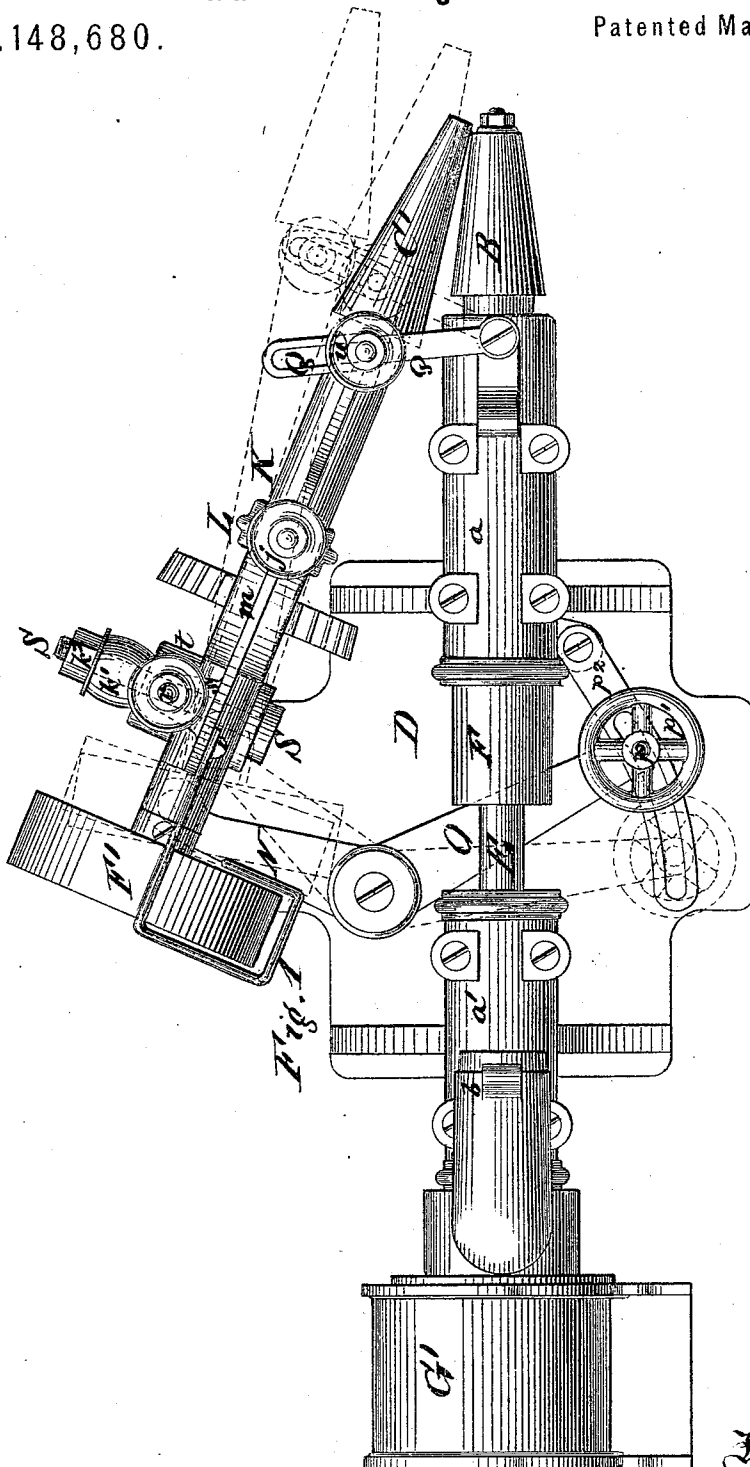


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Hat Pouncing-Machines.

No. 148,680.

Patented March 17, 1874.



