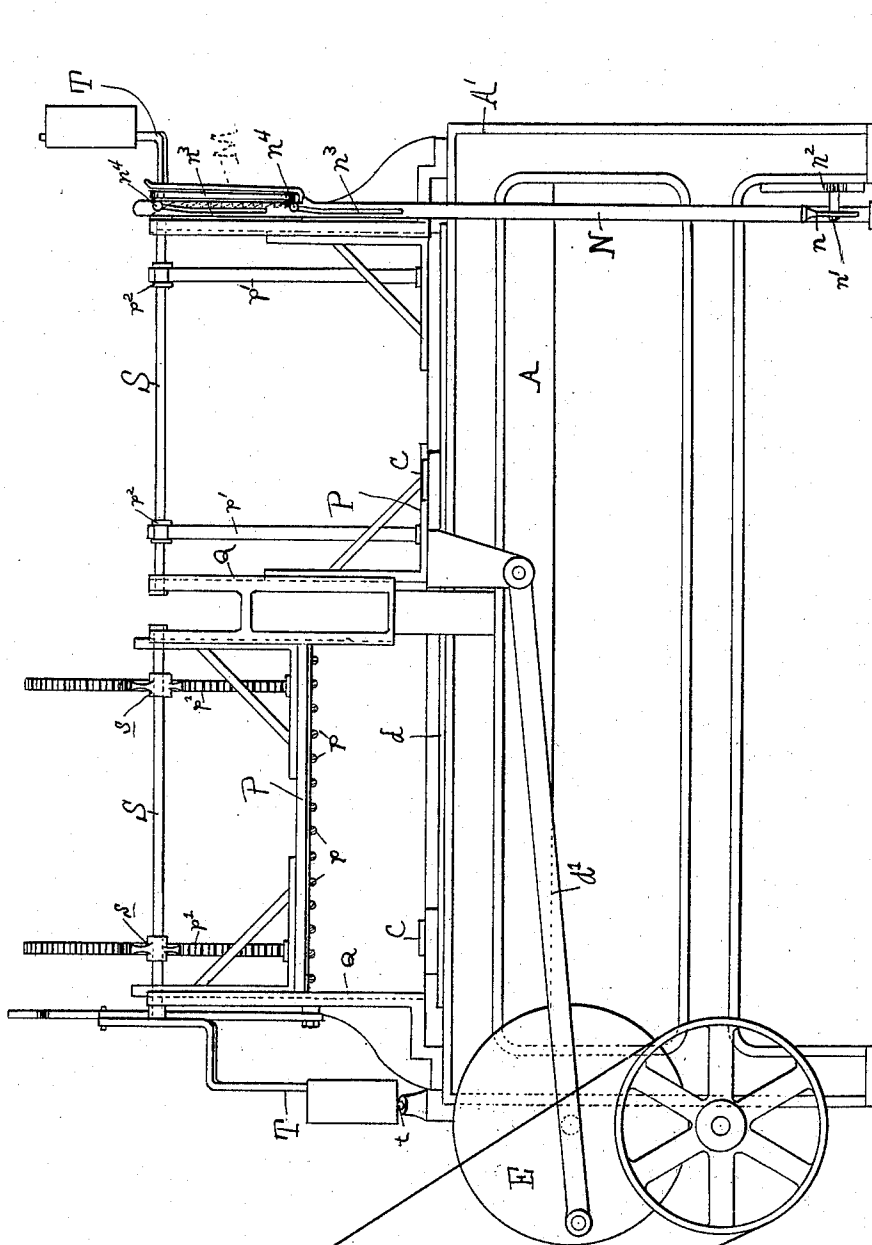


C. E. KEATOR.  
MACHINE FOR SIZING HAT BODIES.

No. 603,906.

Patented May 10, 1898.

FIG. 1.



WITNESSES:

*S. C. Connor*  
*Geo. B. Abbe.*

INVENTOR  
CHAS. E. KEATOR

BY  
*Johnson & Johnson*

ATTORNEYS.

(No Model.)

