No. 665,068. Patented Jan. 1, 1901.

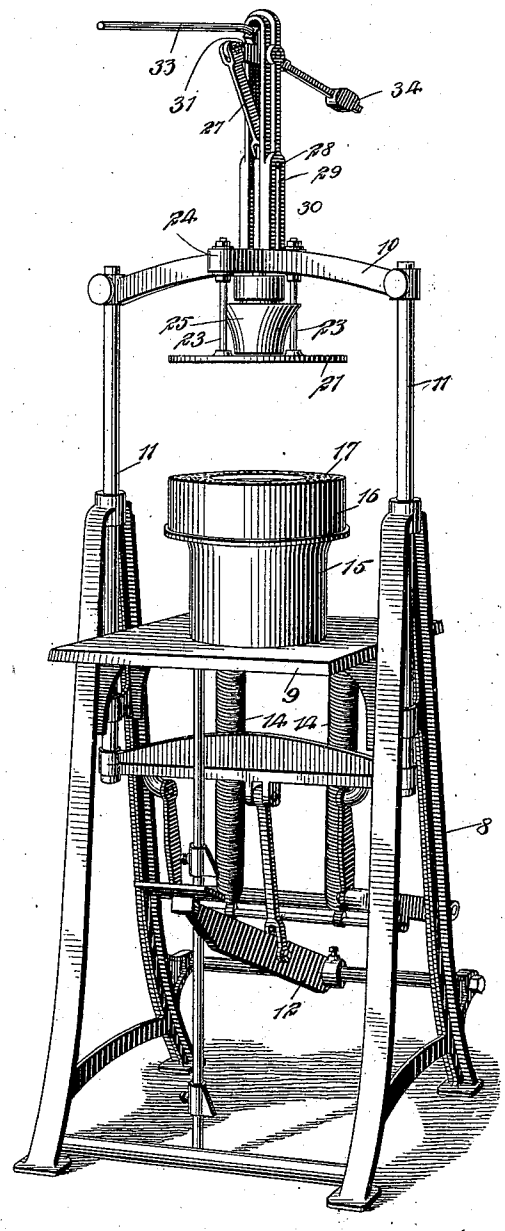
M. A. CUMING.

HAT SHAPING MACHINE.

(Application filed Mar. 16, 1900.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



WITNESSES:

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Fig. 2.

