

E. Waite. Making Wadding

N^o 65,456.

Patented Jan. 4, 1867.

Fig. 3.

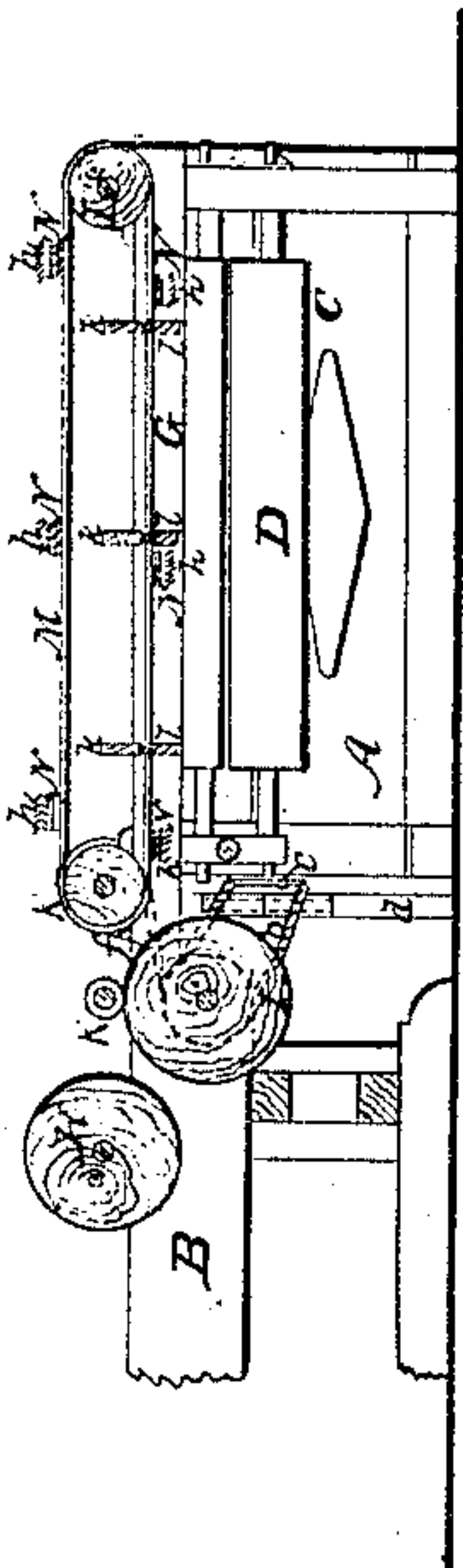


Fig. 4.

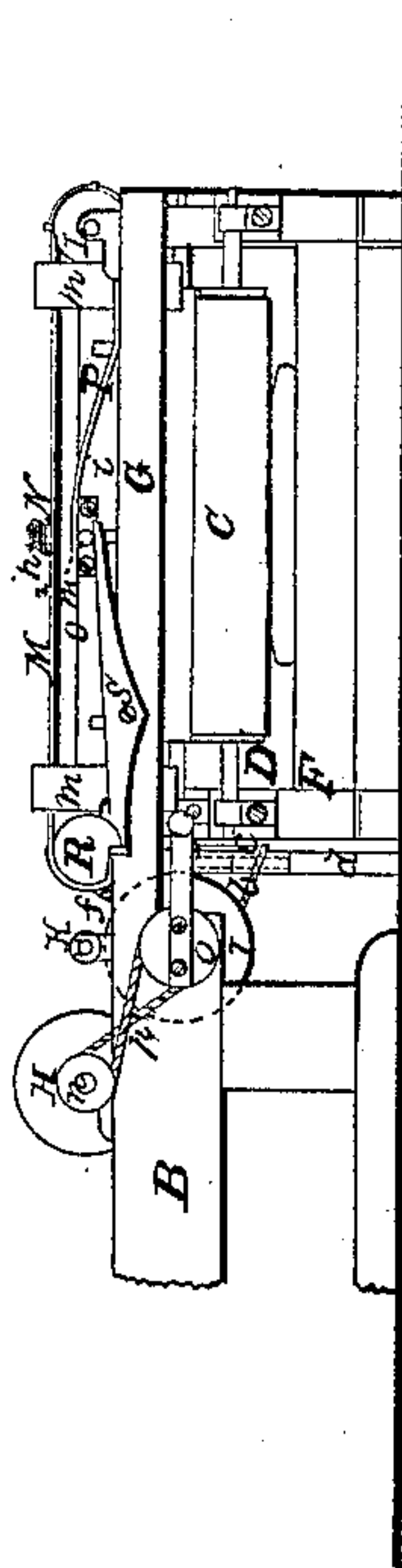


Fig. 1.

