

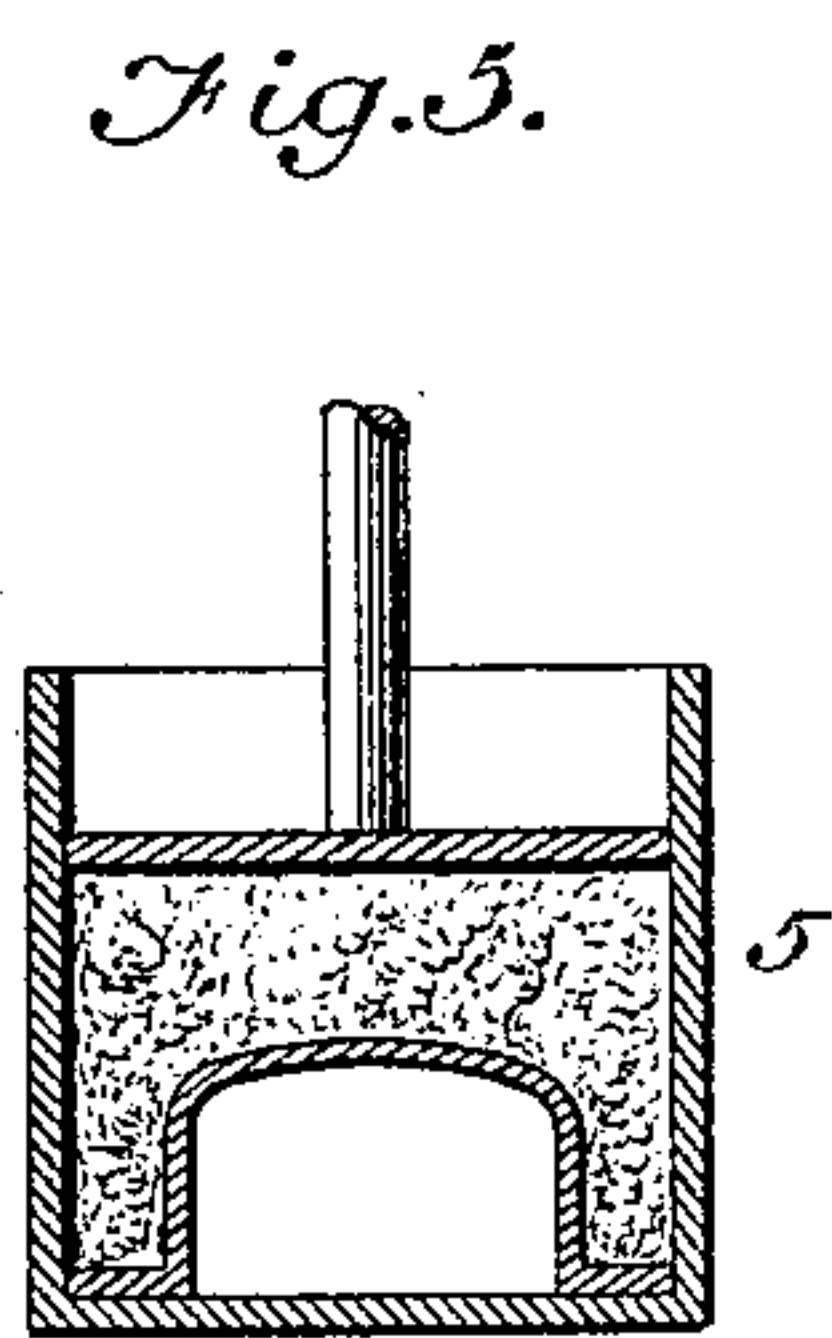
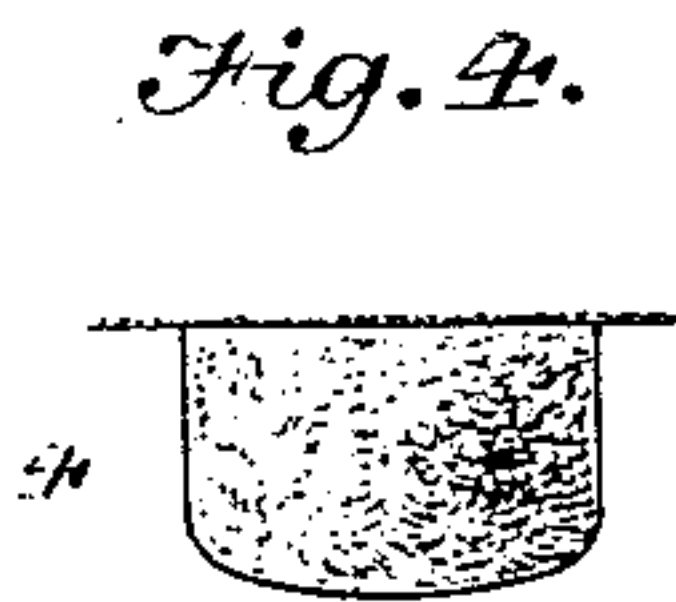
