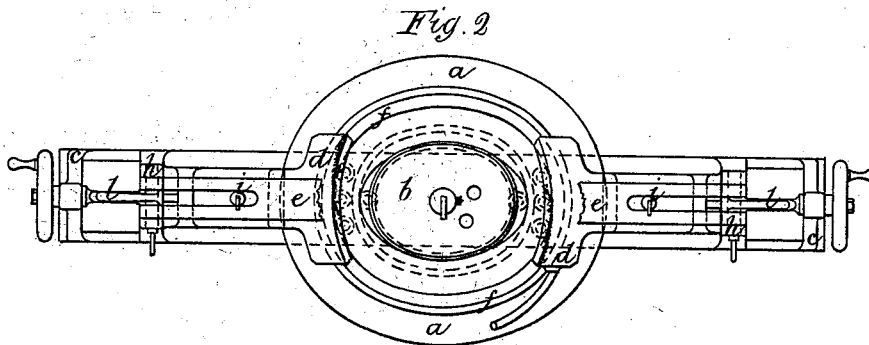
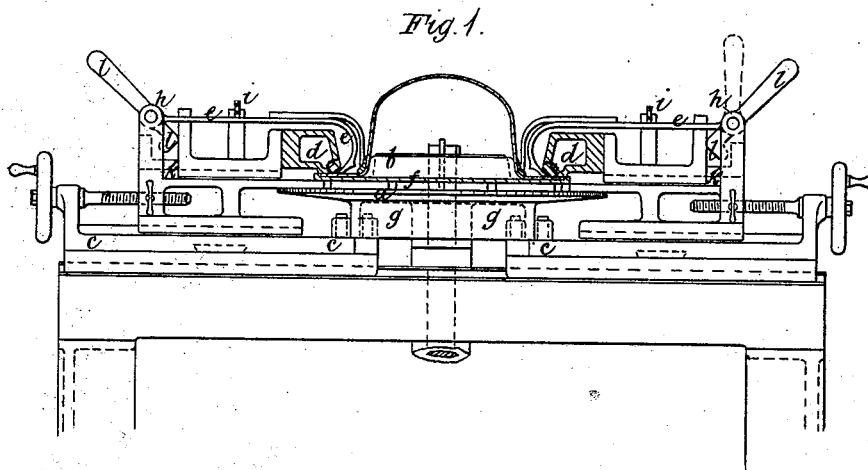


T. LEES.
Machine for Curling Hat-Brims.

No. 201,351.

Patented March 19, 1878.



Witnesses.

John Halsted
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Inventor.

Thomas Lees.
by John J. Halsted,
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UNITED STATES PATENT OFFICE.

THOMAS LEES, OF STOCKPORT, ENGLAND, ASSIGNOR TO SAMUEL RADCLIFFE CARRINGTON, WILLIAM EDWARD CARRINGTON, AND WALTER THOMAS CARRINGTON, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR CURLING HAT-BRIMS.

Specification forming part of Letters Patent No. **201,351**, dated March 19, 1878; application filed December 11, 1877; patented in England May 25, 1876.

To all whom it may concern:

Be it known that I, THOMAS LEES, of Stockport, in the county of Chester, England, have invented certain Improvements in Apparatus for Curling the Brims of Hats, (English patent dated 25th May, 1876, No. 2,199, sealed 17th November, 1876,) of which the following is a specification:

This invention is designed, principally, for curling the brims of hard felt hats; but it may also be adapted for curling the brims of silk or other kinds of hats previously to shaping the same.

Such being the nature and object of my said invention, I will now proceed to describe in detail the manner in which the same is to be or may be performed or carried into practical effect; and in order that the same may be clearly understood, I have annexed hereunto a sheet of drawings illustrative thereof, and have marked the same with figures and letters of reference, corresponding with those in the following explanation thereof.

In the annexed drawing, Figure 1 is a vertical and longitudinal section, and Fig. 2 a plan view, of my improved apparatus for curling the brims of hats.

The apparatus consists, principally, of a revolving plate, *a a*, and brow-block *b b*, (upon which the hat is fastened by means of a loose ring,) in combination with two slides, *c c*, carrying pressers or irons *d d* and breakers or blades *e e*, for curling over and pressing the edge of the brim.

The revolving plate *a a* is fitted on its upper side with an oval ring or templet, *f f*, of the size and form of the brim when finished; and beneath the plate is a corresponding oval ring or cam, *g g*, so connected to the slides *c c*, above mentioned, as to give an alternate movement to them corresponding with the oval form of the hat as it revolves. These oval rings *f* and *g* are fastened to and revolve with the plate *a a*.

The pressers or irons *d d* may be, one or both, heated by gas or otherwise; but I prefer to have one heated and the other cold, the latter acting only as a "dummy" or flattener. The front part of the presser is made somewhat in

the form of a plow, so that as the plate revolves it picks up the edge of the brim of the hat and bends or doubles it over, as seen at Fig. 1, while the following part presses it down and draws in and contracts the edge. A breaker or blade, *e e*, above the brim works inside the bend or curl and assists the operation. The breakers or blades *e e* are each attached to a hinge at *h h*, so that they can be raised up when placing and removing the hat; and the pressers or irons *d d* work on a slide at *k k*, so that they can be moved outward while the breakers are lowered into their places, and then be brought forward over the breakers, and locked in their position by means of a lever and cam, *l l*. The breakers are locked down by means of a spring-catch at *i i*. The form of the curl produced will depend upon the precise form of curler and breaker employed.

The hats, before being placed on the table, are heated and softened by means of an ordinary "baker," or otherwise, and a small quantity of water is applied to the hat-brim as it revolves during the process of curling. When the brim is sufficiently curled and the creases removed, the heated iron or presser *d d* is withdrawn, and a few turns of the plate under the cold iron or dummy will "set" and cool the curl.

Having now described the nature and object of my said invention, together with the manner in which the same is to be or may be performed or carried into practical effect, I wish it to be understood that I claim as my invention—

1. In a machine for curling the brims of hat-bodies, the combination of a plow or brim-curler, a dummy or brim-flattener, a breaker or breakers working inside the curl or bend of the brim, and a revolving table or hat-supporter, substantially as shown and described.

2. In combination, the revolving hat-supporter, the slides *c c*, the presser-irons *d d*, and the hinged breaker or breakers *e e*, substantially as shown and described.

Witnesses: THOMAS LEES.
WM. E. CARRINGTON,
ARTHUR C. HALL.