

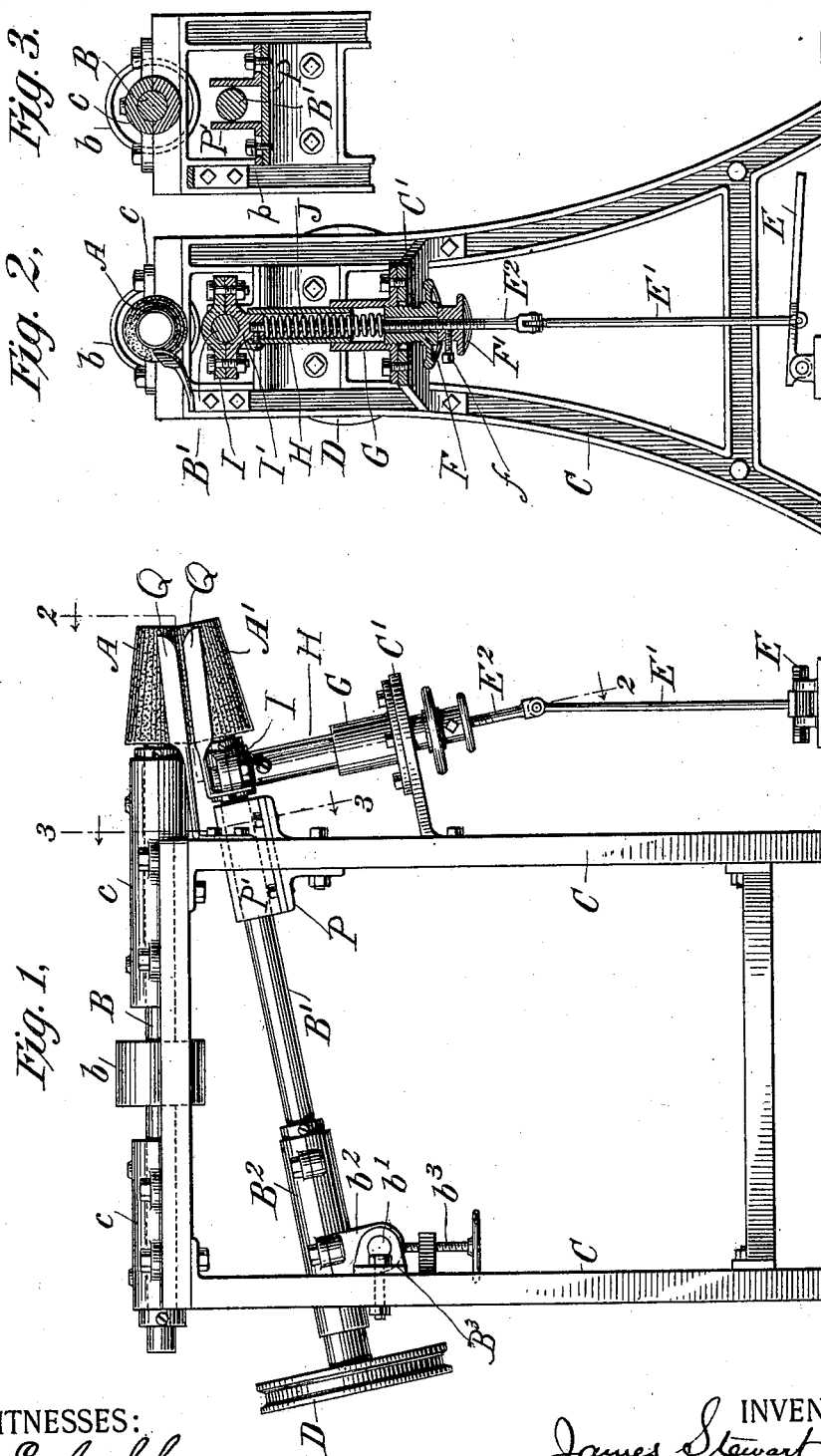
No. 649,143.

Patented May 8, 1900.

J. STEWART, JR.
MACHINE FOR POUNCING FELT HATS.

(Application filed Oct. 19, 1896.)

(No Model.)



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JAMES STEWART, JR., OF YONKERS, NEW YORK.

MACHINE FOR POUNCING FELT HATS.

SPECIFICATION forming part of Letters Patent No. 649,143, dated May 8, 1900.

