(No Model.)

W. E. DOUBLEDAY.

MANUFACTURING FUR FACED HATS.

No. 263,656. Patented Aug. 29, 1882.

Fig. 5.

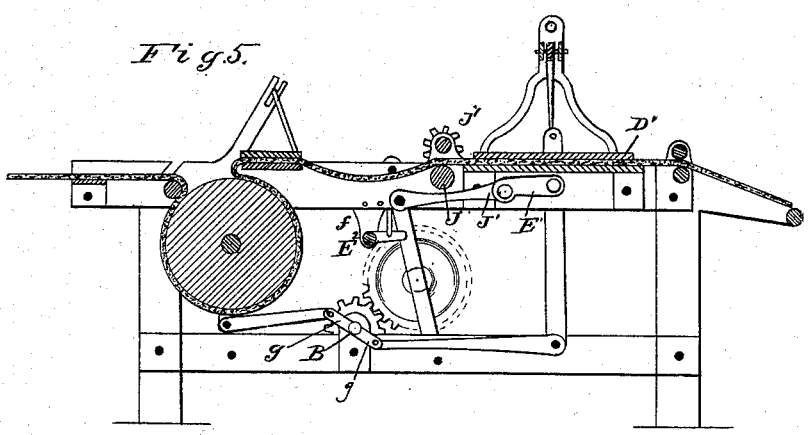


Fig. 2.

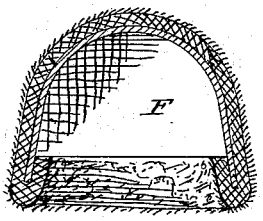


Fig. 4.

Fig. 3.

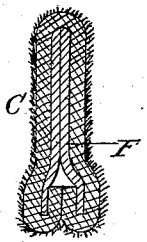
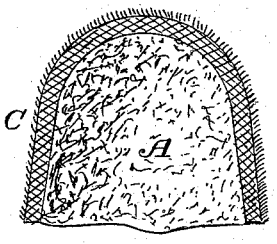


Fig. 1.



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UNITED STATES PATENT OFFICE.

WILLIAM E. DOUBLEDAY, OF BAY RIDGE, NEW YORK, ASSIGNOR TO ELLEN M. DOUBLEDAY, OF SAME PLACE.

MANUFACTURING FUR-FACED HATS.

SPECIFICATION forming part of Letters Patent No. 263,656, dated August 29, 1882.

Application filed June 26, 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 Bay Ridge, in the county of Kings and State of New York, have invented certain new and useful Improvements in Manufacturing 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, folding 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 bats 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 wrapping it with a wet cloth and then removing the bat and cloth together. This bat 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 provide that the lower edge of the bat may be cut off and applied to the lower inner surface of the hat-body to form a nap upon the under brim, as indicated in Fig. 3, and after this has been done the hat-body and the outer and inner bats are flattened out, so that the two cotton surfaces of the under-brim

naps come in contact with each other, as do the inner surfaces of the hat-body between the under brim and the apex of the triangular compound-shaped material, (see Fig. 3;) or, when preferred, a sheet of thin oiled paper, cotton cloth, or other suitable material may be placed between the adjacent surfaces of the cotton on the brim. Of course the under-brim nap-bat is of greater diameter than the adjacent portion of the hat-body; but I have found in practice that this is not a serious objection, as the surplus fur comes away after the scalding operation. I now place a number of these nap-bats and hat-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 hats and the bed-plate and platen of the machine. By this means I stick the fur to the entire outer surface of the hat, and also to the entire inner surface of the under brim, making, as the hat is folded up, four surfaces to which fur is stuck simultaneously.

When desired, the operation may be varied by sticking the fur to the outer surface of the hat-body before applying the nap-bat to that portion of the hat which is to constitute the under brim.

I have found that by this mode of manipulation the fur is firmly stuck to and effectually covers the lower edge of the hat-body.

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 animals from which it is taken.

In carrying out my invention a light platen must be used with a short period of vibration; otherwise, instead of sticking the furs to the body of the hat, it (the fur) will be felted not only to the body of the hat, but the filaments of the fur will be felted to each other, so that they will not flow, and thereby the end sought to be obtained 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 claim 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 a bat of fur to a hat-body which has been previously felted and shrunk, next applying a separate fur bat to the lower portion of the inner surface of the hat which constitutes the under side of the brim, 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:
FRANK SCHULZ,
OTTO KEMPNER.