

(No Model.)

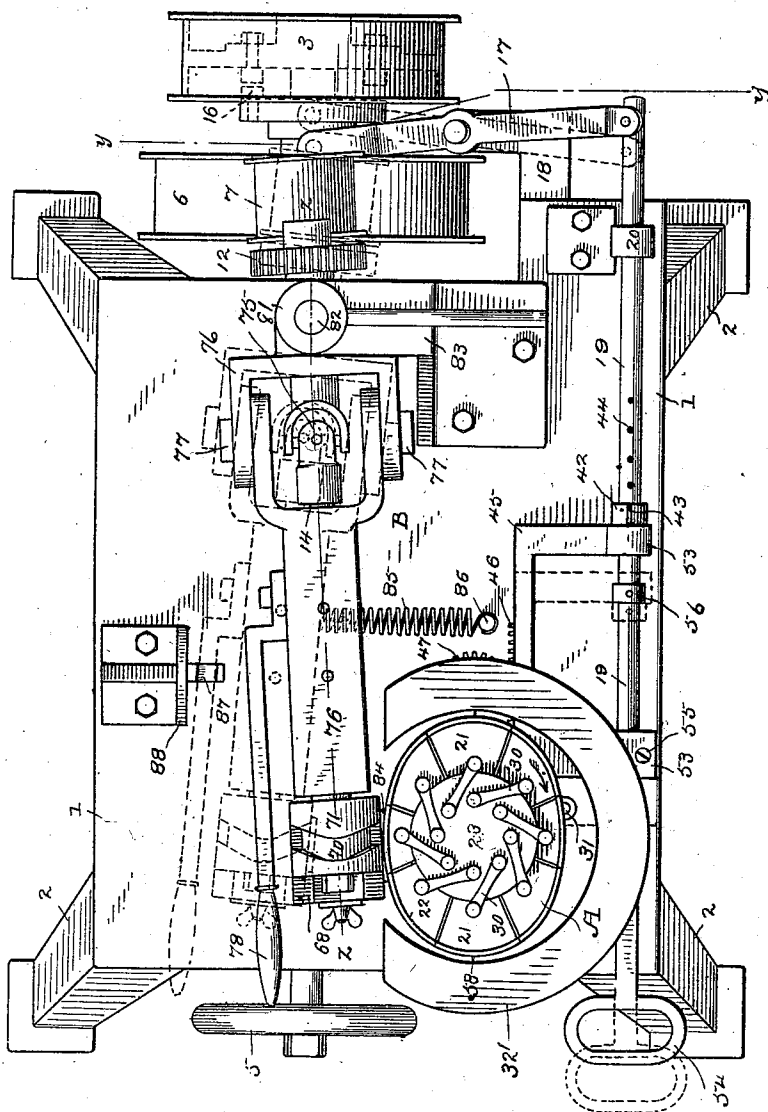
4 Sheets—Sheet 1.

C. S. PECK.
HAT BRIM POUNCING MACHINE.

No. 549,683.

Patented Nov. 12, 1895.

Fig. 1.



