

*S. S. Middlebrook,
Felting Machine.*

No. 65413.

Patented June 4. 1867.

Fig. 1.

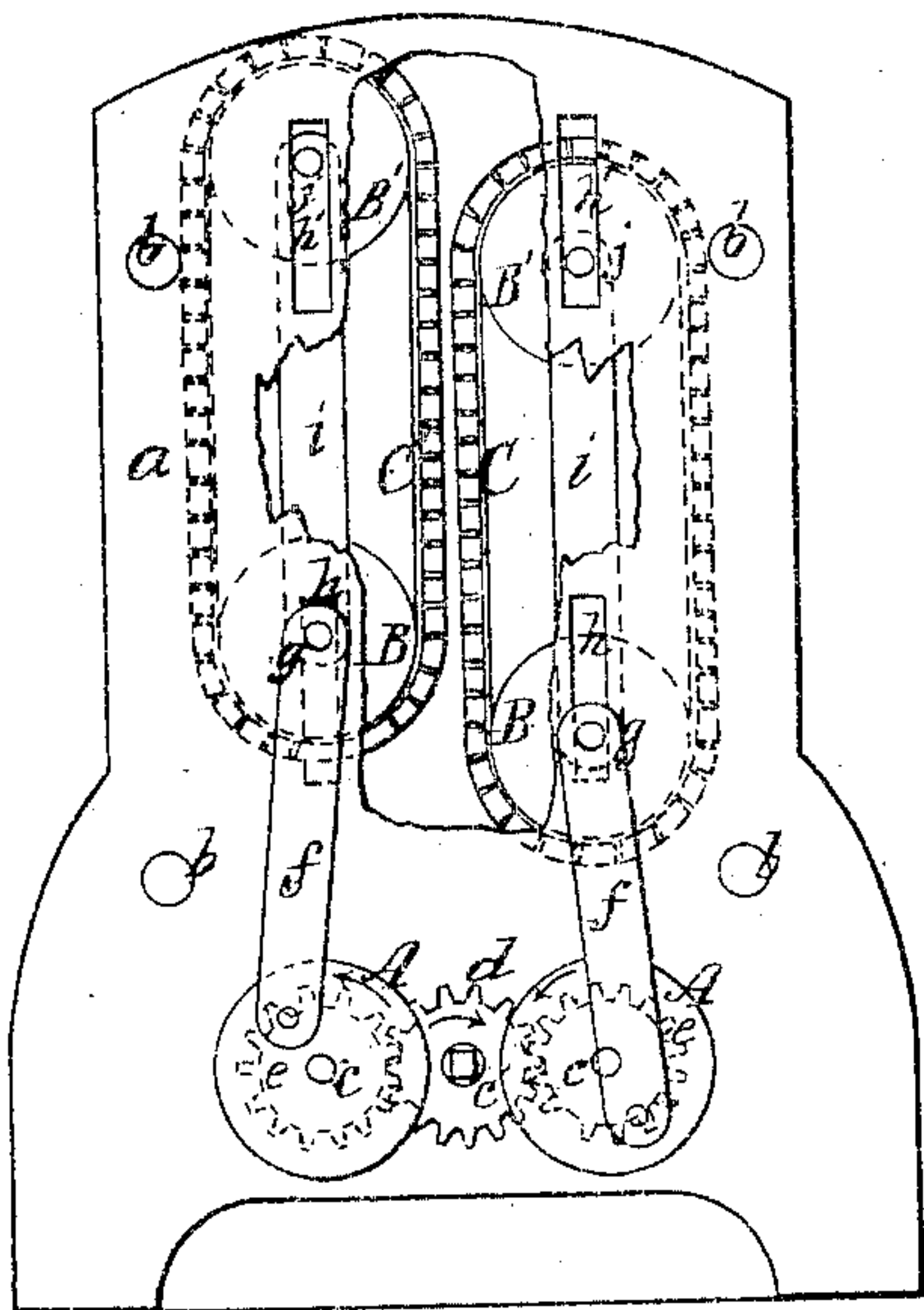


Fig. 2.

