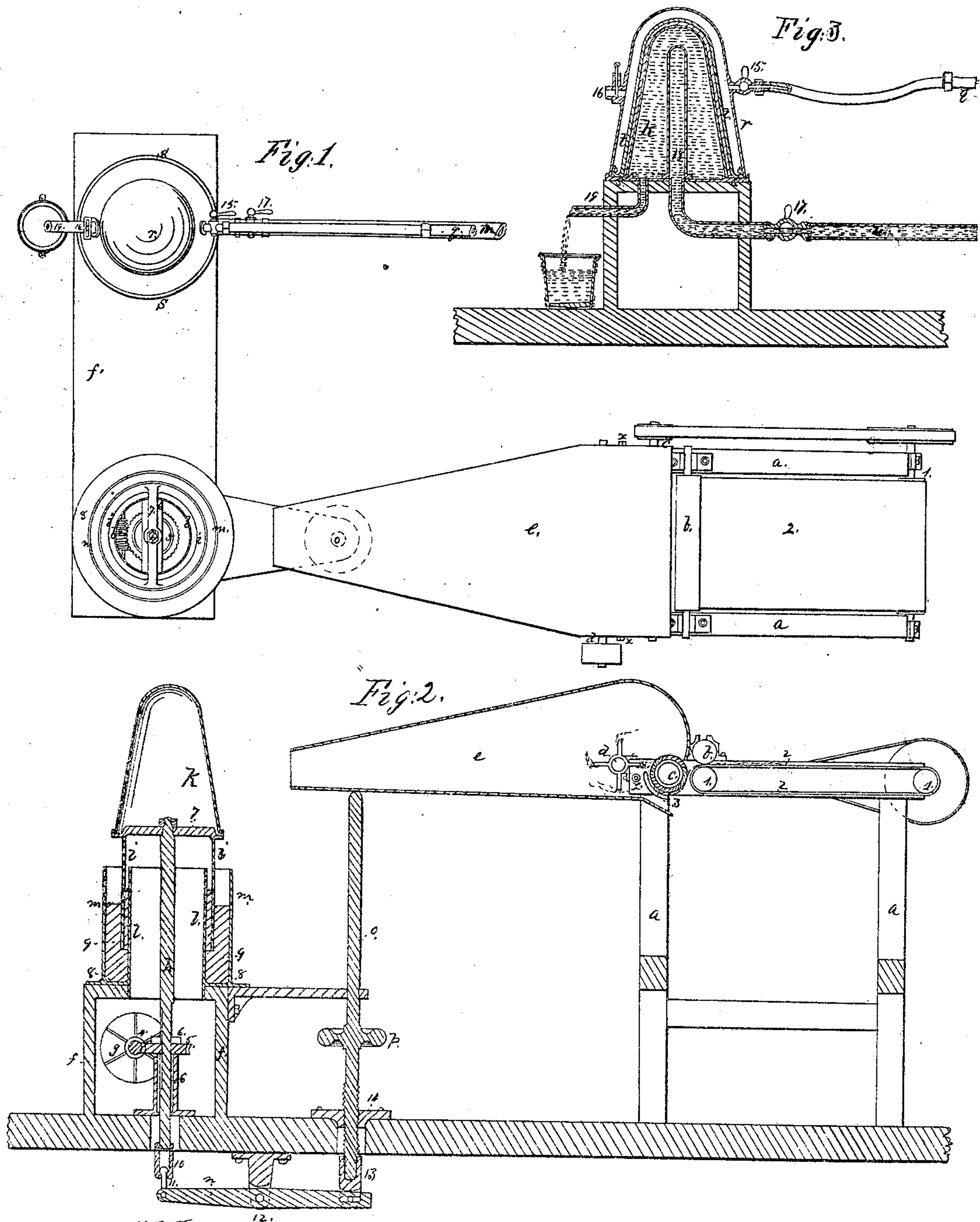


T. Walber.
Forming Bats.
N^o 9205
Patented Aug. 17, 1852.



Witnesses

Samuel W. Gerrill
Charles Tencellent

Inventor
Thos Walber

UNITED STATES PATENT OFFICE.

THOMAS WALBER, OF NEW YORK, N. Y.

MACHINE FOR FORMING HAT-BODIES.

Specification of Letters Patent No. 9,205, dated August 17, 1852.

To all whom it may concern:

Be it known that I, THOMAS WALBER, of the city, county, and State of New York, machinist, have invented, made, and applied
5 to use certain new and useful Improvements in Machinery for Forming the Bodies of Hats, whereby the fur or wool is laid evenly onto the cone as desired and when the hat is formed it is consolidated by pressure operating to force a sleeve or bag of
10 india rubber onto the hat while it is wetted by jets of hot water inside the cone; and I hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference
15 being had to the annexed drawing, making part of this specification, wherein—

Figure 1, is a plan of the machine complete; Fig. 2, is a sectional elevation of the
20 picker and former and Fig. 3, is a sectional elevation of the consolidating apparatus.

The like marks of reference denote the same parts in all the figures.

a, is a frame carrying by the rollers 1, the
25 apron 2, on which the fur or wool to form the hat body is to be laid.

b, is a roller to feed the material into the machine.

c, is a card cylinder revolving so as to
30 take the fur from the apron.

3, is a guard inclosing a part of the cylinder *c*, over the edge of which the wire fan brush *d*, pulls the fiber and throws them off
35 into a trunk *e*, which is of any proper size and shape and directs the fibers to the former.

