This invention relates to that class of ironing-machines in which a heated polishing-iron, usually in the form of a metallic roll, is caused to be moved upon the articles to be ironed and polished, said articles being supported upon a bed or table in position to receive the action of the iron.

My invention consists in the combination, with the iron and bed referred to, of an oscillating support for each of the same, and means for oscillating said supports, the movement of each being in an opposite direction, substantially as and for the purpose set forth.

The invention also consists in the means employed for stopping the oscillation of the bed and iron.

The invention also consists in the means for revolving the iron roll when the machine is not in operation.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of my improved machine. Fig. 2 represents an end elevation of the same. Fig. 3 represents an elevation of the opposite side of the machine.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents the polishing-iron, here shown as a roll, which is journaled in bearings in the swinging end of a lever, *b*. Said lever is pivoted at *c* to movable supports, hereinafter described, so that the lever and roll can be raised and lowered.

d represents the bed, which is attached to one end of an arm, *f*. Said arm is supported by links *g g'*, pivoted, respectively, at *h h'* to the supporting-frame *a'* and at *i i'* to the arm *f*. Journaled in bearings on the frame *a'* is a shaft, *k*, having two cranks, *l l'*, extending in opposite directions. The crank *l* is connected by a rod, *m*, with the lever *b*, supporting the ironing-roll, while the crank *l'* is connected by a rod, *m'*, with the link *g'*.

It will be seen that the rotation of the crank-

shaft *k* will, through the described intermediate devices, oscillate the ironing-roll and bed simultaneously in opposite directions, the throw of both parts being of the same length, thus causing the same movement of one of said parts with relation to the other that would be produced by moving either part alone twice the distance that it is now required to be moved. By thus dividing the throw equally between the bed and roll I enable the operator to stand nearer the bed than she could if the bed only were the moving part, and avoid vibrating the flexible pipe which supplies steam or gas to the roll to such an extent as would be required if the roll were the only reciprocating part.

It will be seen that no separation of the roll from the bed and no variation of the pressure of the roll upon the bed is caused by the oscillating movements. This is due to the fact that the distance from the acting portion of the surface of the roll to the pivots or center on which the lever *b* swings is substantially equal to the length of the links *g g'*, so that the roll and bed oscillate in arcs having radii of substantially equal lengths. The bed and roll therefore rise and fall alike, so that no variation of pressure is caused by their movements.

The roll is provided with a ratchet, *p*, on its arbor, on which bears a pawl, *q*, pivoted to the lever *b*. When the roll is moving in one direction the pawl permits it to rotate by contact with the fabrics on the bed; but when the roll is moving in the opposite direction the ratchet is engaged by the pawl, so that the roll is held and caused to slip upon the article to be ironed, as usual in this class of machines.

The lever *b* is pivoted at its lower end to a rod, *r*, which is affixed to the swinging ends of short arms *s s*, which are pivoted at *s' s'* to the frame *a'*. The arms *s s* are extended forward from the rod *r*, and to their front ends is attached a cross-piece, which, with the extended portions of the arms *s s*, constitutes a treadle or lever, *t*, the depression of which causes the arms *s s* and rod *r* to swing downwardly, and thus depress the lever *b* and press the roll *a* downwardly against the bed. The roll is normally raised from the bed by weighted arms *u*, formed on and extended backwardly from

the arms *s s*, and arranged to swing the arms *s s* and rod *r* upwardly, thus raising the lever *b* and separating the roll from the bed whenever the operator's foot is removed from the treadle. When the treadle is depressed, the short arms *s s* are brought in line or nearly in line with the lever *b*, said arms and lever acting as a toggle-joint and enabling the operator to easily hold the roll against the bed.

