No. 644,472. Patented Feb. 27, 1900.

G. SEGSCHNEIDER.

HAT MACHINE BRIM CURLER.

(Application filed Dec. 22, 1899.)

(No Model.) 3 Sheets—Sheet 1.

Fig: 1.

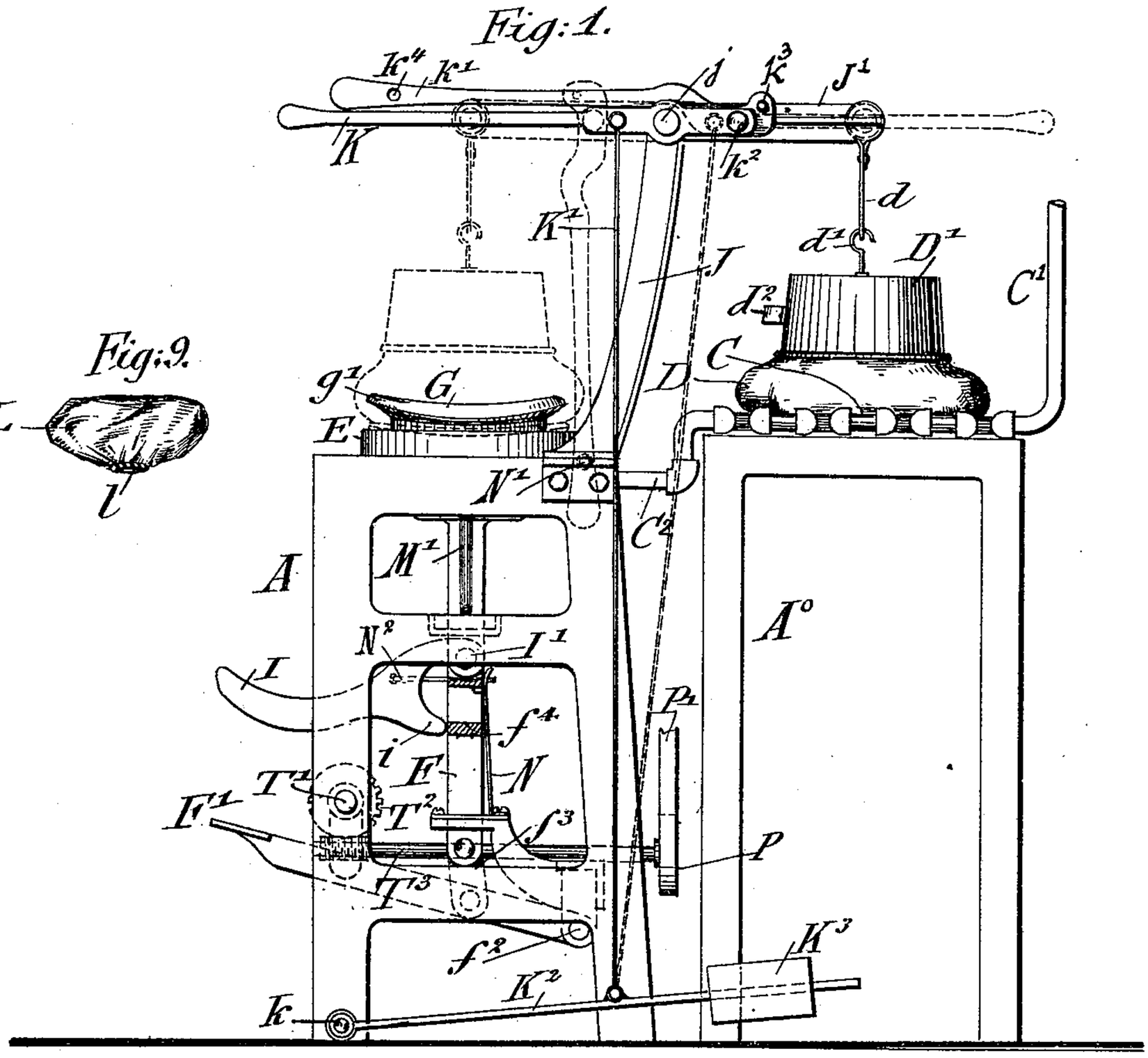
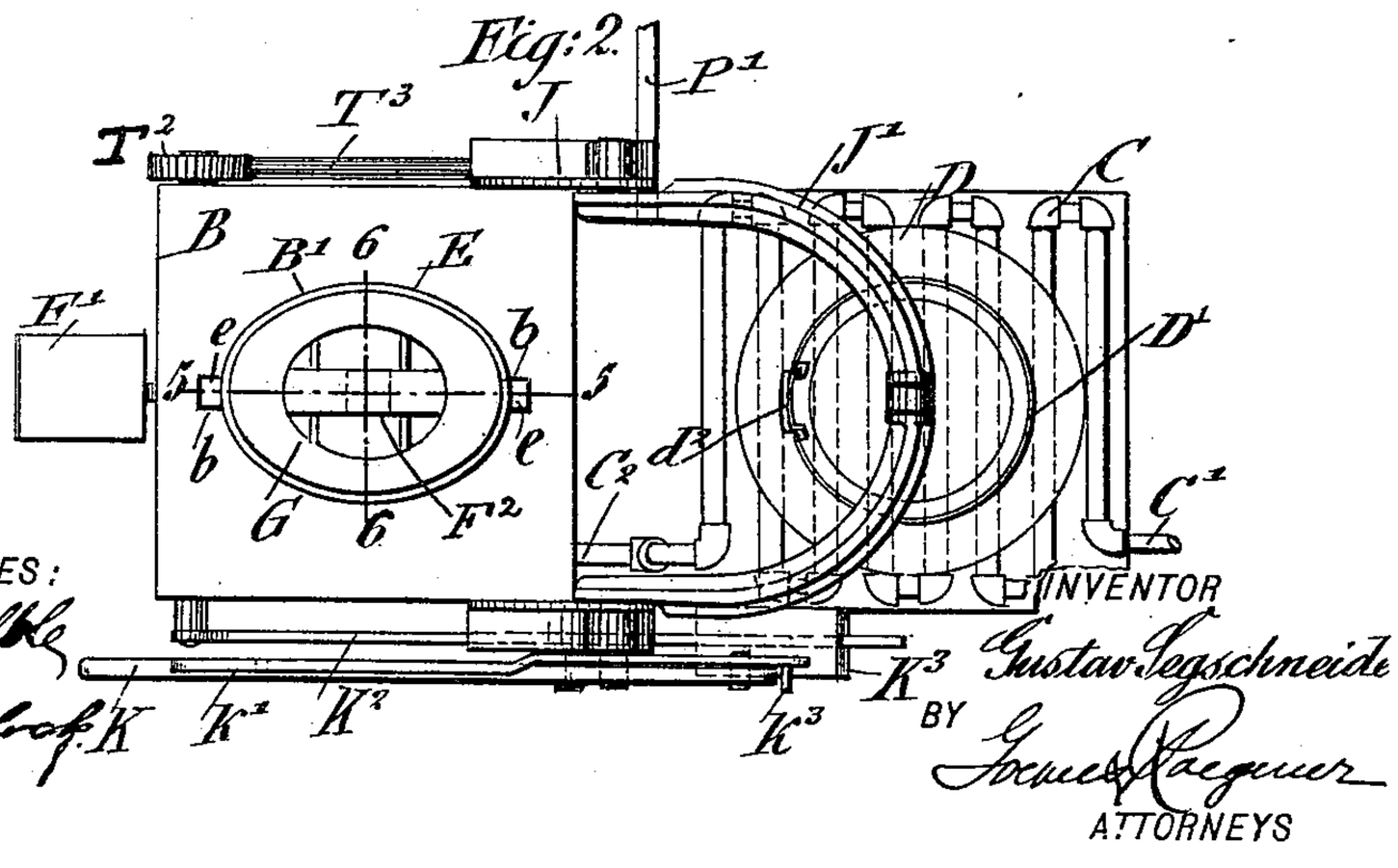


