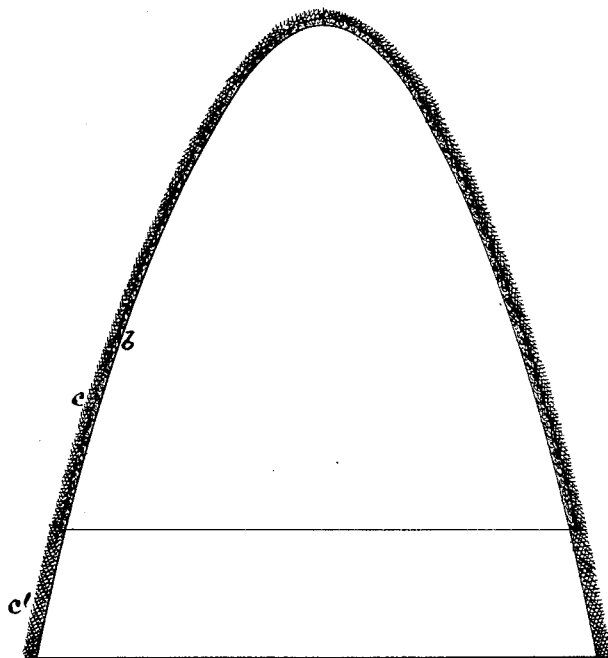


J. T. WARING.
Manufacture of Wool-Hat Bodies, Faced with Fur.

No. 218,202.

Patented Aug. 5, 1879.



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JOHN T. WARING, OF CONCORD JUNCTION, MASSACHUSETTS.

IMPROVEMENT IN MANUFACTURE OF WOOL HAT-BODIES FACED WITH FUR.

Specification forming part of Letters Patent No. **218,202**, dated August 5, 1879; application filed January 14, 1879.

To all whom it may concern:

Be it known that I, JOHN T. WARING, of Concord Junction, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in the Manufacture of Wool Hat-Bodies Faced with Fur, of which the following is a description, reference being had to the accompanying drawing, forming part of this specification.

My invention consists in a novel process of facing wool hat-bodies with fur, by first forming a wool body on a "former," in the usual or any suitable way, afterward placing said body on a perforated cone similar to the cones used in making fur hat-bodies, and subsequently depositing the fur upon said body while on the cone by blast and suction, as fur has heretofore been deposited on cones in the manufacture of fur hats. Before, however, placing the wool body on the perforated cone for the reception of the fur, said body may be partly felted or "hardened." This preparatory hardening or partial felting of the wool body before the commencement of the deposit of the fur is in some respects desirable.

The drawing represents a longitudinal section of a wool hat-body with the fur applied to its outer or face side, and as extended beyond the wool body to form the brim of the hat.

In carrying out my invention, I first form upon a block or former, in the usual way of making raw-wool hat-bodies, a thin wool body, *b*, by taking a lap from the doffer of a carding-machine and winding it on the block or former. Said wool body is then transferred to a perforated cone, such as is used for making fur hat-bodies, and the fur deposited upon said body by blast and suction, as fur is deposited upon perforated cones in making fur hat-bodies; but before thus depositing the fur upon the wool body it is preferred, for reasons hereinafter given, to subject the raw-wool body to a hardening or partly felting operation or operations before placing the wool body upon the perforated cone. This may be done in the usual way of hardening or felting wool bodies. The fur, as it is deposited upon the wool body *b*, forms a facing, *c*; and in order to make a brim to the hat which shall show fur on both sides, I prefer to make the wool body *b* of such size that it will only form the tip, side crown,

and band of the hat, and consequently only partly cover the perforated cone. This will cause a deposit of fur, *c'*, on the perforated cone, below the wool body, and of a greater thickness than the fur facing *c* on the wool body, by reason of the check which the wool body presents to the suction or draft applied to the cone.

It is not absolutely necessary that pure wool should be used in forming the body *b*, as various materials may be mixed with the wool.

The reason for preferring to harden or otherwise partly felt the wool body before depositing the fur upon the latter is, that it enables the wool body to be hardened under a jigger in the same way as an ordinary wool body, which operation might be injurious to the fur covering, though it is better adapted than any other method to the hardening of the wool. After the fur has been deposited on the wool, the whole body is subjected to the process commonly employed for hardening either wool or fur bodies—viz., by placing the cone with the body on it in a bath of hot water, and afterward removing the body, and working it in a wet rolling state between linen or cotton or woollen cloths, or by hardening under the wool jigger commonly used by wool hatters. The fulling or "sizing" may be completed in a fulling-mill, or in any other way known or practiced for sizing fur or wool hat-bodies.

If desired, instead of making the portion of the hat-body which forms the brim of the hat all fur, as hereinbefore described, the wool body may be made sufficiently large to form the entire hat, including the brim, and after it had the fur deposited all over one side, and has been taken from the perforated cone and hardened to some extent, said body may be turned inside out, and replaced upon said cone, where it will have applied to it a cover of a size to leave the brim portion exposed, to be covered with fur in the same or like manner as the opposite side of said brim portion was covered; or the under brim may be covered with fur by covering the upper portion of the cone with another cone, leaving the under brim only exposed to the draft, and thus forming the under brim first with fur and then putting the wool body over it. This sec-

ond cone may be a tight metal one, of a size to insure the fur all going below it, as required, onto an exposed portion of the inner or main cone.

By means of my invention I am enabled to produce a cheap hat-body faced with fur of a fine quality, which shall be stronger than a hat-body made wholly of fur of an inferior quality.

I claim—

1. The process of facing wool hat-bodies with fur, by first forming the wool body on a block or former, afterward placing said body on a perforated cone, and subsequently depositing the fur upon said body while on the cone, by suction or draft within said cone and a blast or current outside of the latter, substantially as specified.

2. In a process of facing wool hat-bodies with fur, by first forming the wool body on a block or former, and subsequently depositing by blast and suction the fur upon said body after the latter has been placed upon a perforated cone, subjecting the raw-wool body, after it has been taken from the block or former, and before it is placed upon the perforated cone, to one or more hardening or partial felting operations, substantially as and for the purposes herein set forth.

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Witnesses:

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