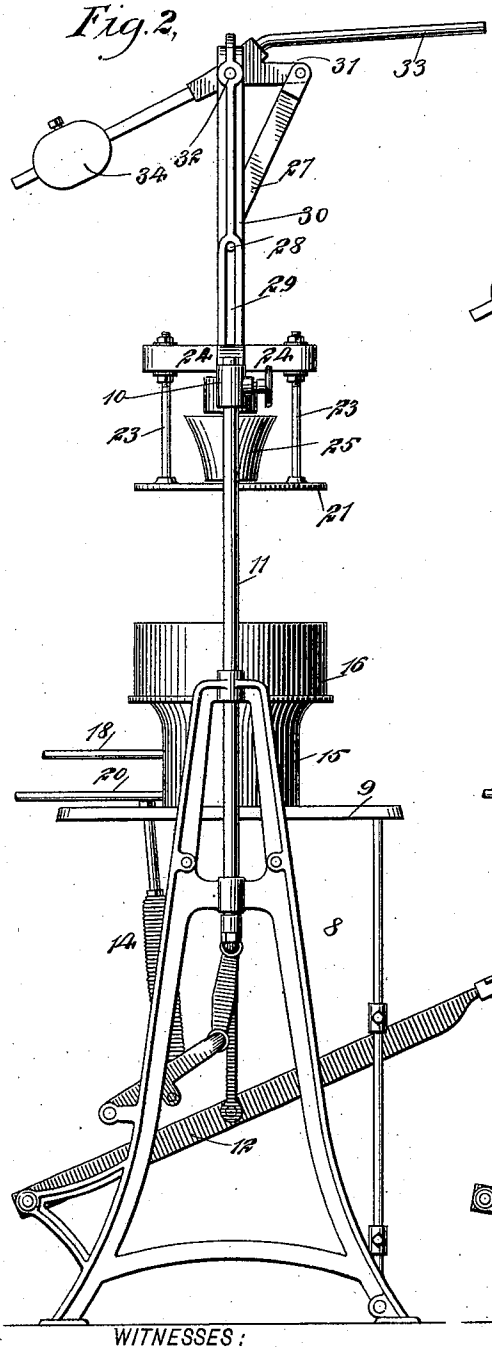
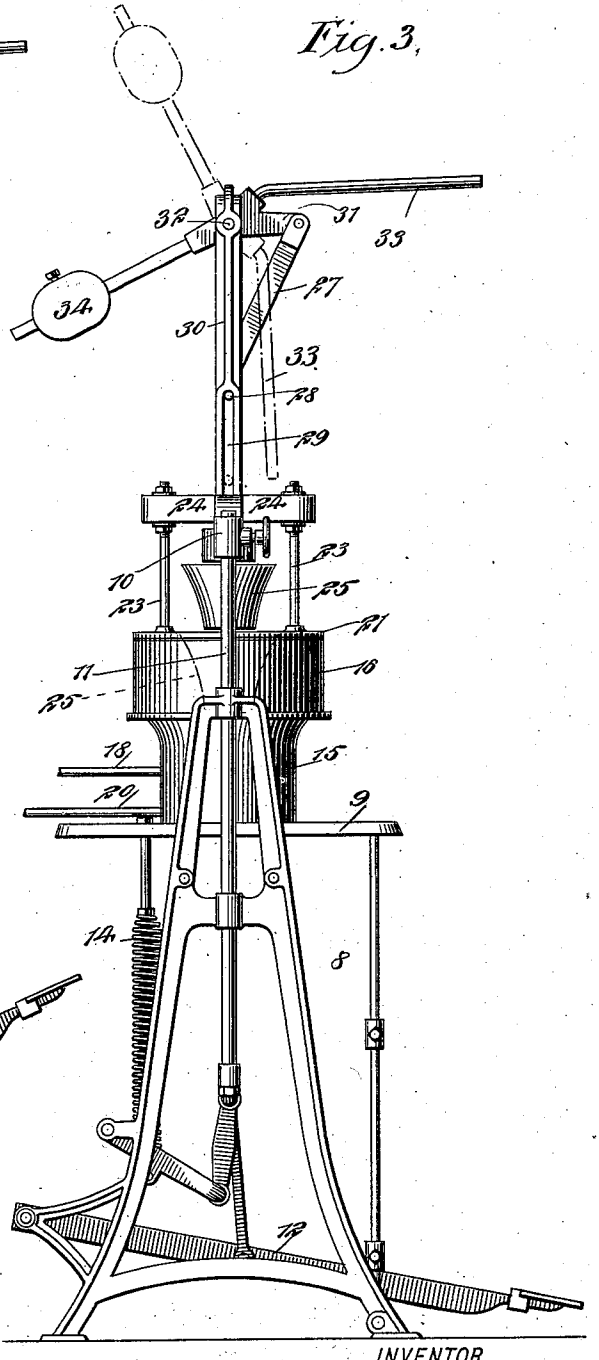


Fig. 3.



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Fig. 4.

