(No Model.)

W. E. DOUBLEDAY.

MANUFACTURE OF FUR FACED HATS.

No. 261,437. Patented July 18, 1882.

Fig. 1.

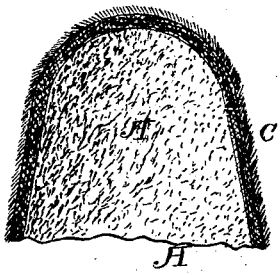


Fig. 3.

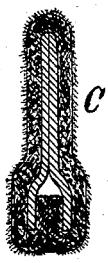


Fig. 4.

Fig. 2.

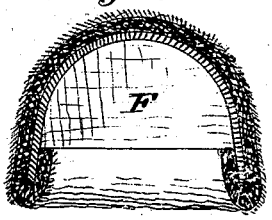
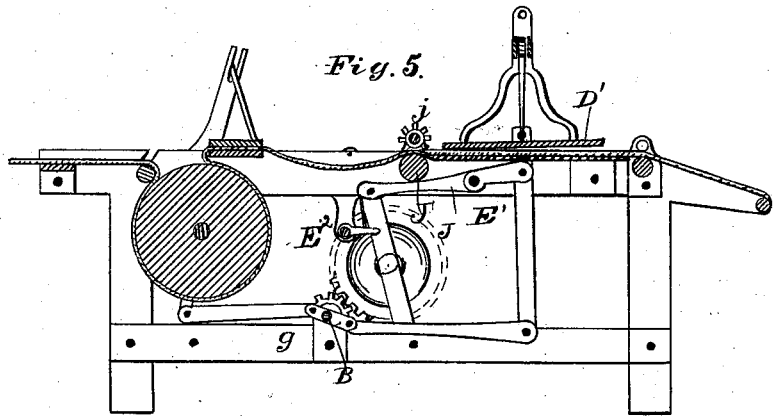


Fig. 5.



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UNITED STATES PATENT OFFICE.

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MANUFACTURE OF FUR-FACED HATS.

SPECIFICATION forming part of Letters Patent No. 261,437, dated July 18, 1882.

Application filed March 1, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. DOUBLEDAY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in the Manufacture of Fur-Faced Hats, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a vertical section of a bat employed by me in carrying out my invention. Fig. 2 is a vertical section of the same bat placed upon a hat-body preparatory to the sticking process. Fig. 3 is a vertical section of the hat-body and fur bat when folded in position to be acted upon by the sticking mechanism. Fig. 4 is a similar view of the hat-body with the fur bat applied to its outer surface only. Fig. 5 is an elevation of a machine adapted for carrying out my invention.

Heretofore in the manufacture of hats it has been customary to apply a fur bat to the outer surface of a hat-body which has been previously fabricated by weaving or felting and shrunk to the size and density which it is desired that it shall have when completed, and then fold the article, and, laying it flat upon a table, proceed to stick the fur upon one side at a time, that side being the upper surface, turning it over as often as may be necessary at each successive stage of the operation; then, after turning it inside out, place a fur bat in contact with that portion of the hat which is to form the under surface of the brim, fold the hat, and lay it flat upon the table, sticking the fur upon its upper surface only, turning the hat over as often as may be necessary during the progress of the work; but in carrying out my improved process of manufacture—that is to say, in sticking the fur to the hat-body by means of mechanical appliances which subject both sides of the hat, when folded, to a pressing and rubbing action produced by adjacent surfaces and suitable operating mechanism—I am enabled to stick the fur to four surfaces simultaneously—that is to say, to both the upper and lower outer surfaces of the hat-body and also to the upper and lower inner surfaces of the brim—the operation of thus sticking these four surfaces at the same instant of time being due to manipulating the hat by means of the adjacent surfaces of the machine.

Having thus set forth the nature of my invention, I will proceed to illustrate one method which I have employed in carrying it into effect.

