Best & Drake,
Ironing Hats.

No. 53518. Patented, Mar. 27. 1866.

Fig. 1.

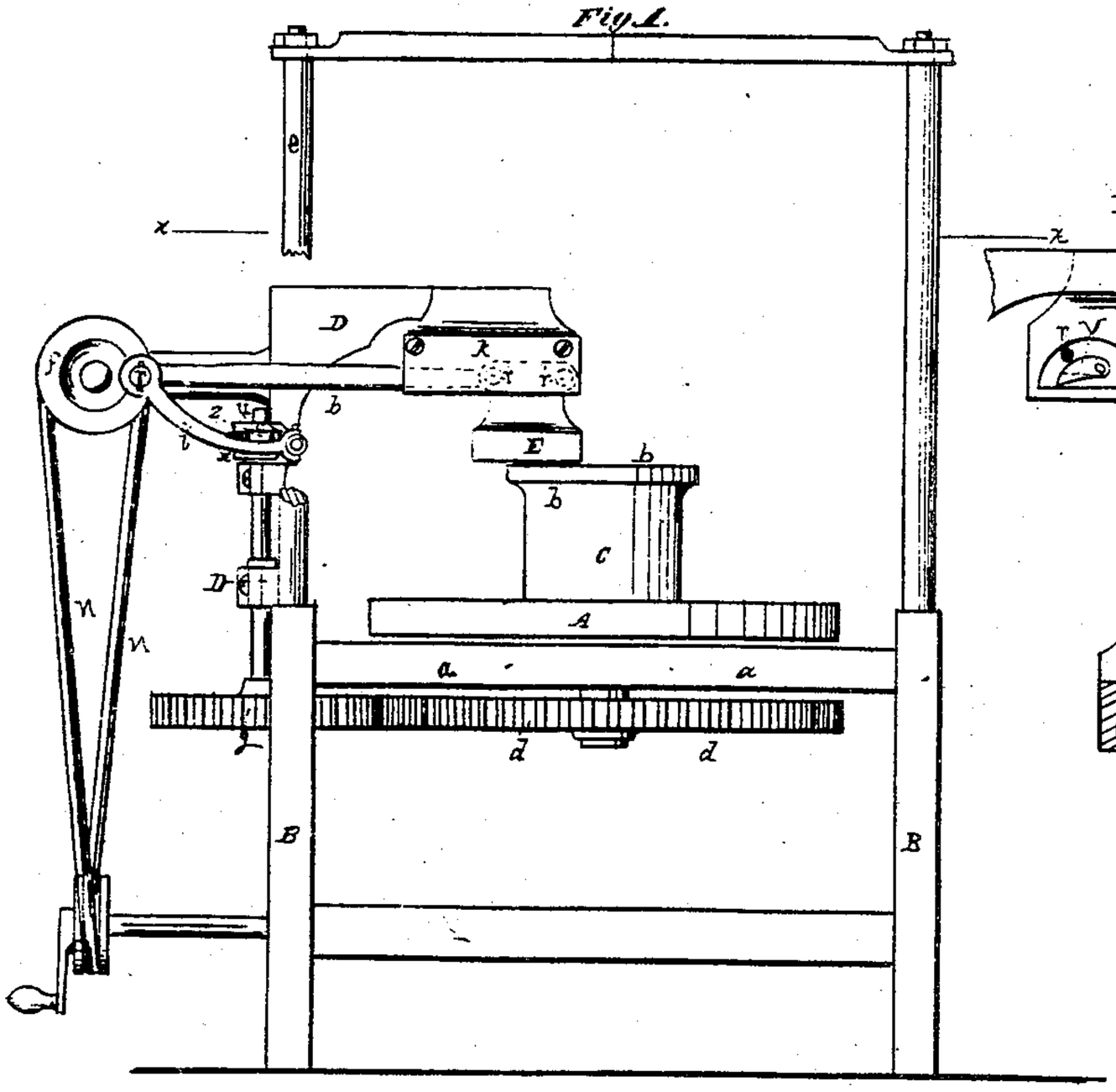
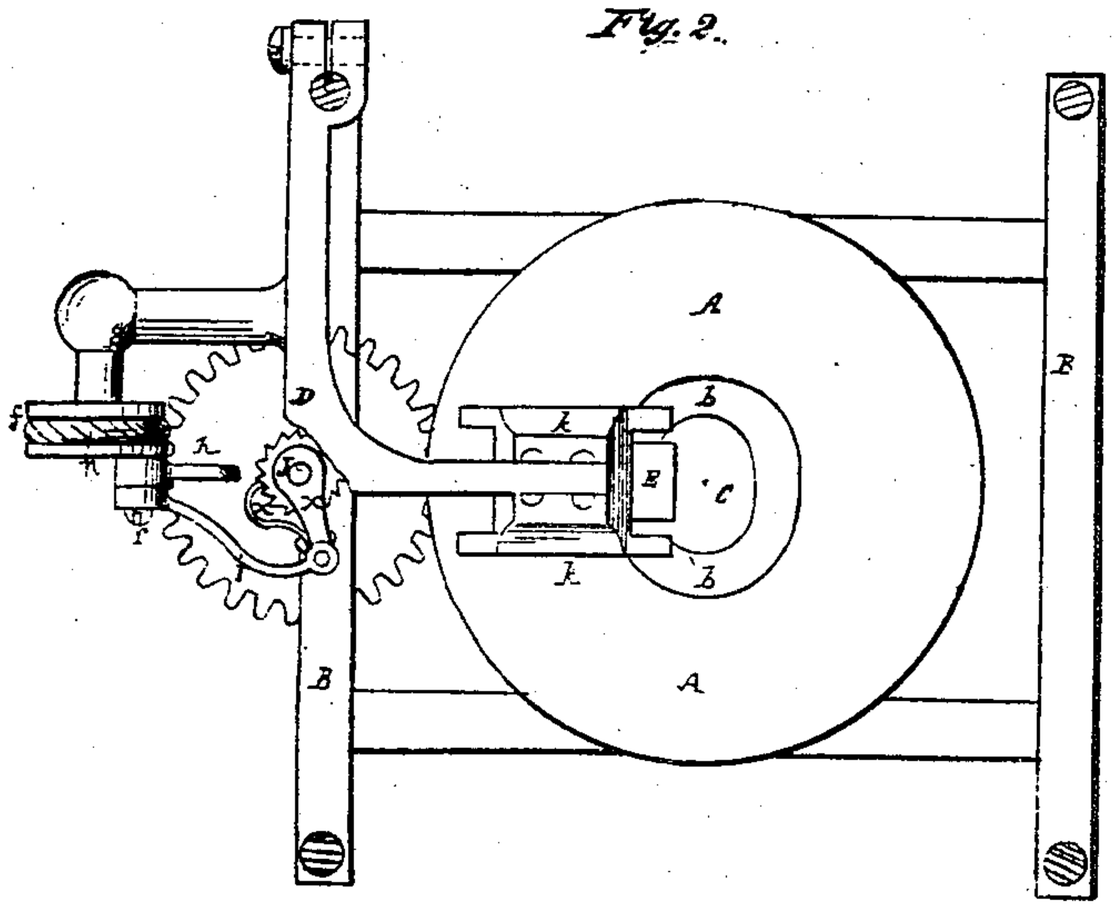