3 Sheets—Sheet 2.

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FIG. 2

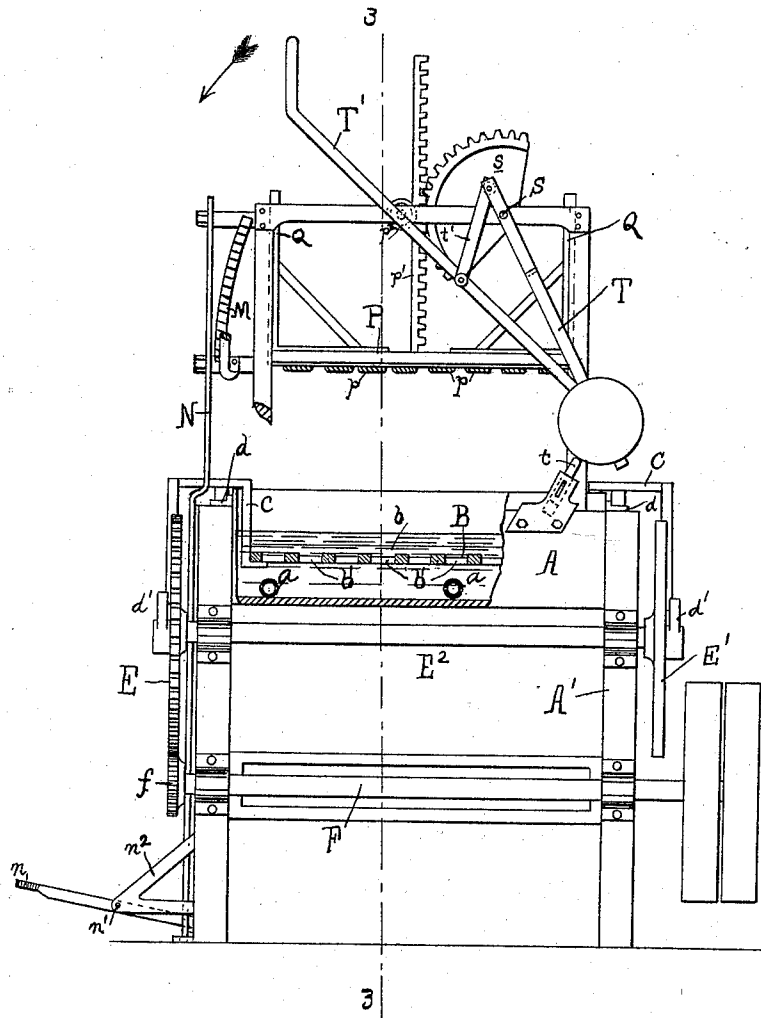
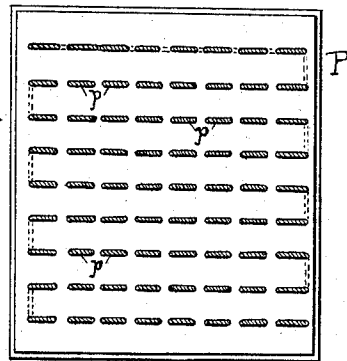


FIG. 4.



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*A. W. Wright*  
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(No Model.)

