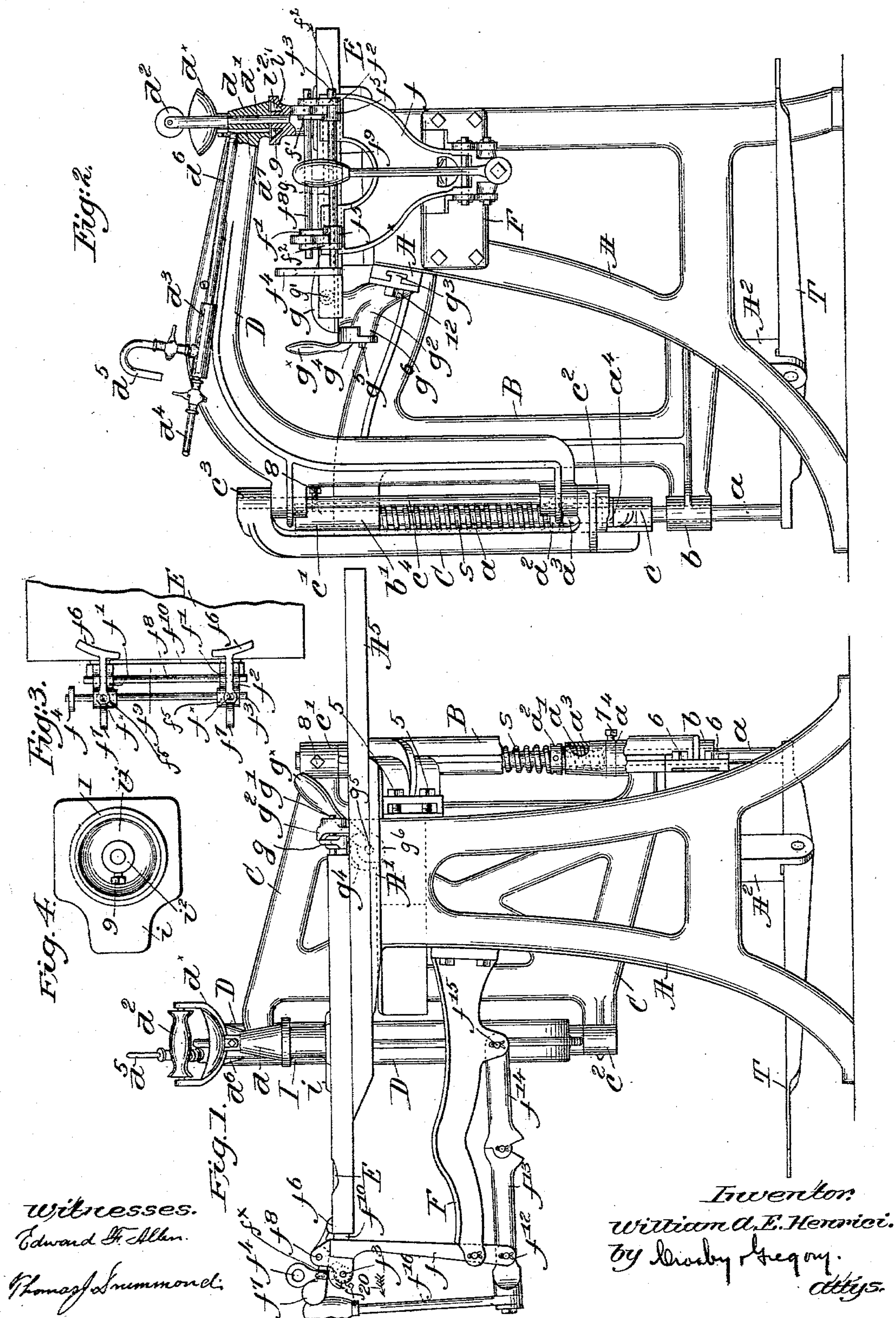


(No Model.)

W. A. E. HENRICI.  
IRONING MACHINE.

No. 556,820.

Patented Mar. 24, 1896.





# UNITED STATES PATENT OFFICE.

WILLIAM A. E. HENRICI, OF CHELSEA, MASSACHUSETTS.

## IRONING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 556,820, dated March 24, 1896.

Application filed April 24, 1895. Serial No. 547,011. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. E. HENRICI, of Chelsea, county of Suffolk, State of Massachusetts, have invented Improvements in Ironing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the ironing of shirts by machinery a number of machines are employed to do the work, each adapted to perform its particular part in such manner that the completely-ironed shirt combines the results of the various operations in such a way that much time is saved and the results are satisfactory in the highest degree.