Fig: 9.

Fig: 2.



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(No Model.) 3 Sheets—Sheet 2.

Fig: 3.

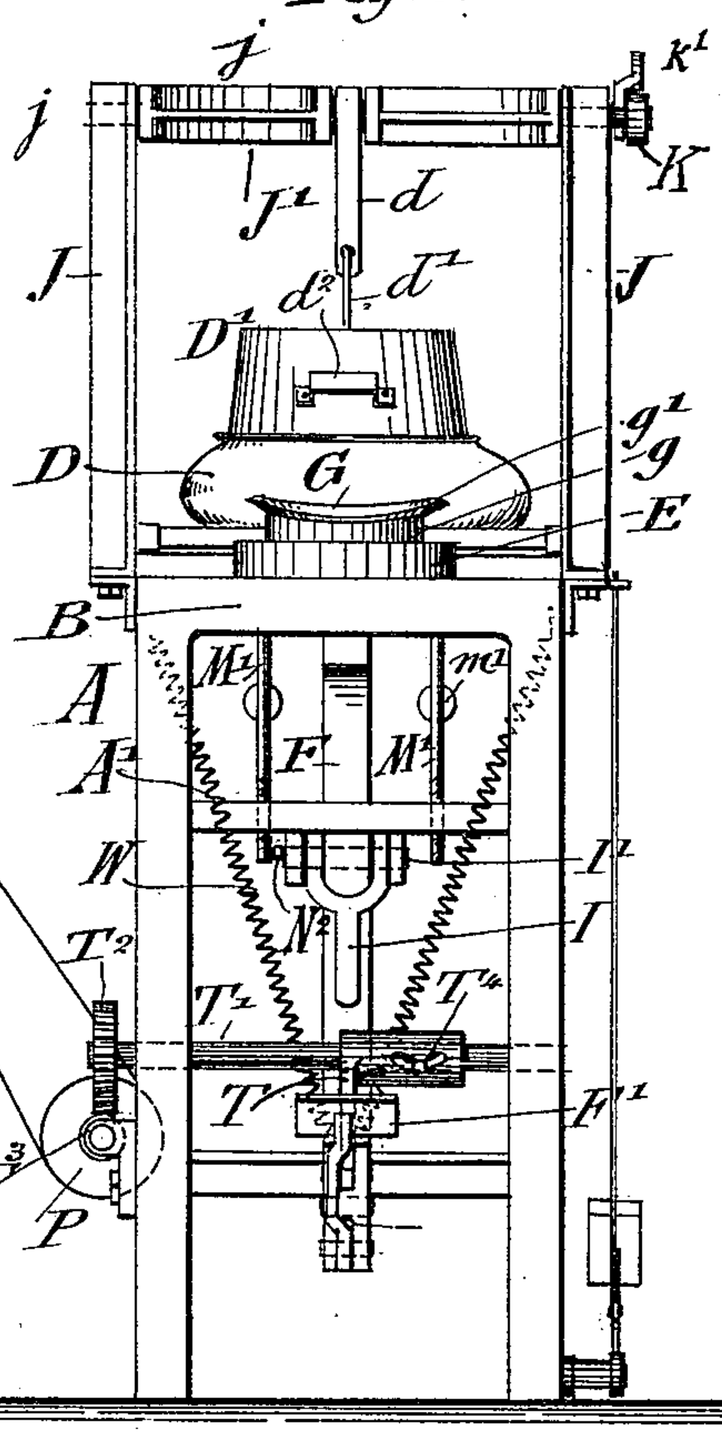

Fig: 7.

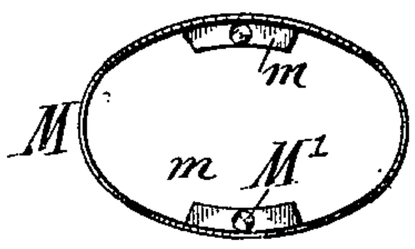

Fig: 8.

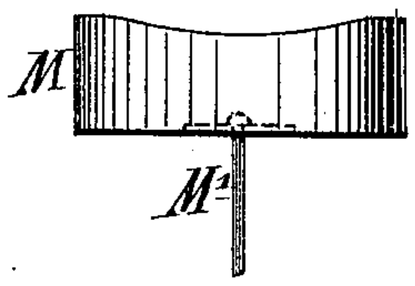

Fig: 6.