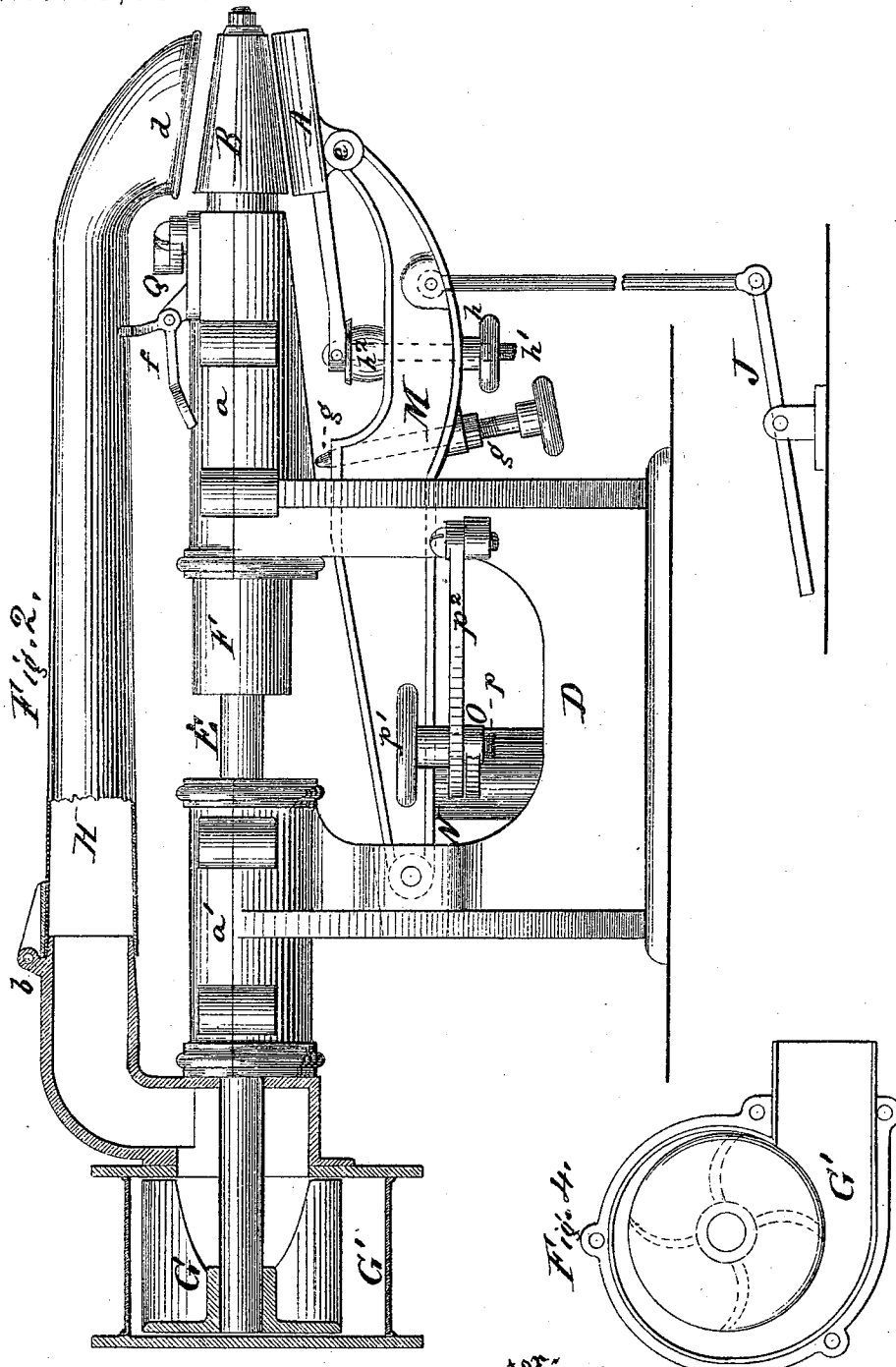
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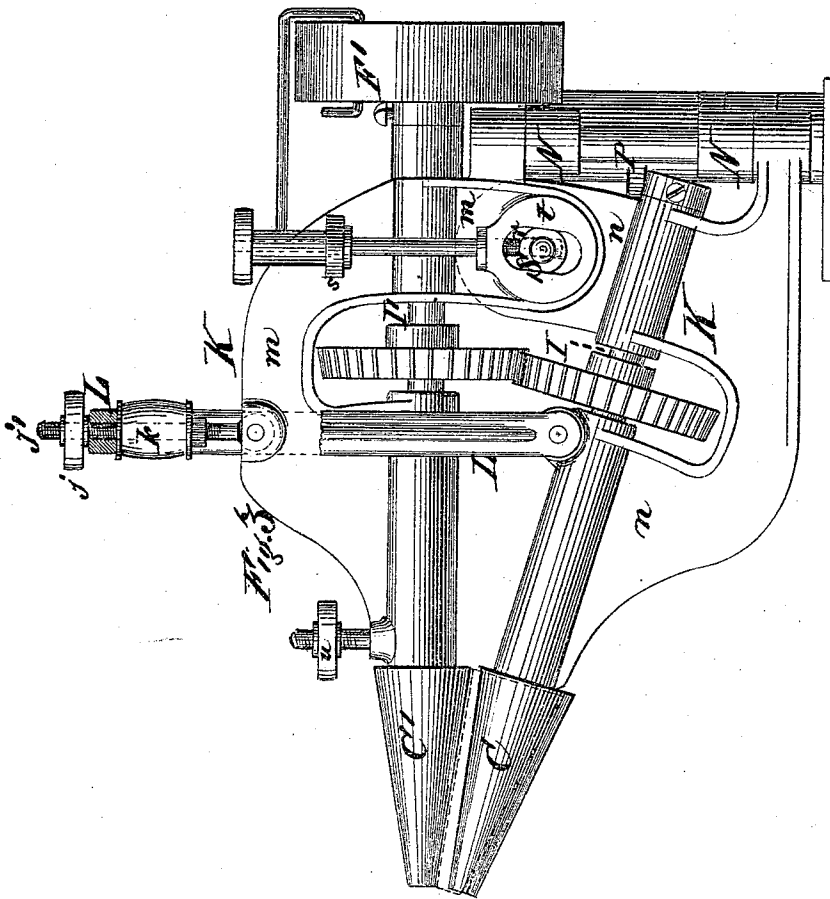
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UNITED STATES PATENT OFFICE.

