M. CHITTENDEN.

Sizing-Machine for Felt, &c.

No. 196,968. Patented Nov. 13, 1877.

Fig. 1.

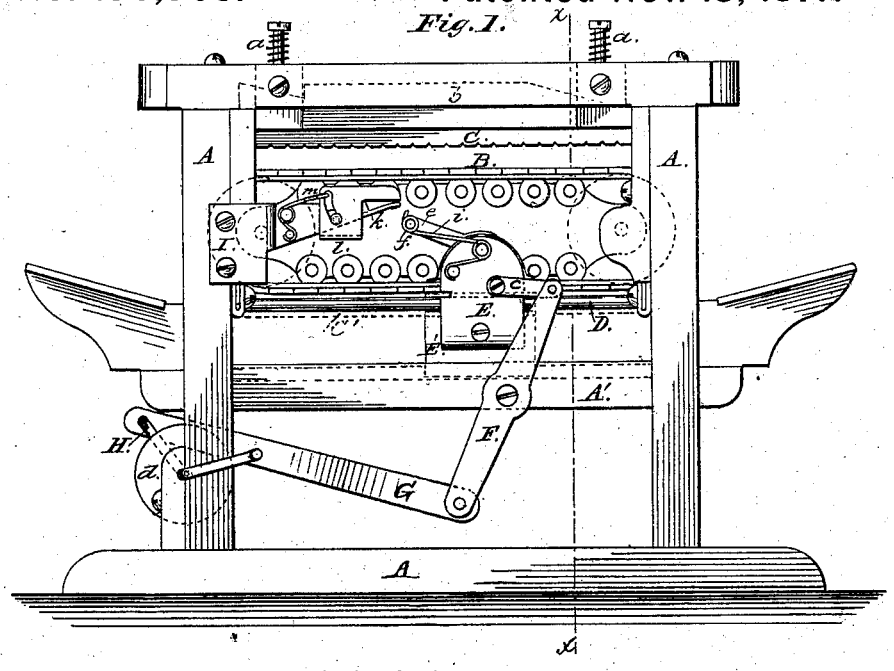



Fig. 2.

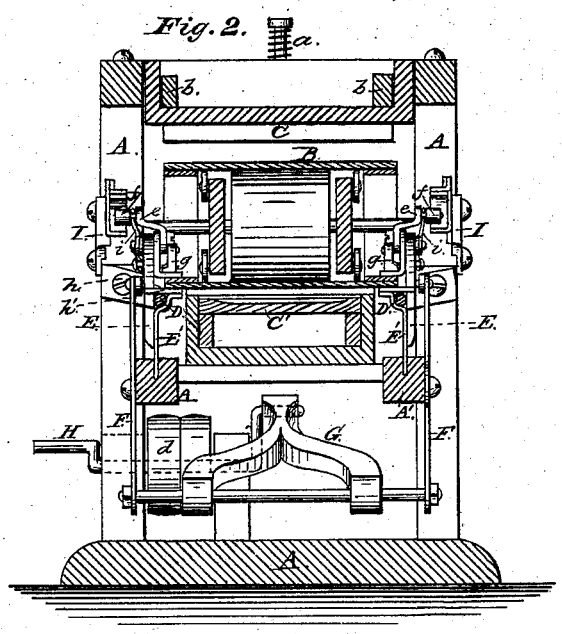
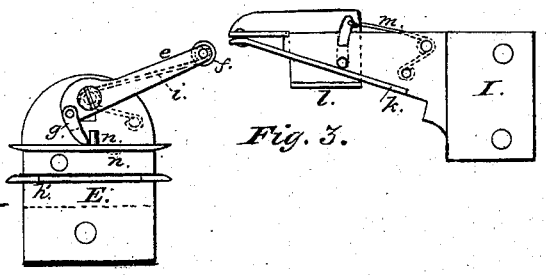



Fig. 3.




Witnesses:

Jos. T. K. Plant

J. Patterson

Inventor:

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# UNITED STATES PATENT OFFICE.

MORGAN CHITTENDEN, OF DANBURY, CONN., ASSIGNOR TO HIMSELF, PETER ROBINSON, AND THEODORE DEMUTH, OF SAME PLACE.