Referring to Fig. 5, which is an elevation or side view of an ordinary hardening or felting machine, D′ is the platen or jigger-plate, to which a rapid vibrating motion is imparted by means of cranks *g*, mounted on shaft B, the platen being elevated automatically through the medium of cranks, (not shown,) rock-shaft E^2, and levers E′ to permit the feeding forward of the material which is being acted upon, this feeding being done by means of an endless belt moved forward by rollers *j j′*, actuated by a cam and connecting devices, substantially as shown in Patent No. 95,863, which more fully describes the machine.

In Fig. 1, A represents a conical bat formed of fur, preferably nutria, formed by blowing the same upon a rotated perforated cone in substantially the manner commonly employed for that purpose. C is an outer layer of raw cotton, which has been blown upon the bat of fur by the same machinery. In forming these cones I prefer to spread the fur in a thin layer upon a feeding-apron and place upon the same apron, but in rear of the fur, a thin layer of cotton, so that the cotton will be deposited upon the outer surface of the fur by the automatic operation of the machine. After the bat has been formed I remove it from the perforated cone, either in the condition in which it is formed, or by unwrapping it with a wet cloth and then removing the bat and cloth together. This cone is of substantially the same taper and size as the hat-body to which it is to be applied, except that the cone is made as much longer than the body as is necessary to permit the lower edge of the fur and cotton bat to be turned inward over the edge of the hat-body F to form a fur-lined brim of the hat, as is indicated in Fig. 2; and after the body has been placed within the hat and the edge of the hat turned over within the lower edge of the body the two are flattened out, so that the two cotton surfaces of the brim come in contact with each other, as do the inner surfaces of the hat-

body between the brim and the apex of the triangular-shaped compound material, (see Fig. 3;) or, when preferred, a sheet of thin oiled paper or other suitable material—such as cotton cloth—may be placed between the adjacent surfaces of the cotton on the brim. It will of course be understood that the extreme edge of the bat is of greater diameter than that portion of the hat-body which is adjacent to it after the bat has been turned inward, as indicated in Fig. 2, and that consequently the portion of the bat will be wrinkled or laid in folds when the article has been flattened out with its inner portions in contact with each other, which is not, however, a serious objection, as will be explained. I now place a number of these bats and bodies between the bed-plate and platen of the sticker, Fig. 5, and subject the same to the rapid vibratory motion of the platen, accompanied by heat or otherwise, as circumstances shall indicate, and, when preferred, I place sheets of paper, cloth, or other suitable material between the hat and the bed-plate and platen of the machine. After this vibratory motion has been continued for a short time, dependent upon circumstances and conditions of temperature and moisture, the fur will be found to be "stuck" to the hat-body, after which the hat is subjected to the usual scalding process.

It will be found upon completing the scalding operation that the surplus of fur which was produced by the wrinkling or folding above mentioned will come away when the layer of cotton is removed, leaving the hat-body thoroughly covered with firmly-attached fur; or, when desired, the operation may be varied by placing the hat-body within the conical bat of fur and cotton and then cutting off or otherwise separating that portion of the bat of fur and cotton which projects beyond the open end of the hat-body, thus forming a ring or band, which may be used in covering the under brim of the hat with fur, such operation being performed separately—that is to say, in such case I stick the fur to the outer face of the hat-body, the folded hat being shown in Fig. 4, and afterward turn the hat wrong side out, place on its outer face the ring or band of fur and cotton, and stick it separately—having found by experience that in such operation the fur can be made to adhere to and cover perfectly the lower edge of the hat in as satisfactory manner as such lower edge can be covered by turning the bat over the edge of the hat-body, as I have first described, and may be able to produce results which are in some respects more satisfactory than those I can produce by the first-described operation, owing to the fact that when carrying out such first-described method the material which is acted upon by the platen or jigger is not of uniform thickness, it being much thicker at the point occupied by the under brim than at the other portions of the hat, as will be readily understood by an examination of Fig. 3.