Usually the bosom of a shirt is first ironed, then the neck and wrist bands, and it is desirable to make sharp and distinct the angle between the bosom and neckband, this operation being called "bosom-fixing." The rough and unironed yoke must also be set or ironed, and for outing-shirts or others in which the bosoms are plaited a special step or operation is necessary—that is, to iron beneath the plaits—so that such part of the shirt shall be smoothed.

This invention has for its object the production of a machine by which these operations of bosom-fixing, yoke-setting, and outing-shirt ironing may be accomplished rapidly and effectively, and in accordance therewith my invention consists in the construction, arrangement and operation of the machine, to be hereinafter described, and particularly pointed out in the claims.

Figure 1, in front elevation, represents a machine embodying my invention equipped to iron the bosom of an outing-shirt. Fig. 2 is a left-hand elevation thereof viewing Fig. 1. Fig. 3 is a top or plan view of one of the shirt-clamps shown in Fig. 1 at the left-hand end. Fig. 4 is a top plan view of an iron to be used in ironing outing-shirts.

Referring to Figs. 1 and 2, the apparatus is mounted upon a suitable framework A, having a flattened top A' to hold a suitable support for the shirt to be ironed, the frame having secured thereto at one end, as by suitable bolts 5 and 6, Fig. 1, a rearwardly-extended

frame B, having bearings  $b\ b'$  for a rotatable and vertically-movable slide-rod  $a$ , supported at its lower end on a suitable treadle T, pivoted to an ear A<sup>2</sup>. The rod  $a$  is surrounded by a spiral spring  $s$  between the bearing  $b'$  and an exteriorly-threaded sleeve  $a'$ , (see Fig. 1,) having an enlarged head  $a^2$  and engaging an interiorly-threaded hub  $a^3$ , held in place on the rod by a collar  $a^4$ , maintained in adjusted position by a set-screw 7. By adjusting the collar  $a^4$  the tension of the spring may be regulated, and after the collar has been secured to the rod the sleeve  $a'$  may be rotated by means of a suitable spanner or wrench within the hub  $a^3$  to complete the adjustment with greater nicety and easiness. The regulation of the spring determines the pressure of the iron upon the work, as will be described.

A swinging frame C has bearings  $c\ c'$ , through which the rod  $a$  is extended, and the swinging frame is secured to the rod by set-screws, as 8, in one or both of the bearings  $c\ c'$ . The outer or free end of the frame, which is upwardly inclined, as shown in Figs. 1 and 2, also has bearings  $c^2\ c^3$ , through which is extended a pintle  $c^4$ , on which is mounted an iron-carrying arm or support D, having at its outer end a hub  $d$ , provided with a vertical hole through which is extended the shank  $d'$  of a handle  $d^2$  of any suitable construction, the shank being rotatable in the hub and to which is secured the iron by a suitable set-screw 9, Fig. 2.

From the foregoing description and the drawings it is obvious that the supporting-arm D is free to swing about the pintle  $c^4$ , and the said pivotal point of the arm is mounted on the swinging frame C, so that the iron may be moved over all parts of a work-support E.

When the work is to be placed on the support, the operator depresses the treadle T, thus raising the rod  $a$  and through it the arm D to lift the iron and permit the insertion of a shirt beneath it.

Secured to the arm D is a mixing-chamber  $d^3$ , connected by suitable flexible pipes  $d^4$  and  $d^5$  with supplies of gas and air, respectively, to form practically a "Bunsen" burner of well-known construction, the mixed air and



gas being conveyed through a pipe  $d^6$  to a passage  $d^7$  in the hub  $d$ , (see Fig. 2,) the open end of the passage terminating directly above the iron, forming thereat a burner, the flame being directed against the top of the iron to heat the same, the hand of the operator being protected by a suitable shield  $d^x$  below the handle  $d^2$ .

In ironing outing-shirt bosoms it is desirable to clamp the shirt at both ends to the work-support E, and at the left-hand end of the frame A, I have secured a bracket F, in which is pivoted a U-shaped rocking frame  $f$ , (clearly shown in Fig. 2,) having ears  $f^2$  at its upper end for a horizontal rock-shaft  $f^3$ , provided with a handle  $f^4$  at one end beyond the adjacent ear  $f^2$ , and cam-hubs  $f^5$  fast on the rock-shaft inside of said ears. Clamping-fingers  $f^6$ , Figs. 1 and 3, having rearwardly-extended and weighted ends  $f^7$ , are pivoted on a rod  $f^8$ , supported in the upper part of the ears  $f^2$  and in additional ears  $f'$  on the rocking frame  $f$ . The cam-hubs  $f^5$  on the rock-shaft  $f^3$  are beneath and act upon adjusting-screws  $f^x$  in the rearwardly-extended arms of the clamping-fingers  $f^6$  to press the said fingers firmly down upon the work held on the work-support E when the handle  $f^4$  is in the position shown in Figs. 1 to 3; and when the rock-shaft  $f^3$  is turned to the left, Fig. 1, the low parts of the cam-hubs  $f^5$  will allow the weighted ends of the clamping-fingers to drop, lifting the clamps from the work.