RUDOLF EICKEMEYER, OF YONKERS, NEW YORK.

IMPROVEMENT IN HAT-POUNCING MACHINES.

Specification forming part of Letters Patent No. 148,680, dated March 17, 1874; application filed April 4, 1873.

To all whom it may concern:

Be it known that I, RUDOLF EICKEMEYER, of Yonkers, in the county of Westchester and State of New York, have made an invention of certain new and useful Improvements in Machines for Pouncing Hats; and that the following is a full, clear, and exact description and specification of the same.

The object of the invention is to render pouncing-machines more compact, and to enable their members to be adjusted to the various circumstances which arise in their practical operation; and the invention consists of certain combinations and arrangements which are specified in detail at the close of this schedule, and some of which may be used separately from the others, if found expedient. The said combinations may be greatly varied in appearance without changing them substantially by varying the construction of the mechanism by which the members of the combinations are combined, and by the use of equivalents; but, in order that the invention may be fully understood, I have represented in the accompanying drawings and will proceed to describe a pouncing-machine embodying the various combinations and arrangements in the best form known to me at present.

Figure 1 represents a plan of the said machine with the suction-pipe removed. Fig. 2 represents a side view of the pouncing-roller and bed and their appurtenances with certain parts of the machine removed to exhibit its internal construction. Fig. 3 represents a side view of the feed-rollers and their appurtenances with certain portions of the machine removed. Fig. 4 represents an end view of the fan-case with the end plate removed.

The members of the machine which operate directly on the hat are the bed A, which supports it; the pouncing-roller B, which carries the sand-paper or other pouncing material and applies it to the hat; and the conical feed-rollers C C', which cause the hat-body to revolve upon the bed A and draw it through between the bed A and the pouncing-roller B. All of these members are connected with the main frame D of the machine, or that frame which sustains the shaft of the pouncing-roller. The pouncing-roller B is secured to a shaft, E, which is constructed to revolve in suitable

bearings, *a a'*, secured to the main frame, and is fitted with a belt-pulley, F, to which the driving-belt is applied. This shaft is extended beyond the rear bearing *a'* and the fan-wings G, for carrying off the dust from the hat, are arranged upon it, so that the same shaft performs the two offices of pouncing-roller shaft and fan-shaft, and that the pouncing-roller and fan can be operated by the same belt-pulley and driving-belt. The fan-wings are surrounded by a fan-case, G', which may be of the ordinary volute form; and the eye of this case communicates with a suction-pipe, H, which is extended to the pouncing-roller B, and terminates there in a mouth, *d*, that extends above the said roller. This suction-pipe is jointed at *b*, so that its mouth may be raised from the pouncing-roller sufficiently to be out of the way when required; and the mouth is readily raised or lowered and supported in either position by means of an oscillating elbow-rest, *f*.

The pouncing-roller is of the usual conical form, and its barrel is covered, by preference, with india-rubber, so as to hold the sand-paper.