WITNESSES

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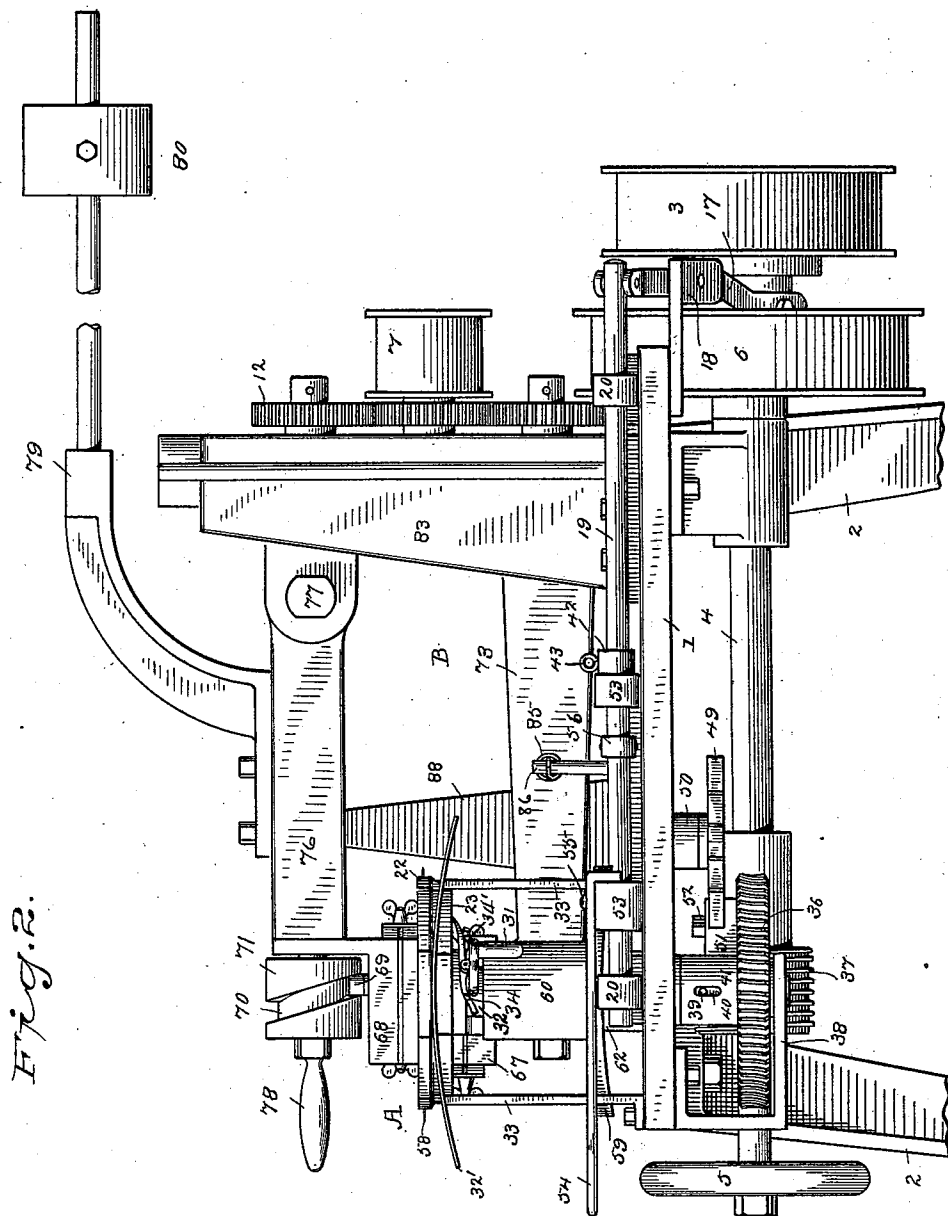
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Fig. 4.

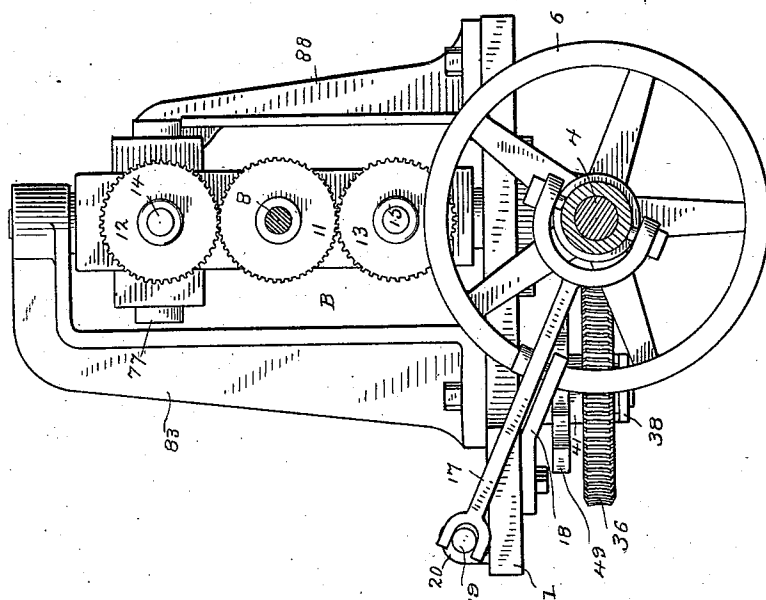
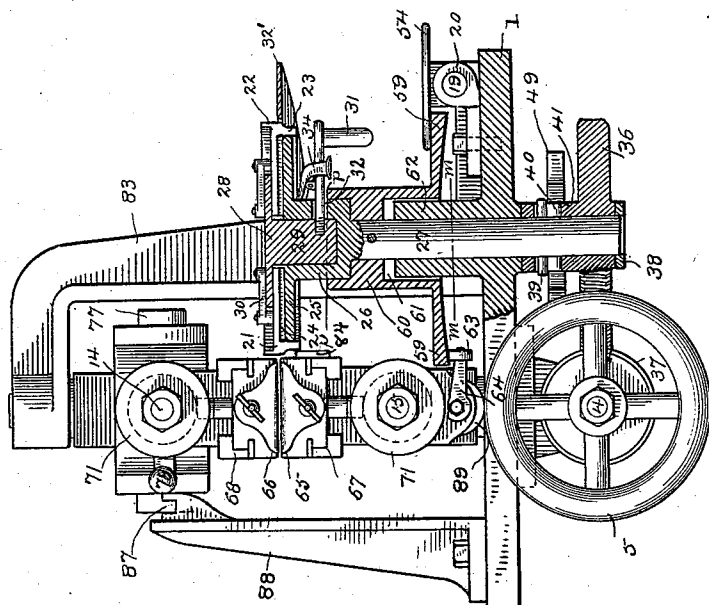