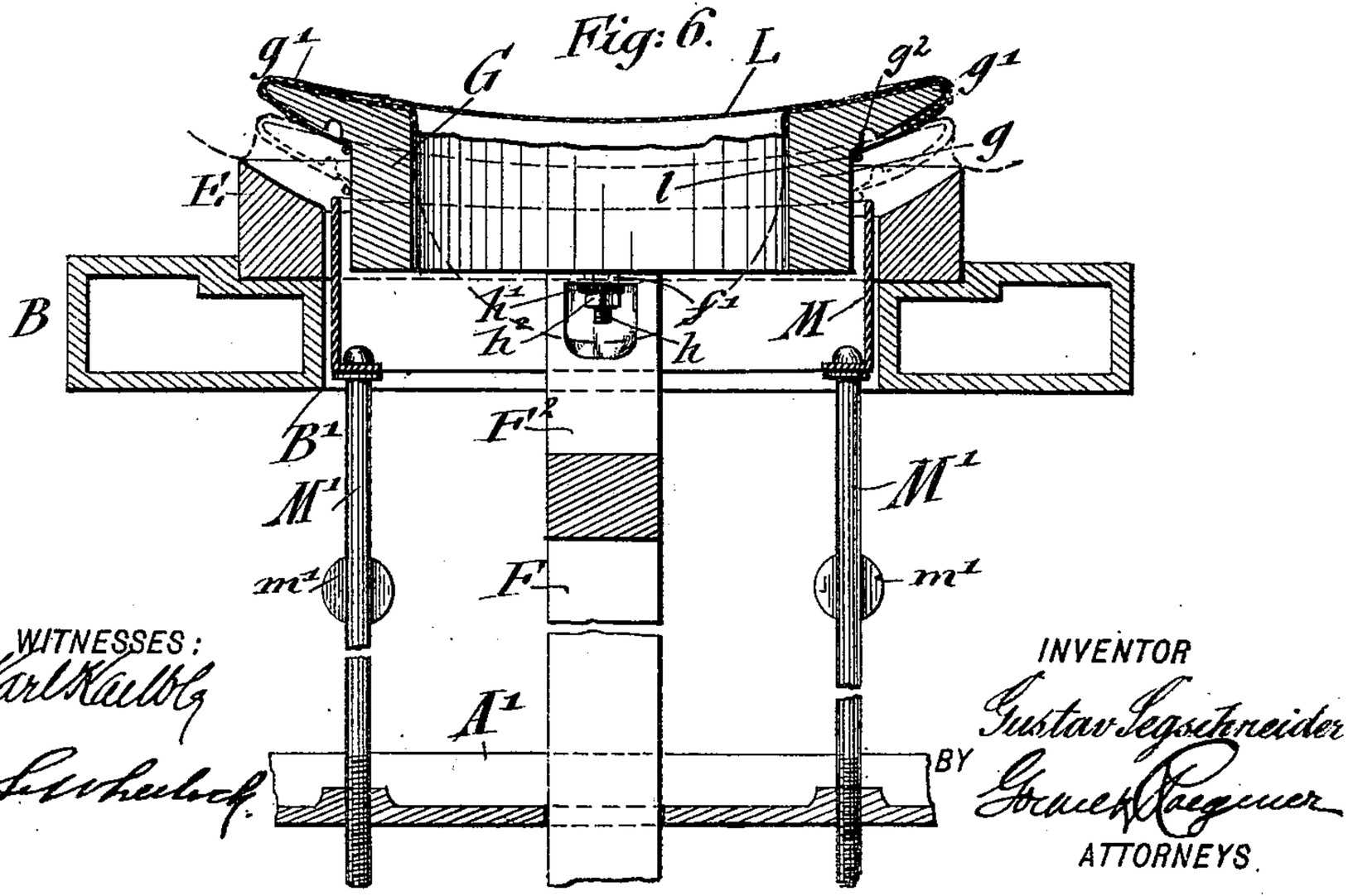

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Fig: 4.