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM BEST AND MAHLON S. DRAKE, OF NEWARK, NEW JERSEY, ASSIGNORS TO WILLIAM BEST, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR IRONING HATS.

Specification forming part of Letters Patent No. **53,518**, dated March 27, 1866.

To all whom it may concern:

Be it known that we, WILLIAM BEST, late of the city, county, and State of New York, now of Newark, in the county of Essex and State of New Jersey, and MAHLON S. DRAKE, of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Machines for Ironing Hats; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side elevation of those portions of a machine which are necessary to illustrate our improvements. Fig. 2 is a plan or top view. Fig. 3 is a detached longitudinal section of the hanger which carries the smoothing-iron. Fig. 4 is a detached end view of the smoothing-iron and the hanger by which it is supported.

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

In the manufacture of felt or fur hats it is necessary to smooth or iron the under side of the brim in such a way that the fibers at the surface will lie with their ends pointing outwardly, or, in other words, so that the surface will feel the smoothest when rubbed with the hand in an outward direction.

This invention is designed to produce this result by closely imitating the action of a common iron as usually operated by hand; and it consists in certain novel means whereby this result is accomplished.

To enable those skilled in the art to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawings, in which the mechanism for smoothing the crown and sides of the hat and the upper surface of the brim thereof are omitted as unnecessary to the explanation of this invention.

A is a circular horizontal table, pivoted in the cross-bar *a* of the supporting frame-work, B, and upon which the hat is placed during the operation of ironing. This table, during the process of smoothing the under surface of the hat brim, receives an intermittent rotary motion, as will be hereinafter fully set forth. The hat, with the hat-block inside of it, is placed in an inverted position within a casing or receptacle, C, which corresponds with it in shape and has around its upper end a projecting rim or flange, *b*, which supports the hat-brim while it is being smoothed, the said casing being secured upon the center of the table A by any suitable means. Placed upon the lower end of the pivot or shaft of the table A is a horizontal spur-wheel, *d*.

