J. WHARTON.

Forming Hat-Bodies.

No. 145,262. Patented Dec. 2, 1873.

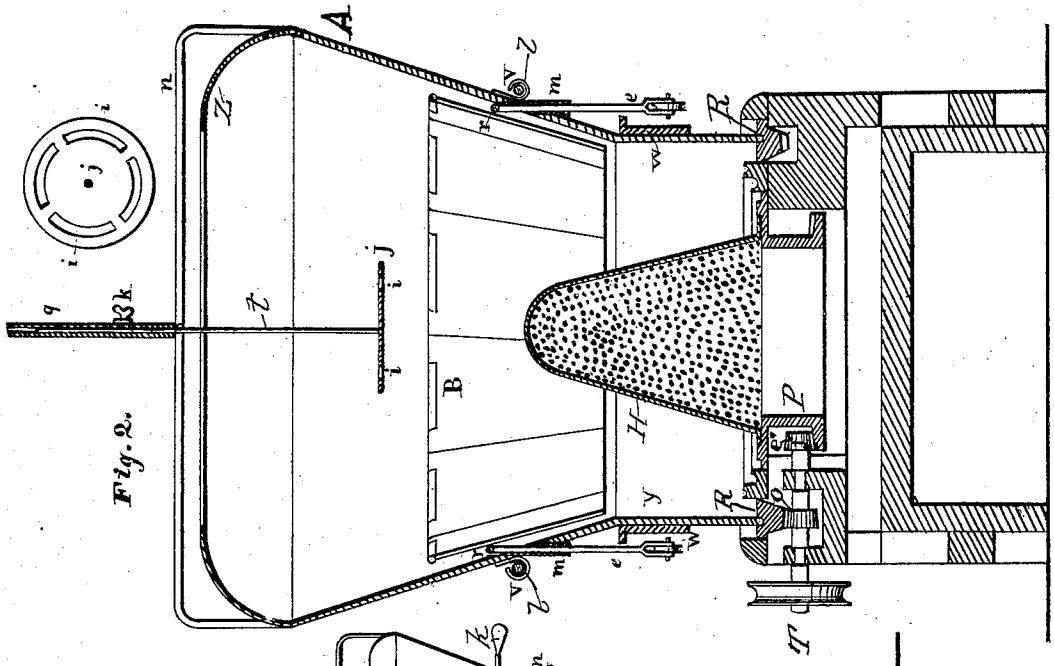

Fig. 2.

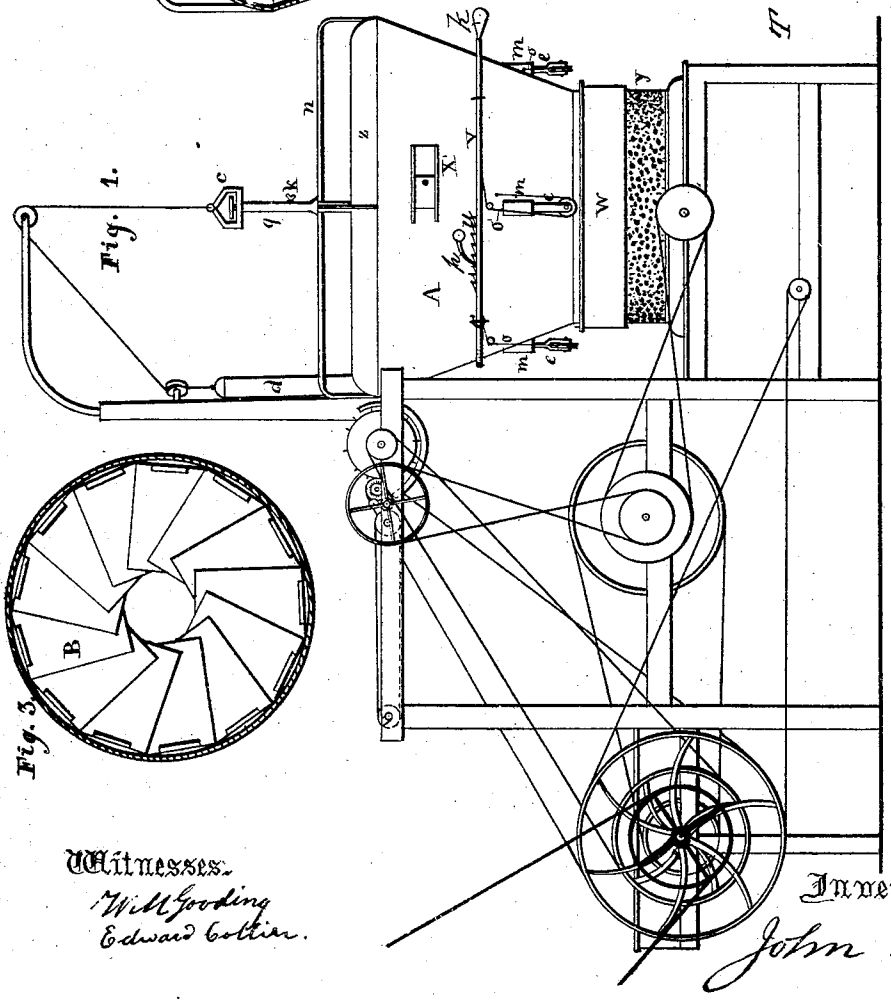

Fig. 1.