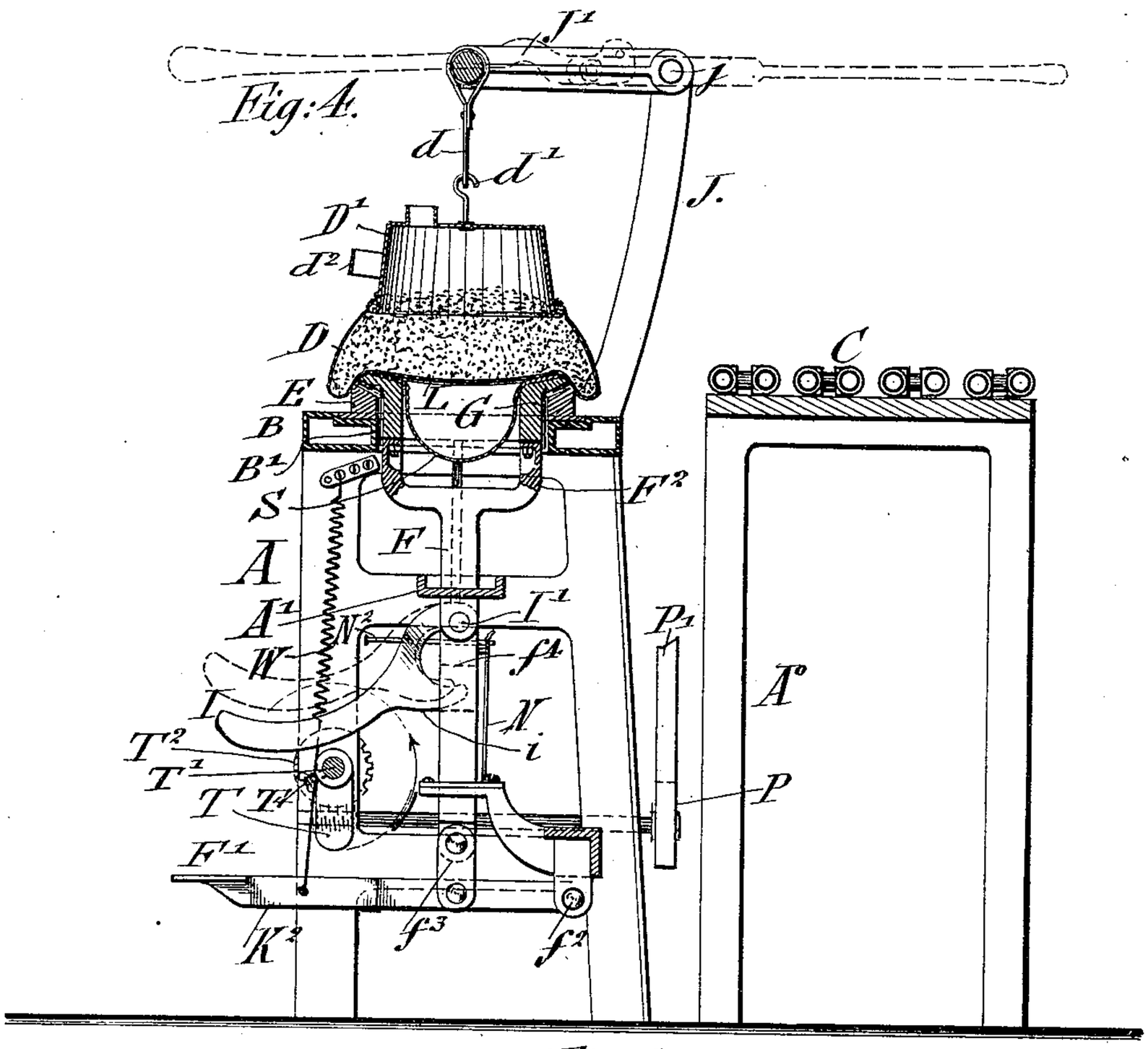
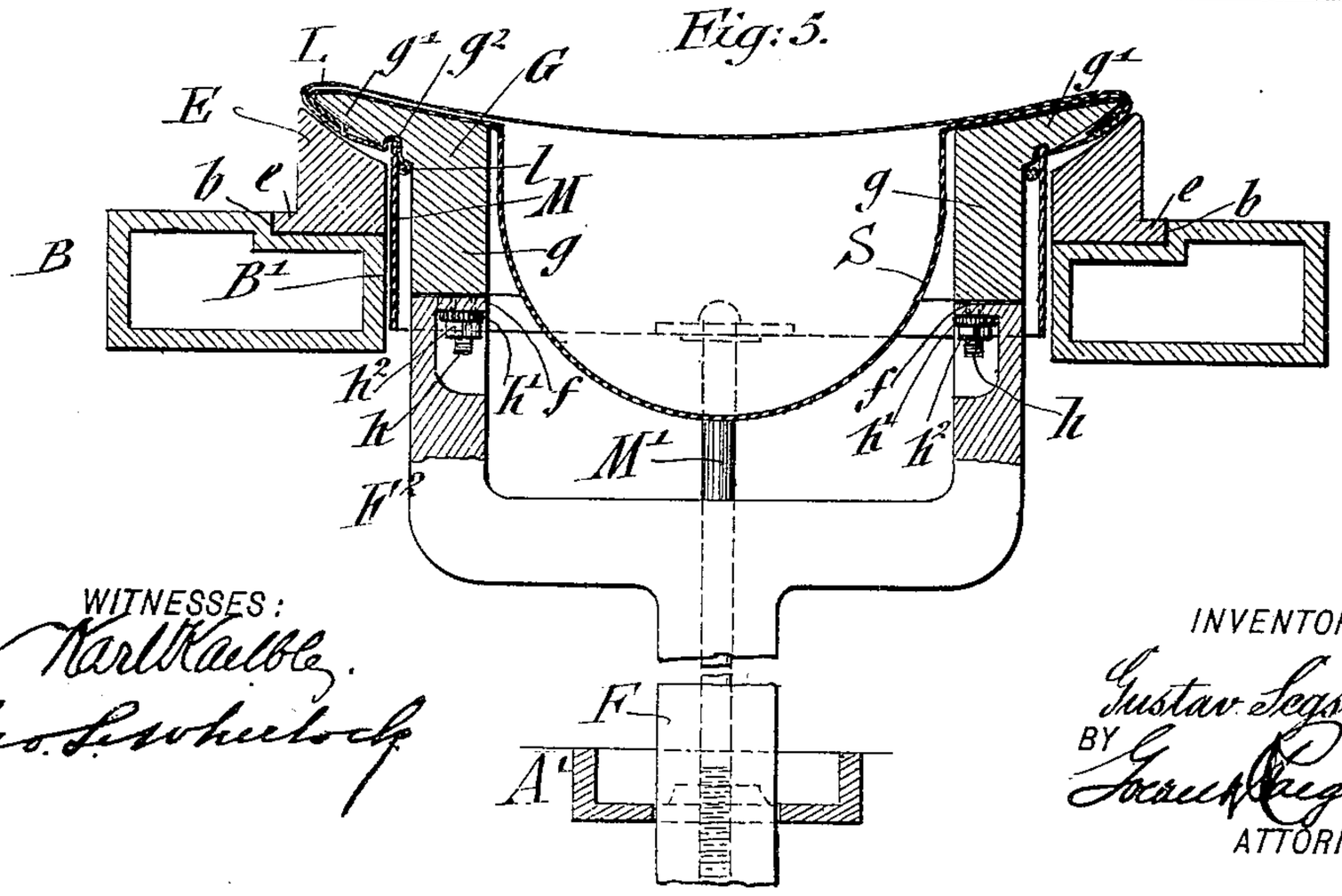