## IMPROVEMENT IN SIZING-MACHINES FOR FELT, &c.

Specification forming part of Letters Patent No. **196,968**, dated November 13, 1877; application filed August 17, 1877.

*To all whom it may concern:*

Be it known that I, MORGAN CHITTENDEN, of Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Sizing-Machines for Felt, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to sizing-machines for felt, woolen, and other similar articles; and the object is to produce a machine by which the work is more thoroughly done, in a shorter space of time and in more reliable manner, than by those now in general use.

The invention consists in certain devices for giving to the endless apron commonly employed in such machines a reciprocating as well as a rotary motion, which is accomplished by a crank and pitman, connecting with a clamp that slides on stationary guides, and which is provided with a spring dog or cam, by which the apron is alternately reciprocated.

It also consists, in connection therewith, of a tripping device provided with inclined and parallel or horizontal planes, arranged so as to alternately engage the clamp with and release it from the apron, so that the motion of the apron will be longer in one direction than the other, thus giving it a rotary as well as a reciprocating motion.

It also consists in certain other devices, in connection with these, which will be more fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my machine. Fig. 2 is a cross-section on line *x x*, Fig. 1; and Fig. 3 is an enlarged detail view of clamp and trip.

In the drawings, A represents a suitable frame, in which is arranged, in suitable bearings, the ordinary endless apron B and upper and lower aprons C and C′. The upper apron is adjusted by screws and yielding springs *a a* and wedges *b*. Below this endless apron is arranged the usual heating apparatus for hot water or steam. On each side of this heating apparatus are arranged two guide-rods, D, upon which a cross-head, E, slides, which is operated by a link, *c*, attached thereto, and connecting with a pivoted lever, F, that is operated by a forked pitman, G, and crank-shaft H. The cross-head is also guided at its lower side and kept in a vertical position by a pendent piece, E′, which moves in a groove in the side piece A′ of the frame.

Motion may be imparted to the crank-shaft by hand, steam, or other power.

To the inner side of the cross-head is attached a pivoted lever, *e*, (best seen in Fig. 3,) having on its outer end a friction-wheel, *f*, while its other end is provided with a dog or cam, *g*. A projecting flange, *h*, bears upon the endless apron B when it is pressed down by a spring, *i*, and cam *g*. Another flange, *h′*, supports the lower side of the apron. To the frame A is attached, on each side, a tripping device, I, provided with an inclined stationary plane, *k*, and a pivoted or movable parallel or horizontal plane, *l*, which is thrown into its normal position by a spring, *m*. The cam *g* bears against the pin *n* on the flange *h*, to prevent it from turning too far.

The operation is as follows: Power being applied to the crank-shaft H, by hand, steam, or other power, motion is imparted to lever F by means of the pitman G, and thus to the cross-head E, which moves back and forward on the guide-rods D, the flange *h* bearing and clamping the endless apron B, and giving it thus a reciprocating as well as rotary motion, until the friction-wheel *f* comes in contact with the inclined plane *k*, which releases the cam *g* and flange *h*. On its return stroke the friction-wheel engages with the horizontal plane *l*, and the moment it has passed it it is again thrown in contact, and clamps the belt or apron B, by the spring *i* and cam *g*, until the next stroke.

The advantages of my device are, that it is very simple, reliable, not likely to get out of order, and a reciprocating as well as rotary motion is imparted to the endless apron. It can be furnished at a very small cost.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a sizing-machine, the combination, with an endless apron, B, a clamping device, E, provided with spring-lever *e*, dog or cam *g*, and flange *h*, pin *n*, and flange *h'*, and sliding on guide-rods D, substantially as shown and described.

2. In a sizing-machine, the combination, with an endless apron, B, and a clamping-piece, E, substantially as described, of a tripping device, I, provided with inclined plane *k* and horizontal plane *l*, arranged substantially as shown and herein specified.

3. In a sizing-machine, the combination of an endless apron, B, and a clamping device, E, provided with a spring-lever, *e*, having friction-wheel *f*, dog *g*, and flange *h*, flange *h'*, and pin *n*, with a tripping device, I, provided with inclined plane *k* and horizontal plane *l*, all constructed and arranged substantially as shown and specified.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

MORGAN CHITTENDEN.

Witnesses:
JOS. T. K. PLANT,
J. A. PATTERSON.