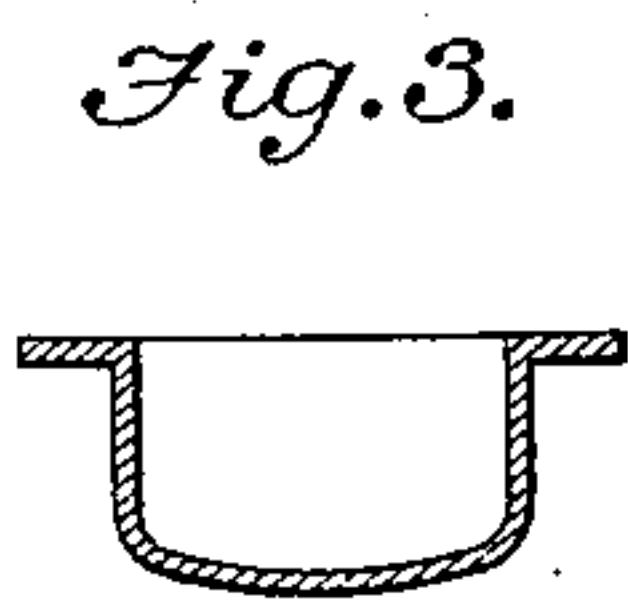
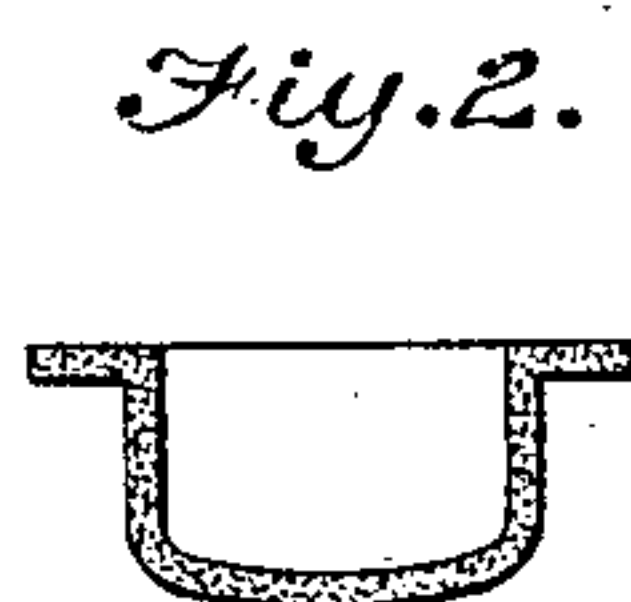