Fig: 5.



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UNITED STATES PATENT OFFICE.

GUSTAV SEGSCHNEIDER, OF YONKERS, NEW YORK.

HAT-MACHINE BRIM-CURLER.

SPECIFICATION forming part of Letters Patent No. 644,472, dated February 27, 1900.

Application filed December 22, 1899. Serial No. 741,240. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV SEGSCHNEIDER, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Machines for Flanging Hat-Brims, of which the following is a specification.

This invention relates to machines for flanging hat-brims, whether bound or not, by subjecting them to pressure and heat, so that the brim has the proper final set or curl. Heretofore this has generally been done partly by hand and partly by machine, the hat being placed on a suitable forming-block having a flange with a profile corresponding to the shape of the brim and the flange of the brim being ironed down on one side of the flange of the forming-block by a hot flat-iron, after which the forming-block is placed on a table and a heated sand-bag let down onto the same, so as to press the brim to the forming-block and heat and iron down the brim, so that when the hat is removed from the forming-block it is properly flanged and set. The work done in this way is necessarily slow and arduous and requires specially-skilled hands.

The object of the present invention is to provide a machine which dispenses with much of the hand labor and which at the same time turns out better work in less time and which requires little attention, as a number of machines—say six—may be tended at one time by a boy, if desired.