Fig. 5.



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Fig. 5.

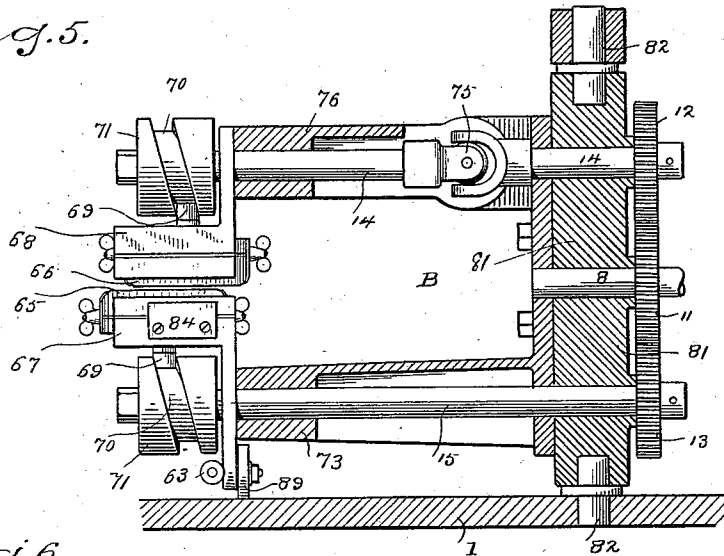


Fig. 6.

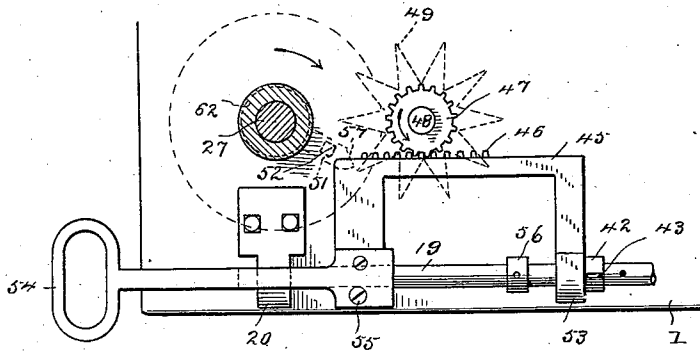
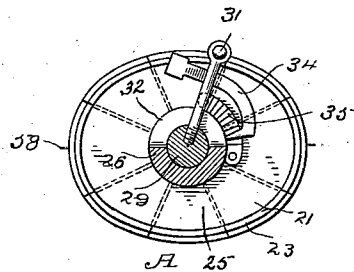


Fig. 7.



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UNITED STATES PATENT OFFICE.

CHARLES S. PECK, OF DANBURY, CONNECTICUT.

HAT-BRIM-POUNCING MACHINE.

SPECIFICATION forming part of Letters Patent No. 549,683, dated November 12, 1895.

Application filed July 30, 1894. Serial No. 518,996. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. PECK, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Hat-Brim-Pouncing Machines; and I 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.

My invention relates to machines for pouncing the brims of hats, and has for its general object to simplify and improve their construction and to greatly improve their mode of operation, and more especially to provide a machine which will pounce both the upper and under sides of the brim at the same time and which may be so adjusted that the machine will stop automatically after the hat that is being operated upon has made a certain predetermined number of revolutions.

