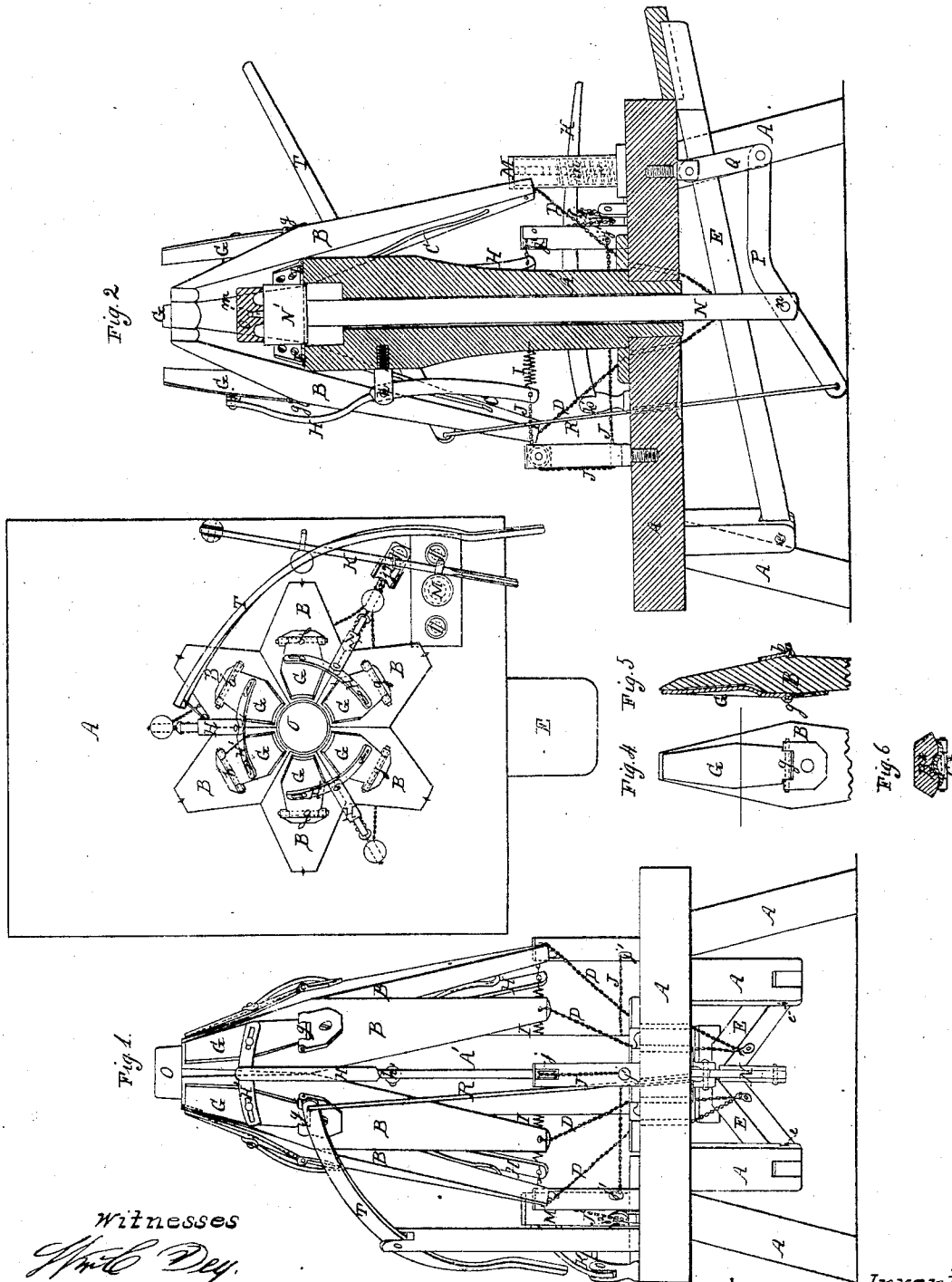


S. Polley.

Blocking & Stretching Hats.

N<sup>o</sup> 63556

Patented Apr. 2, 1867.



Witnesses  
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# United States Patent Office.

STARR POLLEY, OF BROOKLYN, NEW YORK.

*Letters Patent No. 63,556, dated April 2, 1867.*

## IMPROVEMENT IN STEAMING ON HAT-BODIES.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, STARR POLLEY, of Brooklyn, in the county of Kings, and State of New York, have invented certain new and useful Improvements in Machines for Steaming on Hats; and I do hereby declare that the following is a full and exact description thereof.