The invention consists, first, of a machine for flanging hat-brims which comprises a female forming-block, suitably heated, a male forming-block, which telescopes into the female forming-block, a pressure-bag, and means for heating said bag.

The invention consists, secondly, of a treadle mechanism for operating the said male forming-block and a separate hand-lever adapted to more nicely set said block through the medium of said treadle mechanism.

The invention consists, thirdly, of a straining-hoop which is arranged around the male forming-block and is adapted to stretch or tighten a flexible protecting-cap which is placed over said block.

The invention also consists of certain features of construction and combinations of parts to be hereinafter described and then claimed.

In the accompanying drawings, Figure 1 is a side elevation of my machine, showing the same in full lines in position of rest, the dotted lines showing the operative position of the pressure-bag and its operating-levers. Fig. 2 is a top view of the machine. Fig. 3 is a front elevation. Fig. 4 is a vertical longitudinal section showing the parts in operative position. Fig. 5 is an enlarged detail section on line 5 5, Fig. 2, of the steam-chest, the male and female forming-blocks, and means for supporting the said male member, said blocks being in closed position. Fig. 6 is an enlarged detail section on line 6 6, Fig. 2, showing more clearly the straining-hoop and the means for adjusting the same, the male and female members being in normal separated position and the intermediate dotted lines showing the position of the male forming-block and the action of the bag on the brim just after the male forming-block has been released. Fig. 7 is a top view of the straining-hoop. Fig. 8 is a side view of the same, and Fig. 9 is a perspective view of the protecting-cap.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A indicates the frame of the machine, which supports a steam-chest B, and A^0 a supplemental frame which supports a steam heating-coil C for the pressure-bag D, filled with granular material, such as sand. A steam-inlet pipe C′ leads to the coil C, and a pipe C^2 connects the coil and the steam-chest B. The steam-chest is provided with a central opening B′, formed with recesses *b*, in which fit the locking-lugs *e* of a female iron or forming-block E, conformed to fit in said opening. The said block E is removable, so that another of a different pattern may be substituted, the upper surface of the block being polished and curved or slanted about as shown, depending on the shape to be imparted to the hat-brim. Frame A is provided with a cross-bar A′, through which is guided a rod F, that is operated from its lower end by a treadle F′ and is provided with a yoke F^2 at its upper end, which yoke supports a male forming-block G, which may be made of suitable wood or metal and

which is movable or telescopes into the female forming-block E. The construction of this block G is shown clearly in Figs. 2, 5, and 6, it being composed of an entering portion *g* and a peripheral flange *g'*. The edge, top, and bottom of the flange *g'* are polished and shaped to accord with the shape of the hat-brim to be set or ironed down, and the slant or profile of the under surface corresponds with that of the upper surface of the female forming-block, said block G being removable from the yoke F^2, so that another may be substituted.

h indicates the bolts which pass through bent ends *f* of the yoke F^2 and into the male forming-block G, and *h'* are cushions of elastic material confined between the said ends *f* and the nuts h^2 of the bolts, which cushions allow the said block G to have certain upward and lateral yielding movements, permitted by slightly elongating the slots *f'*, through which said bolts pass. (See dotted lines in Fig. 6.) Treadle F' is pivoted to a part of the frame A at f^2 and is connected with the rod E by a link f^3.

A gravitating hand-lever I is pivoted at I' to the cross-bar A' and is provided with a cam projection *i*, formed with an eccentric curve on its lower side, as shown in Fig. 4, which projection is adapted to fall into a recess f^4 in the rod F, so as to automatically lock the treadle in lowered position for the purpose of holding the male forming-block down to the female forming-block. The said hand-lever I is struck at a properly-timed moment by means of a tappet T, mounted on a rotary shaft T', journaled in suitable bearings of the frame A and moved by a worm-wheel T^2 thereon, which meshes with a worm-shaft T^3, driven by a pulley and belt P P', operated from a suitable source of power. The tappet is not rigid on the shaft, but is normally loose, its hub being tapped for a thumb-screw T^4, which is tightened by hand, preferably the moment the treadle is depressed.

The steam heating-coil C serves for heating a sand-bag D, which is provided with means for swinging it over onto the said coil or over onto the male and female forming-blocks without danger of injuring the hat being flanged. Such means comprise standards J on the frame, one at each side of the steam-chest B, in the upper ends of which standards are journaled a pair of trunnions *j*, from which projects a bail J', which by means of a suspension link or strap *d* is connected with the eye or hook *d'* of the metallic holder D' of the sand-bag. At one side of the holder D' is a hand-loop d^2. The trunnions *j* also carry a hand-lever K, projecting oppositely to the arm J', with which hand-lever, at a point near the trunnions *j*, is pivotally connected a rod K', which extends downwardly alongside the machine and is pivoted at its lower end to a lever K^2, pivoted in turn to the frame of the machine at *k* and carrying an adjustable counterbalance-weight K^3, said parts being so disposed that the bag can be swung to one or the other position with little exertion. A handle *k'* is pivoted to the hand-lever K at k^2, its adjacent end being extended and provided with a contact-pin k^3 for use in connection with the hand-lever K in moving the sand-bag D. The sand-bag is not moved through an angle of one hundred and eighty degrees (its whole movement) by said mechanism, for when it has nearly approached its two positions of rest it is simply allowed to drop and settle to its own position.

