

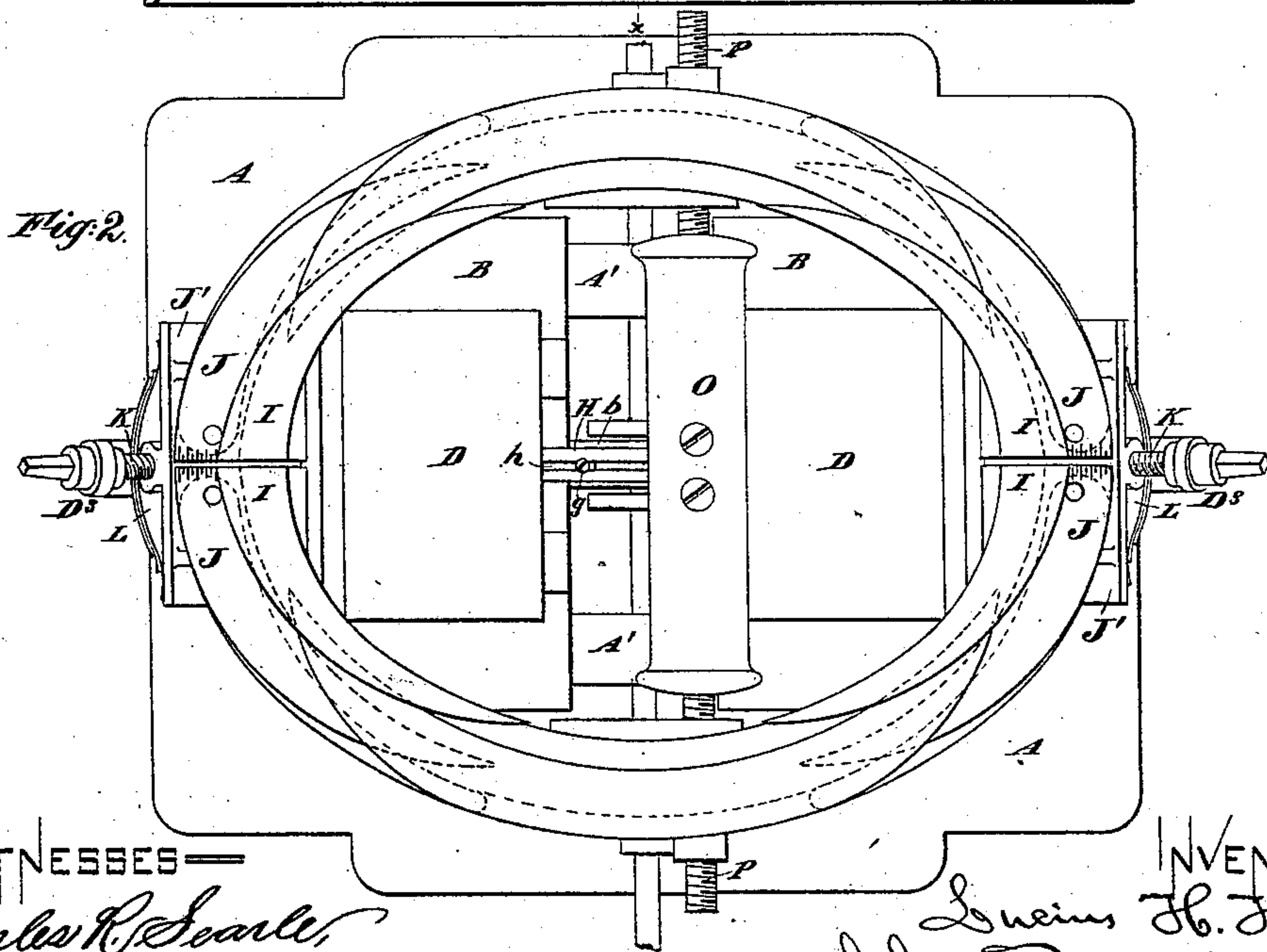
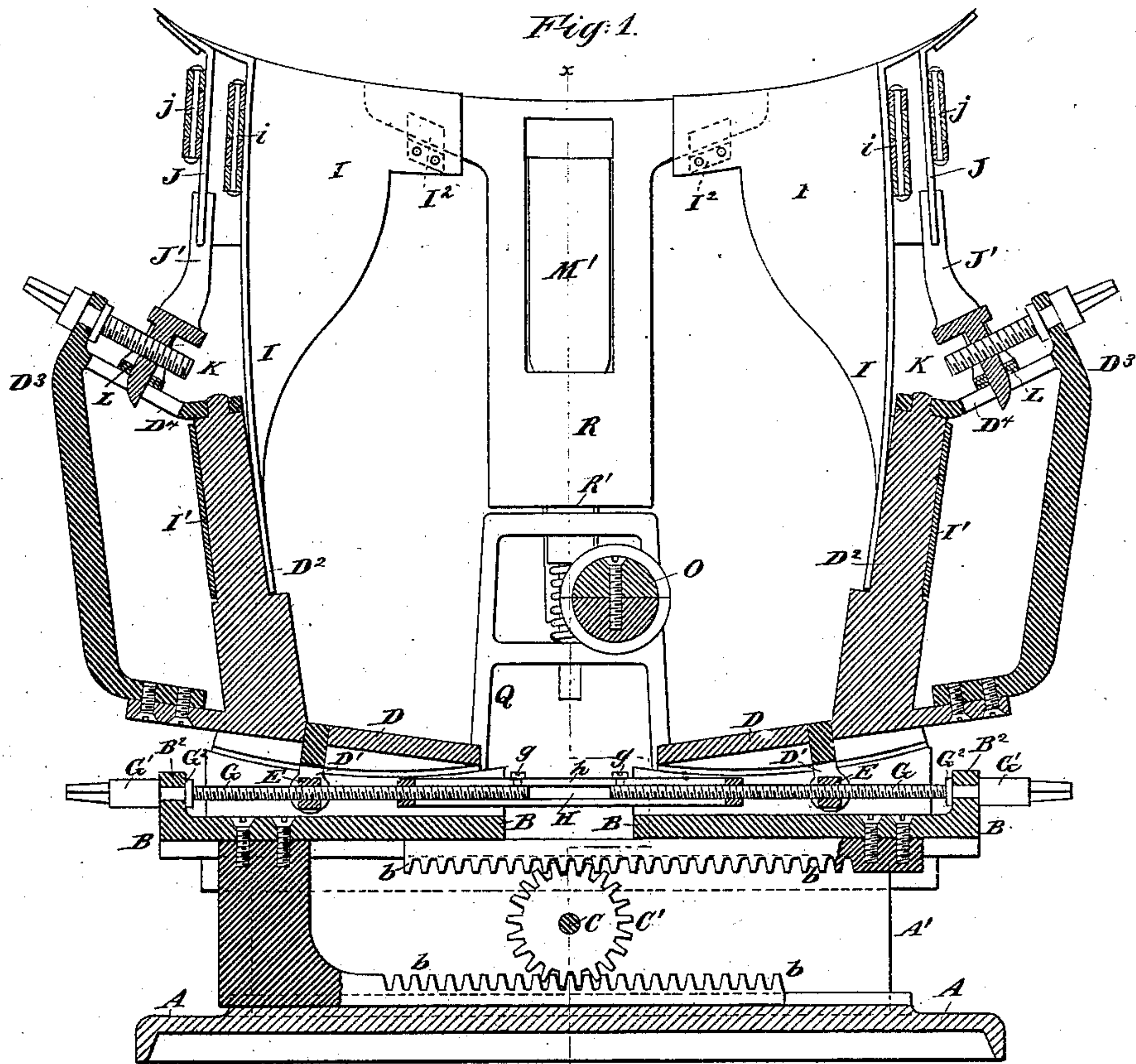
(No Model.)

