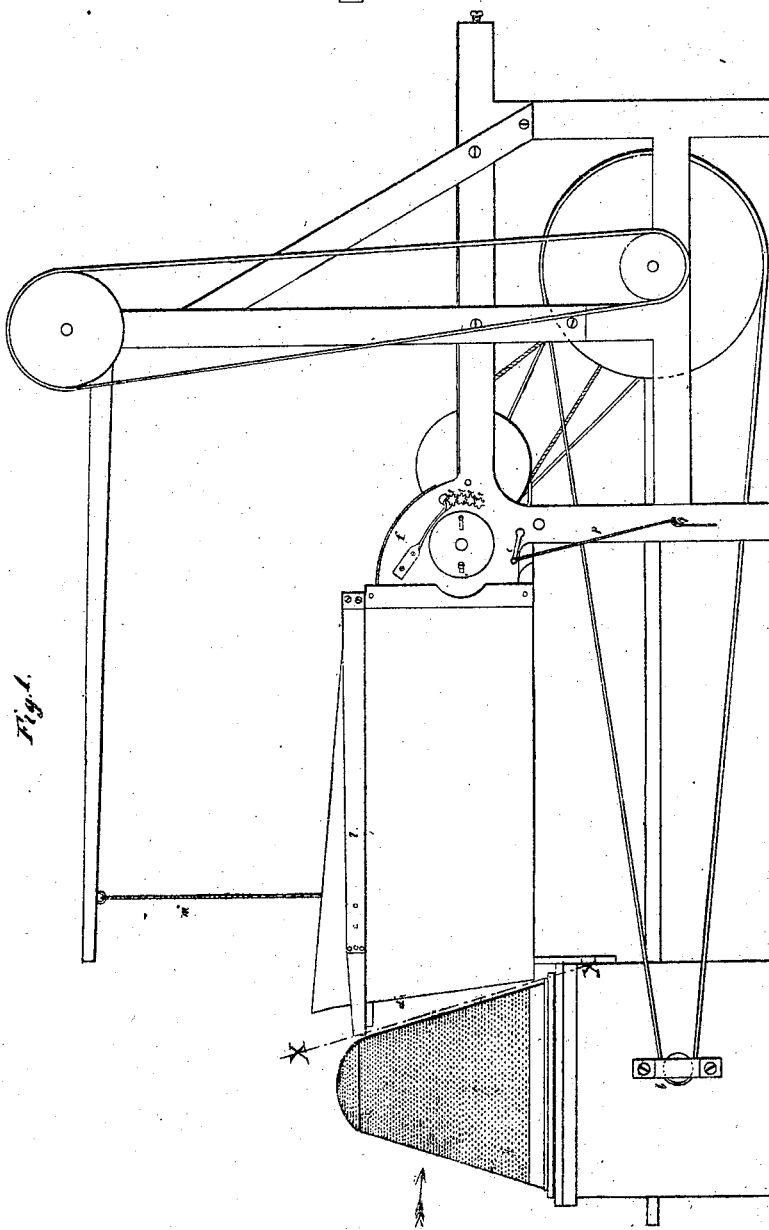
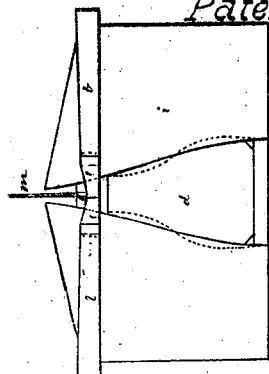


Taylor & Burr.
Forming Bats.