In Fig. 9 is shown a flexible protecting-cap L, which is composed of suitable material, such as canvas, its mouth being contracted by an elastic shirring cord or band *l*, so that the cap bulges out. This cap is placed over the male forming-block for the purpose hereinafter stated, and any fullness or looseness thereof is taken up by a straining-hoop M, (see Figs. 5 to 8,) which is located in the space between the male and female forming-blocks and is adjusted higher or lower and fixed stationary by means of vertical rotary screw-spindles M', which turn at their upper ends in the ears or lugs *m* on the said hoop and screw into suitable threaded openings in the cross-bar A'. *m'* indicates wings on the said spindles M', whereby the same are adapted to be rotated, so as to screw the spindles into the said cross-bar.

N indicates a spring catch or pawl projecting from a portion of the frame A and adapted to snap into the recess f^4 of the rod F and support the rod and the male forming-block in the uppermost or normal position, and N' indicates a catch or pin fixed to the top of the frame and with which, by means of holes k^4, the handle *k'* is engaged, so as to retain the lever mechanism for swinging the bag D in position against wabbling. Catch N may be released by a handle N^2, which is grasped by the operator.

The machine is operated and used as follows: Everything required being at hand and the parts being in the position shown in full lines in Figs. 1, 2, and 6, the hat to be flanged is placed onto the male forming-block G, so that the crown will set into the same and the brim of the hat extend over the flange *g'* of said forming-block. The retaining-cap L is now placed over the flanged upper part of the male forming-block, so that the elastic shirring-cord *l* will snap into the corner-recess formed at the juncture of the entering portion *g* and the flange *g'*, as shown in Fig. 6, whereby the brim of the hat is turned or bent over and under the edge of the flange *g'*. The hat-brim is now moistened through the cap L by rubbing the cap with a wet sponge, the cap protecting the hat against abrasion by the rubbing action and also preventing the scorching of the same under the action of the heat. The said cap is readily placed onto the male forming-block and removed therefrom, its elastic cord avoiding the necessity of tying down the cap by means such as a string. After the cap

is placed onto the male forming-block G the operator releases catch N and places one foot on the treadle F′ and depresses the same until the hand-lever I drops and its cam toe or projection *i* automatically enters the recess f^4 in rod F and assumes the position shown by dotted lines in Fig. 4, the operator then releasing the treadle, which is retained by the said hand-lever. The male forming-block is thus caused to telescope into or enter the female forming-block, and its flange *g′* is thereby lowered onto the female forming-block E, whereby the turned-under portion of the brim of the hat is clamped between the two blocks. Then the operator tightens the thumb-screw T^4, so as to fix the tappet T to the rotating shaft T′. To secure nicety of fit between the two telescoping blocks G E and to fix block G and set it firmly down in position so that it will not shift, the hand-lever I is employed. The operator grasps the hand-lever I, his hand being sensitive to the slightest movement, and presses the cam projection *i* forcibly into the recess f^4 into the position shown in full lines in Fig. 4, the cam projection acting like a wedge to impart to the male forming-block G a slight downward movement, which compresses the cushions *h′* and also locks the said block in position. As the male forming-block is moving down into seated position it eventually brings the portion of the cap L which is adjacent to its shirring-cord *l* in contact with the rounded upper edge of the straining-hoop M, and the same presses the engaged portion of the cap into an endless groove g^2 on the under side of the flange *g′*, thus still further stretching or tightening the cap. This action draws or drags the outer part of the hat-brim down around the flange *g′* and smoothes it out, so that no creases or wrinkles will be retained by the brim. The straining-hoop M is adjusted higher or lower, according to requirements. The parts having been brought to the position shown in Fig. 4, the turned-under part of the brim is immediately subjected to the heat of the female forming-block E, heated from the steam-chest B. As soon as the said parts are in the position shown the operator grasps the hand-lever K and moves it downwardly until the sand-bag D is swung up and past the dead-center, whereupon the bag is allowed to move gently down by its own weight, the counterweight K^3 preventing any jar by the sudden dropping of the bag. The sand-bag by means of this swinging movement is positively and reliably guided to its position over the forming-blocks, so that it will settle properly without injury to the hat or other parts, and the hand-lever K is moved to the position shown in dotted lines in Fig. 1. The handle *k′* drops to the position shown by dotted lines and is taken hold of and sprung over the pin N′. Meanwhile the tappet T is slowly rotating in the direction indicated by the arrow, Fig. 4, its motion being so timed as that at the end of, say, about half a minute after the cam projection *i* engages in recess f^4 said tappet will strike and raise the hand-lever I, thus releasing the said cam projection from the reciprocating rod F, whereupon strong tension-springs W, attached to treadle F′, act on the latter to raise the male forming-block and its supported parts, including the sand-bag, from the female forming-block. It will be observed that the sand-bag D is of such size as to overhang the male forming-block on all sides. Now when the male forming-block G moves up from the female forming-block the springs W act so as to vibrate the block G and sand-bag D up and down in about the intermediate position shown in dotted lines in Fig. 6, thus tending to dry out the last traces of moisture from the hat-brim. At the same time the overhanging portion of the sand-bag settles or drops around the bend or corner of the hat-brim, so as to subject the same to the pressure of the heated sand-bag, so that eventually the whole of the brim is properly smoothed or ironed out and set in dry state. The operator now releases the handle *k′* from the catch N′, moves the same up in line with hand-lever K, (see dotted lines in Fig. 4,) so as to bring the contact-pin k^3 against the hand-lever, so that a further upward motion or push on the said handle *k′* will raise the sand-bag from the male forming-block past the dead-center and swing the the sand-bag back to the heater C, during which time the male forming-block rises to the position shown in Fig. 1 and in full lines, Fig. 6, and the spring-catch N snaps into the recess f^4 and locks the said block in such position. The cap L and the hat are now removed one after the other from the male forming-block, and the machine is ready to flange the brim of another hat.