The counter-shaft *v* has a fast pulley, A, and a loose pulley, B. The driving-belt C is shifted automatically from one pulley to the other by a bell-crank lever, D, pivoted at E to the frame of the machine, and having belt-engaging pins on one arm, and devices connecting said lever to one of the weighted arms *u*, so that when said arms fall by the release of the treadle the lever *b* will be turned in the direction required to remove the belt from the fast to the loose pulley; but when the treadle is depressed to press the roll *a* against the bed the lever will be turned in the opposite direction and move the belt onto the fast pulley. Said devices consist, in the present instance, of a lever, F, pivoted at G to the frame *a'*, and links or rods I J, connecting the ends of said lever, respectively, to the lever D and one of the arms *u*.

It will thus be seen that the operation of the machine is automatically discontinued when the treadle is released and resumed when the treadle is depressed. When the roll *a* is heated by gas, it is necessary that it be rotated step by step when the machine is not in operation, in order that the gas-flame may not be directed so long on any one part of the roll as to overheat said part. To this end I secure to the hub of the loose pulley B a cam, M, and engage with said cam a rod, N, which is vertically reciprocated by the rotation of the cam, and oscillates a lever, O, which is pivoted at P to the frame *a'*. To one end of said lever is pivoted a vertical rod, R, carrying at its upper end a pawl, R', engaging with a ratchet, S, attached to the roll *a*, all as shown in Fig. 3.

When the loose pulley is set in motion by the shipping of the belt onto it from the fast pulley, the pawl R' is reciprocated and caused to rotate the roll *a*, and thus keep it uniformly heated.

The roll is heated by steam or gas supplied by a flexible pipe, *a''*, passing through a hollow trunnion of the roll, as usual.

The crank-shaft *k* is geared to a counter-shaft, *v*, which is rotated by a belt from a driving-shaft.

I do not herein claim the following subject-matter—to wit, in an ironing-machine, the combination of a reciprocating table and a reciprocating roller above it, both of which are reciprocated from the same shaft.

I claim—

1. The combination of a polishing-iron, a bed or support for the articles to be ironed, oscillating supports for said iron and bed, and means, substantially as described, for oscillating the supports of the iron and bed simultaneously in opposite directions, as set forth.

2. The combination of a polishing-iron, an oscillating support for the same, a bed, oscillating supports for said bed, a double-crank shaft, and rods connecting the crank-shaft to the oscillating supports of the polishing-iron and bed, whereby the rotation of said crank-shaft oscillates the supports of said iron and bed simultaneously in opposite directions, as set forth.

3. The combination of a polishing-iron, the supporting-bed, oscillating supports for said iron and bed, means, substantially as described, for oscillating said supports simultaneously in opposite directions, the pivoted arms *s s*, to which the support of the iron is pivoted, an automatic device whereby said arms are normally turned to raise the iron, and a treadle whereby the operator may turn said arms to depress the iron, as set forth.

4. In an ironing-machine, the combination of a polishing-iron, a supporting-bed, oscillating supports for said iron and bed, means, substantially as described, for oscillating said supports simultaneously in opposite directions, the pivoted arms *s s*, having the weighted arms and the treadle, the belt-shipper, and devices, substantially as described, whereby the belt-shipper is operated by the movements of the arms *s s* and their weighted arms, as set forth.

5. The combination of the bed, the internally-heated ironing-roll adapted to rotate by frictional contact with the bed, and provided with a ratchet, a crank-shaft and connecting-pitman for oscillating said roll over said bed, the driving-shaft having the fast pulley and the loose pulley, a cam, M, affixed to the loose pulley, the driving-belt, means, substantially as described, whereby said belt may be held upon either of said pulleys, a pawl, R', engaging the ratchet on the ironing-roll, and means, substantially such as ratchet S, pawl-rod R, and reciprocating means, whereby when the driving-belt is on the loose pulley the rotation of the cam on said pulley is caused to reciprocate said pawl R', and thereby rotate the ironing-roll step by step.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 1st day of December, 1885.

JOHN C. POLAND.

Witnesses:

C. F. BROWN,
H. BROWN.