3 Sheets—Sheet 1.

L. H. HOYT.
APPARATUS FOR SHAPING HAT BRIMS.

No. 299,644.

Patented June 3, 1884.



WITNESSES—
Charles R. Seale,
Henry Meyer.

INVENTOR—
Lucius H. Hoyt,
by his attorney
Thomas D. O'Brien

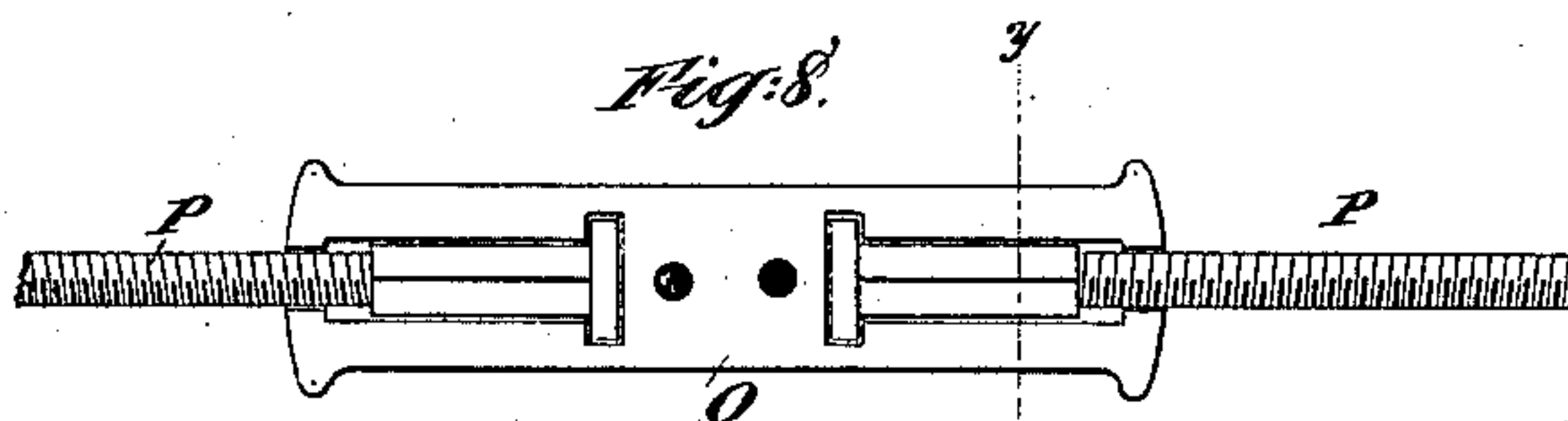
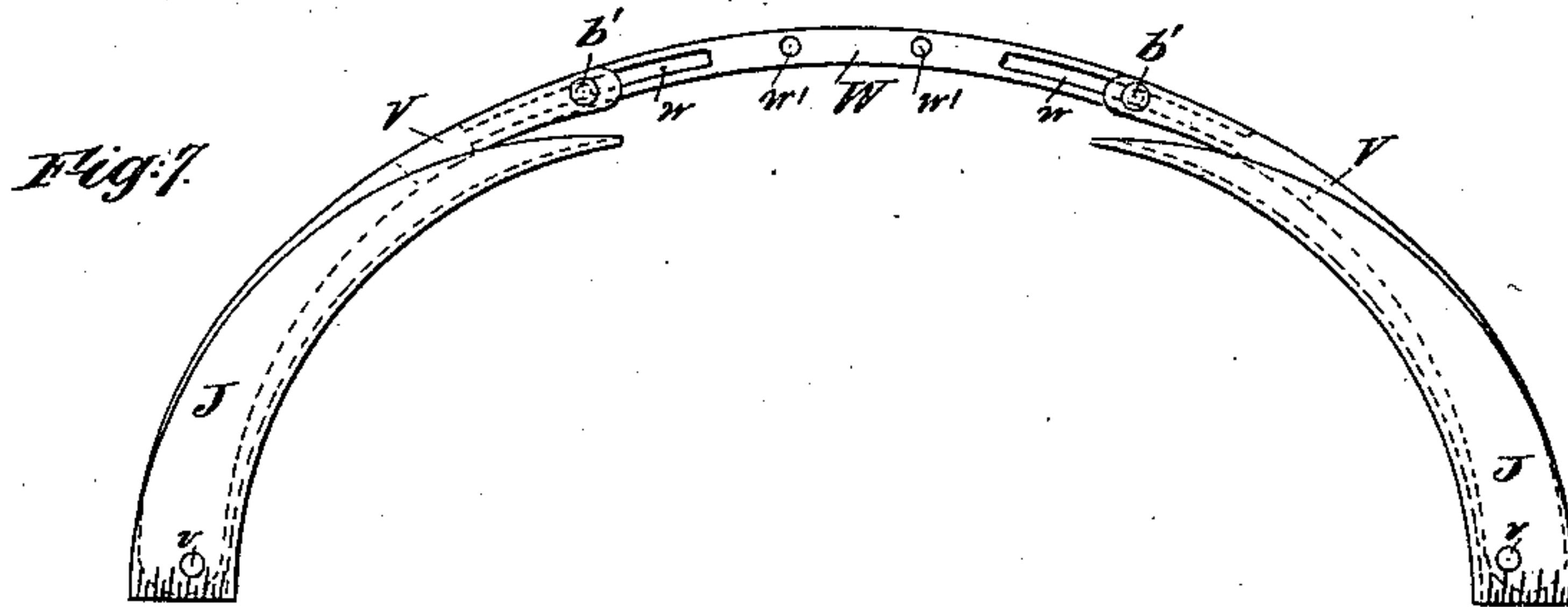
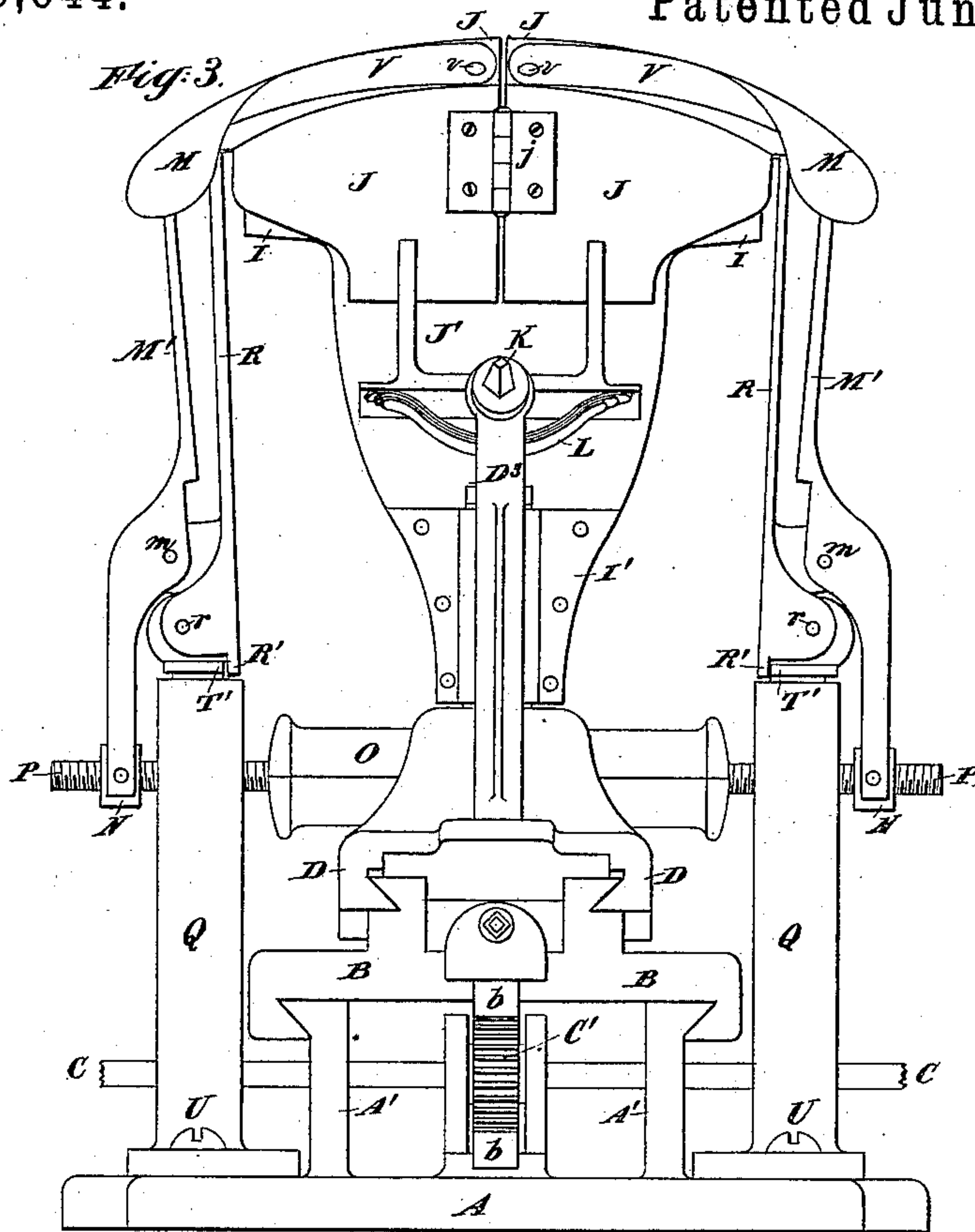
(No Model.)