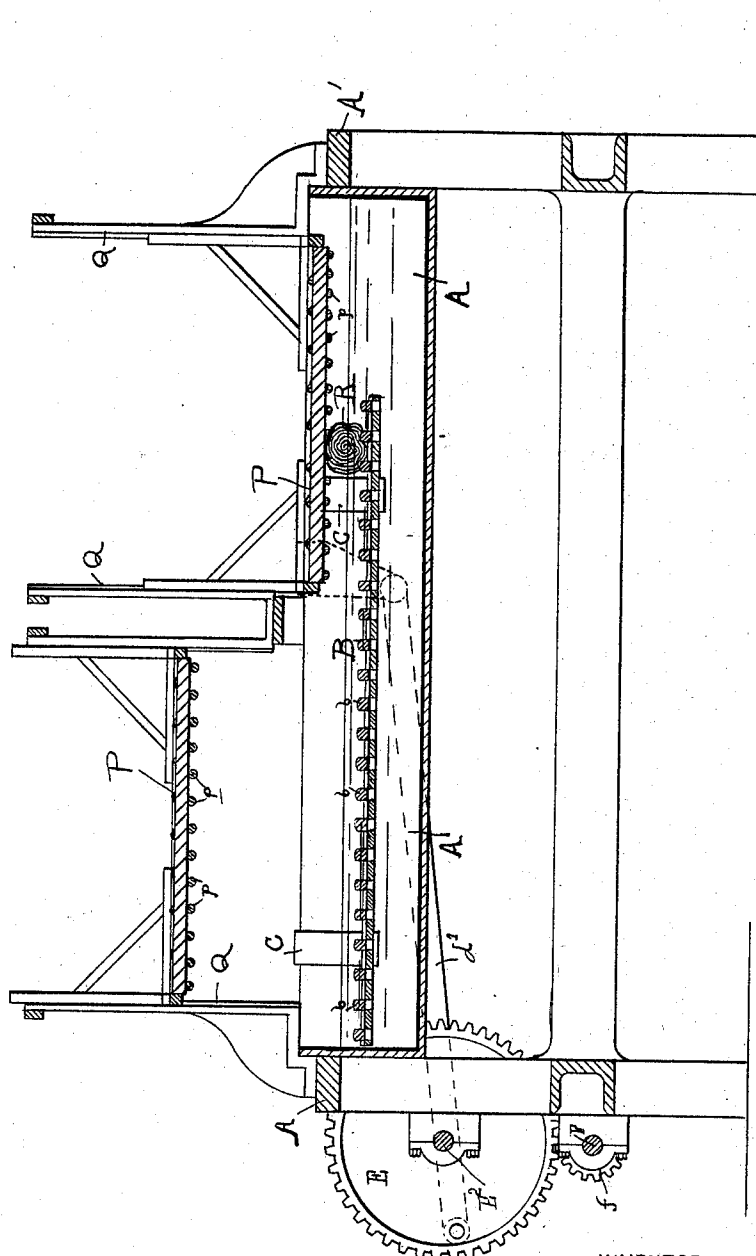
3 Sheets—Sheet 3.

C. E. KEATOR.  
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Patented May 10, 1898.

FIG. 3.



WITNESSES:

*S. C. Connor*

*Geo B. Abbe*

INVENTOR

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BY

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ATTORNEYS.

# UNITED STATES PATENT OFFICE.

CHARLES E. KEATOR, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO THE DUNLAP & COMPANY, OF SAME PLACE AND NEW YORK, N. Y.

## MACHINE FOR SIZING HAT-BODIES.

SPECIFICATION forming part of Letters Patent No. 603,906, dated May 10, 1898.

Application filed November 20, 1897. Serial No. 659,273. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. KEATOR, a citizen of the United States of America, residing in Brooklyn, Kings county, New York, have invented Improvements in Machines for Sizing Hat-Bodies, of which the following is a specification.

My invention relates to the sizing of hat-bodies—that is, the shrinking in size of such bodies by the felting process from the large loose mass of fibers produced on the forming-machine to the closely-felted cone of about one-third of its original dimensions.

The object of my invention is to construct a machine which will be convenient to manipulate and will act upon the hat-bodies in a manner closely resembling in operation and result the old hand method of sizing hats.

In the accompanying drawings, Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is an end elevation, partly in section. Fig. 3 is a longitudinal section on the line 3 3, Fig. 2; and Fig. 4 is a face view of the presser.

The main elements of my machine comprise a tank to contain hot water, a reciprocating bed in the tank, and a vertically-movable presser over the bed.

In the drawings I have shown my invention as embodied in a duplex or double machine convenient for the use of two operators, preferably standing on opposite sides of the tank; but it will be readily understood that my invention is applicable also to single machines or to machines for the use of more than two operators.

A is the hot-water tank, mounted upon a suitable frame A' A'. If this tank is of wood, it should be suitably lined. The water in the tank may be heated in any suitable way, as by means of steam-pipes *a a*, Fig. 2, perforated to let the steam escape into the water. Within this tank is a horizontally-reciprocating bed B, whose upper surface may be corrugated or have projections or be otherwise roughened in any suitable way, as by means of transverse slats *b*, Fig. 3. Openings *b'* are provided, as shown in Fig. 2, for the free passage of the water. This reciprocating bed is carried by hangers C, which are supported and guided on ways *d* on the upper edges of

the opposite sides of the tank or frame, as shown in Figs. 1 and 2. Any suitable means may be employed to impart reciprocating motion to the bed thus mounted. In the drawings I have shown for the purpose two connecting-rods *d' d'* at opposite sides of the tank, connected to crank-pins on wheels E E' on a counter-shaft E<sup>2</sup>. This counter-shaft may be driven from a main shaft F by a pinion *f*, geared to the wheel E, which is toothed for the purpose, Figs. 2 and 3.