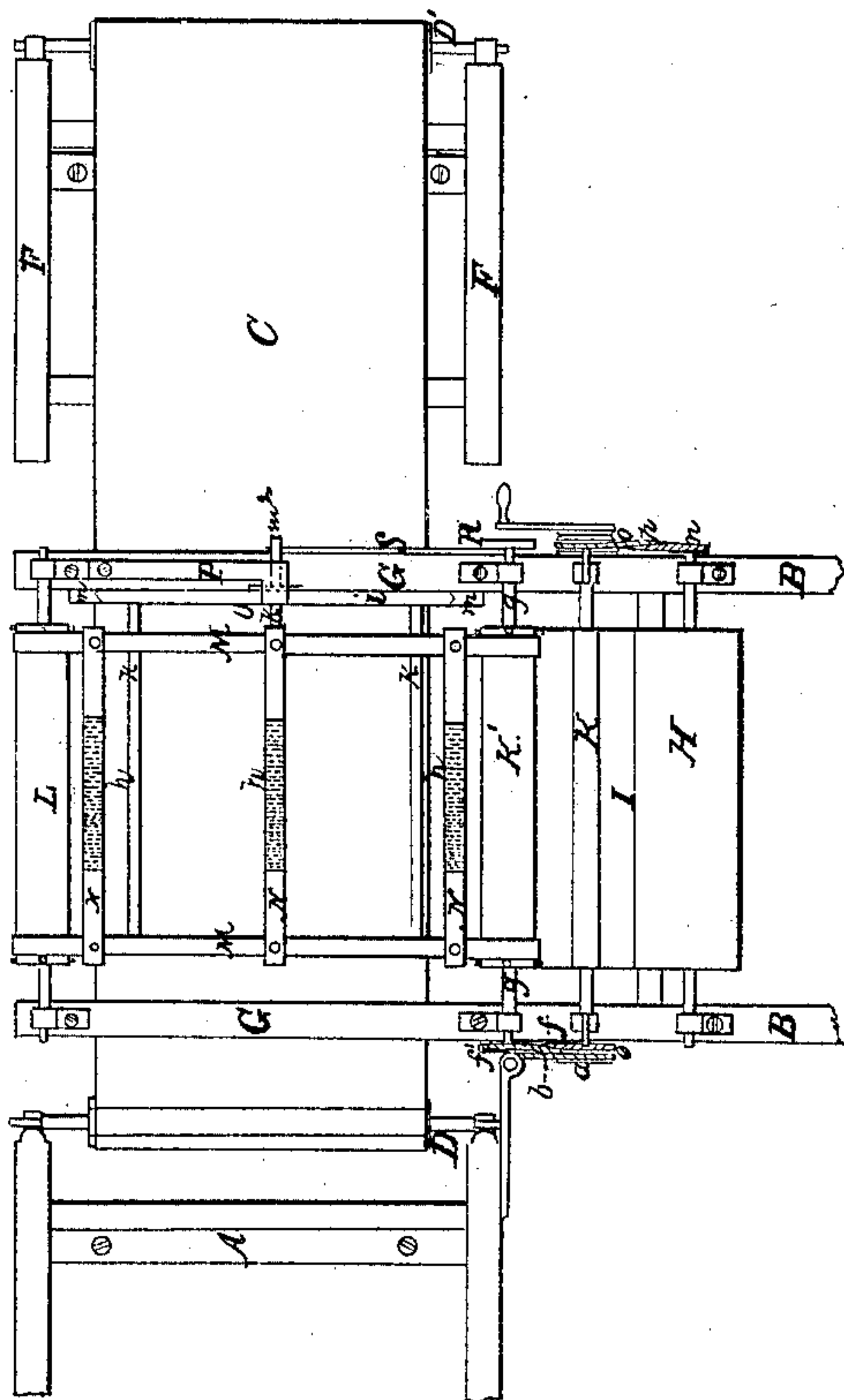
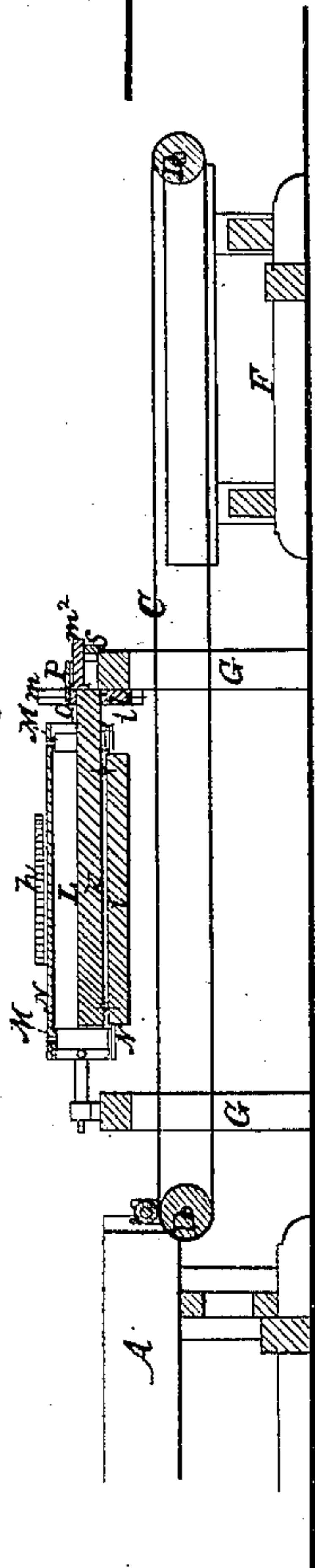