3 Sheets—Sheet 2.

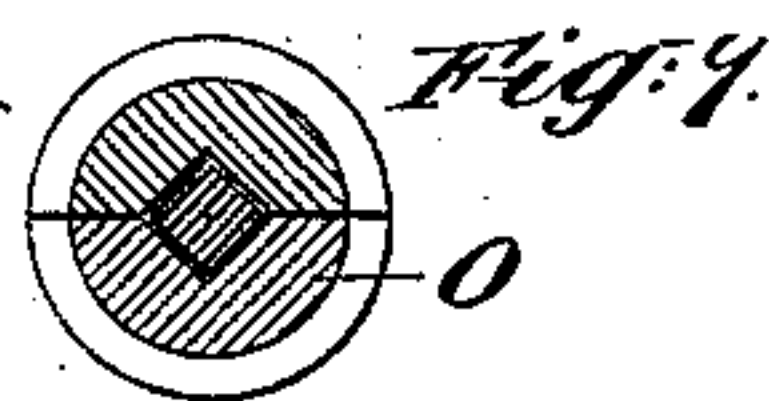
L. H. HOYT.
APPARATUS FOR SHAPING HAT BRIMS.

No. 299,644.

Patented June 3, 1884.



WITNESSES=
Charles R. Seale,
Henry Meyer.



