(No Model.)

W. J. McGALL & A. W. HILSINGER.

HAT BRIM CURLING MACHINE.

No. 510,359. Patented Dec. 5, 1893.

Fig. 1.

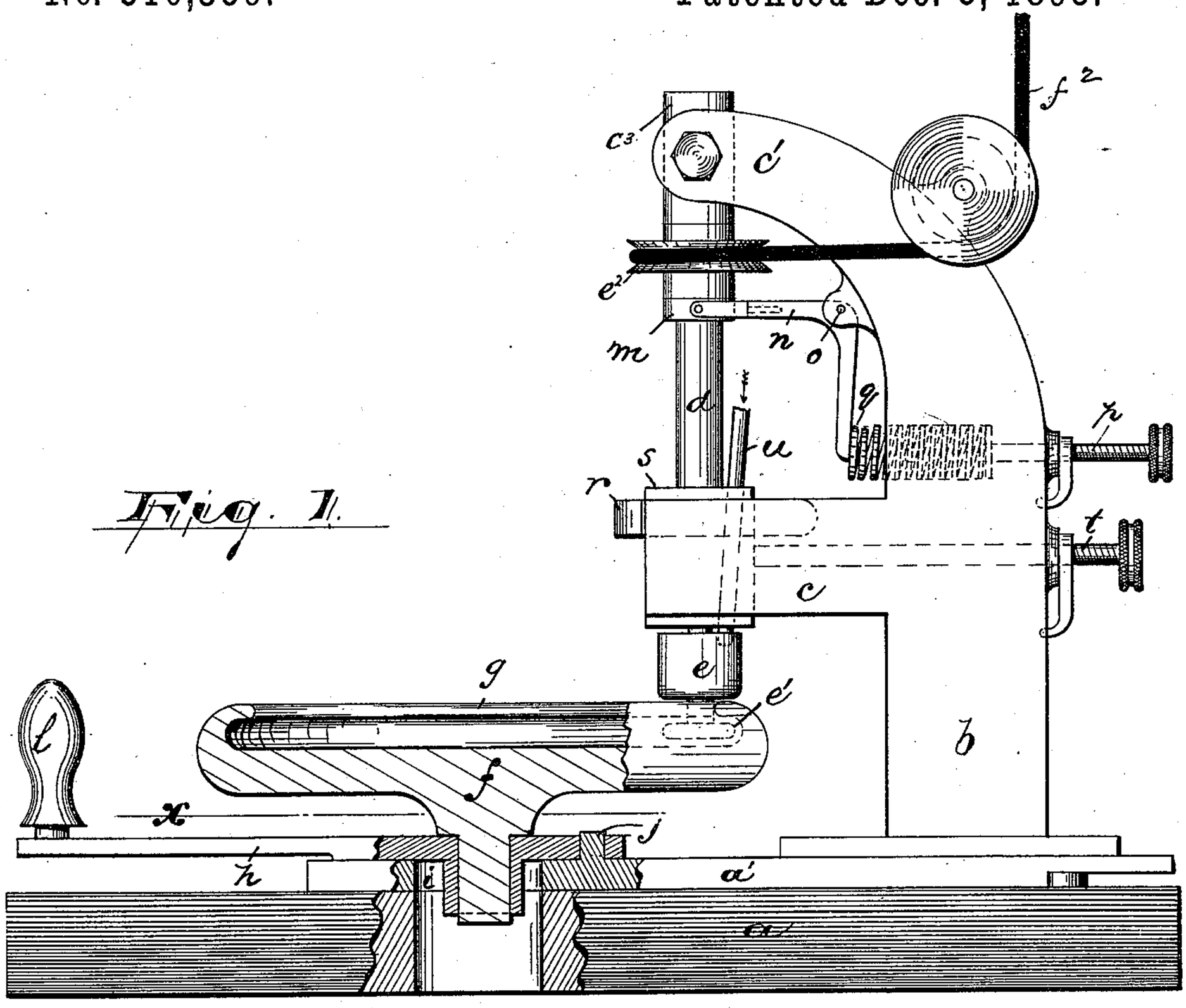
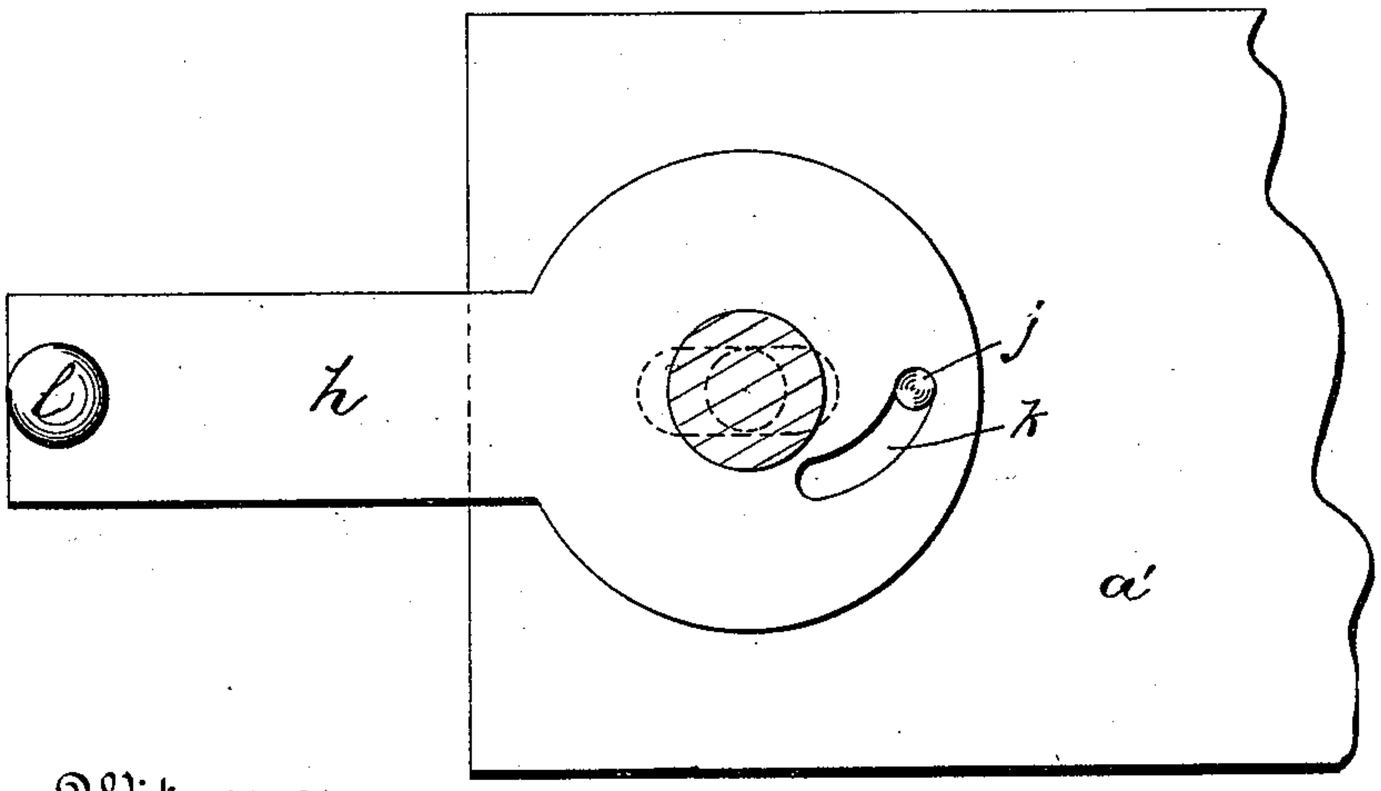