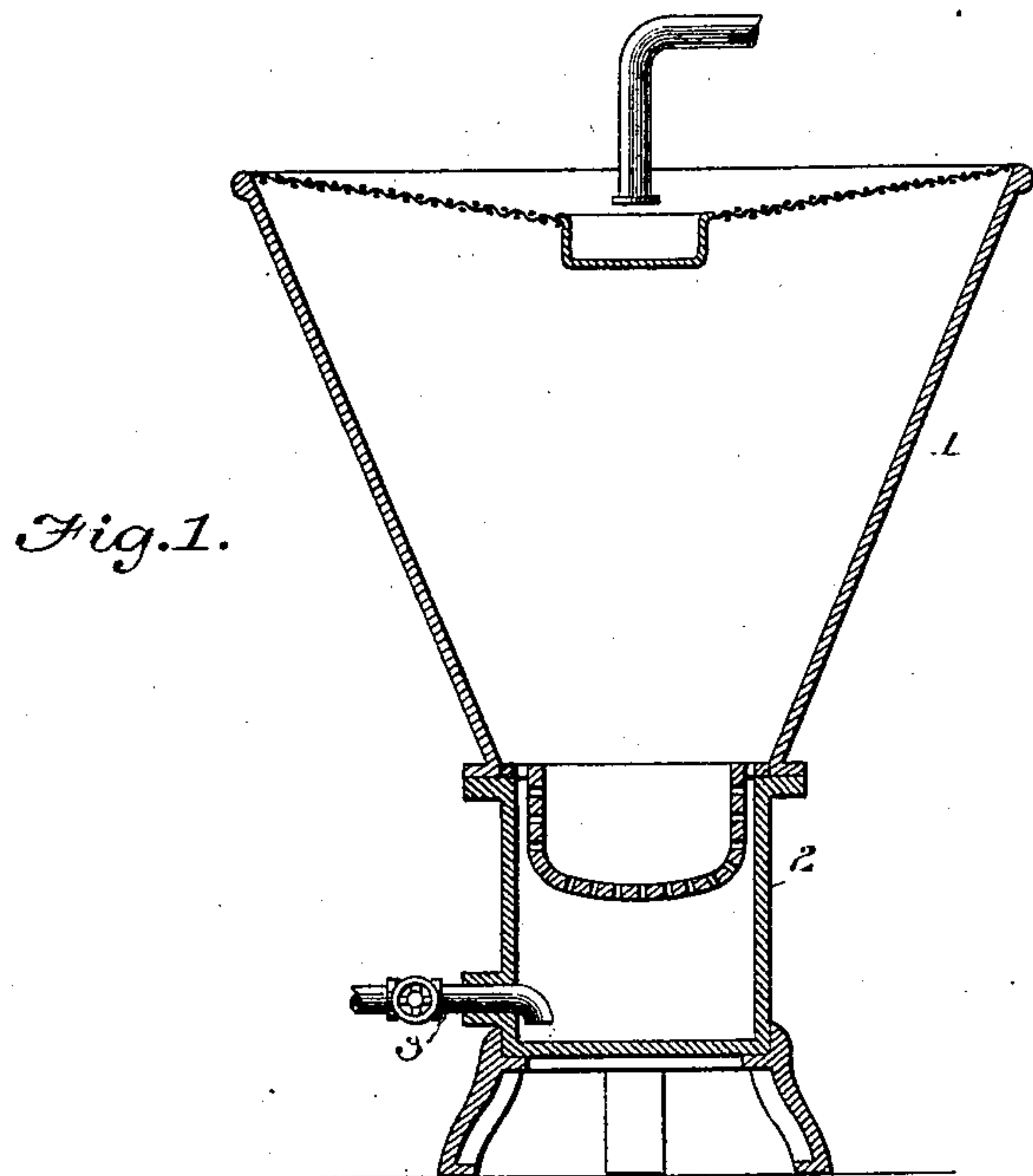
No. 631,903.