INVENTOR=
Lucius H. Hoyt,
by his attorney
Thomas J. Peterson

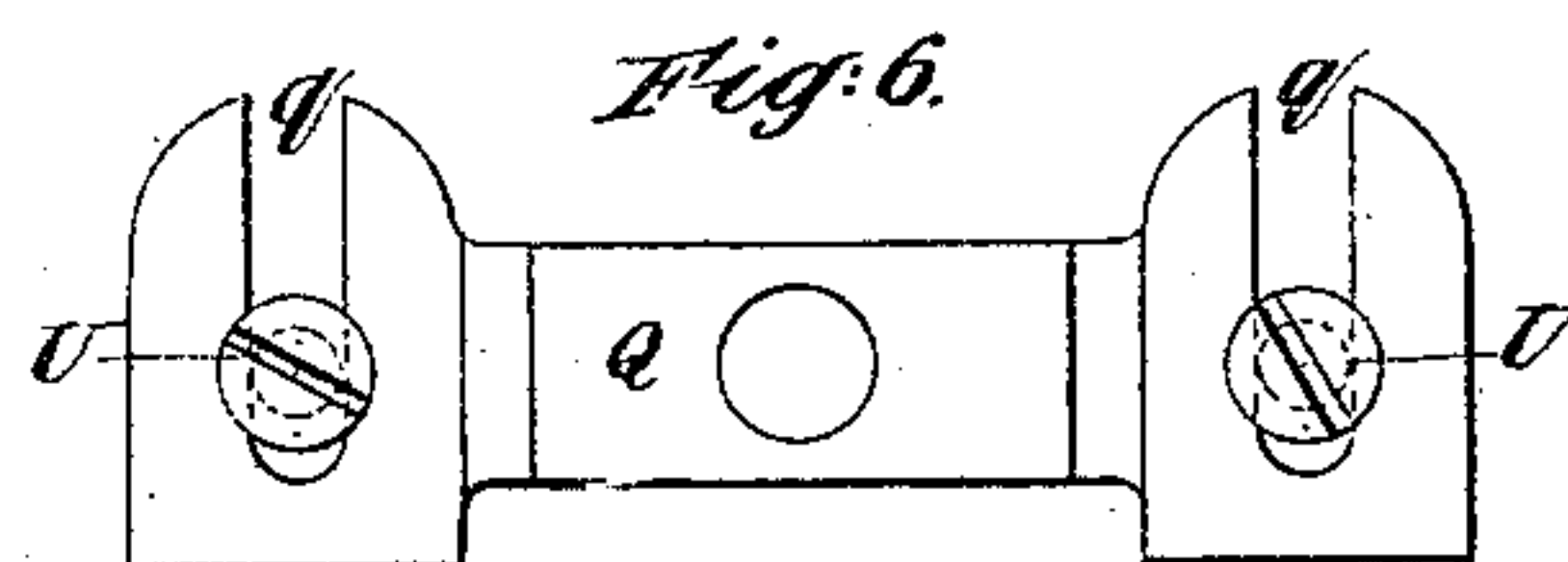