With these ends in view I have devised the novel machine of which the following description, in connection with the accompanying drawings, is a specification, numbers and letters being used to designate the several parts.

Figure 1 is a plan view of the machine complete, except that the counterweight and the bracket therefor are removed; Fig. 2, a side elevation of the machine complete; Fig. 3, an end elevation as seen from the left in Fig. 1, the mechanism for holding the hat and for raising and lowering it during each revolution being shown in section, and said mechanism having made a quarter-turn from the position shown in Fig. 1; Fig. 4, an end elevation as seen from the right in Fig. 1, the driving-pulley being removed and the shaft in section on the line *yy* in said figure; Fig. 5, a section on the line *zz* in Fig. 1, illustrating the manner in which the pouncing-pads are reciprocated; Fig. 6, a section on the line *mm* in Fig. 3, looking down; and Fig. 7 is an inverted plan view of the hat-holding device, showing the construction of the latch, the hub being in section on the line *pp* in Fig. 3.

1 denotes the bed of the machine, and 2 legs by which it is supported.

Power is applied to drive the machine by means of a belt (not shown) running over a belt-pulley 3, which turns freely on a shaft 4,

extending longitudinally of the machine under the bed. At the opposite end of this shaft is a hand-wheel 5 for convenience in turning the shaft should it be desired to place the expanding block in any special position without starting the machine.

6 denotes another belt-pulley on shaft 4, from which a belt (not shown) extends over a pulley 7 on a short shaft 8, journaled in a swinging frame, which as a whole is designated by B.

11 denotes a pinion on shaft 8, which lies between and meshes with pinions 12 and 13, carried, respectively, by upper and lower pouncing-shafts 14 and 15, as will presently be fully explained.

The machine is stopped and started by means of a clutch 16, operated by a clutch-lever 17, pivoted to a bracket 18, and an operating-rod 19, pivoted to the outer end of the clutch-lever and moving in guides 20 upon the bed. The special form of clutch is not of the essence of my invention. I am at present using upon the machine a clutch of simple construction which answers the purpose perfectly and which is illustrated in dotted lines only in Fig. 1. For the purposes of this specification it is deemed sufficient to say that the fixed clutched member lies within belt-pulley 3 and that the sliding member is moved into and out of engagement therewith by means of lever 17 and the operating-rod.

The hat to be operated upon is carried by an expanding block (designated as a whole as A.) This block consists of a series of radially-moving plates 21, each plate having at its outer edge, upon the upper side, a section of an oval flange, (designated by 22.) This flange in use engages the inner side of the hat-body at the band. Upon the under side of each plate is a section of an oval flange 23, which serves as a bearing-plate for the lower pouncing-pad, as will be more fully explained. At the center of each plate, on the under side, is a rib 24, which engages a corresponding groove in a plate 25, which is cast integral with or rigidly secured to a hub 26 and a vertical shaft 27. Radially-moving plates 21 are held in position by an oscillating plate 28, having on its under side a hub 29, which is socketed in a correspondingly-shaped recess in hub 26. The radially-moving plates and the oscillat-

ing plate are connected by means of links 30, the ends of which are pivoted, respectively, to said plates, as clearly shown in Figs. 1 and 3, so that when hub 29 and plate 28 are oscillated, in the present instance by means of a handpiece 31, which extends through a slot 32 in hub 26 and engages hub 29, plates 21 will be moved in or out, as may be required.

The position of parts shown in Figs. 1 and 2 is the normal position. Starting with the parts in this position, the operator places a hat over the expanding block, the brim of the hat resting upon a plate 32', supported by standards 33, extending upward from the bed. It will be noticed that plate 32' is curved from end to end, being highest in the center to correspond with the scope of a hat-brim, and that the side of the plate toward the pouncing-pads is removed, so as to permit the pads in use to act upon the entire surface on both sides of the brim. Having placed the hat in position, the operator secures it there by moving handpiece 31 and expanding the radially-moving plates within the hat-body, the radially-moving plates being locked in position after adjustment by a latch 34, carried by the handpiece. The upper or operative end of this latch engages a rack 35 on the under side of plate 25. (See Fig. 7.) Latch 34 may be held in its operative position by a spring, as 34', (indicated in Fig. 2,) or may be so proportioned as to operate by gravity, if preferred. Shaft 27 carries at its lower end a worm-gear 36, which meshes with a worm 37 on shaft 4. The worm-gear rests upon a bracket 38, which is secured to the under side of the bed (see Fig. 2 in connection with Fig. 3) and is secured to the shaft by means of a pin 39, which passes through a slot 40 in the hub 41 of the worm-gear and through the shaft. (See Figs. 2 and 3.)