This part of the machine so far as described is no more than the ordinary cotton or wool picking or carding machine, and is
40 no point of my invention, and any other machine which will separate the fibers properly and throw them off toward the former may be used. The trunk *e*, is attached to the frame *a*, at *c*, by a hinge or similar
45 means so that the mouth of the trunk can be raised or lowered, while the end at the blower remains stationary; the raising and lowering being effected as hereafter described.

f, is a case inclosing the ordinary rotary fan, or other blower, whereby the air is exhausted from the former or cone; 4, is a
50 screw worm on the end of the shaft of the blower *g*, taking into a horizontal worm wheel 5, which receives through it a vertical shaft *h*, that has a long key seat to take a

key in the wheel 5, by which the shaft *h*, is allowed to be raised or lowered but at the same time is turned by the pinion 5,—6, 6, are supports by which the pinion 5, is retained in place and the shaft *h*, supported
60 vertically. On the end of and attached to the shaft *h*, is a bridge 7, the ends of which are attached to the upper edge of the thin metal cylinder *i*, which has a flanch and groove on its upper end receiving the perforated cone or former *k*, which is to be of the desired size and shape. Within the cylinder *i*, is a cylinder *l*, connected by a flanch
65 8, at the bottom to a cylinder *m*, outside the cylinder *i*, forming a water space 9, in which the cylinder *i*, revolves; the height of these cylinders is to be such that the water will form the packing and prevent the air passing in by the suction of the blower *g*, and
70 also to allow of the cylinder *i*, being moved up and down in the water, and with it the former *k*, by the shaft *h*, as next described.

On the lower end of the shaft *h*, is a socket 10, receiving a ball joint 11, to the
80 lever *n*, this ball joint allows of the rotation of the shaft *h*, and also raises and lowers the shaft when operated on by the lever *n*, this lever *n*, is set on a fulcrum 12, and the other end has a slot taking a pin in
85 the jaws of a socket 13 into which a vertical shaft *o*, is set with a cross key taking a groove around the shaft *o*, so that the shaft and socket are attached together but the shaft is free to turn in the socket. The
90 shaft *o*, passes through guides and the upper end sets under and supports the moving end of the trunk *e*; on the shaft *o*, is a screw thread taking the nut 14, and the wheel *p*, is used to give the shaft a rotation either by
95 hand or by power moving slowly as required. It will now be seen that through the lever *n*, the cone or former *k*, is depressed while the trunk *c*, is elevated and vice versa, by the screw shaft *o*, in the nut
100 14, and that by this means, only half the extent of motion is required that would be necessary if either the cone or trunk alone were moved; the workman by this
105 means directs the fur as it comes out of the trunk *c* onto whatever part of the former he desires, so as to make it of the proper thickness at the proper place.

The hat is to be hardened as follows. *q*,
110 is a pipe from the top of a steam boiler connected by an india rubber or other flexible pipe to a cock 15, on one side of a hood *r*, of

the shape of the former k , but a little larger; within this hood is a bag or lining t , attached to the hood at the bottom end, this lining is of the size and shape to fit over the
 5 former. s , is a circular seat of a size to receive the former and also the hood r , and u , is a pipe and cock from the bottom of the boiler connecting to a vertical perforated
 10 pipe or rose 18, passing up inside the former when placed on the seat s , and 19 is an overflow or draining pipe which carries off the surplus water. The mode of using this
 15 hardener is that the workman takes the former with the hat on it, places it on the seat s , and puts the hood r , over it or he may place the hood r , over the former before it is removed from the cylinder i , and remove the two together to the seat s , he then opens the cock 15, which allows steam to enter be-
 20 tween the hood r , and lining t , which forces the lining tightly onto the hat as it is on the former, consolidating it, at the same time he turns the cock 17 which allows numerous small jets of hot water to issue from the per-
 25 forated pipe 18, which wets the hat by passing through the perforations in the former, wetting and consolidating the hat, the surplus water running off by the pipe 19, and when the hat has been sufficiently operated
 30 on the workman gives the hood r , a partial rotation which detaches the hat from the lining and lays the fibers of the hat straight. The workman then shuts the cocks 15 and 17, and opens a valve or cock 16, which al-
 35 lows the steam to escape from the hood r . The hood is then removed and the finished hat drawn off the former.

The hood r , may have a cord running over a pulley, attached to it, with a weight at the
 40 other end so that the workman raises the hood up and it is suspended at the required height; and the hood may be guided on vertical rods set around it with gromets sliding on the rods attached to a circular
 45 seat that carries the hood, so that the workman sets the former on the seat s , and then pushes the hood down onto it and when the

hat is hardened he raises the hood out of the way.

Having thus described the construction 50 and operation of the parts I wish it to be distinctly understood that the apparatus for picking and separating the fur forms no part of my invention, neither does the mov- 55 able trunk, all these parts being well known and in ordinary use in cotton pickers and gins; neither do I claim retaining the fiber on the former by exhaustion by a blower, that being public property having been shown in a patent issued to T. R. Williams 60 in England in 1833, neither do I claim the use of water to form the packing for the cylinder i , that having been used in other machinery, and hot and cold water have been used in felting cloth and hat bodies, 65 therefore this forms no part of my claim.

I do not limit myself to the screw to raise and lower the former and trunk as a rack and pinion or similar means may be used; but 70

What I desire to secure by Letters Patent is—

1. I claim the combination of the water packed cylinder i , former k , and sliding and revolving shaft h , for the purposes and as 75 described.

2. I claim giving alternate motion to the former k , and blower case f , so that one is raised while the other is lowered, in the man- 80 ner and for the purposes described.

3. I claim the hood r , with its lining by which steam or other gaseous pressure is made to force the bag or lining onto the hat or former in combination with the standing perforated pipe 18, or its equivalent by 85 which the hat is wetted through the perforations in the former as described and shown.

In witness whereof I have hereunto set my signature this sixth day of April one thousand eight hundred and fifty-two.

THOS. WALBER.

Witnesses:

LEMUEL W. SERRELL,
 CHARLES TENCELLENT.