

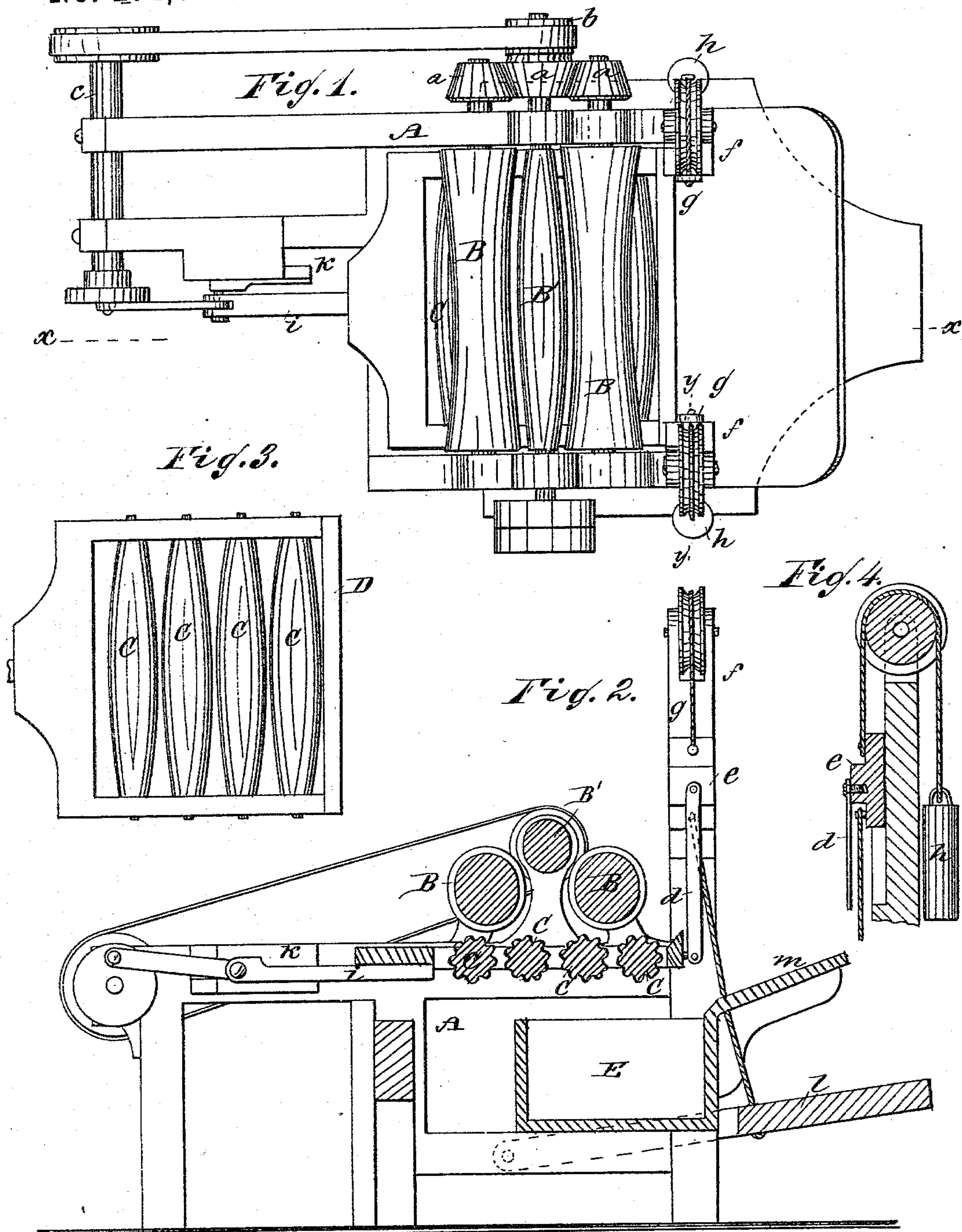
(No Model.)

W. F. MARTIN.

MACHINE FOR SIZING AND SHRINKING HATS.

No. 274,623.

Patented Mar. 27, 1883.



WITNESSES:

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BY

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# UNITED STATES PATENT OFFICE.