The operation of the machine is such as that much time and labor are saved and the hat-brims are flanged and finished in superior manner.

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

1. In a machine for flanging hat-brims, the combination of telescoping male and female forming-blocks, said male forming-block having a flange, means for heating the female forming-block, means for turning the hat-brim over said flange, a pressure-bag, and means for heating the same, substantially as set forth.

2. In a machine for flanging hat-brims, the combination of a stationary female forming-block, means for heating the same, a movable male forming-block having a flange, means for telescoping the said male forming-block into the female forming-block, means for turning the hat-brim over said flange, a pressure-bag, and means for heating the same, substantially as set forth.

3. In a machine for flanging hat-brims, the combination of male and female forming-blocks, said female forming-block being sta-

tionary and said male forming-block being provided with a flange, means for heating the female forming-block, means for turning the hat-brim over said flange, means for telescoping the male forming-block into the female forming-block, means for locking the male forming-block down upon the female forming-block and means for automatically unlocking and releasing the said male forming-block, substantially as set forth.

4. In a machine for flanging hat-brims, the combination of male and female forming-blocks, said male forming-block having a flange, means for heating the female forming-block, a flexible brim stretching and smoothing cap placed over the flange and hat-brim for turning the hat-brim around the edge of the flange, and means, coöperating with the two forming-blocks and cap for pressing and setting the brim to final shape, substantially as set forth.

5. In a machine for flanging hat-brims, the combination of male and female forming-blocks, said male forming-block having a flange, means for heating the female forming-block, a flexible cap having an elastic shirring-cord and placed over the hat-brim for turning it over the said flange, a pressure-bag, and means for heating the same, substantially as set forth.

6. In a machine for flanging hat-brims, the combination of male and female forming-blocks, said male forming-block having a flange, means for heating the female forming-block, a flexible cap placed over the flange for turning the hat-brim thereover, a straining-hoop, for said cap, a pressure-bag, and means for heating the same, substantially as set forth.

7. The combination of a forming-block having a flange, a flexible cap placed over the flange, means, coöperating with flange and cap, for pressing and setting the brim to final shape, a straining-hoop surrounding the said forming-block, and means for bringing the adjacent edge of the said hoop in contact with said cap for straining or stretching the same over the said flange, substantially as set forth.

8. The combination of a forming-block having a flange, a flexible cap placed over the flange, means, coöperating with the flange and cap, for pressing and setting the brim to final shape, and an adjustable straining-hoop around the said forming-block, adapted to contact with said cap, substantially as set forth.

9. In a machine for flanging hat-brims, the combination of male and female forming-blocks, said male forming-block having a flange provided with a groove, means for heating the female forming-block, a flexible cap placed over the flange, for turning the hat-brim thereover, a straining-hoop adapted to press a portion of the cap into said groove and stretch the cap, a pressure-bag, and means for heating the same, substantially as set forth.

10. In a machine for flanging hat-brims, the combination of male and female forming-blocks, said male forming-block having a flange, means for heating the female forming-block, means for turning the hat-brim over said flange, means for telescoping the male forming-block into the female forming-block, means for automatically securing the male forming-block in lowered position, a pressure-bag, and means for heating the same, substantially as set forth.

11. In a machine for flanging hat-brims, the combination of male and female forming-blocks, said male forming-block having a flange, means for heating the female forming-block, means for turning the bat-brim over said flange, a treadle-operated device for depressing the male forming-block, a hand-lever provided with means for automatically locking the male forming-block in lowered position, a pressure-bag, and means for heating the same, substantially as set forth.

12. In a machine for flanging hat-brims, the combination of telescoping male and female forming-blocks, said male forming-block having a flange, means for heating the female forming-block, means for turning the hat-brim over said flange, a bag-heater, a pressure-bag, and means for swinging said bag through an angle of one hundred and eighty degrees from said heater over onto said blocks, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

GUSTAV SEGSCHNEIDER.

Witnesses:
M. H. WURTZEL,
PAUL GOEPEL.