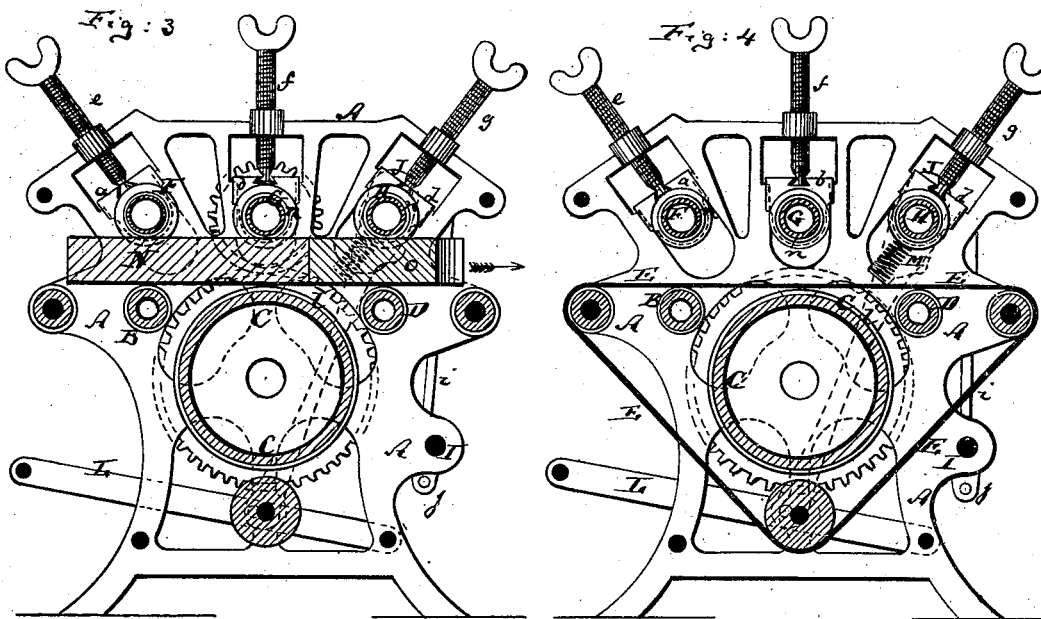
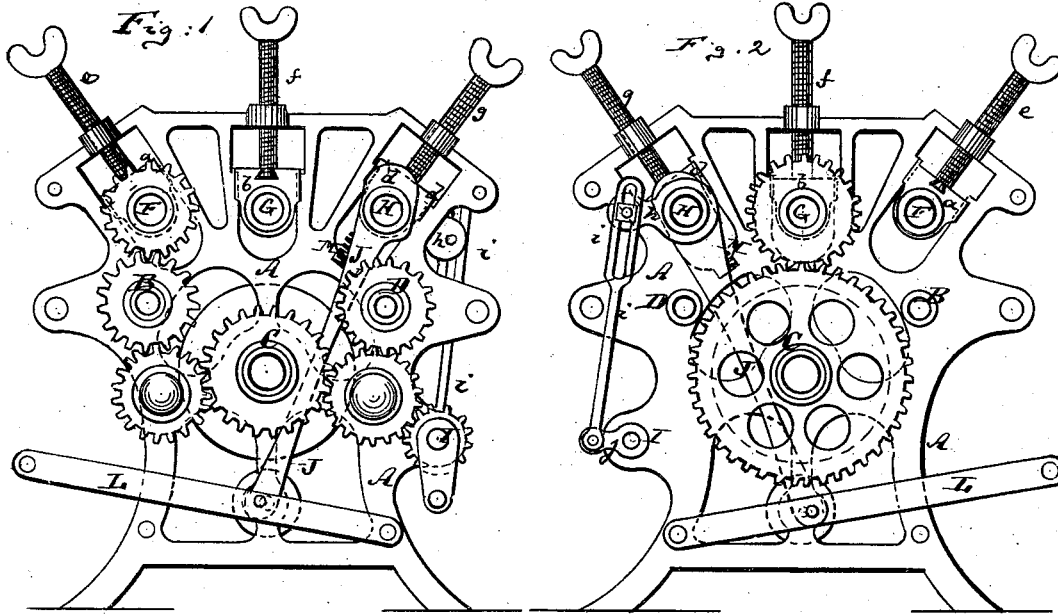


P. O' THAYNE.  
IRONING APPARATUS.

No. 190,445.

Patented May 8, 1877.



