J. GILL.

Machine for Forming Hat Bodies.

No. 164,544. Patented June 15, 1875.

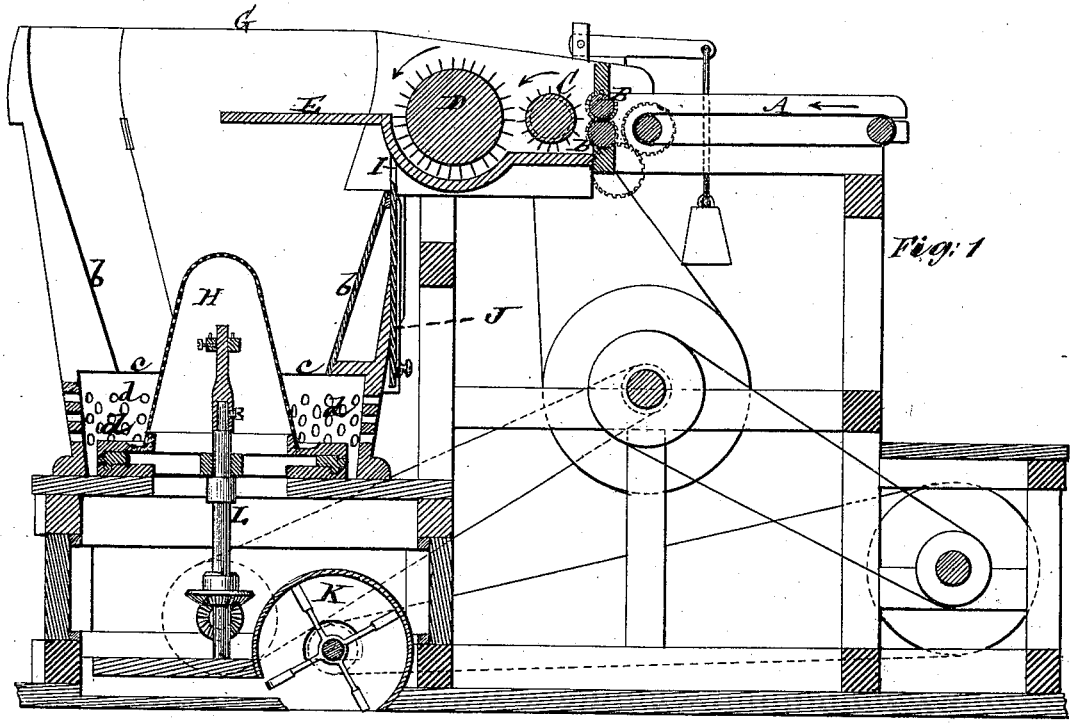
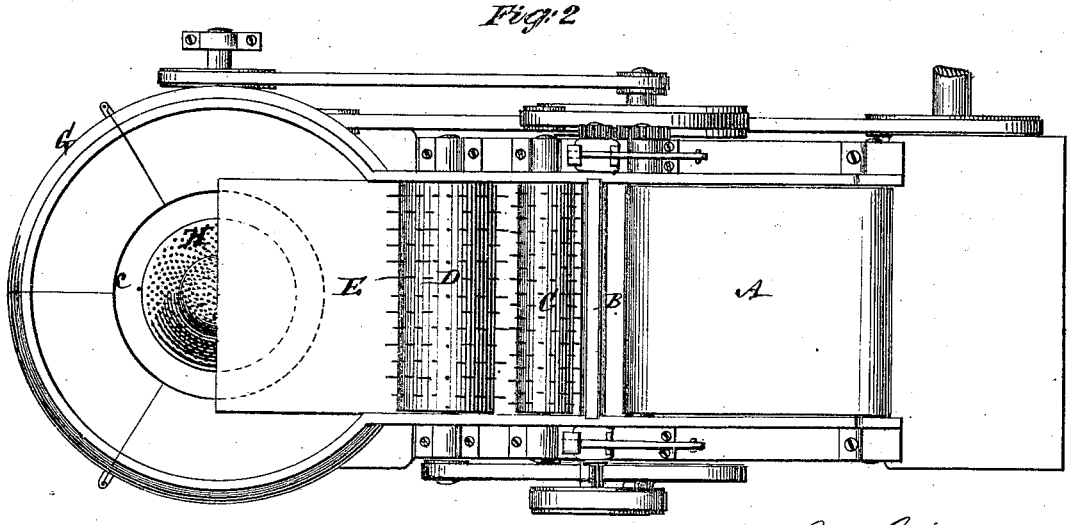


Fig: 1

Fig: 2



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UNITED STATES PATENT OFFICE.