While I employ a well-known machine—say that represented in Fig. 5—in sticking the fur to the felt or other fabric of which the hat-body is composed, yet this operation is not at all analogous in many respects to the operation of hardening or felting, for which such machines are usually employed. In the ordinary use of these machines the platen rests with its entire weight upon a comparatively loose mass of cotton, wool, or mixed fabrics, and operates to unite them firmly and throughout their entire lengths into a firm, hard, compact material, called "felt," of much less thickness when completed than is the bat when the felting operation is commenced; but in carrying out my invention I so manipulate the machine that only one end of each of the fibers or filaments of which the fur is composed is attached to the hat-body, leaving the rest of the fibers in a light, loose, "flowing" condition, substantially like that in which the fur exists upon the animal from which it is taken.

In carrying out my invention either a very light platen must be used with a short period of vibration, or else the machine must be so constructed that the platen cannot rest with its full weight upon the material; otherwise, instead of sticking the fur to the body of the hat, it (the fur) will be felted not only to the body of the hat, but the filaments of fur will be felted to each other, so that they will not flow, and thereby the end sought to be attained by my invention will be entirely frustrated.

I am aware that rollers have been heretofore employed in the process of "sticking" a fur nap to a previously felted or woven fabric, and therefore do not claim such process; but the invention for which I claim protection in this case possesses marked advantages over the processes heretofore employed in the manufacture of hats.

In making hats by any of the modes of manufacture other than my own it has been customary to apply a fur bat to the outer surface of the hat-body, then fold the article, and proceed to stick the fur upon one side at a time, that side being the upper exposed side, laying it flat upon a table, turning it over as often as may be necessary during each successive stage of the operation; then, turning the hat inside out, placing the fur bat in contact with that portion of the hat which is to form the under surface of the brim, folding the hat and laying it flat upon the table, and sticking the fur upon the upper exposed surface only, turning the hat over as often as may be necessary during the progress of the work; but by my process of manufacture—that is to say, by sticking the fur to the hat-body by means of mechanical appliances which subject both sides of the hat, when folded, to a pressing and rubbing action produced by adjacent surfaces in a suitable machine—I am enabled to stick the fur to four surfaces simultaneously—that is to say, to both the upper and lower outer surfaces of the hat and also to the upper and lower inner surfaces

of the brim—the operation of sticking these fur surfaces at the same instant of time being due to the rubbing and pressing action of the adjacent surfaces of the machine. I do not, however, wish to be limited to applying the fur bat to the under brim and sticking it thereto at the same time that I stick the fur to both the upper and lower surfaces of the folded hat, although in practice I prefer to stick the fur to all the fur-faced surfaces at the same time.

Although I have in two of my earlier patents, Nos. 253,160 and 255,260, shown and described a similar method of applying a fur bat to a previously felted and shrunk hat-body, and subsequently sticking fur to said hat-body by means of a sticking mechanism, the hats being afterward manipulated so as to produce a flowing nap of fur, yet the invention which is covered by the claims herein is not claimed in either of my aforesaid patents. In fact, each of said patents contains a disclaimer limiting it to the invention specifically set forth in the claims thereof, in order to avoid any conflict between said Patents Nos. 253,160 and 255,260 and any subsequent case taken out by me as a division thereof. Hence I do not in this case—which is a division of an application upon which one of my aforesaid patents was granted—claim anything shown in either of those patents.

I do not in this case claim any invention except that which is specifically recited in the claim hereof, reserving to myself the right to claim any additional features shown or described herein in another application which I am about to file as a division hereof.

What I claim is—

The herein-described improvement in the art of making hats which have a flowing nap of fur, the same consisting in applying to a hat-body which has been previously felted and shrunk to the desired size a bat of fur of greater size than the hat-body, next turning the lower edge of the fur bat over the edge of the hat-body to form a facing for the under brim of the hat, and subsequently sticking the fur to the outer surface of the hat and to the under surface of the brim, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. DOUBLEDAY.

Witnesses:
HENRY F. RANDOLPH,
R. CLARENCE DORSETT.