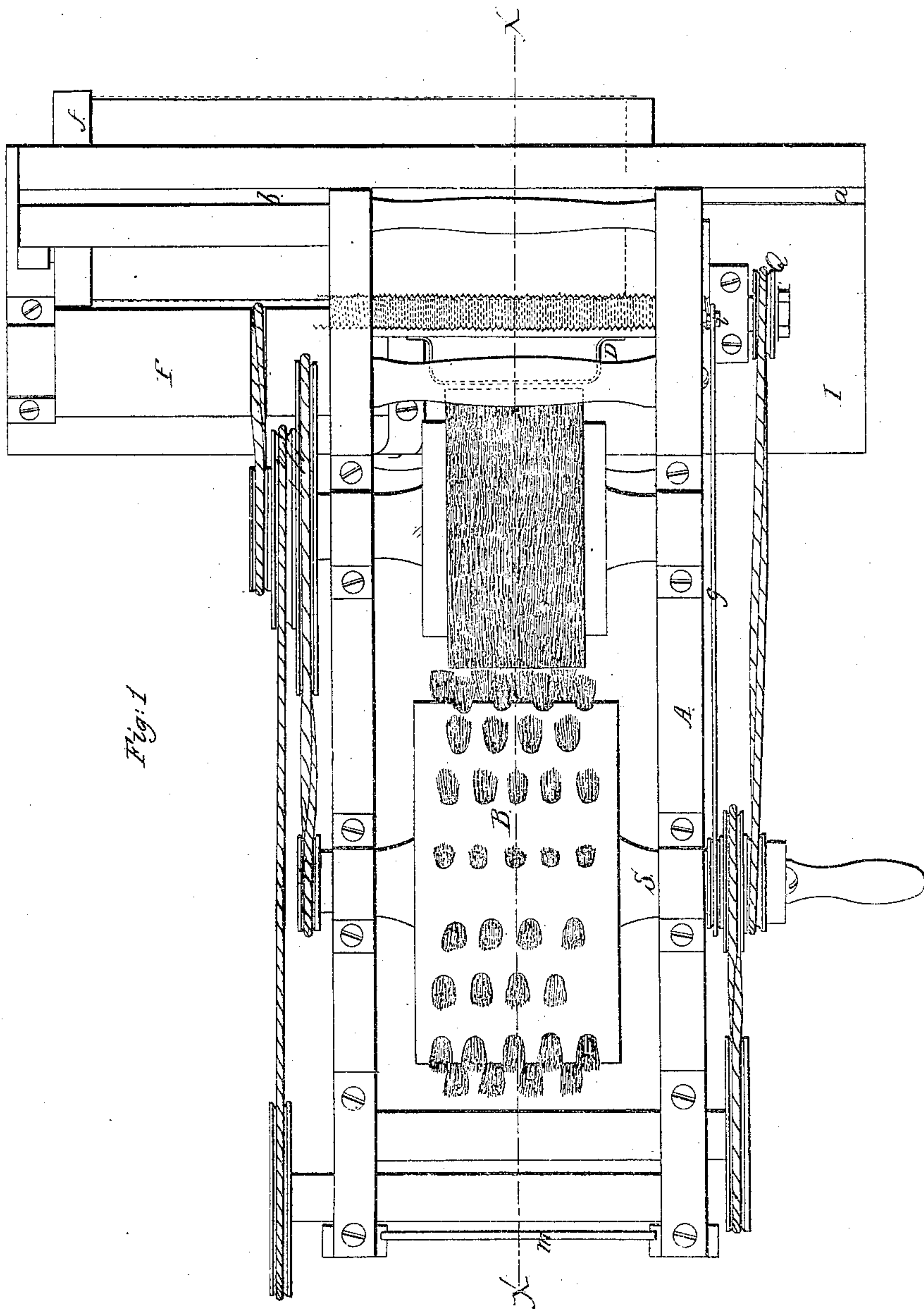


Sheet 1-2 Sheets.

M. D. Whipple.
Making Wadding.

Nº 21,930.

Patented Oct. 26, 1858.