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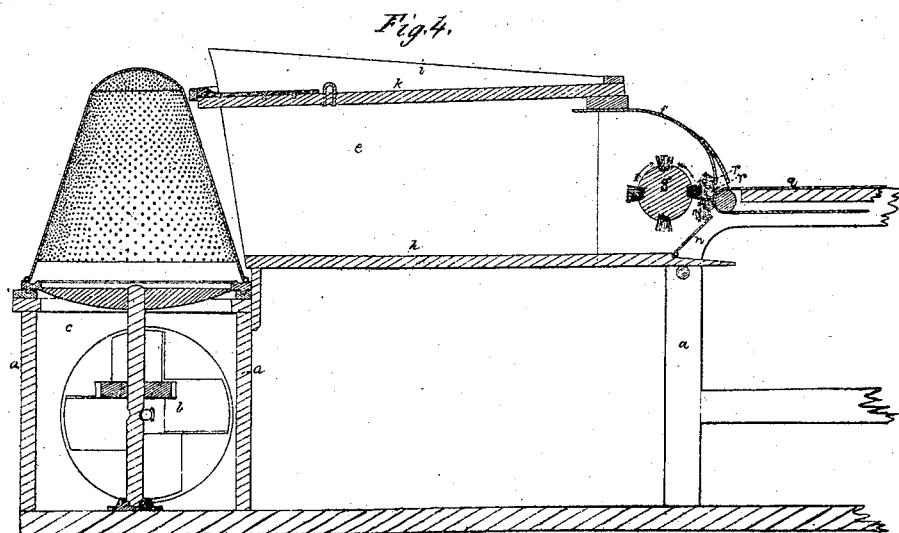
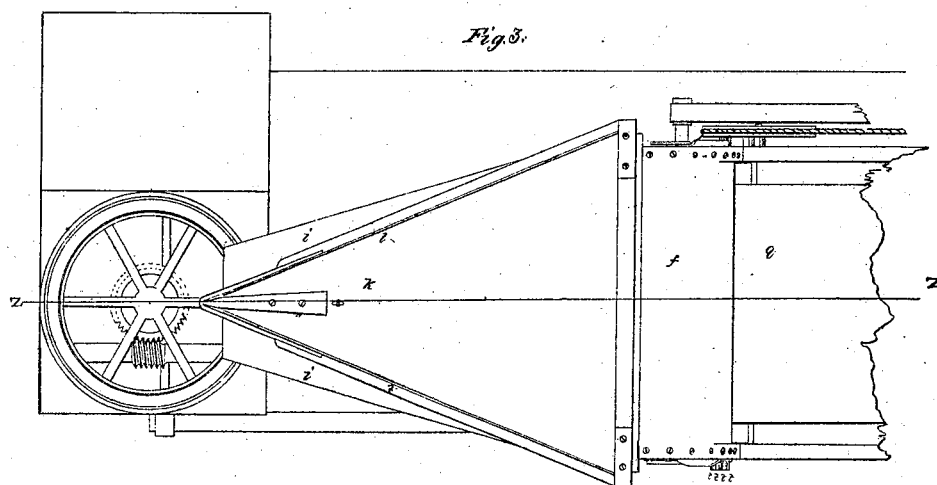
Patented Feb. 9, 1847.



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UNITED STATES PATENT OFFICE.

ALVA B. TAYLOR AND H. A. BURR, OF NEW YORK, N. Y.

MACHINERY FOR MAKING HAT-BODIES.

Specification of Letters Patent No. 4,962, dated February 9, 1847.-

To all whom it may concern:

Be it known that we, ALVA B. TAYLOR and H. A. BURR, of the city, county, and State of New York, have invented certain new and useful Improvements in Machines for Making or Setting up Hat-Bodies, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a longitudinal vertical elevation; Fig. 2, a cross vertical section taken at the line (X X) of Fig. 1 looking in the direction of the arrow; Fig. 3, a plan of the machine with the perforated former removed, and Fig. 4 a longitudinal vertical section taken at the line (Z, Z) of Fig. 3.

The same letters indicate like parts in all the figures.

Our invention is for improvements on the method of forming hat bodies by throwing the fur or other fibers onto an exhausted perforated cone placed in front of a trunk or tunnel which receives the fur from the rotating brush or picker and guides the delivery of it onto the perforated cone.

Our first improvement consists in making the sides of this trunk of thin sheet metal or other substance which can be readily and easily bent to the desired form, so that the aperture or mouth of the trunk which directs the deposit of the fur, etc., onto the perforated cone or former, can be changed at pleasure to increase or decrease the deposit of fur on any part of the former as it may be desired to increase or reduce the thickness of any part of the hat. This object which is of great importance in the manufacture of hats has been attempted by providing the mouth of the trunk with a jointed hood which can be depressed or elevated; but it is found in practice that this does not regulate this distribution so effectually as our improved method, for any desired curve can be given to the sides to give a gradual enlargement or contraction to any part.

Our second improvement consists in making the top of the trunk so that the end toward the former can be depressed or elevated at pleasure, the back end being the axis of this motion by means of which the

mouth of the trunk can be adapted to any size of former and yet have the top of the trunk present an unbroken plane to avoid catching and retaining the fibers or the forming of eddies in the current of air that passes through the trunk tending to interrupt the direct passage of the fibers from the brush to the former. The top being so formed as to embrace the pliable sides that the upper part of the trunk may always be of the same size irrespective of the position of the top.

Our third improvement consists in providing the aperture at the back of the trunk and below the feed rollers and brush with a valve, or shutter for the purpose of closing this aperture to prevent the passage of a strong current of air through the trunk at the commencement of each operation, and until the perforated former is covered with a film of fibers, by means of which the forming of welts or air bubbles in the bat is effectually prevented. At the commencement of the operation and before the perforations in the former are partly closed by the deposit of fibers, it will be obvious that the exhausting fan in the former will produce a much stronger current of air through the trunk than when the perforations are partly closed, and that therefore the fibers will be thrown onto the former at the commencement of the operation; this it is found by experience produces counter currents which throw up the first film of fibers from the surface of the former, and thus forms welts or protuberances which are very injurious to the bat. But by closing the aperture at the back of the trunk the fibers are at first deposited by a gentle current and pressure, and after a film completely surrounds the former the opening of the valve or shutter admits the current that the fibers may be thrown on with more force to complete the bat. And our fourth improvement consists in the employment of one, two, or more rollers, covered with cloth or like substance, below the feed rollers, the rotation of which in connection with the brush has the effect to brush, comb, or otherwise straighten the fibers before they are thrown by the brush and carried to the former.