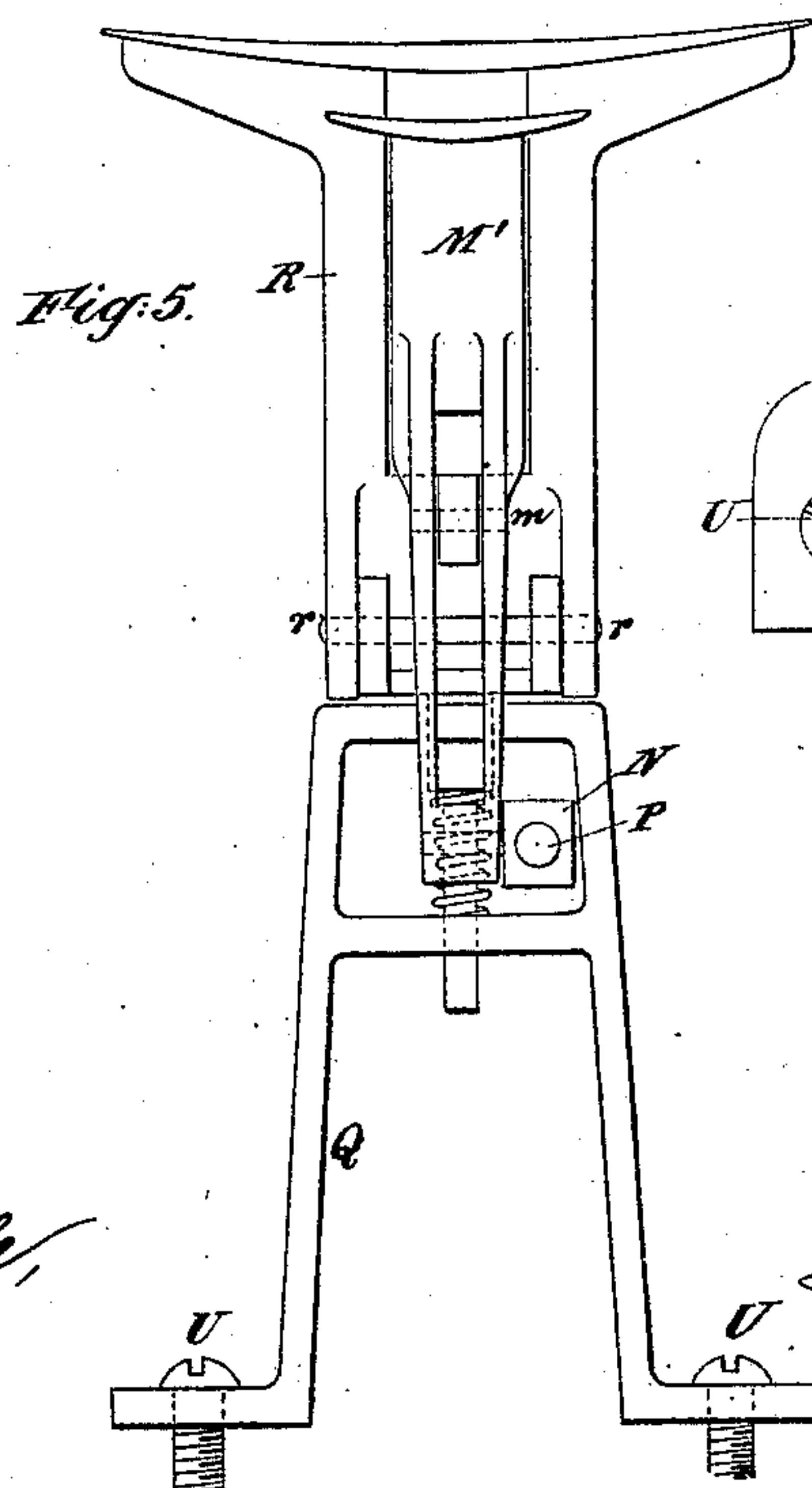
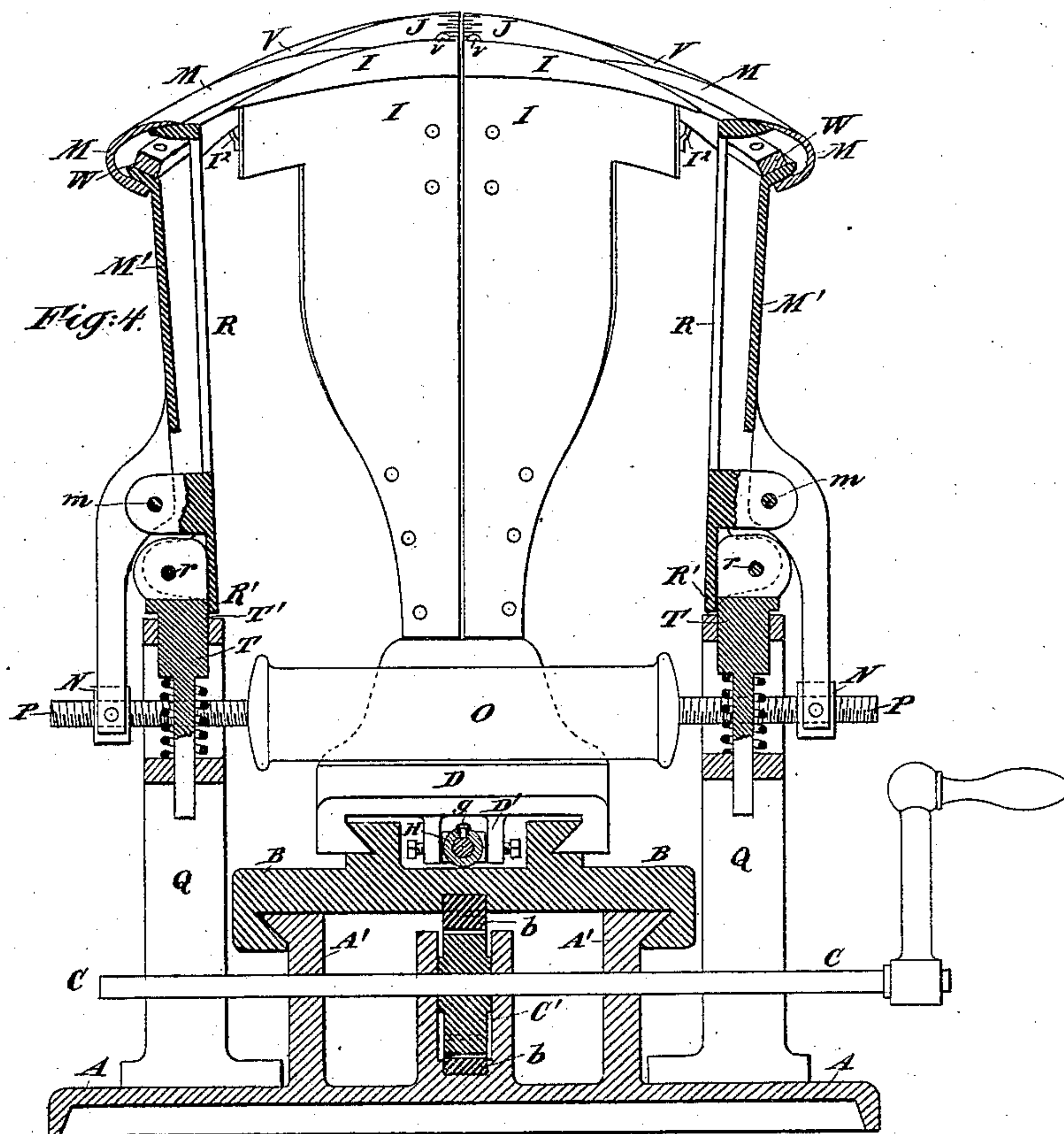
(No Model.)