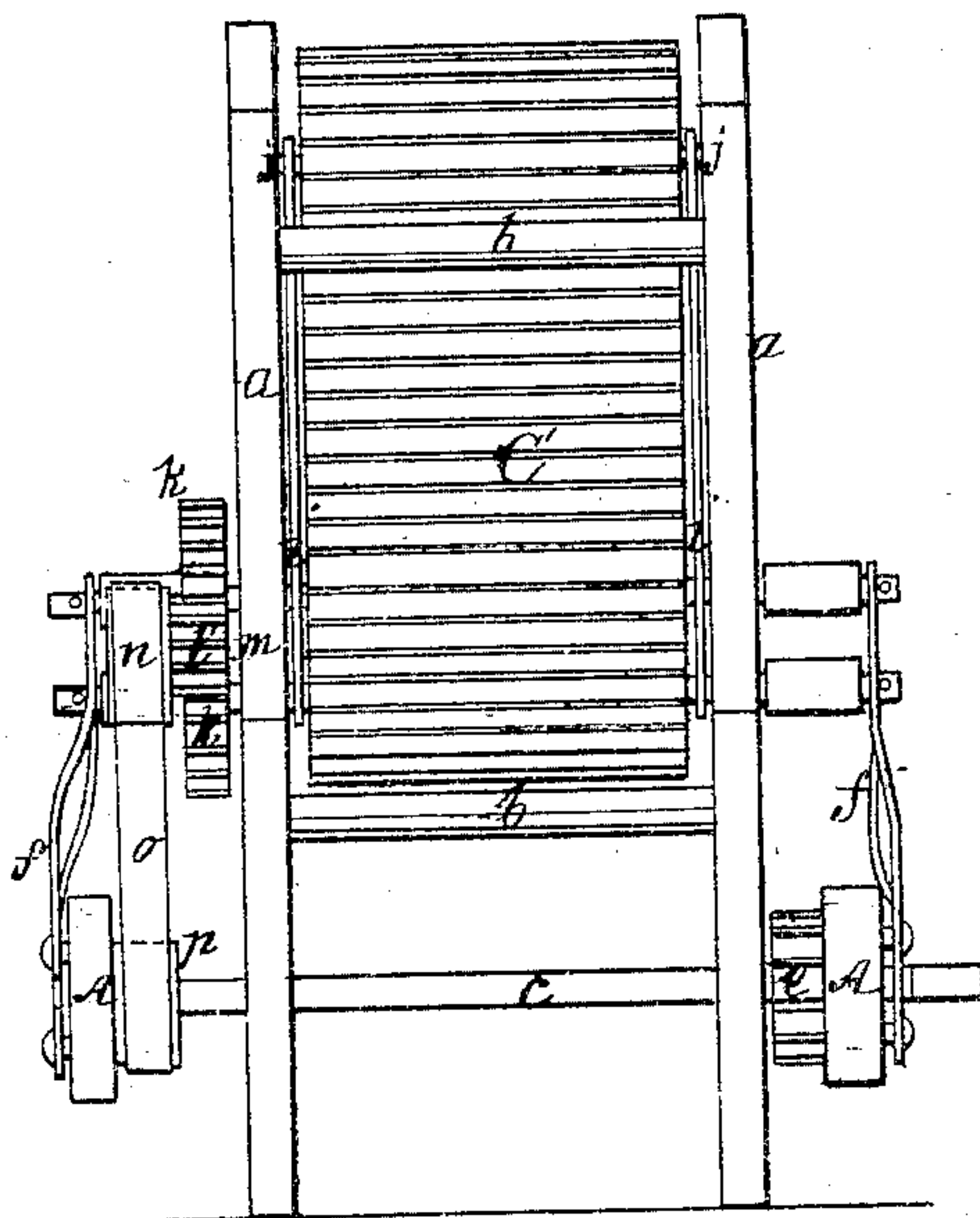
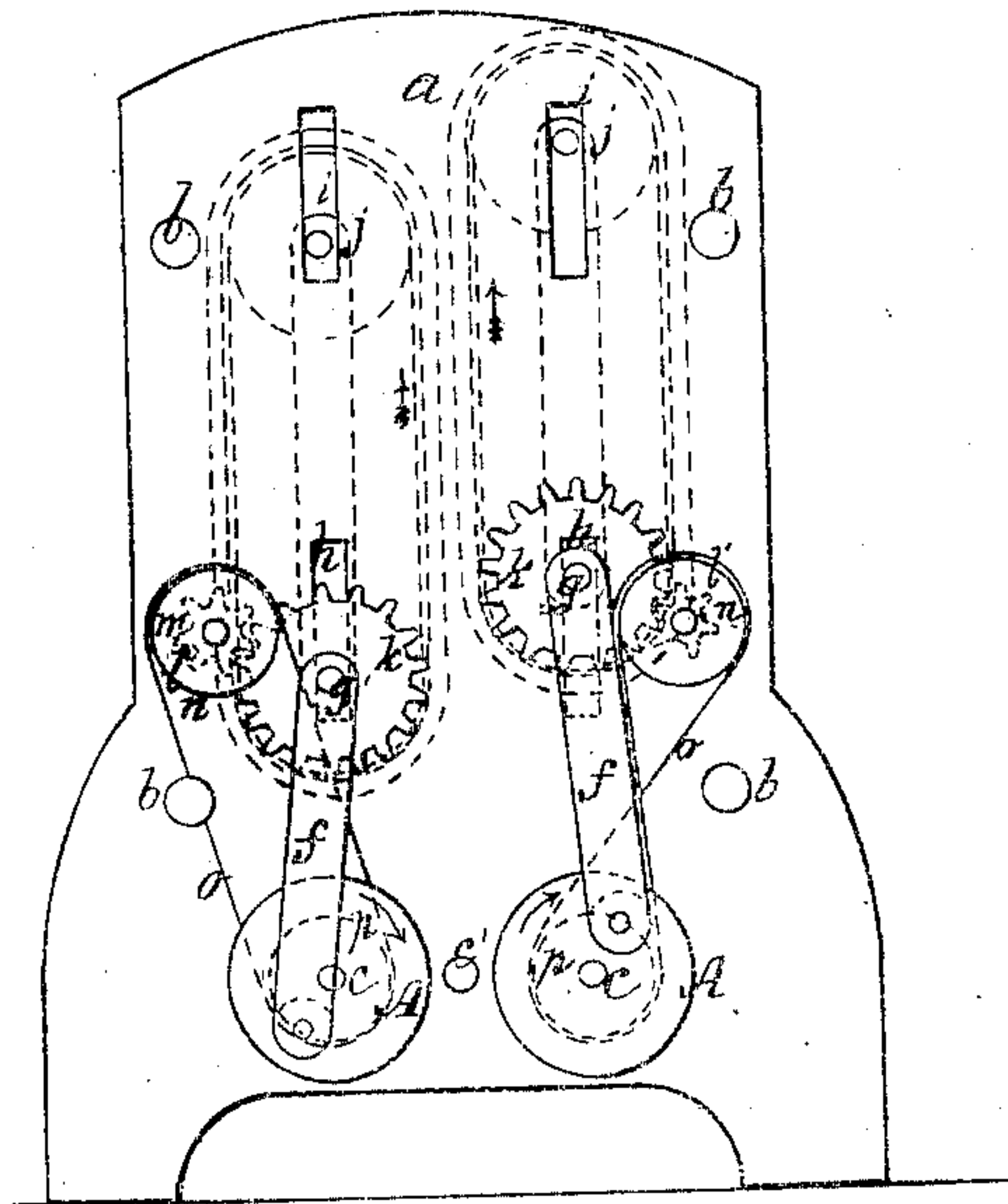