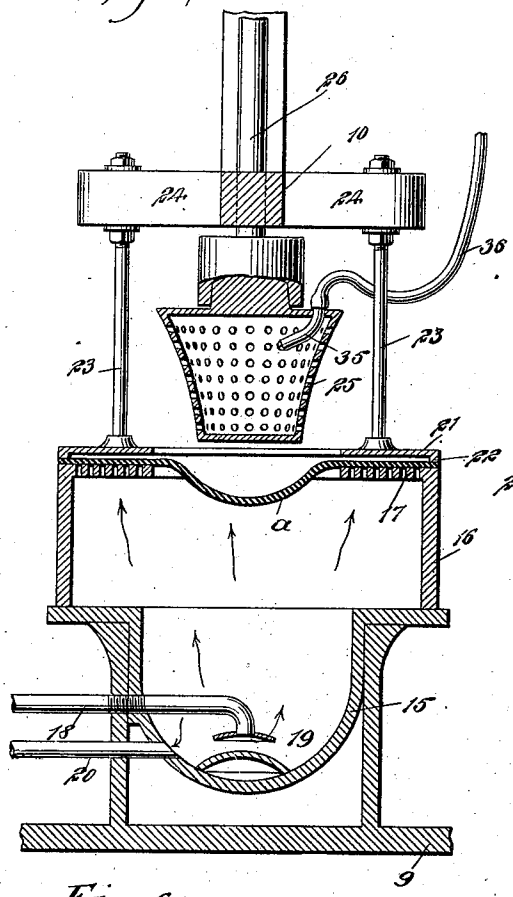


Fig. 5.

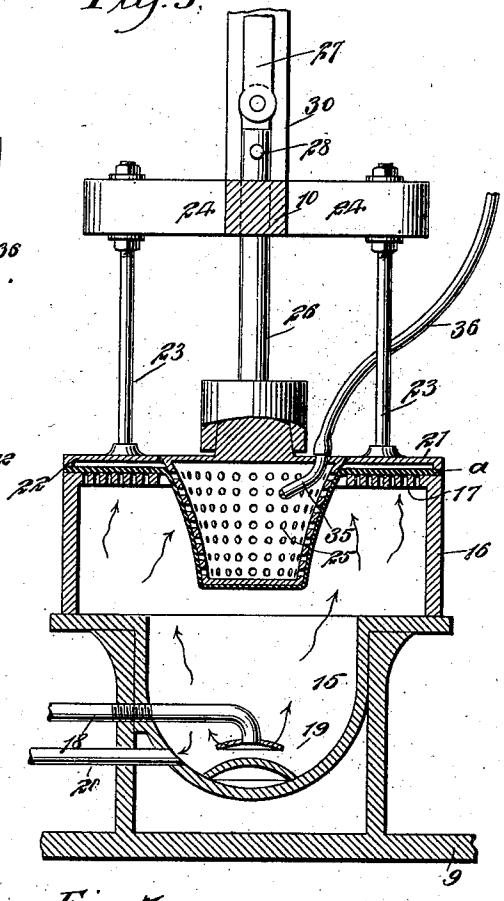


Fig. 6.

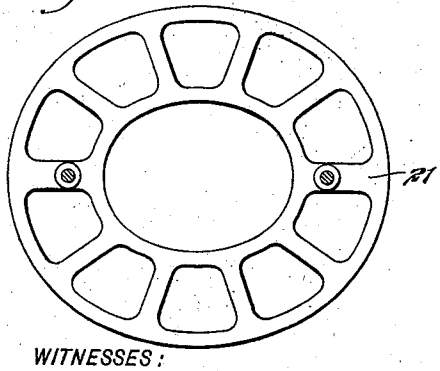
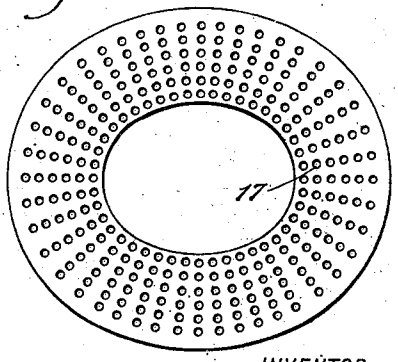


Fig. 7.



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UNITED STATES PATENT OFFICE.

MARI A. CUMING, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO HOWARD WASHBURN, OF SAME PLACE.