3 Sheets—Sheet 3.

L. H. HOYT.
APPARATUS FOR SHAPING HAT BRIMS.

No. 299,644.

Patented June 3, 1884.



WITNESSES—
Charles F. Searle,
Henry Meyer

INVENTOR—
Lucius H. Hoyt,
by his attorney
Thomas D. Watson.

UNITED STATES PATENT OFFICE.

LUCIUS H. HOYT, OF DANBURY, CONNECTICUT.

APPARATUS FOR SHAPING HAT-BRIMS.

SPECIFICATION forming part of Letters Patent No. 299,644, dated June 3, 1884.

Application filed October 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS H. HOYT, of Danbury, Fairfield county, in the State of Connecticut, have invented certain new and useful Improvements in Apparatus for Shaping Hat-Brims; and I do hereby declare that the following is a full and exact description thereof.

The object of the invention is to provide a conveniently-adjustable form by means of which brims of hats of various sizes and styles may be shaped. The shaping-surfaces are composed of a number of thin pieces overlapping one upon another, and adjustable to adapt the same to differences in length and breadth, and also to change the scope or downward bend of the brim. I have in Letters Patent issued to me, dated May 8, 1883, No. 277,035, set forth a combination of parts which has proved eminently useful. My present improvements are in the same general direction. They may be considered as improvements thereon. The present invention provides means for conveniently increasing or diminishing the space for the body of the hat not only lengthwise, but also transversely. I provide simple mechanism for increasing or diminishing the length. The parts which shape the front and back are each split, and connected together hinge-wise, and controlled by a spring. My means for changing the scope, by which I mean the droop, of the brim at the front and back effect this end without changing the space for the hat-body. I have improved the parts which shape the sides of the brim.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a central longitudinal vertical section. Fig. 2 is a plan view. Fig. 3 is an end elevation. Fig. 4 is a section on the line *x x* in Fig. 1. The remaining figures show details detached. Fig. 5 is an elevation of one of the adjustable side stands and its connections, as seen from the outside. Fig. 6 is a plan view of the frame of the stand. Fig. 7 is a top view of the parts which lie at the top and directly shape the brim. Fig. 8 is a plan view showing half of the transverse right

and left screw. Fig. 9 is a section on the line *y y* in Fig. 8.

Similar letters of reference indicate like parts in all the figures where they occur.

A is a bed-plate, of cast-iron or other suitable material, immovably mounted on the bench. (Not represented.) It is provided with two parallel ways, *A'*, on which are supported two slides, *B B*, which respectively carry the mechanism for shaping the fronts and backs of the brims. Each part *B* is moved backward and forward at will by means of a gear-wheel, *C'*, fixed on the shaft *C*, mounted transversely to the ways and engaging with racks *b b*, which connect with the slides *B*, respectively. One rack is mounted lower than the other. The wheel *C'* stands between them and engages in each. The mechanism which supports and shapes the brim at each end is mounted on its respective slide *B* through the medium of a top slide, *D*, which latter is formed with a curved base, and is supported and guided on curved ways. Each top slide, *D*, carries a downwardly-projecting fork, *D'*, in which is mounted a rocking nut *E*, through which is tapped a screw, *G*, provided with a pin, *g*, and is engaged by a slotted tube, *H h*, with the corresponding screw, which is mounted on the opposite slide *B*. One screw *G* is right-handed and the other is left-handed. Each is supported against end movements by means of collars *G' G''*, which bear against a forked bracket, *B''* on *B*. The end of one of the screws *G* is extended sufficiently and squared to be engaged by a suitable wrench or crank, by which means both screws are turned and the positions of both top slides, *D*, on their slide *B* are changed simultaneously. Each top slide, *D*, has a stout post, *D''*, which supports the parts which shape the front and back of the brim, respectively. These parts are each divided at the extreme front and back. The main or inner part will be designated by a single letter, *I*. The two parts thereof are connected by a hinge, *i*, and are subject to the force of a spring, *I'*, which urges them apart, to increase the space for the width of the hat-body. This spring also aids to form the hinge by which the compound part *I* is mounted on the post *D''*. On each side, at the extreme end, is riveted or otherwise secured a