Fig. 2.



Witnesses:
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Enoch Waite. by his attorney.
R. H. Eddy.

United States Patent Office.

ENOCH WAITE, OF FRANKLIN, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND THE ELLIOTT FELTING MILLS, OF SAME PLACE.

Letters Patent No. 65,456, dated June 4, 1867.

IMPROVEMENT IN MACHINES FOR FORMING BATS FOR FELTING, WADDING, &c.

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

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME :

Be it known that I, ENOCH WAITE, of Franklin City, in the county of Norfolk, and State of Massachusetts, have invented an improved Machine for Making Fibrous Bats for Wadding or for being Felted; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view.

Figure 2, a longitudinal section; and

Figure 3, a transverse section of it.

Figure 4 is a front end elevation, showing the endless apron and the machinery for actuating the striker, to be hereinafter described.

This machine is similar in many respects to others in use for the same purpose, that is to say, it not only has two carding engines placed at right angles to each other, but an endless apron to remove a bat from one of such machines. It also has a mechanism by which a fibrous bat or series of such is taken from the other carding engine and laid on the longer bat transversely, the same being in order that the fibres of the two bats may cross one another at right angles or thereabouts.

The difficulty which has been experienced with the machines heretofore used for so making bats for being felted or otherwise employed, has been to operate the two carding engines and the endless apron at the right speeds to cause the transverse bats to be laid at the exact or proper periods of time, and without lapping upon one another upon the longitudinal bat. To overcome this difficulty and insure correct deposits of the transverse bats, I so combine the two sets of feed-rollers of the two bats, by mechanism as hereinafter described, that they must always move in unison, or with the requisite speeds for the correct deposit of the transverse bats on the longitudinal bat, however the speed of the endless apron carrying the longitudinal bat may vary. I have also a new or improved mechanism for removing the transverse bats from the carding engine and depositing them upon the longitudinal bat.