Patented Aug. 29, 1899.

J. H. NEAVE.  
PROCESS OF MAKING HATS.

(Application filed Dec. 31, 1897.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN HENRY NEAVE, OF MATTEAWAN, NEW YORK.

## PROCESS OF MAKING HATS.

SPECIFICATION forming part of Letters Patent No. 631,903, dated August 29, 1899.

Application filed December 31, 1897. Serial No. 665,053. (No specimens.)

*To all whom it may concern:*

Be it known that I, JOHN HENRY NEAVE, of Matteawan, county of Dutchess, and State of New York, have invented a new and useful  
5 Improvement in Processes of Making Hats, of which the following is a specification.

This invention has reference to the process of making hats in imitation of felt, the object being to produce a hat which will be in-  
10 expensive, durable, and of light weight, and which will have the appearance of the felt Derby hat so commonly worn.

The invention consists in forming the body of the hat of a mixture of pulp and a resin-  
15 ous material in granular or pulverulent form treated to form an integral or substantially integral mass and covering this body in an improved manner with fur or analogous material to produce a surface resembling that of  
20 a felt hat.

In the accompanying drawings, Figure 1 is a sectional elevation of a tank with a hat-form therein for the purpose of producing the pulp body of the hat. Fig. 2 is a sectional  
25 elevation of the pulp body removed from the form and previous to being treated to render it homogeneous. Fig. 3 is a similar view of the pulp body after being treated to render it homogeneous. Fig. 4 is a sectional eleva-  
30 tion showing the manner of condensing or concentrating the fur previous to its application to the surface of the pulp body. Fig. 5 is a sectional view showing another way of concentrating the fur and applying it to the  
35 pulp body.

Referring to the drawings, in carrying my invention into effect I first form from a mixture of pulp, preferably wood-pulp, and a resinous material in granular or pulverulent  
40 form a body of the general form of the hat to be made, which operation may be conveniently effected by the apparatus shown in Fig. 1, consisting of a tank 1, containing in its base a perforated hat-form 2, of the construction well known in the art, and a pipe 3 for  
45 withdrawing the water through the form. A mixture of wood-pulp and a resinous material, preferably shellac, in granular or pulverulent form, as distinguished from a solution of the same, is placed in the tank 1 above the perforated hat-form, and the water of the mixture being withdrawn from below through

the pipe 3 a layer or deposit of the mixture of pulp and shellac will be left on the surface of the form, producing a pulp body, as shown  
55 in Fig. 2. This layer is removed from the form and subjected to pressure in any suitable manner to consolidate the mass and expel the water therefrom. It is then dried and subjected to the action of a sufficient degree  
60 of heat to melt the shellac, the result being that the melted shellac will run or flow and permeate the fibers of the pulp, and on hardening or softening will form a practically integral mass or body, such as shown in Fig. 3.  
65 This pulp body is now ready to receive on its surface the coating of fur or analogous material to cause it to resemble the ordinary felt hat. The fur is applied by bringing it in a concentrated or condensed condition into in-  
70 timate contact with the surface of the body, to which an adhesive composition has been applied, the result being the adhesion of the fur in a uniform layer completely covering the surface of the body and producing a sur-  
75 face resembling that of felt. I prefer to accomplish the condensation or concentration of the fur to enable it to be brought in this condition into contact with the pulp body by depositing a layer of the fur on a flexible  
80 backing, such as the felt cap 4, in an ordinary perforated hat-form, such as was employed to form the pulp body. This may be accomplished by the same apparatus represented in Fig. 1, in the tank of which a mixture of  
85 water and fur in a finely-divided condition is introduced, the perforated form being first covered with the felt cap or backing. On the withdrawal of the water through this backing and form the fur will be deposited  
90 on the backing in a uniform layer, as shown in Fig. 4. The water is then drained from the fur, preferably by placing the backing, with the fur thereon, in a hydraulic press and subjecting the same to high pressure,  
95 and after the fur is thoroughly dried by heat or otherwise it is ready to be applied to the pulp body. Before applying the fur to the pulp body the surface of the latter is coated with an adhesive composition to cause the  
100 fur to adhere. I prefer to employ a varnish for this purpose, and in order to prevent the alcohol in the varnish from acting on the pulp or shellac in the body, which would in-