JOHN GILL, OF ORANGE, NEW JERSEY.

IMPROVEMENT IN MACHINES FOR FORMING HAT-BODIES.

Specification forming part of Letters Patent No. **164,544**, dated June 15, 1875; application filed July 6, 1874.

To all whom it may concern:

Be it known that I, JOHN GILL, of Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Machines for Forming Hat-Bodies, of which the following is a specification, reference being had to the accompanying drawing.

This invention relates more especially to the machine which is the subject of Letters Patent granted to Ira Gill, January 13, 1857, and in which the hat-body is formed within a chamber of inverted conical form, surrounding the pervious cone or former. I provide inlet air-openings or perforations around the lower part of this chamber for the influx of air free from fur, such air serving to thin the brim of the hat-body, and concentrate the fur upon the middle or upper portions of the height of the cone, and also operating to prevent fur from lodging in the lower part of the chamber; and the first part of my invention consists in the construction of such lower part of the chamber, in which the said openings or perforations are provided, of larger internal diameter than the inverted conical portion immediately above, thereby forming a cavity wherein the jets of air entering through the said openings or perforations are broken up and diffused, and a better distribution of the non-fur-bearing air around the lower part of the cone or former is obtained. The invention consists, secondly, in a combination, with the hat-forming chamber and cut-off board over which the fur is supplied to the chamber, of a slide for varying the depth of air-opening under the cut-off board, and so regulating the quantity of the non-fur-bearing current admitted to the upper part of the chamber, said air operating to cause the fur-bearing current from the picker to pass farther over and lower down on the cone, and thereby to reduce the thickness of the tip.

In the drawing, Figure 1 represents a longitudinal sectional elevation of a machine for forming hat-bodies, having my invention applied; and Fig. 2, a plan of the same.

A is the endless traveling feeding-apron, on which the fur is carried to the chamber surrounding the pervious cone or former by first passing it through feed-rollers B B, from thence to the licker-in cylinder C, that gives or passes it to a larger cylinder, D, which is both a picker and disintegrator; also a blower, by reason of its construction and rapid motion. This combined picker and blower D throws the fur and directs the current containing the latter over onto the cut-off board E, which is arranged within the upper part of the chamber G on the feeding side of the machine. The interior of this chamber G is constructed to form an inverted conical surface, *b*, which is made to terminate below at a point or a level, as at *c*, which is above the level of the bottom of the pervious cone or former H, with openings *d d* beneath such termination for the influx air, which is free of fur. Fig. 1 shows this perforated lower part of the chamber C to be of larger diameter than the lower part of the conical surface above.

The conical interior surface *b* of the chamber may be constructed so that an imaginary line forming a downward continuation of its axial profile might or might not strike the cone H; but it is preferable that it should be so constructed, as shown in Fig. 1, that such imaginary line should not strike the cone, but should pass entirely outside of the base or lower edge thereof, as then any dags or heavy particles of fur would not be sufficiently under the influence of the exhaust-current to be liable to be thrown upon the cone, but would be more likely to fall outside of the latter.

The influx of air through the openings *d* operates to thin the brim of the hat, and to prevent any fur from lodging in the lower part of the chamber G, as it is more or less liable to do when there is a dead space around the interior lower part of the chamber. Such influx of air concentrates the fur upon the middle and upper portions of the bight of the cone, and its deposit upon the upper part of the cone, as also at the base, may be graduated by proper accessories within the cone.

I is the opening under the cut-off board, by which a current of air, free from fur, is admitted to the upper part of the chamber G, and which serves to cause the fur-bearing current to pass farther over and lower down on the cone H, and so reduce the thickness of the tip. To this end, or to make such general thinning arrangement on the upper part of the

cone effectual, I provide said opening I with a slide, J, which may be adjusted to regulate the quantity of air admitted by said opening, according to the strength of the down draft, or as other circumstances may require. K is a fan, by which the suction is created within the cone or former H, and L the shaft by which said cone is rotated.

I claim—

1. The perforated lower portion of the chamber G, of larger diameter than the lower part of the inverted conical portion *b* above said perforated portion, substantially as and for the purpose herein specified.

2. The slide J, applied to the inlet air-opening under the cut-off board E, in combination with the cone H and chamber G, essentially as and for the purpose herein set forth.

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