Below the pouncing-roller B is the bed A, which supports the hat during pouncing. This bed is combined with the pouncing-roller by being connected with the main frame D through the intervention of a movable support, which, in the present machine, has the form of an arm, M, which is pivoted at its inner end of the main frame, so that its outer end and the bed secured thereto can be lowered to permit of the application of the hats to the bed, and can be raised to press the hats against the pouncing-roller above. The arm M is guided in its movement by being confined in a slot in the front end of the main frame. The bed is raised and lowered by means of a treadle, J, to which the foot of the operator can be applied, and the distance to which it can be raised is limited by a regulating-screw, *g*, so that the pressure of the hat against the pouncing-roller cannot be made excessive, as the contact of the point of the regulating-screw with a projection of the frame above limits the distance to which the bed can be raised. The combination of the bed with the pouncing-roller by means of the movable arm and the

regulating-screw, or some equivalents therefor, enables the distance of the bed from the pouncing-roller to be adjusted to suit hats of different thicknesses. Hats vary in thickness from the brim to the tip, and the variation in different lots of hats differs. In order to adapt the machine to such differences, the bed A is connected with its support or arm M by means of a pivot, *e*, so that the bed can be so tipped upon the support M that the surface of the former can be more or less inclined to the surface of the pouncing-roller, to suit the differences in thickness of the hats. The tipping is adjusted by turning the nut *h* of the tipping-screw *h*¹, and the surface of the said nut is held in contact with the under side of the support or arm M by means of a spring, *h*², which in this instance is made of india-rubber. The feed-rollers C C' are arranged at one side of the pouncing-roller and bed, and they are fitted to spindles I I', which are inclined to each other, and are supported in the bearings of a supplementary or feed-roller frame, K, so that the adjacent conical surfaces of the feed-rollers may press simultaneously upon the hat between them. The two inclined spindles I I' are arranged to revolve in suitable boxes, and are connected by means of beveled wheels, so that they are compelled to revolve simultaneously in opposite directions. Moreover, one of the spindles is fitted with a belt-pulley, F', to which the driving-belt is applied. In order that the distance between the opposing surfaces of the conical feed-rollers may be adjusted to suit the differences in thickness of different lots of hats, the feed-roller frame K is constructed of sections *m n*, the upper, *m*, of which is movable in a vertical direction relatively to the lower, and can be adjusted relatively to the lower to vary either the distance between the adjacent surfaces of the feed-rollers or the inclination of those surfaces to each other. To these ends the upper section *m* of the frame is combined with the lower by means of the yoke L and the pivot S. The sides of the yoke L are pivoted to the lower section of the frame, and they embrace the upper section *m*, so as to prevent its lateral movement relatively to the lower section *n*. The adjustment of the forward end of the upper section of the frame to the lower section is effected by turning the nut *j* of the screw *j*¹, which passes through a hole in the head of the yoke, and is fastened to the upper section *m* of the frame, the said nut *j* being held in contact with the upper surface of the yoke by means of the spring *k*, which, in this instance, is made of india-rubber. The adjustment of the rear end of the upper section of the sectional feed-roller frame thus described, is effected by the screw *r*. The stem of this screw passes through a hole in a bracket, *s*, of the said upper section, and is held therein by a collar below the bracket and by the shoulder of the head above the bracket. The body of the screw passes through a slot in the hub for the pivot S, and is screwed into the pivot S. The bore of this hub *t* of the pivot, as seen

in Fig. 3, is oblong, and is large enough to permit the rear end end of the upper section *m* of the sectional frame to be screwed up or down the extent required for the adjustment of the feed-rollers. The adjacent faces of the upper and lower sections of the sectional feed-roller frame are maintained in contact (so as to prevent lateral movement) by means of a spring, *k*¹, which is caused to press against the outer side of the hub *t* of the pivot by means of a nut, *k*², screwed upon the end of the pivot. The spring *k*¹ in this instance is made of india-rubber, and metallic collars or washers are applied to each of its ends.

The combination of the sections of the feed-roller frame by the means above described, permits the upper feed-roller to be moved bodily from or toward the lower feed-roller, and without changing the inclination or parallelism of their adjacent surfaces, by using both the means of adjustment—viz., the screw-nut *j* and the screw *r*, and the inclination of the surfaces of the feed-rollers to each other may be changed by using either of the said two means of adjustment, or by adjusting the forward and rear ends of the upper section of the feed-roller frame in opposite directions, as found most expedient for any particular case.