Application filed October 19, 1896. Serial No. 609,363. (No model.)

To all whom it may concern:

Be it known that I, JAMES STEWART, Jr., 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 Pouncing Felt Articles, of which the following is a specification.

Heretofore in machines for pouncing articles of felt, as hat-bodies, the pressure of the pouncing surface or surfaces upon the felt has ordinarily been exerted by the operator usually through the medium of a treadle. An objection to this mode of operation has been the difficulty of maintaining a substantially-uniform pressure of the pouncing-surface against the felt, and consequently a special skill has been required of the workman. It is difficult even for the most expert workman to produce with such machines uniformly-well-pounded surfaces, and there has been, therefore, a considerable variation in the degree of perfection of the pounced surfaces of hat-bodies. It is apparent that from inexperience or carelessness a workman might exert too great pressure, thus cutting away the surface too much, leaving it hard and bare, and that unequal pressures at different points upon the surface of the hat will produce an unequal finish. It has also been proposed to force the pouncing-surface against the hat-body by spring-pressure; but the proposed organization was such that the spring was capable of forcing the pouncing-pad against the support carrying the hat, and therefore the objections above stated would be present to a degree.

The primary object of my invention is to overcome these difficulties, and to that end I provide an organization in which the pouncing-surface is forced against the hat-body with a substantially-uniform yet yielding pressure and in which the approach of the pouncing-surface toward the hat-support is limited by an adjustable stop, so that the space between the support and pouncing-surface (and which is occupied by the thickness or wall of the hat) cannot be reduced beyond the fixed limit.

I have shown my invention applied to a pouncing-machine of the general character disclosed in the patent of John C. Wilson,

No. 363,930, dated May 31, 1887, and my invention includes also certain improvements in the general construction of such a machine in addition to the main feature above mentioned. This patent shows a machine for pouncing hat-brims so constructed that both sides of the brim are pounced at the same time during the passage of the brim between the pouncing-rolls whose surfaces travel in the same direction, but at different speeds.

In the accompanying drawings, Figure 1 is a side elevation of my improved machine; Fig. 2, a section on the line 2 2 of Fig. 1, and Fig. 3 a section on the line 3 3 of Fig. 1.

In this machine the pouncing-surfaces are formed on rotary conical rolls A A'. As here represented, the upper roll A is upon a horizontal shaft B, having a pulley b for the reception of a driving-belt and mounted to rotate in elongated bearings c in a frame C of suitable construction. The lower roll A' is upon an inclined shaft B', which in this example of my invention is journaled at one end in a sleeve B², having a projection b², with trunnions b', that have bearings in lugs on a plate or block B³, detachably bolted to the frame, and an accurate vertical adjustment of which is afforded by a screw b³, working in a bracket or projection extending laterally from the frame. This adjustment is to insure proper parallelism of the surfaces of the pouncing-rolls. The shaft B' is equipped with a driving-pulley D, and in this form of my invention I intend that the two shafts shall be driven in the same direction, but at different speeds, as suggested in the above-mentioned patent of Wilson.

Projecting from the right of the frame C, below the lower shaft B', is a bracket C', supporting a hollow cylinder G. Another hollow cylinder H reciprocates within the cylinder G and forms therewith a telescope joint. A bearing-block I, in which the shaft B' rotates, has projecting from its bottom a cylindrical hub I', that fits into the upper end of the cylinder H and is fastened thereto. A threaded vertical rod E², passing through the tubes G H, is screwed into the block I, and a spiral spring J within the cylinders G H surrounds this rod and rests on the face of a plug F, loosely surrounding the rod and having a hand-wheel and an external thread which fits

an internal thread in the lower end of the cylinder G. By screwing up or unscrewing the plug F the spring J is compressed more or less, and the pressure with which the roller A' is forced upward may be varied. A nut F' runs on the threaded rod E² below the plug F and may be secured in position thereon by a clamp-bolt f. By screwing the nut F' up or down, its upper face constantly bearing against the plug F, the threaded rod E² and all the parts secured to its upper end, as well as the roll A', are moved in a vertical direction for adjustment. The nut F' serves as a back-stop for the spring J. By means of a treadle E, connected with the rod E² by a link E', the roll A' may be drawn away from the roll A and the hat or other article inserted between them. When the treadle is released, the spring J returns the lower roll A' to its working position, the upward movement being limited by the nut F'. Of course the adjustment may be such that the rolls may not be in contact, or the floating bearing I may be permitted to rise sufficiently to press the lower roll against the upper one.