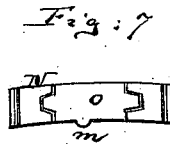
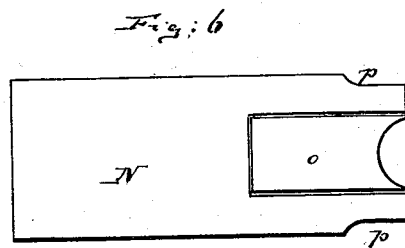
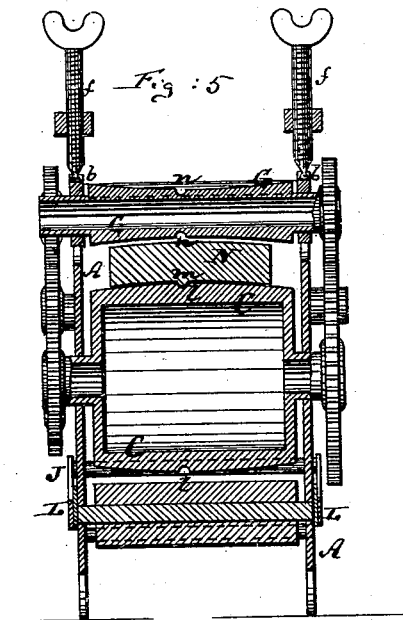
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# UNITED STATES PATENT OFFICE.

PATRICK O'THAYNE, OF NEW YORK, N. Y.

## IMPROVEMENT IN IRONING APPARATUS.

Specification forming part of Letters Patent No. 190,445, dated May 8, 1877; application filed February 8, 1877.

*To all whom it may concern:*

Be it known that I, PATRICK O'THAYNE, of New York city, in the county and State of New York, have invented a new and Improved Ironing-Machine, of which the following is a specification:

Figure 1 is a side view of my improved ironing-machine; Fig. 2, a reverse view of Fig. 1; Fig. 3, a vertical longitudinal central section of the machine, showing it with the ironing-board; Fig. 4, a similar section thereof, showing it without an ironing-board. Fig. 5 is a vertical transverse section of the machine; Fig. 6, a detail top view of the ironing-board; Fig. 7, an end view of the ironing-board.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to a machine which is more particularly adapted to the ironing of shirts and shirt-bosoms, but which may also be used for ironing other suitable fabrics or garments. The principal difficulty to be overcome in devising machinery for performing the work of hand in ironing garments, is the fact that with reasonable speed in the machine, the moisture contained in the garment cannot be expelled rapidly enough to permit the production of a perfect polish. In other words, the joint functions of drying and polishing the garment have heretofore not been successfully performed at the same time, and on the same machine. As far as I am aware, ironing-machines have heretofore been constructed on the rotary principle entirely—that is, the devices applied to the surfaces to be ironed have invariably a rotary motion imparted to them, and the principal feature of my invention is to depart from this custom, and use an oscillating ironing-roller, by which a reciprocating rotary motion is given the roller as it is applied to the surface of the fabric after it has been dried by other rotary rollers, which oscillating motion I have found to be far more effective in the polishing-roller than the rotary, and far more speedy in its result.

My invention consists furthermore in various details of constructing and arranging the parts of the machine; also, in the new arrangement of an ironing-board, all as hereinafter more fully described.

In the accompanying drawing, the letter A represents the frame of my improved ironing-machine. The same is made of cast-iron, or other material, of the size and shape to enable it to properly support the rollers, and other parts of the machine. In this frame are hung three hollow rollers, B C D, the surfaces of which are substantially in line with one another, as indicated in Figs. 3 and 4, and which are all rotated by suitable machinery, such for instance, as the gear-wheels indicated in Fig. 1, to revolve in the same direction, and with substantially equal surface speed—that is, although they may revolve with unequal speed, yet, being of different diameters, their surfaces should move equally fast, for I propose to make the center roller C larger in diameter than the others, as the heat emanating therefrom will be more effective on the fabric passing over it than if it were of smaller diameter, and as I also thereby obtain a larger bearing-surface. The rollers are shown to be hollow, and should be made of metal, so that they may serve to receive suitable heating appliances to aid in drying the fabric passing over them. These rollers are in substance only feed-rollers, and they are not heated when I use an ironing-board, as shown in Fig. 3, but when the ironing-board is discarded, and in its place a feed-apron, E, is used, as in Fig. 4, I prefer to heat these feed-rollers B C D, or one or more of them. Above the rollers B C D are hung in the frame A three hollow rollers, F G H. These rollers are all hung in adjustable boxes marked *a b d*, which, by set-screws *e f g*, are made adjustable in slots of the frame A, as shown, so that they may be set at a suitable distance from the face of the ironing-board or ironing-apron. By a system of gear-wheels, or otherwise, rotary motion is imparted to the roller F, and also to the roller G, the roller G, which is placed over the roller C, moving far quicker than the roller F, which is above the roller B. The third upper roller H receives oscillating motion by a crank and link connection, *h i j*, with the driving-shaft I, shown in Fig. 2, or by other suitable means, the degree of oscillation being regulated by a slot in the connecting-rod *i*. The roller H is not directly supported in the frame A, but in a pair of levers, J J, which connect with a

suitable treadle, L, a spring or springs, M, serving to hold the said roller H away from the roller D, over which it is placed, unless the treadle is depressed to cause it to approach said roller D. The garments to be ironed are placed upon the ironing-board N, which is fed through the machine on the rollers B C D in the direction of the arrow shown in Fig. 3. The roller F, which is rotated, as is also the roller G, and which roller F, as already stated, has the least degree of rotation of the rotary upper rollers, will first affect the garments by pressing them upon the ironing-board, and taking, *i. e.*, evaporating, the moisture therefrom.