In operating upon hats in a pouncing-machine, it is sometimes expedient (as, for example, during the operation of what is technically termed "shaving") to do the feeding by having the feed-rollers operate upon the brim of the hat alone.

In order that the feed-rollers may be adjusted to this requirement, the feed-rollers are combined with the pouncing-roller by means of an adjustable transverse connection, which permits the longitudinal movement of the feed-rollers, so that the relative longitudinal positions of the feed-roller and the pouncing-roller may be changed.

Various adjustable transverse connections, permitting such longitudinal movement, may be used; but that which I prefer, and have employed in the present machine, is a radius frame, N, which is pivoted at its inner end to the main frame D, and has the rear end of the feed-roller frame K pivoted to it, so that the outer end of the radius frame can move to and fro, and that the feed-roller frame and the feed-rollers connected therewith, can be moved longitudinally to vary the longitudinal positions of the feed-rollers C C' relatively to the pouncing-roller B and to the bed A.

In order that the feed-rollers may be secured to in any longitudinal position to which they be adjusted, the radius frame N is provided with an arm, O, whose end is fitted with a clamp-screw, *p*, and nut *p*¹, which connect it with a slotted arc, *p*², that is pivoted to the main frame. The slacking of the clamp-nut permits the longitudinal movement of the feed-roller frame and feed-rollers, and the tightening of the clamp-nut secures them in their positions.

As different lots of hats vary in conicalness,

it is desirable that the feed-rollers should be capable of adjustment horizontally or laterally to the pouncing-roller to suit such variations. The combination of the feed-rollers and feed-roller frame with the pouncing-roller bed and main frame, through the intervention of the pivot P at the rear end of the feed-roller frame K, permits the front end of the feed-roller frame and the feed-rollers to be turned horizontally from or toward the pouncing-roller and bed, so as to adapt the positions of the feed-rollers to variations in the hat-bodies. The holding of the feed-rollers in any horizontal position to which they may be so turned or adjusted, is effected by means of the slotted link Q, and the clamp-screw and nut *u*, the first of which is connected by a pivot with the main frame, so that it may turn to adapt itself to variations in the longitudinal positions of the feed-rollers.

The various combinations and arrangements above described make the machine practicably universal in its application, as they enable its members to be adjusted to suit the variations of the work to be done by it, which occur in practice.

When the machine is adjusted, the operation of the bed, pouncing-roller, and feed-rollers upon the hat is substantially the same as that of the corresponding members of the pouncing-machines in general use.

Having thus described a machine embodying all the parts of my invention in the best form known to me at present, I claim as my invention—

1. The combination and arrangement, substantially as before set forth, of the pouncing-roller, the fan-wings arranged upon the shaft of the pouncing-roller, the fan-case, and the jointed suction-pipe extended from the fan-case to the pouncing-roller, and having its mouth above the said roller.

2. The combination, substantially as before

set forth, of the pouncing-roller, the bed, and the movable support, which permits the relative positions of the bed and pouncing-roller to be varied.

3. The combination, substantially as before set forth, of the pouncing-roller, the bed, the movable support, and the regulating-screw for limiting the pressure that can be exerted upon the hat between the pouncing-roller and the bed.

4. The combination, substantially as before set forth, of the bed with its support by means of a pivot, so that the bed may be tipped longitudinally.

5. The combination, substantially as before set forth, of the pouncing-roller, the two feed-rollers, and the sectional feed-roller frame, so that one feed-roller may be moved relatively to the other to suit the peculiarities of the hat upon which the pouncing-roller is to operate.

6. The combination, substantially as before set forth, of the two conical feed-rollers, the inclined feed-roller spindles, the sectional feed-roller frame, and adjusting-screw at the rear end of the said sectional frame.

7. The combination, substantially as before set forth, of the pouncing-roller, the conical feed-rollers, the movable feed-roller frame, and the adjustable transverse connection, which permits of the longitudinal movement of the feed-rollers relatively to the pouncing-roller.

8. The combination, substantially as before set forth, of the pouncing-roller, the conical feed-rollers, the feed-roller frame, the pivot, which permits the feed-roller frame to be turned horizontally, and the means of securing the feed-roller frame in its horizontal position.

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