HAT-SHAPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 665,068, dated January 1, 1901.

Application filed March 16, 1900. Serial No. 8,962. (No model.)

To all whom it may concern:

Be it known that I, MARI A. CUMING, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Hat-Machine, of which the following is a full, clear, and exact description.

This invention relates to an apparatus for pressing hats of felt, wool, cloth, or other fabric into proper form; and it comprises a certain peculiar construction and arrangement of parts which enables me to subject the material at one side to the action of the steam in direct contact therewith, thus rendering the material sufficiently pliable to be readily molded or pressed into form.

This specification is the disclosure of one form of the invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the apparatus. Fig. 2 is a side view thereof with parts in inactive position. Fig. 3 is a similar view except that the parts are shown in active position. Fig. 4 is an enlarged detail section of the dies engaged. Fig. 5 is a similar view except that the crown of the machine is shown lowered into position. Fig. 6 is a plan view of the upper or movable die, and Fig. 7 is a plan view of the lower die.

The apparatus is mounted on a suitable framing 8, with a stationary platform 9 situate at the upper part thereof and with a crown-carrier 10, the ends of which are connected with rods 11, sliding vertically in the framing 8 and actuated by treadle mechanism 12, all of which parts are of usual the construction. The crown-carrier 10 is held in the elevated position (shown in Figs. 1 and 2) by means of springs 14, and upon the operation of the treadle mechanism the crown-carrier is thrown down, as shown in Figs. 3, 4, and 5.

On the table 9 is mounted a basin 15, which carries the lower die, this die comprising an ovate side portion 16 and a foraminated top plate 17, the latter being formed with a central opening permitting the passage of the crown therethrough. A steam-feed pipe 18 leads into the basin 15 and is provided with a concavo-convex deflector-plate 19, fastened to its discharge end. Passing from the basin is the steam outlet or exhaust pipe 20. The steam entering by the pipe 18 is deflected by the plate 19 and caused to pass upward into the basin to act on the hat, as will be hereinafter described, from whence the steam passes out through the pipe 20.

The upper or movable die 21 is ovate in form to correspond with the lower or basin die and has a central orifice to permit the crown-mold to pass therethrough. This die 21 may be formed of open-work, as illustrated in Fig. 6; but when necessary in giving shape to the hat it may be in the form of an imperforate plate. The periphery of the die 21 is formed with a downwardly-projecting rim 22, which is adapted to bear on the upper face of the lower die at the periphery thereof, so as to clamp at its edges the material from which the hat is formed. This material is indicated by the letter *a* in Figs. 4 and 5. The die 21 is fastened to the crown-carrier 10 by means of the rigid bars 23, attached to the die and to projections 24 on the die-carrier. When the die-carrier is moved down, as shown in Fig. 3, the upper die 21 is forced down upon the material *a*, which is placed on the lower die, and the edges of the material are clamped securely in place by the rim 22. It will be understood that the dies 17 and 21 may be in any form desired, according to the form of the hat to be produced. I have here shown them in their simplest form—that is to say, to produce a hat with a flat brim. It is clear, however, that a brim of any sort may be molded by correspondingly changing the form of the dies, which of course will be done in practice.

The crown 25 or the die member which shapes the crown of the hat is carried fast on a bar 26, (see Figs. 4 and 5), provided with studs 28, which run loosely in slots 29, formed in a frame 30, mounted rigidly on the crown-carrier 10, the stem passing up between the side members of this frame. The upper end of the bar or stem 26 is jointed to a link 27, which in turn is pivoted to an arm 31, mount-

