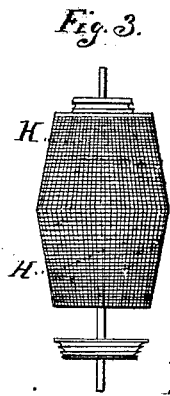
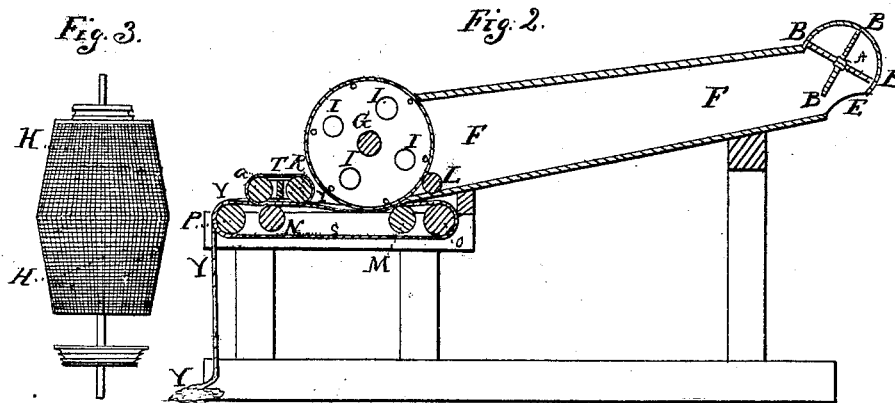
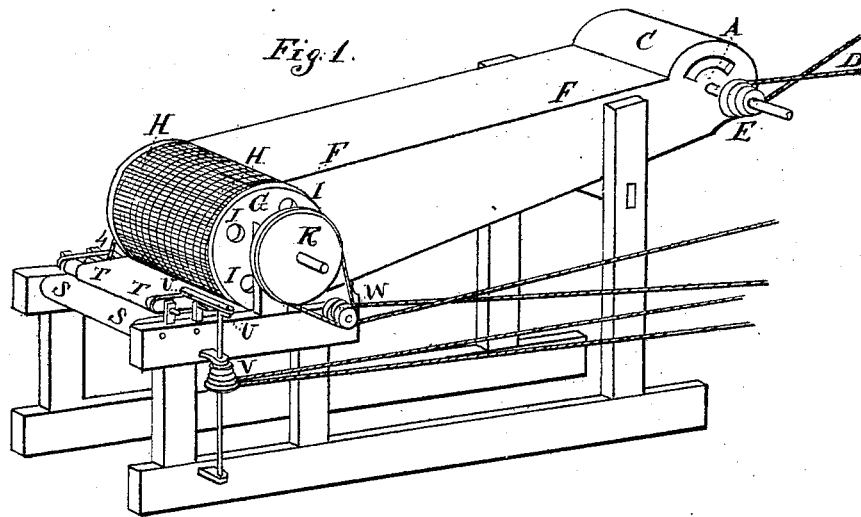


H. S. Miller.

Forming Bats.

N^o 1094

Patented Mar. 5, 1839.



UNITED STATES PATENT OFFICE.

HEZEKIAH S. MILLER, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR MAKING FELT IN THE MANUFACTURE OF FUR HATS.

Specification forming part of Letters Patent No. 1,094; dated March 5, 1839; Reissued April 24, 1849, No. 134.

To all whom it may concern:

Be it known that I, HEZEKIAH S. MILLER, of the city and county of Philadelphia, in the State of Pennsylvania, have invented
5 a new and useful Improvement in the Manufacture of Hat-Bodies from Fur; and I declare the following to be a full and exact description and specification thereof.

The nature of my invention consists in a
10 method by which fur, after being carded, picked, or blown, is converted into a continuous web, lap, or sheet for the purpose of being wound into hat bodies so as to attain advantageously, with fur, the same end
15 which has been heretofore attained in relation to wool. This is done by the following process, viz: A revolving fan or blower, having four or more floats or wings, and of length to correspond with a carding machine picker or blowing machine, receives
20 the fur from the doffer of a carding machine, or from a picker, or from a blowing machine such as is known among hatters and used for cleansing the hair from fur, and blows it through a passage, oblong box,
25 or spout, until it reaches a cylinder of which the surface is composed of seive work, wire gauze, millinet, or other similar open substance, so as to admit through it the air received with the fur from the revolving fan aforesaid. This gauze cylinder is in
30 constant motion so that the fur received from the fan through the said passage is made to pass through between the said gauze cylinder and a friction roller and is compressed between them into a web film or sheet of fur. The web or lap so formed,
35 then follows a small distance on the surface of the said gauze cylinder, until it reaches a revolving apron or endless sheet of leather or other suitable material, when it is again compressed between said apron and the gauze cylinder, the pressure being assisted by a second roller placed within the said
40 apron or endless sheet. The web or sheet of fur then continues to advance upon the surface of the said apron until it reaches another similar apron, placed over the first mentioned, and is there between the two
50 aprons, compressed a third time, the compression being assisted by rollers placed within each apron. The web or sheet of fur is now perfected so that it may be wound into hat bodies upon a roller of the cus-

tomary or proper form, in the same manner, 55 well known to hatters which has heretofore been practiced for winding a web or sheet of wool, for the same purpose.