Fig. 2.



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UNITED STATES PATENT OFFICE.

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HAT-BRIM-CURLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 510,359, dated December 5, 1893.

Application filed January 9, 1893. Serial No. 457,732. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM J. McGALL, residing at West Orange, and ADIN W. HILSINGER, residing at Orange, in the county of Essex and State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Hat-Brim-Curling Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in that class of hat brim curling machines represented by the device shown in a prior patent granted August 16, 1892, No. 480,877.

The object of the invention is to facilitate the adjustment of the hat in the machine and thus save time and labor and reduce the cost of manufacturing the hats.

The invention consists in the improved hat brim curling machine and in the arrangements and combinations of parts all substantially as will be hereinafter set forth and finally embraced in the clauses of the claim.

Referring to the accompanying drawings in which like letters indicate corresponding parts in each of the views, Figure 1 is a side elevation of the improved machine, and Fig. 2 is a section taken on line *x*, Fig. 1.

In said drawings, *a* indicates a suitable bed plate, bench or table, having a suitable metal plate, *a'*, thereon, on which is secured a standard, *b*, having lateral bearing arms *c*, *c'*, for a rotary shaft *d*. The said shaft is given its rotary movement by means of a pulley, e^2, and belt f^2, in any suitable manner. At the lower end of said shaft, the same is provided with a rotary ironing tool, *e*, which is of the peculiar shape and construction common to the ironing tools disclosed in the patent above referred to. Below said ironing tool, *e*, carried by the plate, *a'*, is a co-operating tool, *f*, which is adjustable in its relations, being movable horizontally so that the inwardly turned flange, *g*, may be thrown toward or from operative relation to the ironing surfaces of the tool *e*. Said tool, *f*, is preferably in the form of a turn table or disk, having at its peripheral edge the upwardly and inwardly turned flange, *g*, and centrally pivoted on a lever or eccentric carrier, *h*, working in a slot, *i*, and on a pin *j*, of the plate *a'*, the said lever having an eccentric slot, *k*, to receive said pin, *j*, and so disposed in its relations to the parts as to produce the desired horizontal movement of the rotary tool, when the handpiece, *l*, adjacent to said tool, is operated, all as will be understood upon reference to Fig. 2.