My invention is adapted for seizing the hat by that portion which is to form the brim, and to stretch with tolerable uniformity the whole of the part which is to form the body. It is especially efficient for stretching the centre of the tip or top; an end which has not been properly effected by the most approved hat-stretching machines heretofore known to me.

I apply the hat-body, previously prepared by any suitable means, upon a conical or rather pyramidal-shaped assemblage of levers. I hold it thereon by a series of clamps which are drawn together and embrace the rim of the hat-body with gentle force. I then open the levers or increase the size of the conical frustum, thereby stretching the tip, and then elevate, through the space thus provided in the centre of the mass, a hat-block previously introduced, which rises into the interior of the hat-body, and striking the tip draws up the entire body. The hold taken by the clamps upon the brim is so gentle as to allow the hat-body to be thus drawn upward before it will tear; but the hold is so firm as to efficiently stretch the material. The conical frustum and the clamps which fit thereon are corrugated with grooves and beads extending up and down, so that the hat-brim is taken up by being forced into these corrugations. This stretches the portion which is to form the brim, and affords a firmer hold on the material. The clamps are operated with the various springs of such strength that their pressure is just sufficient for the purpose. This mode of bringing the clamps upon the hat allows for any inequalities in the thickness of the material, or for accidental wrinkles, or the like, without inducing fracture of the machine, or too strong hold of the material.

I will first proceed to describe what I consider the best means of carrying out my invention, and will afterwards designate the points which I believe to be new. The accompanying drawings form a part of this specification.

Figure 1 is a side elevation of the entire machine.

Figure 2 is central vertical section; and

Figure 3 is a plan view of the same.

Figure 4 is a face view.

Figure 5 is a vertical section; and

Figure 6 is a horizontal section of one of the conically arranged stretchers.

Similar letters of reference indicate like parts in all the figures. The tints are employed mainly to aid in distinguishing parts. The parts that stretch are yellow; the parts that clamp are blue; and the hat-block and carrier are pink.

A is a rigid framework or stand which supports the machine. B B, etc., are six levers formed as represented, and adapted to turn on the hinges *b*. Their lower ends are pressed outwards by springs, C, so that they tend to hold their upper ends in the form of the frustum of a pyramid. This forms a pyramidal frustum on which the hats are placed, as above referred to. To the lower ends of the levers B are connected chains D, which lead through holes in the framing A, and connect to the treadle or foot-lever E, hinged at *e*, to the framing A, as represented. When the treadle E is free, the upper ends of the arms of the levers B come together, as indicated in the figures. When the treadle E is depressed by the action of the foot, the upper ends of the levers B are spread apart, and stretch the tip of the hat. G G, etc., are clamps, hinged to the exterior of the levers B at the points *g*, and they are actuated by means of the cross-bar H<sup>1</sup>, mounted on the upper end of the lever II, which lever turns on the centre *h*. The lower ends of the levers H are drawn inward by the springs I, which tends to hold the clamps G open in the position indicated in fig. 2. They are in this position when the hat-body is drawn upon the tops of the levers B. To close the clamps G, and thus seize the hat-body, the lower ends of the levers H must be moved outward. This is effected by the chains J, which pass over the pulley *j*, through holes *j*<sup>1</sup> and under the pulley *j*<sup>2</sup>, and then up to the lever K, which turns on the pivot *k*. So long as the clamps are open as in fig. 2, the lever K may be left down, but when it is desired to press the clamps together and seize the hat, the lever K is elevated by seizing it with the hand and drawing it upward, thus pulling the chains J, and moving outward the lower ends of the levers H in opposition to the tension of the springs I. When the lever K has been raised to its full extent, it is hooked upon one of the hooks L, which is capable of traversing to a certain distance in a vertical slot in the side of the hollow post or case M. This case contains a stout coiled spring which holds the hooks, with supporting shelves. This supports the lever K when it is hooked thereon, but in such a manner that it may yield downward when the force is too great. The force is usually quite gentle when the lever is lifted and placed upon the shelf or hook L, and it is increased afterward when the clamps G are moved outward by the

