



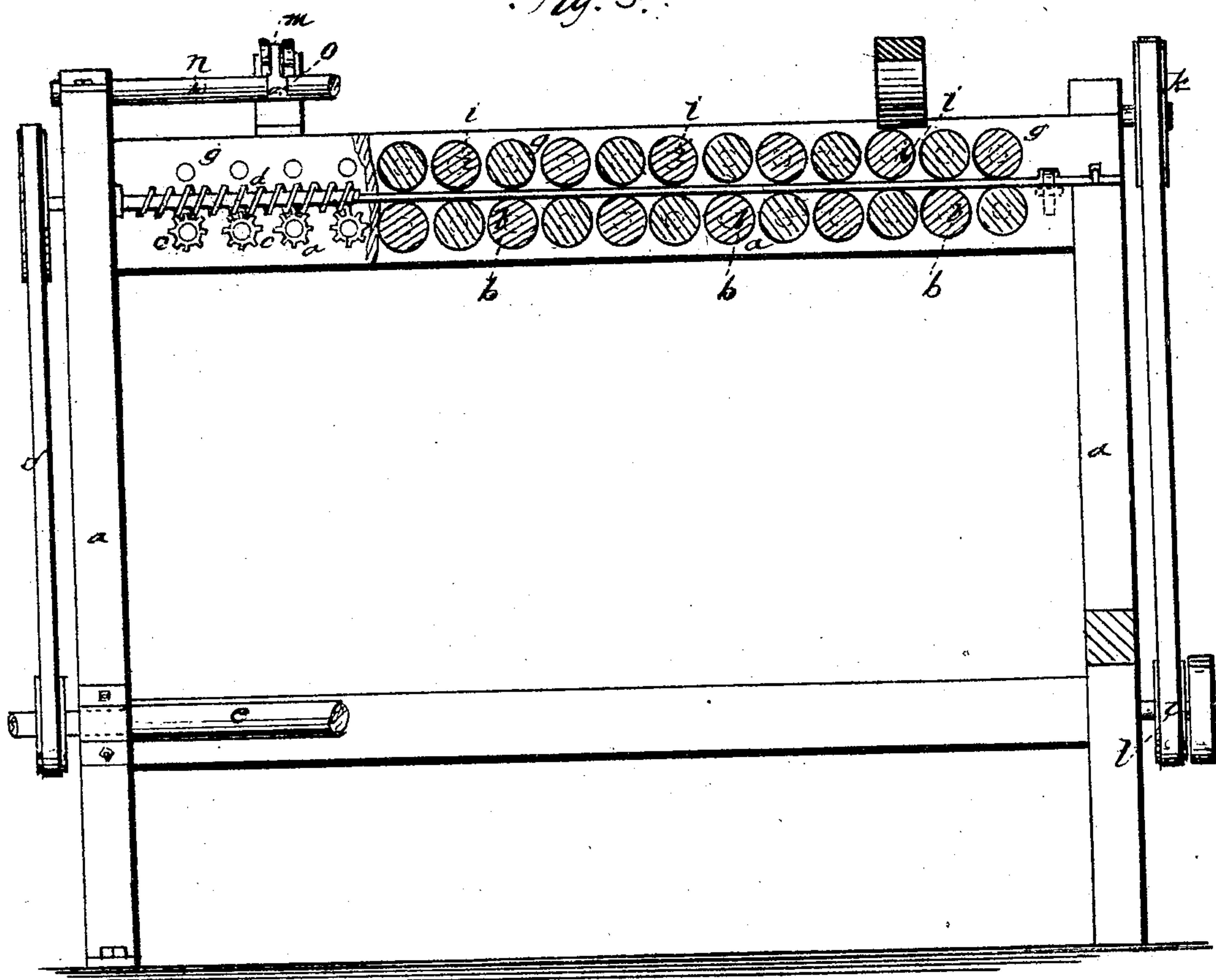
A. Cattaneo.

Felling-Machine.

N<sup>o</sup> 81252

Patented Aug. 18, 1868.

Fig. 3.



Witness  
Chas. H. Smith  
Geo. D. Walker

Inventor  
Angelo Cattaneo  
per L. M. Powell



# UNITED STATES PATENT OFFICE.

ANGELO CATTANEO, OF NEWARK, NEW JERSEY.

## IMPROVEMENT IN FELTING-MACHINES.

Specification forming part of Letters Patent No. 81,252, dated August 18, 1868.

*To all whom it may concern:*

Be it known that I, ANGELO CATTANEO, of Newark, in the county of Essex and State of New Jersey, have invented, made, and applied to use a certain new and useful Improvement in Felting Hat-Bodies and other Articles; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a plan of the said machine. Fig. 2 is a vertical section of the same at the line *x x*, Fig. 1; and Fig. 3 is a section and partial elevation transversely of the rollers.

Similar marks of reference denote the same parts.

Articles have heretofore been felted between rollers, moving them progressively through the machine; but they were arranged with one roller above the space between the two lower rollers.

The nature of my said invention consists in a series of rollers arranged in pairs, one above the other, and moved regularly and continuously by screw-pinions, the upper series of rollers being set in a frame, and receiving therewith an endwise movement, so as to felt the goods passed through between such pairs of rollers in a very uniform and thorough manner.

My machine is especially adapted to hat-bodies and hats, but may be applied to other felted goods.

In the drawings, *a* is a frame, in the upper part of which is a range of rollers, *b b*, the journals of which project at one end through the frame and receive pinions *c c*, that are driven by a screw-pinion, *d*, that receives motion from the shaft *e* by the belt and pulleys *f*, or other suitable motive power. By this arrangement of pinions and screws all the rollers *b b* move in the same direction at a uniform speed. I provide a second range of rollers, *i*

*i*, set in a frame, *g*, so as to be directly over the rollers *b b*, as seen in Fig. 3; and pinions at the ends of the journals of these rollers *i i*, like the pinions *c c*, are driven by the screw-pinion *h*, that receives motion from the pulleys *k* and *l*, or in other convenient manner. The frame *g* is set to slide upon the top of the frame *a* by means of the eccentrics *o* and connecting-rods *m*, said eccentrics *o* being on or formed in the shaft *n*, that receives motion from the pulleys and belt *p* or otherwise. By this means the range of rollers *i i*, while revolving in one direction, receive a motion endwise of said range, so that the hat-bodies, which are passed in between the ranges of rollers *i* and *b*, are thoroughly and uniformly felted by the rubbing movement produced by such endwise movement of the rollers.

The hat-bodies or other articles to be felted should be in a moist condition, and steam or water may be supplied to facilitate the operation of felting.

It will be evident that the ranges of rollers *b* and *i*, being placed as shown, form a series of pairs of squeezing and rubbing rollers, and that the fabric has an opportunity to expand between the respective pairs of rollers, so that the felting operation is performed in a manner corresponding largely with the hand method.

What I claim, and desire to secure by Letters Patent, is—

A felting apparatus formed of two ranges of rollers arranged in pairs and driven by the worm-pinions and gears, as represented, in combination with the frame *g*, carrying the upper range of rollers, to which frame and the rollers a reciprocating motion is given in the manner and for the purposes specified.

In witness whereof I have hereunto set my signature this 13th day of January, 1868.

ANGELO CATTANEO.

Witnesses:

GEO. D. WALKER,  
CHAS. H. SMITH.