The overhanging end of the shirt is clamped against the edge of the work-support by means of a strip of rubber or other suitable material  $f^{10}$ , secured to a cross-bar  $f^9$  of the rocking frame, and the latter is pivotally connected at its lower end at  $f^{12}$  to the lever  $f^{13}$  of a toggle-joint, the other lever,  $f^{14}$ , thereof being pivoted at  $f^{15}$  to the bracket F. The outer end of the lever  $f^{13}$  has fast thereto an actuating-handle  $f^{16}$  to straighten or break the toggle, the toggle being shown as straightened in Fig. 1, to thus press the pad  $f^{10}$  firmly against the edge of the work-support.

When the hand-lever  $f^{16}$  is moved in the direction of the arrow 20, Fig. 1, the toggle is broken and the upper end of the rocking frame  $f$  swings outwardly or to the left, viewing Fig. 1, and first the operator by depressing the handle  $f^4$  moves the cam-hubs out of the way to permit the weighted ends of the clamping-fingers  $f^6$  to raise the latter from the work. At the other end of the work-support I have provided a clamp (shown as an arm  $g$ ) pivoted at  $g'$  to the side of a stand  $g^2$  and adapted to extend across the work-support, said stand having a flanged foot  $g^3$  to enter an undercut groove in a portion  $A^x$  of the frame (see Fig. 2) and held in adjusted position by a set-screw 12, whereby the stand and arm  $g$  can be moved bodily toward or from the end of the work-support.

The end of the clamping-arm  $g$  nearest its pivot extends over a hub  $g^4$ , (clearly shown in Fig. 2,) pivoted at  $g^5$  to the stand and cut

away at  $g^6$ , so that when the hub  $g^4$  is turned part way around on its pivot from the position shown in Figs. 1 and 2 the cut-away portion  $g^6$  will be beneath the adjacent end of the clamping-arm, and the outer end of the latter may be lifted to release the work, a reverse operation clamping the work, as the high part of the hub then bears against the under side of the overhanging portion of the arm  $g$ .

The hub  $g^4$  is provided with a suitable handle  $g^x$  by which it may be operated, and the clamping-arm is shown in Fig. 1 as adapted to turn down upon a board or other support  $A^1$ , which may be secured to the frame.

The iron shown is designed for ironing outing-shirts or shirts with plaited bosoms. The foot  $i$  of the iron I (shown in Figs. 1 and 4) is very thin, so that it will readily pass underneath the plaits of the bosom, the foot of the iron being shown in Figs. 1 and 4 as extended at one side.

It is to be understood that the work-support in any instance is covered with thick felting or other suitable material to present a properly-yielding surface to the shirt as it is ironed. and in Fig. 1 the outer covering is shown as broken out, to more clearly illustrate the same.

It will be obvious that all of the operations—namely, outing-shirt ironing, bosom-fixing, and yoke-setting—may be carried out on the machine shown in Figs. 1 and 2—that is to say, in yoke-setting it is unnecessary to clamp the shirt to the work-support, while in ironing outing-shirts they should be clamped to properly perform the work, and in bosom-fixing, while it is not absolutely necessary that the shirt be clamped, it is preferable.

I claim—

1. In an ironing-machine, a work-support, a rocking frame at one end thereof, clamping-fingers pivoted thereon, a rock-shaft, cams thereon to act upon the said fingers to clamp them upon the work, and an iron mounted in a frame to move universally in a horizontal plane over the work, substantially as described.

2. In an ironing-machine, a work-support, a rocking frame at one end thereof, and clamping-fingers pivoted thereon, combined with a rock-shaft, and cams thereon to act upon the said fingers to clamp them upon the work, substantially as described.

3. In an ironing-machine, a work-support, a rocking frame at one end thereof, means to actuate it to bring it against the end of the work-support, and clamping-fingers pivoted on said frame, combined with cams to act upon said fingers, adjusting devices to regulate the pressure of the fingers upon the work, and means to operate the cams, substantially as described.

4. In an ironing-machine, a work-support, a rocking frame at one end thereof, clamping-fingers pivoted thereon, a rock-shaft, and cams thereon to act upon said fingers to clamp them upon the work, a transverse arm pivoted at



the other end of the work-support, and a cam-hub mounted at one side of the work-support, to engage the overhanging end of said arm, to press down the other end of the arm upon  
5 the work and retain it thereupon, substantially as described.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

WILLIAM A. E. HENRICI.

Witnesses:

AUGUSTA E. DEAN,  
JOHN C. EDWARDS.