Over the tank are mounted the pressers P P, (two in this duplex machine,) which are movable up and down in vertical fixed guides Q, mounted on the frame of the machine. The face of each presser is corrugated or roughened in any suitable way, as by projecting portions of rope *p*, threaded through openings in the presser-face. In Fig. 2 and at the left of Figs. 1 and 3 the presser is shown in its elevated position, while at the right of Figs. 1 and 3 the presser is shown in the lowered position, in which the roll R of hat-bodies wrapped in a cloth is being pressed and rolled between the presser P and bed B as the latter is being constantly reciprocated.

I prefer to combine with each presser a counterweighted lever or levers to normally hold the presser in the elevated position convenient for the introduction of the roll or rolls of hat-bodies, and I provide a latching device to retain the lowered presser in proper position for the manipulation of the roll of hat-bodies until such time as it may be desired to remove the roll for the refolding of the hat-bodies. In the drawings I have shown each presser as provided with a pair of racks *p' p'*, held by friction-rollers *p<sup>2</sup> p<sup>2</sup>* in gear with quadrantal racks *s s* on a shaft S, which is mounted in bearings in the frame and carries at one end a counterweighted lever T. To this lever T is connected a handled lever T' in any suitable way, as by a link *t'*. A yielding or spring stop *t* may be provided to lessen the shock of the fall of the counterweight.

On one of the upper side frames, adjacent to the operator, is a bar M with ratchet-teeth, with which the hand-lever T' will engage when it is drawn down in the direction of the arrow, Fig. 2, to lower the presser P. By this

engagement with any desired one of the teeth of this ratchet the presser can be locked in such position as is best suited to give the desired pressure to the roll of hat-bodies. To  
 5 unlatch the lever and allow the presser to rise again automatically by the pull of the counterweighted lever, I provide a releasing-bar N, to be operated by a treadle  $n$ . This treadle is pivoted at  $n'$  to a bracket  $n^2$  on the frame,  
 10 Fig. 2, and acts on the lower end of the bar N, whose upper end has one or more inclined slots  $n^3$ , through which pass guide-pins  $n^4$  on the frame, Fig. 1. These slots are such that  
 15 as the release-bar is pushed upward by the treadle the bar will crowd the hand-lever T' over to one side and out of engagement with the ratchet M.

I claim as my invention—

1. A hat-sizing machine comprising a wa-  
 20 ter-tank, a reciprocating bed therein, a vertically-adjustable presser and means for locking the latter in its lowered position.

2. A hat-sizing machine, comprising a wa-  
 25 ter-tank, a reciprocating bed therein, a presser, fixed vertical guides on which said presser is adjustable, and means for locking the presser in its lowered position, substantially as described.

3. A hat-sizing machine, comprising a wa-  
 30 ter-tank, a bed therein and means for recip-

rocating the bed in the tank, in combination with a presser, means for locking the latter in the lowered position and a counterweight to automatically raise it when released, substantially as described.

4. A hat-sizing machine comprising a wa-  
 35 ter-tank, a bed therein, and means for reciprocating the bed in the tank, in combination with a presser, vertical guides for the latter, means for locking the presser in the lowered  
 40 position, a counterweight to automatically raise it when released and releasing devices controlled by a treadle, substantially as described.

5. A hat-sizing machine, comprising a wa-  
 45 ter-tank, a bed therein, horizontal guides on which the bed may slide and means for reciprocating the bed on its guides in combination with a presser, fixed vertical guides on which  
 50 the presser is adjustable, and means for locking the presser in its lowered position, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. E. KEATOR.

Witnesses:

F. WARREN WRIGHT,  
 GEO. E. MINER.