piece, I², forming a pocket, which engages with the side-shaping piece, to be described farther on. The flange or outwardly-projecting rim at the top extends out to a breadth only equal to that of the narrowest brims which are to be treated. Its angle may be changed by turning the screw G and moving the top slide, D, outward or inward on its support. Moving it outward increases the inclination of the brim. Moving it inward diminishes the inclination or makes the brim more nearly horizontal. Greater widths of the brim at the front and back are provided for by additional shaping-pieces J J, which lie partially under the flanges of I, and are adjusted to extend out more or less beyond. Each outer shaping-piece, J, is also divided into two parts, connected by a hinge, j, and is supported in an adjustable bracket, J', through which is tapped an endless screw, K, which is mounted in a bracket, D³, having an inclined way, D⁴, parallel to the screw K. A half-elliptical spring, L, abutting on the inclined way D⁴, and guided by a groove or slot therein presses up against the bracket J' and holds the outer shaping-piece J in close contact with the inner shaping-piece I, however the screw K may be turned to adjust it, outward or inward. The bracket D³ and its attachments, being mounted on the top slide, D, partake of all the changes of inclination of the latter in the same manner as does the inner shaping-piece I. The curling should be effected by other means before the hats are shaped on my apparatus. There must be provisions for readily narrowing the shaping parts at the sides and again increasing their width to the proper extent. Slotted brackets or standards Q are held by screws U, and are adjustable outward and inward by reason of the slots q. They stand in adjustable positions on each side of the bed-piece, and carry swiveling uprights T, which support all the parts that contribute to shape the sides of the brim. The outer edges of the brim are shaped by pieces M, which are curved to the proper form, and are riveted or otherwise attached to levers M', turning on centers m below. The outer edge of each piece M is curled under in the form to which the hat-brim is to be shaped. Another and more important function performed by this curling of each shaping-piece M is that the attachment thereof to the lever M' is done through the curled edge instead of directly by the body. This allows the considerable space between the curled edge and the body to be all occupied by other parts of the mechanism. The lower arm of each lever M' carries a rocking nut, N. The two screws P, one operating the mechanism on each side, respectively, are one right-handed and the other left-handed, and are connected by a coupling-piece, O, which allows them to move apart and together, while compelling them to turn alike. Both are turned by a handle or key applied to one screw. The above adjusts the outer shaping-piece, M.

There are two other shaping-pieces on each side interior to M. The innermost, R, turns on a horizontal pin, r, mounted in the top of the swiveling upright T. Its upper and effective portion engages at each end in the pocket I² of the adjacent end shaping-piece I. An offset or shoulder, R', matching against a corresponding shoulder, T', limits the inward movement, so that the end shaping-pieces cannot be overstrained in that direction.

V and W are intermediate side shaping-pieces, and also bridges covering the gaps which would otherwise occur between the side shaping and the end shaping parts in treating broad-brimmed hats. V V lie mainly under the pieces J, and are pivoted thereto at the points v. The other end of each is engaged by a headed pin, b', with skeleton shaping-pieces W, which are curved and slotted, as shown. The headed pins b' engage in the longitudinal slots w. Headed pins m' on the outer side shaping-pieces M engage in the holes w'. The skeleton W constitutes a complete support for a portion of the hat-brim, which, when very broad, would otherwise be unsupported between the inner side piece R and the outer side piece M. The swinging pieces V are stout bridges to fill out the outline of the brim between the outer side piece M and each outer end shaping-piece J. The springs J' L tend to contract the shaper by exerting a force on the divided end shaping-pieces I J. The contraction of these parts is restrained by the pockets I², which engage each with the side shaping-pieces R. The outermost of these, M, is held inward to the required position by the screws P and their coupling-piece O.

Modifications may be made in the forms and proportions. Parts of the invention may be used without the whole. Other means may be employed for the engagement of the end shaping-pieces J with the side shaping-pieces R. A headed pin on the one part engaging in a slot on the other would be effective; or these parts may be left without any positive engagement, the pressure of the springs I' being sufficient to keep them always in contact. All the several shaping-pieces, whether at the sides or ends, as also the intermediate bridge-pieces, V, and skeleton parts W are made thin, with their edges beveled or chamfered off, so as to lie on and change their positions on each other like the scales of a fish or the feathers of a bird in all conditions, presenting a fair surface to shape the brim, which is placed therein in a heated condition, and is pressed by the hands or otherwise, as will be readily understood. The shaping-pressure may be effected by the hands or by the well-known device, sometimes termed a "sand-bag," in which a body of sand or analogous loose material rests on the brim, and through the medium of a yielding diaphragm of cloth presses the previously-heated brim down until it assumes the form of the shap-

ing-surfaces and becomes sufficiently cooled to maintain that form.