It will be seen that while the motion of the worm-gear is communicated to the shaft by the engagement of the sides of the slot with the pin, the shaft itself is left free to move vertically independently of the worm-gear, the purpose of which will presently be fully explained.

In order to provide for the stoppage of the expanding block, and with it the hat-body that is being operated upon, the instant it has completed a predetermined number of revolutions, I place upon operating-rod 19 an adjustable stop 42. This stop may be locked to the rod in any suitable manner. I have shown it as provided with a pin 43, which passes through the stop and engages any one of a series of holes 44 in the operating-rod, these holes being just far enough apart to permit an additional revolution of the expanding block for each hole toward the right with which pin 43 is placed in engagement.

45 denotes a plate which lies upon the bed and is provided with a rack 46, engaging a pinion 47 on a vertical shaft 48, which carries at its lower end a star-wheel 49. This shaft is journaled in a hub 50 on the under side of the bed.

51 denotes a lug carried by and extending from hub 41, which engages the points of the star-wheel, thereby causing an actuation of the star-wheel once during each revolution of shaft 27, which carries the expanding block. In the present instance I have shown lug 51 as resting upon worm-gear 36 and secured thereto by a bolt 52.

53 denotes eyes upon plate 45, through which operating-rod 19 slides freely.

54 denotes a handpiece for convenience in operation, which is secured to plate 45 in any suitable manner, as by screws 55, engaging one of the eyes 53, and 56 denotes a stop rigidly secured to the operating-rod. The operation of this portion of the machine is as follows: Suppose the parts to be in the position shown in Figs. 1, 2, and 6 and that it is desired to start the machine. The operator takes hold upon handpiece 54 and pulls outward—that is, toward the left, as seen in Figs. 1 and 6—moving plate 45 toward the left also. As soon as the right eye 53 upon the plate engages stop 56 the operating-rod, also, will be moved toward the left and by means of clutch-lever 17 will operate the clutch and communicate the motion of loose pulley 3 to shaft 4 and through the connections already described will impart motion to the operative parts of the machine. It will be apparent from Fig. 6 that as plate 45 is moved forward the left pinion 47 will be turned backward by the rack. This, however, produces no effect, as it will be noticed in Fig. 6 that the back of lug 51 at its outer end is cut away, as at 57, so that when the star-wheel moves backward it will pass by the lug without engagement therewith. As soon as motion is communicated to shaft 27 lug 51 will be carried around, and will of course complete its revolution with the revolution of the expanding block. When the revolution is nearly completed—that is, when the lug approaches the position shown in Fig. 6—it will engage one of the points of the star-wheel and will impart rotary movement to the star-wheel, shaft 48, and the pinion, which in turn will move rack 46 and plate 45 toward the right, as shown in Fig. 6 and in Figs. 1 and 2. Suppose now that stop 42 has been adjusted to stop the machine at the completion of the first revolution of the expanding block. The movement of plate 45 will carry the right eye 53 against stop 42 and will move the operating-rod toward the right sufficiently to oscillate lever 17 and disengage the clutch members. Should it be desired to have the adjustable block make two, three, or more revolutions, pin 43 is removed and block 42 moved one, two, or more holes toward the right, as may be required, and then locked in position again by the pin. This construction insures that the expanding block will stop in just the position from which it started, so that all the operator has to do is to remove the pounced hat, place another upon the block, and start the machine again in the manner already de-

scribed—that is, by pulling handpiece 54 toward the left, as seen in Figs. 1, 2, and 6, and by means of the engagement of the right eye 53 with stop 56 moving the operating-rod toward the left, oscillating lever 17, and placing the clutch members in engagement.