Fig. 3.



Witnesses:
 Theo. Trache
 Wm. Brown

Inventor:
J. J. Mapplebrook
Per *[Signature]*
Attorney

United States Patent Office.

S. S. MIDDLEBROOK, OF SANDY HOOK, CONNECTICUT.

Letters Patent No. 65,413, dated June 4, 1867.

IMPROVEMENT IN FELTING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, S. S. MIDDLEBROOK, of Sandy Hook, in the county of Fairfield, and State of Connecticut, have invented a new and improved Hat-Sizing Machine; 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 make and use the same, reference being had to the accompanying drawings forming part of this specification.

This invention relates to a new and improved machine for sizing hats, reducing their dimensions by rubbing and friction after being formed in the usual way.

The invention consists of two endless aprons placed vertically in a suitable framing, and one arranged to travel or move a trifle faster than the other, and both so arranged as to have a reciprocating motion, as hereinafter fully shown and described, whereby the desired work may be expeditiously and perfectly performed. In the accompanying sheet of drawings—

Figure 1 is a side view of my invention, having a portion of the framing removed or broken away.

Figure 2, an end view of the same.

Figure 3, a side view of the same, opposite to that shown in fig. 1.

Similar letters of reference indicate like parts.

The framing of the device is composed of two upright sides, *a a*, connected at a suitable distance apart by rods or bars, *b*, and having three parallel shafts *c c c'* fitted in their lower ends, the sides *a* serving as bearings for the shafts. The central shaft *c* is the driving-shaft, and has upon one end of it a pinion, *d*, which gears into other pinions *e e* on the shafts *c c*, and on the shafts *c c* there are pulleys *A* at each end, the pulleys *A* having each a connecting-bar, *f*, attached near their peripheries, the upper ends of said bars being fitted loosely on the ends of the shafts *g* of two rollers *B* which are between the sides *a a* of the framing. The rollers *B B* are parallel with each other, and the shafts *g* pass through vertical slots *h h* in the sides *a a*, and also through the lower parts of metal plates *i* at the inner sides of the sides *a a* of the framing. The shafts *g* of the lower rollers *B* have toothed wheels *k* on one end of them, at the outer side of the framing, and these wheels *k* gear into pinions *l l'* on fixed shafts *m*, attached to one of the sides *a*, said pinions having pulleys *n* attached which are driven by belts *o o* from pulleys *p* on the shafts *c c*. *C C'* represent endless aprons, which may be composed of slats attached to endless belts, or constructed in any other proper manner. These aprons, it will be seen, are moved in the direction indicated by the arrows through the medium of the belts *o o*, pinions *l l*, and wheels *k*, and the endless apron *C* is made to move a trifle faster than the apron *C'*, in consequence of the pinion *l* being a trifle larger than *l'*. Besides this movement of the aprons *C C'*, they have an up-and-down or reciprocating movement given them by means of the crank pulleys *A* and connecting-bars *f*.

The hats to be operated upon are put in between the upper parts of the aprons *C C'*, in roll form, and in passing down between said aprons are, in consequence of the peculiar action of the same, subjected to the necessary rubbing and friction, the passage downward of the hats being insured by having one apron, *C*, move on its rollers *B B'* with rather greater speed than the other, *C'*.

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

The combination of the endless aprons *C C'*, reciprocating and revolving at different velocities as and for the purpose described.

S. S. MIDDLEBROOK.

Witnesses:

JAMES A. WILSON,

HENRY L. WHEELER.