WILLIAM F. MARTIN, OF DANNEMORA, ASSIGNOR OF TWO-THIRDS TO BENJAMIN S. W. CLARK, OF PLATTSBURG, AND GUY M. CLARK, OF DANNEMORA, NEW YORK.

## MACHINE FOR SIZING AND SHRINKING HATS.

SPECIFICATION forming part of Letters Patent No. 274,623, dated March 27, 1883.

Application filed September 4, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM F. MARTIN, of Dannemora, in the county of Clinton and State of New York, have invented a new and Improved Machine for Sizing and Shrinking Hats, of which the following is a full, clear, and exact description.

My improvements relate to machines for sizing and shrinking wool and fur felt hats, the object being to simulate the usual hand operation as nearly as possible, and to accomplish the work more rapidly than can be done by hand.

To that end the invention consists in a combination of convex flushed roller or rollers, between which the hats are passed, which rollers have a revolving motion in addition to a reciprocating movement that is given to the lower flushed roller or rollers, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the machine. Fig. 2 is a vertical longitudinal section on line *x x* of Fig. 1. Fig. 3 is a plan view of the lower rollers and their carrying-frame. Fig. 4 is a detail section on line *y y* of Fig. 1.

A is the frame of the machine.

B B B' are rollers, sustained across the frame A in suitable bearings, the two rollers B being the largest, and the roller B' placed between and slightly above them. The upper roller, B', is convex on its surface, and of oval form in cross-section. The rollers B B have concave surfaces, and are also oval in cross-section. The object of this construction is to obtain an opening and closing movement of the space between the rollers as they are revolved. Upon the shafts of the rollers B B B' are friction-pulleys *a*, and on the shaft of the middle roller, B', is a pulley, *b*, for connection of a belt from the driving-shaft *c*.

C C C C are four rollers having fluted and convex surfaces, and placed beneath the upper rollers in a frame, D, that is suspended at its

forward end by links *d* from slides *e*, that are fitted for movement upon side standards, *f f*.

To the slides *e* cords are connected, passing over guide-pulleys at the top of standards *f*, and carrying weights *h*, by which the frame D and the rollers C are kept up against the rollers B B. The frame D is connected at its rear end, by rod *i*, to a slide, *k*, that is fitted in a horizontal slideway, and the slide is connected to a crank-disk on the driving-shaft *c*, so as to obtain a reciprocating movement of the frame D. Beneath the frame D is a hot-water-box, E.

For lowering the frame D and rollers, I provide a treadle, *l*, that is pivoted in the lower part of the frame A, and connected by cords to the slides *e*, so that by pressing down the treadle the slides *e* and the frame D are brought down. *m* is a shelf for placing the hats upon during the work. One or more rollers C may be employed.

In operation the hats are taken from the hot-water tank E, and the frame D being lowered by pressing down the treadle *l*, they are placed upon the roller C, and the frame being then allowed to rise, the rollers C press the hats against the rollers B B. The rollers B by their rotation compress the hats, and by their oval and convex form the pressure is rendered intermittent. By the reciprocation of the frame D the hats are moved back and forth, so that the action is equalized and made uniform upon the whole surface. There will be no tendency to a quick biting movement, whereby so many hats are injured in machines of this character. The machine may also be used for scalding napped hats.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In machines for sizing and shrinking hat-bodies, the combination of the concave rollers B B and convex roller B' with the lower fluted roller or rollers, C, that are fitted for reciprocation, substantially as shown and described.

2. In machines for sizing and shrinking hat-bodies, the combination of the rollers B B, of concave form and oval cross-section, and the

roller B', of convex form and oval cross-section, substantially as shown and described.

3. The combination of the convex fluted roller or rollers C, carried by the reciprocating frame D, with the upper rollers, B B B', the rollers B being concave and the roller B' convex, substantially as shown and described.

4. The combination, with the upper concave

and convex rollers, B B B', of the frame D, rod i, and reciprocating slide k, the links d, and the slides e, suspended by weights, substantially as shown and described.

WILLIAM F. MARTIN.

Witnesses:

JAMES MOON,

SEWARD ALLEN.