movement of the levers B, which press the hat-body against their inner faces. It will be observed that although the clamps G are hinged upon the levers B, and opened and closed against the outer faces of the upper end of the latter, the mechanism for operating them, that is to say, the levers H and their connections, are not carried on the levers B. It follows that the clamps G are shut against the hat by a means which tends to hold them in the same position, even while the stretching parts B are moved outward. To actually remain stationary while the levers B, which press against their internal faces are moved outward, would be impossible. Consequently the clamps G are compelled to move outward with the movement of the levers B, and the pressure of the clamps G increases during the movement. The movement would be impossible except by the springing of some of the parts. In practice, the levers H and the chains J, and their several connections, all spring more or less, but their elasticity is mainly provided in the spring *m*, which yields downward and allows the lever K to sink, and consequently the chains J to yield as the movement of the stretching levers B requires it. This elastic action of the clamps G provides, as before remarked, for holding the hat-bodies with a very uniform and just sufficient force, whether the hat-bodies are uniform or vary in thickness, or even where a wrinkle, or other accident, causes a marked increase of thickness at any point. The corrugations on the stretching levers B and on the clamps G, are very plainly indicated in figs. 5 and 6. The exterior of each stretching lever B has a deep and smoothly rounded groove, as indicated by B\* in fig. 6. The inner face of each clamp G has a bead, which may be produced as indicated by simply corrugating the metal of which the clamp G is composed, as represented by G\* in fig. 6. There now remains to be described simply the mechanism for operating the hat-block. N is a vertical rod, slightly within the post A<sup>1</sup>, which forms the central erect portion of the framing A, around which the mechanism is arranged, as represented. Its upper end is enlarged, as indicated by N<sup>1</sup>, and provided with a pin, *m*<sup>1</sup>, or other suitable means for holding in proper position a hat-block, O, which may be of any approved form and material. The lower end of the rod N is connected, by the joint *n*, to a lever, P, which is hung at one end by a link, Q, to the under portion of the framing A, and is connected at the other end by a cord, R, of one extremity of the lever S, which turns on the joint, and is operated by hand. After the tip of the hat-body has been stretched by being seized between the clamps G and stretching levers B, and strained by the depression of the treadle E, and the consequent openings of the upper ends of the stretching levers B, the operator still holding his foot on the treadle E, seizes the handle of the lever T, and depresses it, thus raising the cord R and rod N, and bringing upward the hat-block O. As the latter rises it presses upward into the interior of the hat-body, and, continuing to rise, it draws it upward, drawing the material of the hat-body out from between the clamps G, and stretching levers B. The resistance made by the hold of these clamps and levers is just sufficient to stretch the sides of the hat-body to the extent desired. After the lever T has been thus operated, and the hat-block O has been raised to the full extent, as indicated in fig. 1, the next operation is to tie a string firmly around the hat-block outside of the hat-body, and to thus confine the hat-body properly to the block. After this operation is completed the clamps G are opened by liberating the lever K, and consequently slackening the chains J; and the hat-body is now removed with the block in its interior to be subsequently treated by other machinery or by hand. A considerable number of hat-blocks being provided, another block O, is now placed on the support N<sup>1</sup>, and properly fitted on the pin *m*<sup>1</sup>, and the handle of the lever T is elevated, thus lowering the hat-block O to the position indicated in fig. 2. After this is effected the treadle E is released, and the lower ends of the stretching levers B are moved outward by the action of the spring C, thus closing their upper ends and forming them into the conical frustum first described; and the whole of the parts are now in the position indicated in fig. 2, ready to receive another hat-body, and allow the same round of operations to be repeated. My machine may be varied in many of its proportions and details without departing from the principle of my invention. Thus, the form of the levers and of all of the parts may be varied at will, so long as a proper tapering surface is preserved on which to place and press the hat-body. The number of the several parts and clamps may be increased with advantage, excepting that the cost of the machine will thereby be increased. It is practicable to even reduce the number here represented. But I have found by experiment that six, as here constructed and represented, answer a very good purpose. Certain portions of the operation may be conducted by power, if necessary.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

1. I claim the levers B, standing in a conical or pyramidal position during the stretching of the hat-body, and provided with clamps for holding the body thereon, all constructed and arranged substantially as and for the purpose herein set forth.
2. I claim the longitudinal corrugations G\* and B\*, in the acting faces of the lever and clamps of a hat-stretching machine, adapted to operate relatively to each other and to the hat-body, as herein described and set forth.
3. I claim the spring connection *m*, arranged relatively to the clamps G and levers B, and their connections, substantially as and for the purpose herein set forth.
4. I claim the carrier N N<sup>1</sup>, and hat-block O, operating relatively to the pyramidally arranged stretching levers B, which previously stretch the hat-body, substantially as and for the purposes herein specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

STARR POLLEY.

Witnesses:

W. C. DEY,

EMIL VOSSNACK.