ed to rock about an axis 32, located at the upper extremity of the frame 30. This arm has a hand-lever 33 connected therewith and a balance-weight 34, also connected therewith. The parts 31 and 34 are so disposed that the weight will hold the crown raised, as shown in Figs. 1, 2, and 3, and also when the hand-lever 33 is thrown down to the position indicated by dotted lines in Fig. 3 the weight will be locked in this position and the crown held lowered, owing to the relative position of the arms 31 and link 27, which parts form a toggle which assumes its extended position when the weight 34 is elevated, as shown by dotted lines in Fig. 3, and the crown 25 thrown down, as shown by full lines in Fig. 5. If desired, this crown 25 may be made foraminated, as indicated in Figs. 4 and 5, and fitted with a gas-burner 35, fed by a flexible pipe 36. By these means the crown may be heated to accelerate the operation of drying the material. In connection with the action of the crown with respect to the crown-carrier 10 and the die 21 it will be observed that the downward movement of the die 21 will be accompanied by a similar movement of the crown, but that the crown will not move relatively to the die until the hand-lever 33 is thrown. Therefore the operation of the treadle mechanism 12 places the parts in the position shown in Fig. 4, and the crown 25 is not moved down until the hand-lever 33 is operated.

In using the apparatus the material from which the hat is to be formed is placed in its unformed state upon the lower or stationary die 17 and steam is admitted into the basin 15. This steam, acting on the material through the central opening in the die 17 and also through the foraminations therein, will soften the material, so that it may be molded into form. The treadle mechanism 12 is then operated to bring down the crown-carrier 10, thus clamping the die 21, with its rim 22, against the material a to hold the material in place. The hand-lever 33 should now be operated to throw the crown 25 from the position shown in Fig. 4 to that shown in Fig. 5, causing the central portion of the material to be pushed down through the central opening in the die 17 and the crown of the hat to be formed. The steam-pressure within the basin 15 acting on the material forces it snugly against the crown 25 and causes it to conform to the shape thereof. When the material has been properly shaped, the steam may be turned off and the material allowed to dry, which operation may, if desired, be accelerated by heating the crown 25 in the manner described. When the material has been dried, the hat may be taken out of the machine and the operation repeated. It will be observed, therefore, that the hat is placed in the machine dry and is taken out in the same condition.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A hat-machine having a steam-basin, a foraminated die placed thereon, a movable die working with the first-named or foraminated die, to hold the hat between the two, whereby the hat is subjected to the action of steam during the operation of the dies, and a crown-die mounted to move toward and from the first-named dies to form the crown of the hat, the first-named dies having central openings, permitting the crown to pass therethrough.

2. A hat-machine, having a steam-basin, a foraminated die placed thereon, a movable die working with the foraminated die to hold the hat between the two, whereby to subject the hat to the action of the steam within the basin, and a crown-die working with the two first-named dies to form the crown of the hat.

3. A hat-machine, having a foraminated die with a central opening therein for the reception of the crown of a hat, a die working with the foraminated die to engage and hold the outer edges of the brim of the hat, leaving the other portions of the hat loose on the die, and means working with the foraminated die to form the crown of the hat.

4. A hat-machine having a steam-basin, a foraminated die thereon, a second die working with the first-named die to hold the outer edges of the brim of a hat, leaving the other parts of the hat free on the die, and means working with the die to form the crown of the hat.

5. A hat-machine, having a movable die, means on which the die is carried and by which it is moved, a crown-die also carried on said means, a frame mounted rigidly on said means, an arm mounted to rock at the upper part of said frame, a link connecting the arm with the crown-die to move the same independently of the first-named or movable die, and a hand-lever having connection with the arm to actuate the same, the said arm and the link forming a toggle to hold the crown-die in operative position.

6. A hat-machine having a foraminated die with a central opening therein for the reception of the crown of a hat, an upper die working with the foraminated die and having a rib around its outer edge to engage the outer edge of the brim of the hat, leaving the other portions of the brim of the hat free, the two dies having a central opening therein, and means working with said dies to form the crown of the hat.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MARI A. CUMING.

Witnesses:
V. B. OWENS,
EVERARD BOLTON MARSHALL.