D is a frame, which carries the greater portion of the working parts of the apparatus, and which is pivoted upon a vertical post, *e*, in such a way that it may be turned away to one side to allow the employment of other machinery for smoothing the outer parts of the hat, and is confined rigidly in place, when required, by any suitable means. Upon the outer end of this frame D is a pulley, *f*, which is connected by a band, *n*, with a band-wheel, *l*, situated upon the end of a driving-shaft, *m*, which is rotated by any suitable means. The pulley *f* is provided with a crank-pin, *r*, and upon the opposite or inner end of the said frame is a hanger, *k*, in which is suspended the smoothing-iron E, which may be quadrangular in shape, and has its bottom flat and smooth, the said smoothing-iron being situated above the brim of the hat and connected with the crank-pin *r* by means of a pitman, *h*.

j is a vertical shaft, which turns in suitable bearings in the frame D, and has upon its lower end a horizontal spur-wheel, *g*, which meshes into the spur-wheel *d* on the shaft of the table A. Upon the upper end of this shaft *j* is a ratchet-wheel, *x*, and pivoted upon the same shaft above the said ratchet-wheel is a vibrating arm, *u*, the outer end of which is connected with the crank-pin *r* by a pitman, *i*, and secured upon this arm *u* is a spring pawl, *z*. The end of this pawl *z* is formed into a hook and acts upon the ratchet-wheel *x* as the arm *u* is vibrated by the rotation of the crank-pin *r*, so as to produce an intermittent rotary motion of the shaft *j*, and consequently of the table A. Formed in the internal surface of each side of the hanger *k* are two endless semicircular grooves, *s s*, clearly shown in Fig. 3, which act as guides to control the movements of the smoothing-iron E, the iron following the upper or curved portion of the said guides during its forward movement, and the lower or straight portion thereof in its return or backward motion, there being two pins or projections, *r*, upon each side of the said iron, one pin, *r*, extending into each of the guides *s*, so

that the iron is sustained thereby. Pivoted in each of the guides *s* is a latch, *v*. The upper sides of these latches *v* are curved, as shown in the drawings, and their ends project back in such relation to the pins *r'* as to drop in front of the said pins when the iron has completed its backward movement in order to prevent the said pins from moving forward in the lower or straight portions of the guides during the forward movement of the iron, and thus causing them to slide upward and follow the upper or curved portions of the said guides, so that the iron is elevated above the hat-brim during such forward movement.

The hat being placed in the casing C, the operation of the machine is as follows: A rotary motion is communicated from the driving-shaft *m* to the pulley *f* through the agency of the band *n*, and the revolutions of the said pulley *f* communicate a reciprocating movement to the smoothing-iron E by means of the crank-pin *r* and the pitman *h*. When the iron E is pushed forward the points of the latches *v*, being in contact with the bottoms of their respective guides, as represented in Fig. 3, act upon the pins that project from the sides of the iron and guide them upward in the semicircular parts of the guides and over the upper sides of the said latches *v*, thus causing the pins to follow the curved or semicircular upper sides or surfaces of the guides, and raising the iron during such forward stroke so that it cannot come in contact with the hat-brim; but on the backward or return stroke the weight of the iron keeps the pin in contact with the straight horizontal bottoms of the guides, so that the iron is brought in contact with the upper surface of the brim of the hat and smooths the same by passing from the inner to the outer edge thereof, this outward motion of the iron, in smoothing the brim, causing the fibers on the surface thereof to lie with their ends pointing outwardly, in the manner hereinbefore explained. While the iron E during its forward stroke is passing over and out of contact with the hat-brim, as just described, the movement of the crank *r*, acting through the pitman *i* and vibrating arm *u*, operates the pawl *z*, to partially rotate the ratchet-wheel *x*, which, by means of the spur-wheels *g* and *d*, turns the table A, so that the periphery of the hat-brim moves a distance equal to the width of the flat bottom of the iron E, thus presenting a fresh surface to the action of the iron during its backward or return movement, the crank *r*, during such return movement, operating the pawl to take hold of the next tooth of the ratchet-wheel, in order to turn the table at the succeeding forward movement of the iron. This operation is repeated, the smoothing-iron being drawn across the hat-brim in an outward direction and upon successive portions thereof until the entire brim is smoothed. When this is done the motion of the pulley *f* is stopped by any suitable means, and the hat is removed from the machine.

What we claim as new, and desire to secure by Letters Patent, is—

1. Controlling the movements of the smoothing-iron, in the manner described, by means of guides *s s*, and latches *v v*, arranged substantially as herein set forth.

2. The pulley *f*, with its crank-wheel *r*, the pitman *i*, vibrating arm *u*, and pawl *z*, arranged with reference to each other and with the ratchet-wheel *x*, spur-wheels *g* and *d*, and table A, substantially as herein set forth, for the purpose specified.

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