To secure the desired upward pressure of the flange, *e'*, of the tool, *e*, on the under side of the curled felt, we have provided improved and more convenient means for regulating the pressure of the tool *e*. This consists preferably of a loose collar *m*, in which the said shaft rotates and which is connected with a lever, *n*, fulcrumed at *o*, upon the standard, *b*, and, in turn, operated by an adjusting screw *p*, a spring, *q*, being interposed between the end of said screw and the arm of the lever to admit of a slight vertical play and thus provide for irregularity of construction or operation of the tools. The collar *m*, held by the lever, spring and setting or adjusting screw, bears upward on the shaft driving-pulley, e^2, fastened to the shaft and forming a shoulder thereon and thus said shaft and the tool carried thereby are held up to the desired position in the sliding bearing or box and pivoted bearing, c^3, carried by the arm *c'*. A spring, *r*, secured to the arm, *c*, bears upon a sliding box or bearing, *s*, for the shaft, *d*, and tends to throw the tool, *e*, toward the co-operating flange, *g*, the inward movement being limited and controlled by a regulating screw, *t*. By these means the adjustment is made to accord with the different varieties of goods worked upon, the screw, *t*, throwing the tool outward when heavier goods are to be ironed. The lever, *h*, and the tool, *f*, are thrown horizontally when it is desired to remove or insert the hat body and inasmuch as this operation is often repeated, the advantages of the conveniently disposed handle *l*, will be apparent.

The ironing tool, *e*, is heated by gas supplied through the pipe *u*, or in any suitable and effective manner. The tool, *f*, may also

be heated when stiff hats are to be worked upon to soften the felt.

Having thus described the invention, what we claim as new is—

1. In a hat curling machine the combination with the standard, *b*, having bearing arms *c*, *c'*, a rotary shaft, *d*, arranged in said arms and provided with means for producing rotary movement, and an ironing tool, *e*, secured at the lower end of said shaft, of a cooperating ironing tool, *f*, arranged below said tool, *e*, on a lever by which it is moved horizontally beneath the shaft, *d*, and its tool *e*, substantially as set forth.

2. In a hat curling machine, the combination with the standard, *b*, having bearing arms *c*, *c'*, a rotary shaft, *d*, and means for rotating the same, and an ironing tool, *e*, arranged or secured at the lower end of the shaft and provided with means for heating it, of a cooperating rotary, hat carrying or supporting ironing tool arranged below said rotary tool, *e*, on a lever by which it is moved horizontally, the said lever having a handle, *l*, laterally adjacent to said hat carrying or supporting tool, substantially as set forth.

3. In a hat curling machine, the combination with the rotary ironing tool *e*, and cooperating hat-supporting ironing tool *f*, of a lever *h*, having the latter tool pivoted thereon, said lever having a handle, *l*, disposed laterally adjacent to said cooperating tool, and adapted to move the said cooperating tool horizontally to or from the iron substantially as set forth.

4. In a hat curling machine, the combination with the rotary tools *e* and *f* having cooperating curling flanges, of a lever, *h*, carrying one of said tools, said lever being provided with an eccentric slot *k*, and a handle *l*, and bearings for the tool, and a plate *a'* having a pin *j* and providing bearings for said lever substantially as and for the purposes set forth.

5. In a hat curling machine the combination with a standard, and the rotary tools *e*, *f*, having curling flanges *e'*, *g*, of a shouldered shaft, a loose collar bearing against the shoulder thereof and holding said shaft up by an elastic pressure, a lever, *n*, fulcrumed on said standard and operating said collar, a spring bearing against said lever and imparting elastic pressure thereto and an adjusting screw *p*, substantially as set forth.

6. In a hat curling machine the combination with the rotary tools *e*, *f*, having curling flanges *e'*, *g*, of the shaft *d* operating one of said tools, a loose collar adapted to raise said shaft, a lever fulcrumed on said arm and adapted to raise said collar, and an adjusting screw having bearings in said arm and operating said lever, all said parts being arranged and adapted to operate substantially as set forth.

7. In a hat curling machine, the combination with the standard, its shaft and ironing tool, *e*, means for heating and rotating the same, of a cooperating hat supporting tool, *f*, movable pivotally and horizontally to and from operating relation to the tool *e*, and beneath said tool, and means for moving said hat supporting tool horizontally to and from operative relation to said tool, *e*, substantially as and for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 6th day of January, 1893.

WILLIAM J. McGALL.
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Witnesses:
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