D. W. GITCHELL.

MACHINE FOR SHEARING HATS.

No. 192,066. Patented June 19, 1877.

Fig. 1.

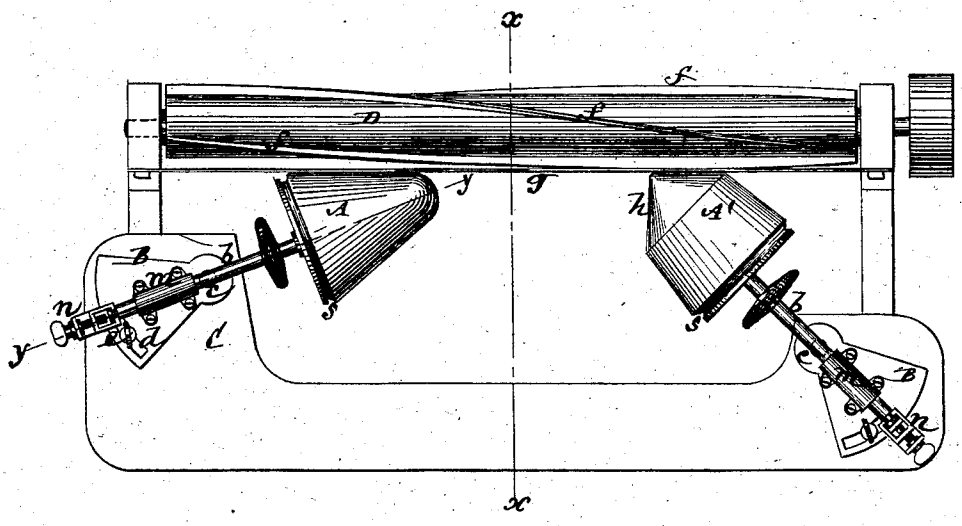


Fig. 2.

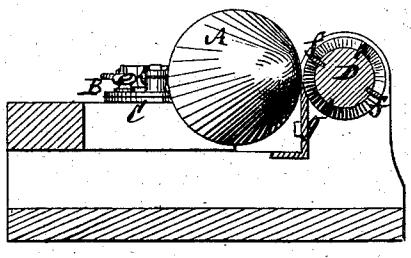
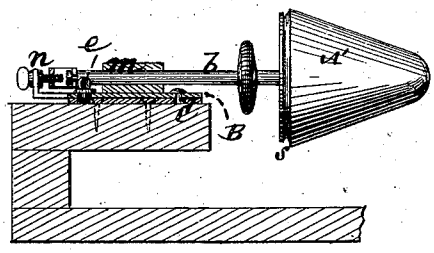


Fig. 3.



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UNITED STATES PATENT OFFICE.

DELOS W. GITCHELL, OF ORANGE, NEW JERSEY.

IMPROVEMENT IN MACHINES FOR SHEARING HATS.

Specification forming part of Letters Patent No. **192,066**, dated June 19, 1877; application filed November 28, 1876.

To all whom it may concern:

Be it known that I, DELOS W. GITCHELL, of Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Machines for Shearing the Surfaces of Wool-Felt Hats; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to machines for reducing to a uniform length, by shearing, the nap on wool-felt hats; and consists in a novel combination of devices forming an organized machine or apparatus for the purpose, whereby special provision is made for adjustment of the cone-blocks carrying the hat-body in various directions relatively to the shears, substantially as hereinafter described.

In the accompanying drawing, Figure 1 represents a plan of a machine, in part, having my invention applied; Fig. 2, a vertical transverse section on the line *x x*, and Fig. 3 a diagonal transverse section mainly on the line *y y*.

C is the frame of the machine, on which are mounted one or more rotating cone-spindles, *b*, carrying, respectively, a cone-block, A or A′, and a shearing device, which may consist of a rotating cylinder, D, of spirally-arranged cutters *f*, and a fixed cutting-blade, *g*.

The rotating spindles *b* which carry the cone-blocks A A′ are supported in boxes *m*, which are attached to swiveling plates or carriers B, pivoted at *c* to the main frame, or to plates secured thereon, for the purpose of bringing the cone-blocks up to or away from the shears, to provide for the placing of the hat-body on either cone-block for the presentation of said body to the shears, and for the removal of the hat-body after the nap on it has been sheared. Set-screws *e*, passing through slots *d*, serve to hold the swiveling carriers B to any swiveling set that may be given the latter.

Furthermore, the rotating spindles *b* are adjustable longitudinally within or through the boxes *m*, by means of screw blocks or holders *n*, for the purpose, and in conjunction with the swiveling adjustable carriers B, of adjusting the cone-blocks or hat-bodies thereon into parallelism with the cutting-line of the shears. Although two cone-blocks, A A′, are here shown, one, A, of which is shaped to provide for the shearing of the nap on the side crown, band, and brim, while the other cone-block, A′, is formed with a flatter tip, *h*, for the purpose of providing for shearing the tip of the hat, a single cone-block constructed to provide for the shearing of the side crown, tip, band, and brim, may be used, and when separate cone-blocks, as described, are used, they may either be arranged for consecutive action in the same machine or in separate machines.

The cone block or blocks carrying the hat-bodies may either be rotated by hand or by steam power, and at a comparatively slow velocity as compared with the rotating shearing-cylinder D.

In the operation of the machine, as shown in the drawing, the hat-body, after it has been formed, hardened, and fulled, in the usual or any suitable manner, has its nap, which may be raised by teazling, subjected to the action of the shears by first shifting the hat or hat-body onto the cone-block A, and securing it by a rubber band in a crease, *s*, and, after said cone-block has been adjusted in proper relation with the shears, rotating the cone-block to shear the side crown, band, and brim of the hat on its exterior surface. Said hat-body is then transferred to the cone-block A′, and secured thereon by a rubber band in a groove, *s*, and such cone-body shifted or adjusted into a proper relation with the shears to shear to a uniform length the nap on the tip of the hat.

To nap and shear the under surface of the brim, the hat-body may be turned inside out on the cone block or blocks, and be subjected to the action of the shears, as before.

When the hat to be produced is an embossed one, the embossing, which may be done in the way commonly practiced in embossing felt hats, should be done before shearing.

After the hat-body has been sheared, as described, it may be blocked into shape, and the raised nap thereon, which has been sheared to a uniform length, as described, be curled to produce a wool-felt hat having a napped

and curled surface, as in a separate application made by me for Letters Patent.

I claim—

The combination of the adjustable swiveling carrier B, having an attached bearing, *m*, the cone-block A or A′, the rotating and longitudinally-adjustable spindle *b*, carrying said block, the screw block or holder *n*, and the rotating cutting-cylinder D, and fixed cutting-blade *g*, substantially as shown and described.

D. W. GITCHELL.

Witnesses:

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