In the drawings, A and B represent portions of the frames of the two carding engines, which, when in use, are disposed at or about at a right angle to one another. C is the endless apron proceeding from the main carding engine, and destined to receive the bats discharged from its doffer. This endless apron is supported by and travels on two rollers, D D', the journals of the latter roller being sustained by a frame, F, between which and the main frame A of the carding engine, and so as to extend over and across the endless apron, and from the frame B of the auxiliary carding engine, is another frame, G, constructed as shown in the drawings. The doffer of the auxiliary carding engine is shown at H. In advance of it is a feeding-drum, I, surmounted by a pressure or top roller, K. The comb of the doffer is not represented, it being common to the carding engine. In covering the doffer with its card teeth or clothing, such is not to go entirely around it, but there is to be a narrow space extending across the surface of the doffer from end to end of it, in which there is to be no clothing or teeth, the circumference of a cross-section of the doffer, minus the width of the said space left unclothed, being equal, or about equal, to the width of the endless apron. The feeding-drum or roller I, which receives the bat from the doffer, (such bat being combed off the doffer and received upon the said roller I,) has a diameter about equal to or a little greater than that of the doffer. A pulley, *a*, fixed on the shaft of the feeding-roller I, has an endless band, *b*, running around it, and a pulley, *c*, fixed on the shaft of the roller D of the endless apron C. The said band *b*, in its course from one pulley to the other, is bent at or about at right angles around a guide-post, *d*, or against two friction-rollers arranged thereon. Thus it will be seen that there is such a connection between the endless apron, carrying and driving-roller, and the feeding-roller of the auxiliary carding engine, that the proportions of their speeds will always be alike, whatever may be the speed of the endless apron. Thus, if at any time the speed of the main carding engine should be increased or diminished, the speed of the delivery-roller of the auxiliary carding engine will be increased or diminished in like proportion, so as to cause it to deliver the transverse bats at the proper velocity for them to be deposited on the bat of the apron without improper overlapping of any one of such transverse bats on that next to it and previously laid. There is also another pulley, *e*, fixed on the shaft of the feed-roller I. A crossed endless band, *f*, goes

around this pulley and another pulley, f' , fixed on the shaft g of the driving-roller K' of the transverse bat-carrier, or apparatus or mechanism for removing each transverse bat and transferring it to its proper position over and for being deposited on the endless apron. This apparatus is composed of two rollers, $K' L$, two endless belts, $M M$, and a series of card-clothed bars, $N N$, &c. The belts work around the two rollers, and the bars extend from one roller to the other, and are arranged at or about at equal distances asunder. The outer surface of each of the bars is to be covered with card teeth or card clothing, as shown at h .

The next part of the machine to be described is the striker, or that by which each transverse web or bat, after having been brought directly over the bat on the endless apron by the bars $N N$, &c., is forced off the teeth of such bars and deposited on the bat of such endless apron. This apparatus may be thus explained: The said striker, shown at O , is composed of a bar, i , and a series of other bars, $k k k$, extending from such bar i at right angles, and into the space within the transverse carrier, each of such bars k being provided with a projection, l , to extend from it as represented. I prefer to hinge each of the said projections directly to its bar, as shown in the drawings, in order that they may present no impediments to the movements of the carrier. The bar i of the striker is supported by and so as to be capable of being moved vertically between two guides or standards $m m$, projecting upward from the frame G . The striker is depressed at the proper times by the action of a spring, P , fixed to the frame G , and bearing upon the striker, the arrangement of such spring being as represented in fig. 1. A notched wheel, R , fixed on the shaft of the inner roller of the carrier, operates with a lever, S , whose fulcrum is extended from the frame G . The longer arm of the said lever extends underneath and against a stud, m^2 , projecting from the striker. The notched wheel operates on the lever so as to cause it not only to raise the striker upward and hold it so elevated the proper length of time, but releases the lever so as to enable the spring to suddenly depress the striker in a manner to cause it to force a transverse bat off the carrier and down upon the bat of the endless apron. The shafts of the doffer H , and the feeding-drum I , are provided with pulleys $n o$, around which an endless crossed belt, p , travels, the same being to cause the speed of the doffer to vary with that of the feeding-drum, in order that the bat may be delivered to the feeding-drum at the proper rate in proportion to its speed, whether such be accelerated or retarded by the endless apron.

Having thus described my invention, what I claim as constituting the same, is as follows:

I claim the combination of the endless apron C and the feeding-drum I of the auxiliary carding engine by or with mechanism whereby the speed of the said drum may be controlled by or increased or diminished with that of the apron, substantially as and for the purpose specified.

I also claim the endless carrier and the striker, made and arranged in manner, and provided with mechanism for operating them as described.

And I particularly claim the application of the projections of the striker to their bars by hinges or mechanical equivalents therefor, in order that the projections may vibrate or move relatively to the bars, so as not to impede the motion of the carrier.

I also claim the combination of the endless apron C , the feeding-drum I , and the doffer H , by or with mechanism whereby the speeds of both the drum and doffer are varied with that of the endless apron, the same being for the purposes or objects substantially as explained.

ENOCH WAITE.

Witnesses:

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