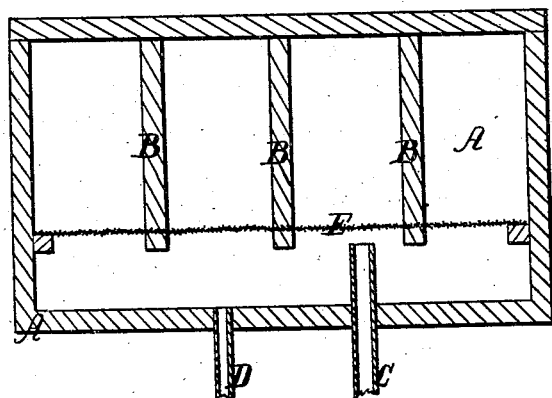


*A.C. Brush.*  
*Forming Bats.*  
*N<sup>o</sup> 52,133. Patented Jan 23, 1866.*



*Witnesses;*

*Wm E Lyon*

*Geo B. Houghton*

*Inventor;*

*Alfred C Brush*

*Munn & Co*

*Attorneys*

# UNITED STATES PATENT OFFICE.

ALFRED C. BRUSH, OF DARIEN, CONNECTICUT.

## IMPROVED PROCESS FOR TREATING FUR.

Specification forming part of Letters Patent No. 52,133, dated January 23, 1866.

*To all whom it may concern:*

Be it known that I, ALFRED C. BRUSH, of Darien, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Treating Fur, Wool, and Hair; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

The drawing, consisting of only one figure, represents a steam-box by means of which I propose to illustrate the principle of my discovery and invention.

The fine hair of certain animals, known by theseveral names of "fur," "wool," and "hair," contains in its natural state more or less oil or grease and yolk, which it is necessary to remove in order to bring it to a proper condition for felting, as, in making hat-bodies or other articles produced by felting, and for other processes of manufacture. Such oil or grease and yolk have sometimes been removed to a greater or less extent by immersing and washing the stock in a bath containing alum and salt, or by using a solution of soda, or by using common soap. Other alkalies have also been used, and it is also common to attempt to cure or purify fur by means of quicksilver, and also by means of sulphuric acid. Some of these methods involve considerable expense on account of the cost of the materials and some of them injure the felting properties of the fur, wool, and hair by destroying their fine filaments and serrations, which in felting engage each other, and which, therefore, it is desirable to preserve uninjured.

The treatment which fur that is intended for felting purposes now commonly undergoes is known by the general name of "carrotting," which name is understood by many to comprehend any of the processes at present known or used for removing grease from the fur and for preparing it for the felting process. As already stated these processes, whether acids or alkalies or quicksilver are used, are found to injure the felting properties of the fur. In addition to this injurious action on the fur, it is found that the workmen who are afterward employed in finishing

hats, where hot irons are used, are often injured in health by the vapors which are generated by the heat employed in the work, so that it is commonly assented that the business of finishing hats is an unhealthy employment. Both these results are avoided and done away with by my discovery and invention.

My discovery and invention, consists in a new method of treatment of fur, wool, and hair, whereby the natural oil, grease, or yolk is removed without destroying the felting properties. I subject them to the action of steam in a closed vessel for a period of thirty minutes, more or less. The pressure of steam necessary for this purpose varies with different kinds and conditions of stock. For many varieties of fur a pressure of sixty pounds, or even less, will suffice, while for some kinds of fur, while new and in a very oily condition, a pressure of from one hundred to one hundred and fifty pounds will be required, and for very oily wool a pressure of two hundred and fifty pounds (more or less) will be necessary. The pressure may be carried to four hundred, five hundred, or any practicable height without injury to the materials, so long as the steam remains moist and superheating is avoided. Superheated or dry steam at any pressure, however low, will injure, if not destroy the fiber.

Any suitable receptacle or vessel may be used for carrying out my invention, which is strong enough to resist the pressure of the steam. The vessel may be of any suitable material. The letter A designates such a receptacle or vessel. It may be divided by partitions B, if desired, and it may have in its bottom one or more openings, C, to receive steam in the several divisions, and one or more smaller openings, D, to let the natural oil or grease, which in the case of wool is sometimes called the "yolk," and impurities and foreign matters escape along with the water of condensation. It is provided with a perforated or reticulated false bottom, E, to support the fur, wool, or hair, and at the same time allow the water of condensation and the oil or grease and other matter to run off.

The openings to admit steam may, if preferred, be made in the sides instead of in the bottom.

By means of my invention I am enabled to

prepare fur, hair, and wool for hatters and other uses in a clean and sweet condition without discoloring them and without destroying or impairing their natural felting properties, and in the best possible condition for dyeing.

The absence of the deleterious agents commonly used to remove oily and saponaceous matter from fur, wool, and hair adapts these materials to receive and preserve colors with much better effect when prepared under my process than under those heretofore employed.

The process is also very valuable for the purpose of disintegrating burrs and other

foreign matter, so that they may be removed from the wool with much less loss of fiber or injury thereto.

I claim as new and desire to secure by Letters Patent—

The process, substantially as above described, for treating fur, wool, and hair, and preparing them for felting or other purposes.

A. C. BRUSH.

Witnesses:

ALEXR. A. C. KLAUCKE,  
JAS. L. EWIN.