In the accompanying drawings (a) represents a frame of the usual or any desired construction, and (b) an exhausting fan with a chamber (c) over which is placed

the perforated former of any desired form, and in front of the aperture (*d*) of the trunk (*e*) which runs back to and is connected with the case (*f*) that surrounds the upper part of the rotating brush (*g*). The bottom (*h*) of this trunk is flat, and gradually narrowed from the brush to the mouth, and to the edges of this are properly secured the sides (*i, i*) of the trunk which are made of sheet copper sufficiently thin to admit of bending with facility so that the mouth (*d*) of the trunk can receive any desired shape, and can at any time be changed to regulate the deposit of the fibers onto the former, for if the sides be bent so as to give the form represented by dotted lines in Fig. 2 it will be obvious that the lower part of the bat will receive a greater quantity of fibers in proportion to the middle than if formed as represented by the full lines, so that by this means the attendant can alter the shape of the mouth to increase or decrease to any extent desired the deposit of the fibers onto any part of the former, and thus increase or decrease the strength of any desired part of a hat. The curve given to the sides at the mouth should be gradually run along the sides until the curves are lost to prevent any sudden curve along the sides. The top (*k*) of this trunk is, like the bottom, flat, and fits within the sides, the back end rests on the top of the case (*f*) of the fan, and the forward end which is wedge-formed extends a little beyond the sides, and to the end thus projecting are attached bars (*l, l*) which pass along on the outside of the sides (*i, i*), and are connected again with the top at the back end, so that the sides being thus embraced between the top and these bars, when the forward end of the top is depressed or elevated the flexible or pliable sides follow so that the upper part of the mouth of the trunk will always present the same size. The top is held at any desired elevation by means of a cord (*m*) attached to any part of the frame, or it may be held in any other desired manner. By means of this the height, size, and form of the mouth can readily be adapted to any size or form of former, or to the deposit of the fibers on any part thereof.

The back part of the trunk, between the bottom and the lowest of the rollers back of the brush is open for the admission of a current of air toward the exhausted power induced by the exhaustion and the rotation of the brush. This aperture is provided with a valve or shutter (*n*) by which it can be closed or opened at pleasure to shut off in whole or in part the current of air. The axle of this valve is provided with an arm (*o*) and cord (*p*) by which the attendant can hold it in any desired position, and thus

regulate the force with which the fibers will be carried to the former.

The fibers are fed to the brush from an apron (*q*) by means of two feed rollers (*r, r*) covered with cloth, and below these and in the curve of the brush are two other similar rollers (*s, s*) also covered with cloth against which the fibers are brushed by the rotation of the brush, the surface of these rollers forming a curved bed against which the brush acts, while at the same time they continue to hold the fibers for the brush to act on them after they have been liberated by the feed rollers. One of the feed rollers receives motion by a belt in the usual manner and carries the others by means of toothed pinions (*t, t, t, t*) on the end of each that mesh into one another.

It is not deemed necessary to describe the manner of carrying the brush, the former, and the exhausting fan, as there is nothing essentially new in these. It will be obvious from the foregoing that other substances may be substituted for copper in making the sides of the trunk, and that any substance which will bend with facility and retain the form given to it will answer the purpose, but from the experiments that have been made copper has been found to answer the best purpose.

What we claim as our invention and desire to secure by Letters Patent is—

1. Making the sides of the trunk of thin sheet metal or other substance which will bend with facility and retain the form given in combination with the movable top for the purpose of adapting the form of the mouth or delivery aperture of the trunk to any size or form of former, and to the regulation of the deposit of the fibers on the former to determine the thickness of the bat, substantially as herein described.

2. We claim so connecting the top of the trunk with the sides thereof that it can be elevated or depressed at pleasure to increase or decrease the height of the mouth or delivery aperture of the trunk and adapt it to any size of former that may be used, substantially as herein described.

3. We claim the valve or shutter in combination with the trunk, substantially as described, for the purpose of regulating or stopping the current of air through the trunk, as described.

4. We claim the addition of the roller or rollers, covered with cloth or other analogous substance producing like results, in combination with the feed rollers and rotating brush, substantially as described.

A. B. TAYLOR.
H. A. BURR.

Witnesses:

A. M. GUSTIN,
C. W. M. KELLER.