The floating bearing I of the shaft B' may not afford sufficient stability and may permit a vibration of the roller end of the shaft that would be objectionable. I therefore provide a bearing for this shaft that prevents lateral vibration while permitting vertical movement. This bearing, which is preferably an elongated one, may be constructed as follows: On the frame below the shaft B' I mount in any suitable manner a plate P, whose face is preferably parallel, or substantially so, with the shaft. Vertical bearing-plates P' on opposite sides of the shaft are adjustably attached to the plate P by bolts p, passing through enlarged openings or slots in the feet or laterally-projecting bases of the bearing-plates. The bearing-plates may thus be adjusted to compensate for wear and prevent the lateral vibration or chattering of the shaft.

Q Q are guide-blades attached one to the frame and the other to the floating bearing I.

From the foregoing description it will be observed that the spring J affords a uniform and yielding upward pressure of the lower pouncing-roll, and consequently if the felt is of uniform thickness substantially-uniform results are obtained in the pouncing of its surface or surfaces, and if the felt varies in thickness the yielding spring permits the pouncing-roll to accommodate itself to such variations in such a way that a substantially-uniform pounced surface is produced.

It will be apparent that any one who can properly feed the hats to the rolls may operate this machine and that both the output and uniform perfection of finish will be increased.

I have shown a spring for determining the pressure of the pouncing-surface upon the felt and prefer to use it instead of a weight because of its capacity for ready adjustment

and the greater facility of operation afforded by its use.

I claim as my invention—

1. In a pouncing-machine, the combination of the pouncing device, means for forcing it against the felt with a uniform yielding pressure, means whereby the pouncing device may be withdrawn for the insertion of the article to be pounced and an adjustable stop for limiting the movement of the pouncing device under the yielding pressure.

2. In a pouncing-machine, the combination of a pouncing-roll, its movable shaft, a spring for pressing the roll against the felt, and means by which the roll may be withdrawn against the pressure of the spring, and an adjustable stop for limiting the movement of the pouncing-roll under the action of the spring.

3. In a hat-pouncing machine, the combination with two rolls, one of which is movable, relatively to the other, of a spring for forcing the movable roll toward or against the other, mechanism for regulating the tension of this spring, an adjustable stop for limiting the movement of the movable roll under the action of the spring, and a treadle and connecting-rod for separating the rolls, substantially as described.

4. In a hat-pouncing machine, the combination with two rotary pouncing-rolls, their shafts, one of which has a rocking bearing at one end and a floating bearing at the other, and is movable relatively to the other shaft, of a spiral spring supporting the floating bearing, means for regulating the tension of the spring, a connecting-rod and treadle for separating the pouncing-surfaces, and a back-stop for the spring, substantially as set forth.

5. The combination with an adjustable spring - supported floating bearing for the movable shaft of a hat-pouncing machine, of a hollow cylinder which slides in a sleeve secured to the frame of the machine, a threaded rod attached to said bearing, a spring surrounding the rod, a nut on said rod acting as a back-stop for the spring, and a treadle for depressing the bearing, substantially as described.

6. In a hat-pouncing machine, the combination of a pouncing-roll, its shaft having a rocking bearing at or near one end and a floating bearing at the other, of bearing-plates normally rigidly but adjustably connected with the frame and arranged at opposite sides of the shaft that permit the vibration of the shaft on the rocking bearing, but prevent play of the shaft at right angles to the plane of such vibration.

7. In a hat-pouncing machine, the combination of a shaft rotating in fixed bearings, its roll, a second roll and its shaft having a rocking bearing whereby a vibration of the shaft is permitted, a floating bearing for the latter shaft, adjustable bearing-plates at opposite sides of said shaft that permit such vibration but prevent lateral play thereof, a spring that presses the vibrating roll and shaft

toward the first-named roll and shaft, means
for adjusting the strength of said spring, an
adjustable stop for limiting the play of the
spring and means by which the movable roll
5 may be withdrawn against the pressure of the
spring for the insertion between the rolls of
the article to be pounced.

In testimony whereof I have hereunto sub-
scribed my name.

JAMES STEWART, JR.

Witnesses:

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