Fig. 3.

Witnesses.
Will Gooding
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UNITED STATES PATENT OFFICE

JOHN WHARTON, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN FORMING HAT-BODIES.

Specification forming part of Letters Patent No. **145,262**, dated December 2, 1873; application filed June 25, 1873.

To all whom it may concern:

Be it known that I, JOHN WHARTON, of the city of Newark, county of Essex and State of New Jersey, have invented certain Improvements in Apparatus used to Form the Bodies of Hats, of which the following is a specification:

My invention relates to machines for forming hat-bodies; and the invention consists in a novel construction and arrangement of devices for controlling the deposit of the fur or fiber used upon the cone, in such a manner that any part of the hat-body may be made of greater or less thickness, at the will of the operator.

Figure 1 is a side elevation of a machine embodying my improvement. Fig. 2 is a vertical section through the deflector and cone; and Fig. 3 is a transverse horizontal section of the deflector or case, showing, in plan, the interior guide.

The frame, feeding-table, fan, and operating parts may be made in the usual manner.

In the drawing, Fig. 2, H represents the cone upon which the hat-body is formed, and A is the deflector or case. This case I construct in the form of an inverted frustum of a cone, with its upper edge Z curved inward, as represented in Figs. 1 and 2, its lower portion, Y, being tubular in form, with its extreme lower part perforated. Upon this tubular portion I mount an annular slide or collar, W, by the raising or lowering of which the perforations in the lower part of the tubular portion may be opened or closed at will. Upon the interior of the case A, about midway of its inclined sides, I hinge a series of plates, B, which are arranged with their edges overlapping one another, as shown in Fig. 3, whereby they are left free to slide or move one upon another, thus enabling their inner ends to be drawn down, as represented in Fig. 2, in which case the central opening is enlarged or left of nearly or quite the full size of the interior of the case A, or by which they may have their inner ends raised, thereby reducing the central opening, as represented in Fig. 3. To operate these plates B, I arrange under them, and within the case A, a ring, *r*, as shown in Fig. 2, and from which arms or rods *e* extend vertically downward, projecting through tubes *m* on the case, and terminating with a pulley at their lower ends, as shown in Figs. 1 and 2. Around the outside of the case A, I arrange another ring, V, which is suspended loosely in hooks or supports *l*, as shown in Fig. 2, whereby it is left free to be moved horizontally, it being provided with a handle for that purpose, as shown at *k*, Fig. 1. I then provide a series of cords, *o*, and attach one end of each to the outside of the case A, near where the rods *e* pass through it, and pass them down under the pulleys in the lower ends of the rods, and thence up to the outer ring V, to which they are secured. When thus arranged, it will be seen that by turning the ring V the cords *o* will be drawn up, thereby elevating the ring *r* and the plates B, the ring V being provided with a ratchet, *u*, into which a pawl, *p*, engages, as shown in Fig. 1, for the purpose of locking it in place, when desired. Thus the plates B form an adjustable guide, by which the fur, in its descent, can be directed to those parts of the body forming on the cone, technically termed the "band" and the "crown." For convenience in removing the cone, I attach to the case A a cross-bar, *n*, as represented in Fig. 1, and at the center of this cross-bar I attach a tube, *q*, having a flange at its upper end, which is arranged to turn freely in a clutch or yoke, *c*, attached to a cord suspended from above, as shown in Fig. 1. Through the tube *q* passes a rod, *t*, which is held at any desirable height by a set-screw, *k*, Fig. 1, and to the lower end of this rod *t* is secured a disk, *j*, having an annular slit or opening, *i*, in it. By adjusting this device higher or lower within the case A, the fur can be thrown upon the tip and square of the hat, as desired. For the purpose of still further controlling the currents of air in the upper portion of the case, openings may be made in its side, as at X, Fig. 1, and covered with perforated sheet metal, and provided with a slide for opening and closing at pleasure. The case A is made to revolve in a direction opposite to that of the cone H, for the purpose of more effectually crossing and mixing the fibers as they are deposited. This I accomplish by providing two concentric turn-tables, the inner one, P, for supporting the cone H, and the outer one, R, for supporting the case A, as shown in section in Fig. 2, these being operated by a shaft, T, which has upon it a pinion, O, engaging in teeth or cogs

on the under side of the outer table R, and also a pinion, e', which engages with teeth upon the upper side of a flange on the lower portion of table P, the shaft T thus causing the two tables R and P to revolve in opposite directions. By these several devices and means I am enabled to control the deposit of the fur upon the cone in a most perfect manner, whereby it can be made thicker or thinner at the various points of the hat, and also to cross the fiber more effectually, and thus arrange it in the manner best suited for the subsequent operation of felting.

Having thus described my invention, what I claim is—

1. An expansible deflector, B, within the case A of a machine for forming hat-bodies, substantially as described.

2. The combination of the case A and cone H, provided with gearing, substantially as described, whereby the case and cone are made to rotate in opposite directions, as set forth.

3. The combination of the case A, cone H, and deflectors B and j, substantially as described.

4. The combination, in a machine for forming hat-bodies, of the case A, having its lower portion provided with perforations, and a slide, W, the cone H, expansible deflector B, and the adjustable deflector j, all constructed and combined substantially as described.

JOHN WHARTON.

Witnesses:
W. M. GOODING,
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