W. E. GOWDY.

Machine for Shearing and Napping Hats, &c.

No. 198,377. Patented Dec. 18, 1877.

Fig. 1

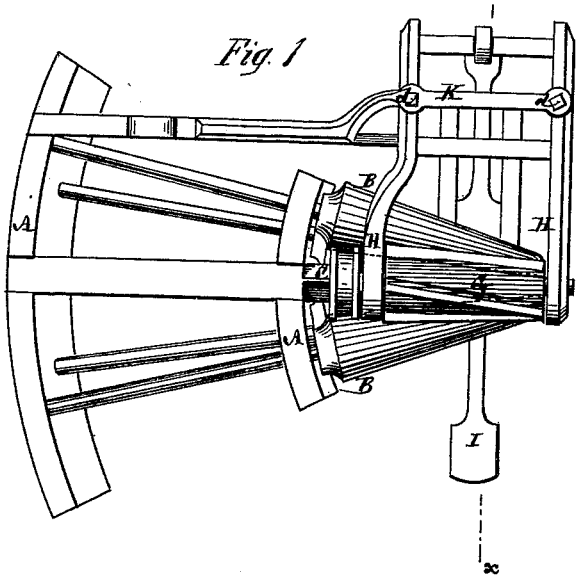


Fig. 2

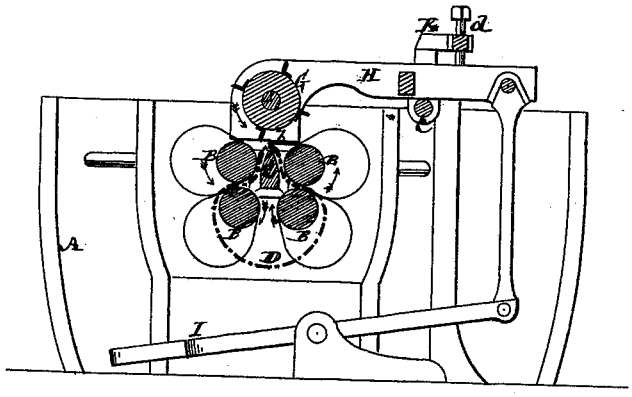
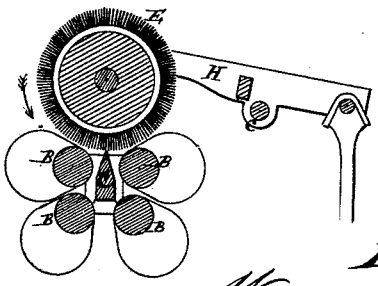


Fig. 3



Witnesses
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Inventor
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by his Attorneys
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UNITED STATES PATENT OFFICE.

WILLIAM E. GOWDY, OF NEWBURG, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO JARVIS C. BRUSH, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR SHEARING AND NAPPING HATS, &c.

Specification forming part of Letters Patent No. **198,377**, dated December 18, 1877; application filed November 19, 1877.

To all whom it may concern:

Be it known that I, WILLIAM E. GOWDY, of Newburg, in the county of Orange and State of New York, have invented certain new and useful Improvements in Machines for Shearing and Napping Hats and other circular articles, of which the following is a description, reference being had to the accompanying drawing, forming part of this specification.

This invention is more particularly designed for shearing and napping or gigging wool and fur hats, and will here be described more especially with reference to shearing and napping wool-felt hats.

The invention consists in certain novel constructions and combinations of parts or devices, including a series of conical guide and draw rolls intermediately arranged sharp rest for the article under operation, a rotary shear or teaseling cylinder, and means for adjusting either of the latter relatively to the rest over which the material or hat-body passes, whereby the desired results are obtained in a simple and very efficient manner.

Figure 1 represents a plan of a machine constructed in accordance with my invention. Fig. 2 is a transverse vertical section of the same on the line *x x;* and Fig. 3 a similar view to Fig. 2, in part, but showing a teaseling or napping cylinder as substituted for the rotary shear shown in the other figures of the drawing.

A is the frame of the machine, which frame may be of any suitable construction. Carried by said frame are duplicated pairs of draw-rolls B, of iron or other material. These rolls, which should be driven so that the one pair travel faster than the other pair in order to effect the necessary draw, are of an elongated conical construction, and are arranged so that their axes converge toward a common center, or approximately so, beyond or outside their smaller ends. Between said pairs of rolls, and extending throughout the length of them or thereabout, is a central bar or rest, C, supported at one end by the main frame, but clear of any obstruction at the opposite end, to allow of the introduction and passage of the hat-body D between the rolls and over said rest, as shown in Fig. 2. This rest is of an inverted-V or beveled construction on its upper edge, to form a sharp working-surface for the hat-body as the latter is drawn and rotated by the rolls, and held taut or at a stretch while passing under the shearing or napping devices. This sharp resting-surface insures a much more perfect cut or napping action.

In operating on wool-felt hats the hat-body D is introduced between the rolls B and over the rest C after it has been formed, hardened, and fulled in the usual or any suitable manner, and the nap on it is or may be raised by first subjecting it to the action of a rotary teaseling-cylinder, E, which occupies the same position in relation with the rolls B and rest C—that is, immediately over said rest and between the upper rolls—that the rotating shear or cylinder G, of spirally-arranged cutting-blades, occupies when it is desired to shear to a uniform length the raised nap on the hat-body. Said rotary shear has combined with it a stationary cutter, *b*, which is arranged to project immediately over the rest, for action in concert with the cutting-blades of the rotary shear or cylinder G.

H is a frame or holder for the rotary shear G and its stationary cutter *b*, or for the teaseling-cylinder E, according to which of these devices is being used. This frame is hung to rock or vibrate on an intermediate fulcrum, *c*, and is controlled by a foot-lever, I, to hold the shear or teaseling-cylinder to its work.

To set the rotary shear G so as to cut the nap of the hat-body of a uniform or given length, there is combined with the rocking frame H and a fixed arm, K, adjustable stops *d*, which serve to determine the distance of the cutting-line or action of the shear from the upper edge of the rest C, over which the material or hat-body passes, and during which it is exposed to the action of the cutters.

I claim—

1. The combination of a series of converging conical draw-rolls, an interposed rest or bar, having an upper sharpened or narrow edge, and a rotating shear or teaseling-cylinder, substantially as and for the purpose specified.

2. The combination of a rocking frame, carrying the rotating shear or teaseling-cylinder, a treadle or lever for holding the latter to their work, a series of conical draw-rolls for conducting and holding taut the material under operation, and a rest or bar over which said material is passed while under exposure to the shear or teaseling-cylinder, essentially as described.

3. The combination of one or more adjustable stops, *d*, with the rocking frame H, the rotary shear G or napping-cylinder E, the rest or bar C, and the rolls B, substantially as specified.

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Witnesses:
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