As already stated and as clearly shown in Fig. 2, plate 32' is curved to correspond with the scope of a hat-brim, so that in setting a hat in place on the expanding block there will be no trouble in adjusting it, as the scope of the brim will naturally conform to the scope of the plate. Points 58 are preferably provided on the plates 21 at the ends, which pass through the body of the hat and hold it against the possibility of turning upon the block. On account of this curvature of the plate and the corresponding scope of the hat-brim it is necessary that the expanding block by which the hat-body is carried should be gradually raised during the first quarter-revolution—that is, until the longitudinal diameter of the hat-brim is transverse to the longitudinal diameter of the plate. From this position during the second quarter of the revolution the expanding block is gradually lowered until at the half-turn the scoped brim and curved plate are in the same relative position as at the beginning, the raising operation being repeated again during the third quarter and the lowering operation repeated again during the last quarter of the revolution. This raising and lowering of the expanding block is produced in the manner which I will now describe. 59 (see Fig. 2) denotes a plate carried by shaft 27, which is curved from end to end to correspond with the scope of a hat-brim and with the curvature of plate 32'. This plate is shown as made integral with a hub 60, said hub being rigidly secured to shaft 27 and having in its under side a recess 61, which receives a boss 62, extending upward from the bed. The special construction of these parts is not of the essence of my invention. I have adopted the present construction in a machine recently built and find that it meets the requirements perfectly. 63 denotes a roller carried by a rigid arm 64, extending from any convenient portion of the swinging frame. In the present instance said arm extends outward from the lower pouncing-pad carrier, presently to be fully described, the entire weight of plate 59, shaft 27, and the expanding block resting upon said roller. The operation of this roller in connection with plate 59 will be clearly understood from Fig. 3, which see in connection with Fig. 2, in which the shape of plate 59 is clearly shown, and Fig. 5. It will be seen from Fig. 3 that hub 60 and plate 59 must rotate with shaft 27 and that through the engagement of roller 63 with the under side of the plate, as clearly shown, said plate, and with it shaft 27 and the expanding block, carried thereby, will be raised and lowered, as already described, the height of the rise and fall of the expanding block depending, of

course, upon the curvature of plate 59. The effect of this movement is to keep the under side of the hat-brim at all times even with the top of the lower pouncing-pad, presently to be described.

65 denotes the lower pouncing-pad and 66 the upper pouncing-pad. These pads reciprocate, respectively, in a lower pouncing-pad holder 67 and an upper pouncing-pad holder 68. Each pouncing-pad carries a roller 69, which engages a cam-groove 70 in the periphery of a cam-wheel 71, by which it is reciprocated, these cam-wheels being so timed as to cause the pads to move in opposite directions. The lower cam-wheel 71 is carried by shaft 15, which is journaled in an arm 73, forming part of the swinging frame, which as a whole is designated by B. The upper cam-wheel 71 is carried by shaft 14, which is made in sections connected by a universal joint 75. (See Fig. 5.) This shaft is journaled in an arm 76, also forming part of the swinging frame B. Arm 76 is made in two parts, which are hinged, as at 77, so as to permit the outer end of said arm carrying the upper cam-wheel, upper pouncing-pad holder, and pouncing-pad to swing in the vertical plane. The pivoted portion of this arm is provided with a handpiece 78 for convenience in manipulating it, said arm being provided also with a bracket 79, extending in the opposite direction, which carries an adjustable weight 80, which serves to counterbalance the weight of the cam-wheel, handpiece, and other parts carried by the arm and to regulate the pressure of the upper pouncing-pad upon the brim. Arms 73 and 76 are secured to a head 81, also part of the swinging frame, the ends of which are pivoted on trunnions 82, the lower trunnion resting in the bed and the upper trunnion being carried by a standard 83, which is rigidly secured to the bed and extends upward therefrom. Rotary motion is communicated to shafts 15 and 14 to reciprocate the pouncing-pads by means of pinion 11 on short shaft 8, said pinion engaging pinions 12 and 13 on shafts 14 and 15.

84 denotes a wearing-plate on the lower pouncing-pad, which in use rests against oval flanges 23 on the expanding block. (See Fig. 3.) Suitable means is provided to hold plate 84 in contact with flanges 23 at all times in use, so that the pouncing-pads will follow the oval of the hat-body. In the present instance I have shown a spring 85, one end of which is connected to a pin 86, extending upward from the bed, and the other to some convenient portion of the swinging frame. If preferred, a cord and weight may be used in lieu of a spring, which, being a well-known equivalent, is not deemed to require illustration. The swinging frame is retained out of operative position against the power of the spring by the engagement of handpiece 78 with a notch 87 in a bracket 88, extending upward from the bed.