The garments will next be exposed to the action of the heating-roller G, which revolves much faster than the roller F, and which, by its excess of speed, imparts to the fabric a degree of gloss sufficient for ordinary purposes; yet the bosom part of the shirt, for instance, which is to have an extra gloss, is further subjected, by a depression of the treadle L, to the polishing action of the oscillating roller H, which roller, as it rocks over and presses upon the garments, serves to impart a perfect polish to the surface thereof. Any moisture which may have remained in the garments after they have passed the roller F will be entirely evaporated by contact with the rapidly-rotating roller G, so that the polishing-roller H will have a dry surface to act upon.

It is evident that the surfaces of the rollers should conform to the surface of the ironing-board in their cross-section; and I prefer to use an ironing-board which has a convex surface, as shown in Figs. 5 and 7, in which case the upper rollers F G H must be concave, as is also shown in Fig. 5. This construction is preferred, as it serves to bring the shirt-bosom into the curved shape, transversely, in which it is to be worn on the body, and therefore the formation of crinkles in the shirt is more completely avoided.

In case the machine is to be used without an ironing-board, I use the apron E, as in Fig. 4, and cause the garments to be pressed by the rollers F G H upon the rollers B C D, or upon the roller D alone, the apron, of course, intervening. In this case the upper rollers must be brought farther down, to compensate for the thickness of the ironing-board, which was otherwise interposed. This, of course, makes it necessary to also make the lower rollers with convex surfaces, as shown in Fig. 5, so that the concave upper rollers may apply uniform pressure to the garments to be ironed on the apron. Yet, although this concavity is desirable, as already stated, I do not wish to confine myself to it, as the remaining features and devices of my invention will be fully operative if straight rollers and flat ironing-boards are used. I prefer, also, to provide the lower rollers B C D with circumferential grooves *l*, to receive guide-ribs *m*, that project from the lower surface of the ironing-board. I further prefer to provide each or

several of the upper rollers F G H with one or more circumferential grooves, *n*, for the reception of projecting hems or seams which it may not be desired to flatten out by means of said rollers, or for forming projecting beads on the same.

It is evident from the foregoing description that the ironing-board is not stationary, but that it moves through the machine with the garments which are placed upon it, and this, also is what I deem a new and important feature of my invention.

A further feature of my invention consists in making the ironing-board sectional, as indicated in Fig. 6—that is to say, in rendering the bosom-supporting part *o* removable from the remainder of the body of the board, but flanked along its entire length by projecting wings from the body of the board—so that I may iron the body of a shirt as far as the yoke on this machine without ironing the bosom, which may be necessary whenever it is desired to iron the bosom separately by hand, and for other purposes. This construction of sectional ironing-board also enables me to substitute different constructions of bosom-boards in the same ironing-board, such, for example, as have different grooves or projections, adapting themselves to the various kinds of bosoms to be ironed.

I furthermore improve the construction of the ironing-board by cutting away at its front end the corners *p p*, Fig. 6, so that the board will support only those parts which it is desired to expose to the action of the ironing-machine, and not parts of a sleeve or other things not to be ironed at the same time.

As to the construction of the rollers F G H, it may be of suitable kind, either hollow metallic rollers or such as are lined with cement or clay; and they may be heated either by gas or by hot irons introduced in them, or in any other suitable manner.

I claim as my invention—

1. In an ironing-machine, the feed-rollers B D, combined with the ironing-board or apron and with the larger feed-roller C, and with moving mechanism which will cause all three rollers to have equal circumferential motion, substantially as specified.

2. The combination of two or more feed-rollers, B C, with a movable ironing-board, N, and with the ironing-rollers F and G, the roller G revolving faster than the roller F, substantially as herein shown and described.

3. In an ironing-machine, the ironing-roller H, combined with mechanism *h i j*, and with an apron or board, all arranged so that during the operation of the machine the roller H will be rocked backward and forward over the surface of the garments, substantially as herein shown and described.

4. The combination of the rotary ironing-roller G with the oscillating ironing-roller H, and with the lower feed or moving devices, substantially as specified.

5. The combination of one or more ironing-

rollers, F G, &c., having concave surfaces, with a rectilinearly-moving ironing-board, N, having a convex surface, and with two or more supporting or feed rollers, B C, substantially as herein shown and described.

6. The oscillating ironing-roller H, hung in links that connect with the treadle L, and combined with the moving mechanism *h i j*, whereby it is oscillated independently of its treadle motion, substantially as specified.

7. The ironing-board N, made with sectional or removable bosom-piece *o*, which is on both sides flanked along its entire length by pieces projecting from the body of the board, substantially as shown.

8. The feed-rollers B C, made with guide-grooves *l*, and combined with the reciprocating ironing-board having the guide-rib *m*, substantially as specified.

9. The ironing-rollers F G, made with grooves *n* for admitting hems and forming beads in the fabric, and combined with the smooth movable ironing-board or apron, substantially as and for the purpose set forth.

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