5 interfere with the adhesive action of the var-  
 nish, I propose to first coat the body with a  
 "size" of such a nature as to resist the action  
 of the alcohol. The backing, with the fur  
 10 thereon, is now applied to the pulp body with  
 the fur surface next the varnished surface of  
 the pulp, and they are subjected to the action  
 of heat and pressure, conveniently in a heat-  
 ed metal die, the result being that the var-  
 15 nish and shellac will be softened by the heat,  
 and the fur being thus brought into intimate  
 contact with the softened varnish will be  
 caused to adhere to the surface of the body,  
 forming a uniform layer of fur completely  
 20 and wholly covering the surface of the pulp  
 body. When the varnish has set, the cap or  
 backing is stripped, leaving the fur coating  
 exposed. By thus applying the fur coating  
 by bringing the fur in a condensed or concen-  
 25 trated condition into contact with the pulp  
 body I am enabled to obtain a thicker and  
 more uniform layer on the body than if the  
 fur were sifted or dusted on, as has heretofore  
 been practiced. Instead, however, of first  
 30 depositing a layer of the fur on the backing,  
 as described, it may be compressed around  
 the hat in a suitable casing 5, surrounding the  
 hat, as shown in Fig. 5. The fur being packed  
 in this casing is brought in a compressed con-  
 35 dition into intimate contact with the body  
 and caused to adhere as in the other case de-  
 scribed. The hat may now be subjected to  
 such of the usual finishing and polishing op-  
 erations as are commonly practiced and which  
 40 may be found necessary to give the surface a  
 smooth and finished appearance to resemble  
 that of the ordinary felt hats, and the interior  
 of the hat may be treated to give it the proper  
 finished appearance. By forming the body  
 45 of pulp and shellac or of any other resinous or  
 gummy material the body is readily suscep-  
 tible to the action of heat, so that the brim  
 may be properly curled and the crown ma-  
 nipulated to properly fit the wearer, as the  
 usual felt hats are now shaped to the head.

Having thus described my invention, what  
 I claim is—

1. The process of forming hats in imitation  
 of felt, which consists in producing a body of  
 the general form of the hat, condensing a  
 quantity of fur, bringing the condensed fur  
 into contact with the body, and finally sub-  
 50 jecting the body and fur to pressure; where-  
 by a portion of the condensed fur will be  
 caused to adhere to the surface of the hat and  
 form a complete covering. 55

2. The process of forming hats in imitation  
 of felt which consists in producing a body of  
 the general form of the hat, applying to said  
 body a flexible backing having a layer of fur  
 60 thereon with the fur next the body, and finally  
 stripping the backing to expose the fur.

3. The process of forming hats in imitation  
 of felt which consists in producing a body of  
 the general form of the hat, applying to said  
 body an adhesive composition, applying to a  
 flexible backing a layer of fur, applying this  
 backing and fur to the body with the fur next  
 the adhesive composition, subjecting the same  
 to pressure to cause the fur to adhere and  
 70 finally stripping the backing to expose the  
 fur.

4. The process of forming hats in imitation  
 of felt, which consists in producing from a  
 mixture of pulp and a resinous material in  
 granular or pulverulent form, a body of the  
 general form of the hat; applying to said body a  
 covering of varnish or adhesive composition;  
 applying to a flexible backing a layer of fur;  
 applying this backing and fur to the body  
 80 with the fur next the adhesive composition;  
 subjecting the same to heat and pressure to  
 melt the resinous material, soften the varnish  
 and cause the fur to adhere; permitting the  
 varnish to set; and finally stripping the flexi-  
 85 ble covering to expose the fur.

In testimony whereof I hereunto set my  
 hand, this 22d day of December, 1897, in the  
 presence of two attesting witnesses.

JOHN HENRY NEAVE.

Witnesses:

JOHN R. KEECH,  
 LEONARD D. CHRISTIE.