89 denotes a roller journaled on a pin ex-

tending from the lower pouncing-pad holder 67, which travels over the bed and carries the weight of the outer end of the swinging frame, thus relieving the strain upon the trunnions and making it perfectly easy to swing the frame in either direction.

It will be readily understood from the drawings (see Fig. 5 and in connection therewith Fig. 3) that the lower pouncing-pad bears upon the under side of the brim and that the upper pouncing-pad bears upon the upper side of the brim and that reciprocatory motion is imparted to the two pads simultaneously through the engagement of rollers 69 with the cam-grooves in cam-wheels 71.

In use as soon as the expanding block stops after the pouncing of a brim the operator by means of handpiece 78 lifts arm 76 slightly and swings frame B backward, carrying the pouncing-pads out of engagement with the brim, and locks the parts in this position by placing the handpiece in engagement with notch 87. The operator then disengages latch 34 from the rack and by means of handpiece 31 retracts the radially-moving plates 21 of the expanding-block, so that the hat-body thereon may be readily removed and a new one placed in position to be operated upon. Having secured another hat in place on the expanding block, the operator disengages handpiece 78 from notch 87, and spring 85 at once draws the swinging frame into operative position—that is, the position shown in Fig. 3—wearing-plate 84 upon the lower pouncing-pad resting against flanges 23 on the expanding-block. Simultaneously with the disengagement of handpiece 78 from notch 87 the operator with his other hand pulls handpiece 54 outward, which in the manner already explained actuates the operating-rod and clutch-lever, causing power to be transmitted to the operative parts of the machine. As soon as the expanding block carrying the hat to be operated upon has made the predetermined number of revolutions, during which time the brim will have been pounced on both sides by the rapid reciprocatory motion of the two pouncing-pads, the operating-rod will be moved in the other direction through the engagement of plate 45 with the adjustable stop on the rod and the movement of the operative parts of the machine will be stopped. I am thus enabled to pounce both sides of a hat-brim simultaneously and evenly and to stop the machine instantly after any predetermined number of revolutions shall have been made by the expanding block, so that just the required amount of pouncing may be given to each hat and all of the hats will be pounced exactly alike. Further than this, owing to the rising-and-falling movement of the expanding block during the pouncing operation the curvature or scope of the hat-brim is compensated for, so that unevenness in the work of the pouncing-pads is rendered impossible and the entire surface is pounced on both sides.

It will of course be understood that the details of construction may be varied to an almost unlimited extent without departing from the principles of my invention.

I claim—

1. In a machine of the character described the combination with suitable means for carrying and rotating a hat body, mechanism for raising and lowering the body twice during each revolution to compensate for the scope of the brim and a reciprocating pouncing pad, of stopping and starting mechanism, an adjustable stop operating in connection therewith and mechanism intermediate the hat carrying device and the stop whereby the rotation of the hat body is stopped automatically when a predetermined number of revolutions shall have been made.

2. The combination with a rotating block by which the hat body is carried, of mechanism substantially as described and shown for raising and lowering the block twice during each revolution to compensate for the scope of the hat brim, and reciprocating pouncing pads adapted to operate on opposite sides of the brim.

3. In an automatic brim pouncing machine the combination with a rotating block by which the hat body is carried, of reciprocating pouncing pads adapted to operate on opposite sides of the brim, a swinging frame having an arm 73 by which the lower pouncing pad is carried, an arm 76 hinged to swing in the vertical plane by which the upper pouncing pad is carried, suitable means for moving the arms and pouncing pads toward the block, a bracket 79 on arm 76 and an adjustable weight on said bracket by which the pressure of the upper pouncing pad on the brim may be regulated.

4. The combination with a rotating shaft carrying a hat block and means substantially as shown for raising and lowering said shaft and hat block twice during each revolution, of reciprocating pouncing pads adapted to operate on opposite sides of the brim, a swinging frame by which the pouncing pads are carried and suitable means for holding the swinging frame and pouncing pads in operative position.

5. The combination with an expanding hat block having an oval flange 23 on its under side, of upper and lower pouncing pads adapted to operate on opposite sides of the brim, said lower pouncing pad being provided with a wearing plate adapted to engage flange 23, and suitable means for holding said plate in engagement with the flange so that the pouncing pads in use will conform to the oval of the hat body.

