

UNITED STATES PATENT OFFICE.

JOS. McCRAKEN, OF BROOKLYN, NEW YORK.

IMPROVED PROCESS OF STIFFENING HAT-BODIES.

Specification forming part of Letters Patent No. 15,664, dated September 2, 1856.

To all whom it may concern:

Be it known that I, JOSEPH McCRAKEN, of Brooklyn, Kings county, State of New York, have invented a certain new and useful Process for Stiffening Hat-Bodies; and I do hereby declare the following to be a full description of the same.

The object of my invention is to obviate the evil among hatters in getting the requisite amount of stiffening in the hat-body at the "tip" or "crown" and "brim," so as not to appear through the felt upon the outside surface.

The usual practice among hatters for stiffening hat-bodies is to take the hat-body as it comes from the sizing-kettle and thoroughly rinse it in clean water to free it from the acid used in the sizing-kettle. Then with a solution of shellac in pearlash-water and by means of a brush cover the entire inner surface of the hat-body, after which it is placed over a steamer to drive the stiffener in the body when the operation is finished. The objection to this process is that where the felt happens to be thin in spots, which is as many as seven is to ten, or generally quite thin, the stiffener strikes through and shows itself upon the external surface, and to a certain extent rendering the body worthless, or at least requiring more time and expense to get rid of the stiffener than the body is worth. To get over this difficulty has been the efforts of the manufacturer of hats for years.

The nature of my improved process for stiffening hat-bodies is to obviate this difficulty, and to make the application of the stiffener more certain and uniform by means of chemical agency acting as a controller to regulate the quantity and depth to which the stiffener can be applied, and consequently prevent it from penetrating or striking through upon the external surface of the hat-body to spoil it; but to describe my process more in detail I will give the following description of its application and use.

When the hat-body has been sized or shrunk it is rinsed in clear water, so as to free it entirely of any acid. It is then dried. When quite dry the outside of it is wet with water acidified in the proportion of about eight ounces to six gallons water, so as to penetrate the felt about half its thickness. This is best done by taking hold of the brim crown side

down, at opposite points, with the two hands and slowly immersing it till it touches the edges of the brim without overrunning into the hat-body. As the wool is dry it does not take up the water rapidly. Consequently the operator, by the length of time of immersion, may cause the acidified solution to penetrate the body to any depth required. After having acidified the external surface of the body I then apply the stiffeners, made as follows: That for the tip or crown I make by taking eighteen pounds of gum-shellac and dissolve it with about one and one-half pound of pearlash in as little water as practicable, so as to leave it about the consistence of molasses. That for the brim I take some of the pearlash stiffener and dissolve in it some sal-soda in the proportion of about eight ounces of sal-soda to about one gallon of the pearlash stiffener. When these preparations of the stiffeners are ready with a stiff brush I apply the pearlash stiffener to the inside of the tip or crown, rubbing it on freely. I next take the sal-soda and pearlash composition stiffener and in like manner apply it to the inside of the brim, after which the body is placed over a steamer for about thirty seconds to drive the stiffener in the felt to complete the operation. The object of this one of the pearlash stiffeners is to leave the tip or crown less stiff—that is, the greatest amount of stiffening in the hat-body is required in the brim. Consequently no hatter, if avoidable, will apply as much stiffening to the tip or crown as he does to the brim; but as this is difficult of controlling it will be perceived that the difference of alkaline strength between the pearlash stiffener and the compound stiffener of sal-soda and pearlash for the brim will regulate that upon the principle of chemical action—that is, of greater or lesser degree of chemical decomposition taking place on the contact of alkaline stiffener with the acidified surface of the hat-body. As the sal-soda and pearlash stiffener used for the brim has the greatest strength, of course it will penetrate the felt to a greater depth than the weaker alkaline or pearlash stiffener, yet both so gradual and graduated as to depth as to leave the crown and brim equally and sufficiently stiffened without penetrating through the felt to show itself, and thereby spoil or damage the quality of the

hat—that is, in sandpapering the external surface of the hat down to take off its furry or woolly roughness in the lathe the gum-shellac is exposed through the thin spots, and consequently render the hat worthless and unsalable. By my process of acidulating the bodies before applying the stiffener to wool hats, this evil is prevented.

It will be observed that my invention relates especially to wool hats, as none other are subjected to the sandpapering-finishing operation; and it is because of this sandpapering-finishing operation that it makes it absolutely necessary that some controlling-point should always be used to prevent the stiffener from striking through and showing on the outside of the body and not left to the mere judgment of the operative to graduate the quantity to the tip or crown and brim, and the varying thickness or evenness of the felt.

Having now described my improved process for stiffening wool hat-bodies, I will proceed to state what I claim and desire to secure by Letters Patent of the United States, what I claim is—

The process of stiffening wool hat-bodies by acidulating the hat-bodies before applying the stiffening as a means of graduating and controlling the quantity and depth to which the stiffener can penetrate the body of the felt, in combination with a pearlash solution of shellac for stiffening the tip or crown and a pearlash and sal-soda combined solution of shellac for stiffening the brim, substantially as described, and for the purposes hereinbefore set forth.

JOSEPH McCRAKEN.

Witnesses:

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