In the annexed drawing Figure 1 represents a perspective view, and Fig. 2 a vertical 60 section of the apparatus which I employ in the process above described; while Fig. 3 represents a suggested variation in the form of the before mentioned gauze cylinder.

A, Fig. 1, and A, Fig. 2, represents the 65 revolving fan or blower which first receives the fur from the doffer of the carding machine, &c.

B B B B, Fig. 2, are the four floats or wings of the fan A. C, Fig. 1, is the cover 70 to the said fan, which cover may be of wood or other material, and the floats of the fans may be of wood, metal or other suitable substance.

D, Fig. 1, is the band by which the fan 75 (A) is driven.

E, Fig. 1, and E, Fig. 2, is the place where the doffer of the carding machine fits underneath the fan of the lapping or web-forming machine, (which latter is my invention). 80

F, F, Fig. 1, and F, F, Fig. 2, is the oblong box, passage, or spout, through which the fur is driven by the fan (A). It may be made of wood or other material; in breadth, 85 proportioned to the carding machine (or picker, &c.); in thickness or vertical diameter about ten inches at the upper and twelve inches at the lower end; and in length about six feet; or of such other size and proportions as may be found expedient. 90

G, Fig. 1, and G, Fig. 2, is the cylinder of wire gauze, (&c.) which constitutes an important portion in my improvement.

H, H, Fig. 1, and H H, Fig. 3, is the seive work, wire gauze, or other open work of 95 which the surface of the cylinder G is composed. The form of the cylinder in Fig. 1 is straight, or of uniform diameter, while that in Fig. 3 is swelled in the middle approaching that of a double cone. The form 100 represented in Fig. 3 may be used, if desired, for the purpose of increasing the thickness of the central part of the web or lap of fur, so as to give more substance or thickness to the rims of the hats, two hat bodies being 105 made from one web, as is customary.

I, I, I, Fig. 1, and I, I, I, I, Fig. 2, are bores or holes through the ends of the gauze

cylinder, made for facilitating the escape of the air which is received into the cylinder from the fan A.

K, Fig. 1, is the pulley by which the gauze cylinder (G) is driven, the band being also seen in the drawing.

L, Fig. 2, is the roller by which the fur is first compressed into a web between it and the gauze cylinder G.

M, Fig. 2, is the roller which next aids in compressing the web, between the gauze cylinder and principal apron; and N, Fig. 2, is the third compressing roller, which aids to compress the web between the principal and lesser apron, or revolving sheets.

O and P, Fig. 2, are the two rollers on which the principal apron revolves; and Q and R, Fig. 2, are the two rollers over which the smaller or secondary apron revolves.

S, Fig. 1, is the principal apron, and T T, Fig. 1, is the secondary or upper apron; the edges of these aprons are also seen, in section, at S and T Fig. 2. The secondary apron T T has a frame for its rollers Q, R, so constructed that the frame the rollers and the apron together are capable of a reciprocating lateral or side motion. This lateral reciprocating motion is communicated through the rod U U, Fig. 1, which rod is moved back and forth by a crank or eccentric connecting its outer end with the upper end of the shaft which is moved by the pulley V, Fig. 1, as seen in the drawing. The contemplated advantage of this reciprocating lateral motion of the upper apron is the

more fully to press and mat together the web or lap of fur.

W, Fig. 1, is the pulley which drives the roller O, Fig. 2, and puts the principal apron in motion; and X, Fig. 1, is the band, coming from the pulley on the farther end of the cylinder G, and putting in motion the roller (R Fig. 2,) so as to make the upper apron revolve.

Y Y Y Y, Fig. 2, is the lap or sheet of fur the edge of which is seen in section proceeding from the gauze cylinder along the surface of the principal apron and descending to the floor. The manner of winding this sheet into hat bodies on a double cone or cylinder is the same which is used for making wool hats. It is not exhibited in the drawing, because it is well known to those in the trade, and constitutes no part of my improvement.

What I claim as my invention and desire to secure by Letters Patent is:

1. The combination of the fan, oblong box or spout and cylinder for the purpose and in the manner herein described.

2. The combination of the two aprons operating for the purpose and in the manner herein described; and also these in combination with the combined fan spout and cylinder as herein described.

HEZEKIAH S. MILLER.

Witnesses:

THOMAS EARLE,
W. T. BRYANT.