In treating styles of hats with but slight roll at the sides, so long as a uniform size of hat with a brim of uniform breadth and scope is being shaped no changes of any part are required, except a partial turn of the shaft C, and consequently a lengthening of the apparatus to facilitate the removal of each hat and the placing of a fresh one, and the shortening of the apparatus to embrace the hat with gentle firmness preparatory to the shaping of the brim. The form is to be set the required width in front and rear, and the required roll at the sides is obtained by turning O, and thus adjusting its attached screw P; and it is not disturbed again unless the roll at the sides is too high or too low. When the scope is to be changed, the screws G are turned. When the breadth of the brim at the front and back is to be increased or diminished, the screws K are turned. When the width of the hat-body is to be increased, the stands Q are shifted outward; and when the brim at the sides is to be widened, the screws P are turned. Instead of turning one of these by a handle (not shown) applied to the projecting end and causing the other to turn by its connection through the coupling-piece O, the hand may, if preferred, be inserted through the open side of the apparatus and applied directly to the coupling-piece O, which is conveniently shaped to allow it to be grasped, and thus effect the turning. The upper face of each end shaping-piece J is graduated and marked plainly in eighths of an inch. This allows the extent or breadth of the brim to be determined instantly by inspection.

Some of the advantages due to certain features of the invention may be separately enumerated, as follows:

First. By reason of the fact that the racks *b* are arranged as shown—one above the other—with the teeth of the uppermost presented downward and the lowermost presented upward, I am able to shift the position of the slides B B and effect the adjustment of the length of the space for the hat-body by a single gear-wheel, C', which engages in both racks. This is the most frequent adjustment required. With many styles of hats this is the only change required in treating all the different sizes.

Second. By reason of the fact that the end shaping parts I overlap the end shaping parts J to varying extents, indicated by the graduations on J, and that the parts J are conveniently changeable in position outward and inward by the screws K, and are pressed upward into close contact with the under face of I, the edge of which latter is reduced in thickness, as shown, I am able to conveniently adjust the breadths of the brims at the front and back and to determine the extent of the adjustment with facility, and to adjust the whole outward and

inward by the mechanism *b* C' without disturbing their mutual relations.

Third. By reason of the fact that the end shaping parts I and J are divided and hinged and equipped with springs, as described, I am able to vary the width of the brims within considerable limits without appreciably changing the relations of the parts or their effects on the brims as they are successively presented thereto and pressed thereon.

Fourth. By reason of the curved ways B' on the slides B, and the corresponding curved bearings therefor in the top slides, D, I am able to change the scope or inclination of the end shaping parts I J without materially varying the length of the space for the hat-body. In other words, the screws G, connected as shown, by shifting the top slides, D, outward and inward, cause them to traverse in arcs of which the centers are coincident with the center of the end shaping parts. The inclination is changed without changing the positions.

Fifth. By reason of the brackets Q having slotted bases, as shown, held by the pinching-screws U, and carrying the inner side shaping-pieces R, in combination with suitable end shaping pieces, adapted to expand and contract, I am able to vary the width of the space for the hat-body within wide limits.

Sixth. By reason of the levers M, screws P, and connecting-piece O, I am able to adjust the side shaping-pieces M inward and outward with any degree of fineness and to move each to an equal extent by a single movement.

Seventh. By reason of the side shaping-surfaces M, carried on levers M', and of nuts N and right and left screws P, connected together by the coupling or handle O, I am able to adapt the machine to shape side brims of different widths by a single operation.

I claim as my invention—

1. In a hat-brim-shaping machine, the single gear-wheel C', in combination with the racks *b* and slides B, carrying the end shaping parts, arranged to serve as herein specified.

2. In a hat-brim shaper, the graduated end shaping-pieces J, in combination with the overlapping end shaping-pieces I, and with means, as *b* C', for adjusting both together outward and inward, and with means J' K, for adjusting the breadth of the brim, and springs L, pressing the parts J I in contact, all substantially as herein specified.

3. In a hat-brim shaper, the combination of end shaping parts, divided vertically, with means for engaging the same with the side shaping parts, and with provisions for increasing and diminishing the width of the space for the hat-body, substantially as and for the purposes herein specified.

4. In a hat-brim shaper, the top slides, D, carrying the end shaping-surfaces, in combination with the curved supporting-ways B' and means, as G, for traversing the one relatively

to the other, so as to change the scope without changing the position of the shaping parts, substantially as herein specified.

5 5. The adjustable brackets Q, carrying the side shaping-pieces R, in combination with the pinching-screws U, engaging in the slots q' , arranged to serve relatively to each other and to suitable end shaping-pieces J J, substantially as specified.

10 6. The movable side shaping-pieces M, carried on levers M', in combination with the screws P, and means O, for connecting and turning them, arranged to adjust the hat-brim-shaping surfaces on the two sides by a single
15 motion, substantially as herein specified.

7. In a hat-brim-shaping machine, the screws P, connected together as shown, in combination with the swiveling-nuts N, levers M', and side shaping-pieces M, and inner side shaping-pieces R, arranged to serve as herein specified. 20

In testimony whereof I have hereunto set my hand, at Danbury, Connecticut, this 17th day of October, 1883, in the presence of two subscribing witnesses.

LUCIUS H. HOYT.

Witnesses:

AARON S. BATES,
DAVID B. BOOTH.