6. The combination with upper and lower reciprocating pouncing pads and a swinging frame by which they are carried, of a rotating shaft carrying a suitable hat block and also carrying a plate 59 which is curved to correspond to the scope of the hat brim and a roller carried by the swinging frame upon which

said plate bears so that as the shaft rotates it is raised and lowered through the engagement of said plate with the roller thereby keeping the lower side of the brim even with the top of the lower pouncing pad.

7. The combination with pouncing pads adapted to operate on both sides of a hat brim and mechanism for reciprocating said pads, of vertical shaft 27 carrying a suitable block for the hat body mechanism for rotating said shaft and a plate 32 lying outside of the block upon which the brim rests said plate being curved to correspond with the scope of the hat and one side thereof being removed so as to permit the reciprocating pads to act on the entire surface on both sides of the brim.

8. In a machine of the character described the combination with suitable driving mechanism, a clutch of ordinary construction and an operating rod having a stop 56 and an adjustable stop 42, of a plate 45 having a rack 46 and eyes 53 through which the operating rod passes, one of said eyes lying between said stops, a shaft 48 carrying a star wheel and a pinion engaging the rack, a shaft 27 carrying a lug 51 which engages the star wheel once during each revolution of shaft 27 whereby movement is imparted to the plate and from the plate to the operating rod to stop the machine after the number of revolutions to which the adjustable stop has been set shall have been made.

9. In a machine of the character described the combination with an oval expanding hat block consisting of a series of radially moving plates 21 each plate having on its under side a section of an oval flange 23, and means for adjusting said plates of a swinging frame carrying upper and lower reciprocating pouncing pads, said lower pad lying in use in contact with said sections of the oval flange for the purpose set forth, and suitable means, as a spring, for holding the swinging frame in operative position and permitting it to follow the oval of the hat block.

10. The combination with a swinging frame and upper and lower pouncing pads carried thereby, of shaft 27 carrying an expanding hat block and a plate 59 curved to correspond with the scope of a hat brim and a roller 63 carried by the swinging frame upon which said plate bears so that shaft 27 and the parts carried thereby are raised and lowered twice during each rotation which keeps the lower side of the hat brim even with the top of the lower pouncing pad.

11. The combination with a rotating hat block, of a swinging frame carrying a fixed arm 73 and an arm 76 hinged to swing in the

vertical plane, a shaft 15 in arm 73 and a shaft 14 in arm 76 in two parts connected by a universal joint to permit upward movement of the arm, cam wheels carried by said shafts, upper and lower reciprocating pouncing pads carrying rollers engaging the cam wheels and upper and lower pouncing pad holders carried respectively by said arms.

12. In a machine of the character described the combination with a shaft 27, carrying a lug 51, and a shaft 48 carrying a pinion and a star wheel adapted to be engaged by said lug, of suitable operating mechanism, an operating rod by which said mechanism is stopped and started, a stop 56 and an adjustable stop 42 on said rod, and a plate carrying a rack which is engaged by the pinion and an eye lying between the stops through which the operating rod passes, rotation of shaft 27 through the engagement of the lug with the star wheel acting to move the plate into engagement with the adjustable stop which actuates the operating rod and stops the machine, and movement of the plate in the opposite direction causing it to engage stop 56 and actuate the operating rod in the other direction to start the machine.

13. In a machine of the character described the combination with a rotating block adapted to carry a hat and pads for pouncing the upper and lower sides of the brim simultaneously, of mechanism for raising and lowering the block twice during each revolution to compensate for the scope of the hat brim, an adjustable stop and mechanism operating in connection therewith to stop the rotation of the block automatically.

14. The combination with shaft 4 carrying a worm 37, a clutch of ordinary construction and an operating rod having a stop 56 and an adjustable stop 42, of a plate 45 having a rack 46 and eyes 53 through which the operating rod passes, one of said eyes lying between said stops, a shaft 48 carrying a star wheel and a pinion engaging the rack, a shaft 27 carrying a worm gear 36 which engages worm 37 and a lug 51 which engages the star wheel once during each revolution of shaft 27 whereby movement is imparted to the plate and from the plate to the operating rod to stop the machine after the number of revolutions to which the adjustable stop has been set shall have been made.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES S. PECK.

Witnesses:

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LEVI P. TREADWELL.