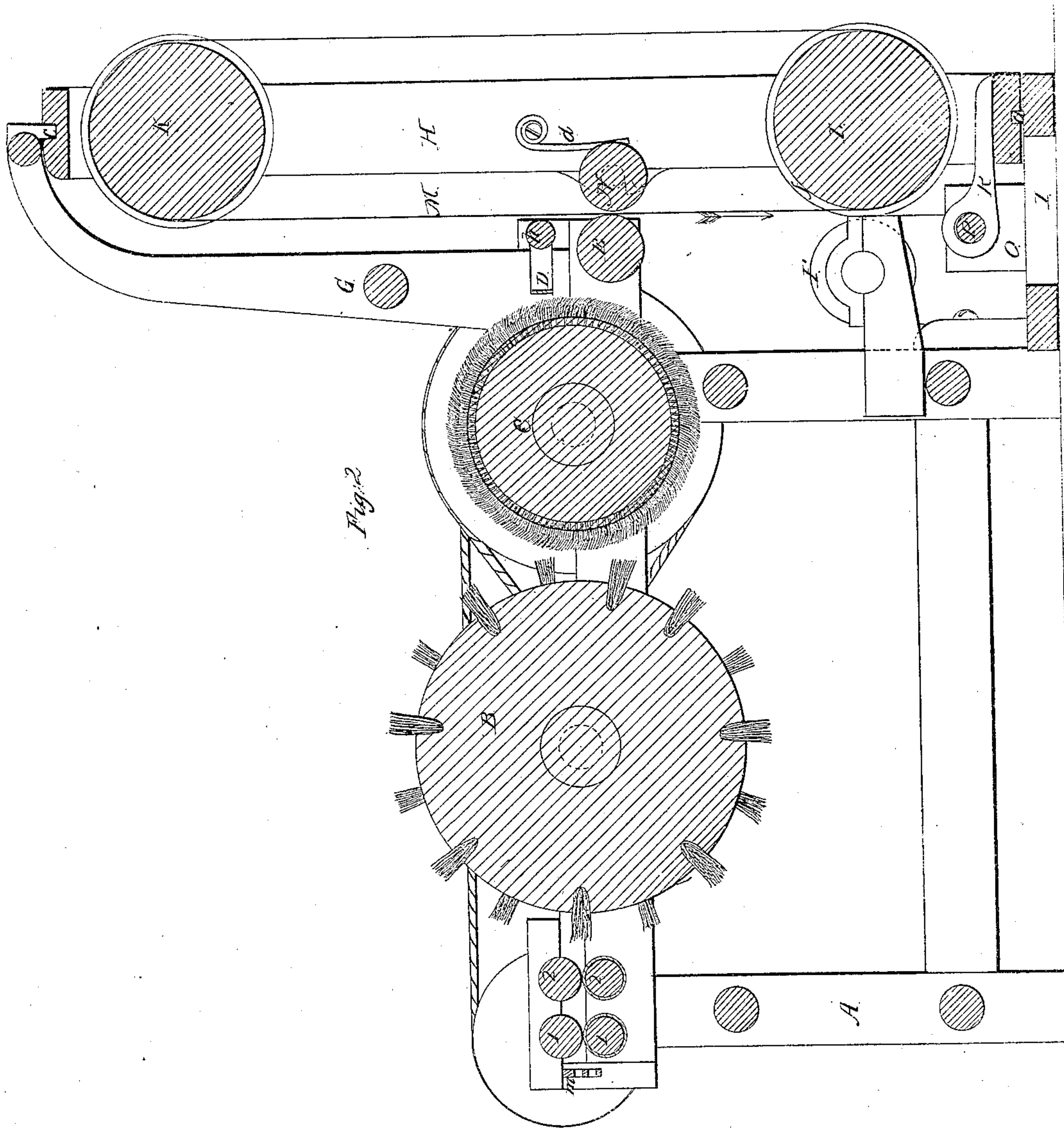


Sheet 2-2 Sheets.

M. D. Whipple.
Making Weddings.

N^o 21,930.

Patented Oct. 26, 1858.



UNITED STATES PATENT OFFICE.

MILTON D. WHIPPLE, OF CHARLESTOWN, MASSACHUSETTS, ASSIGNOR TO ALFRED B. ELY,
OF BOSTON, MASSACHUSETTS.

FORMING BATS FOR FELT CLOTH.

Specification of Letters Patent No. 21,930, dated October 26, 1858.

To all whom it may concern:

Be it known that I, MILTON D. WHIPPLE, of Charlestown, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Preparing the Bat for Felt Cloth, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2, a longitudinal vertical section on the line *x, x* of Fig. 1.

The first part of my improved process of preparing the bat for felting, consists in shortening the staple used, by breaking or tearing in pieces the fiber. This gives a greater number of short fibers or ends to be interlocked with each other when the bat comes to be fulled.

The second part of my invention consists in a combination of certain devices for working the wool and making it into a bat after its staple has been shortened.

That others skilled in the art may understand and use my invention I will proceed to describe the manner in which I have carried out the same.

In the drawings A is the frame of the machine, in suitable bearings in which are carried two pair of rolls 1, and 2, a brush cylinder B, a card clothed cylinder or doffer C, a shaft *h* to which is attached a comb D, a roll E, and a friction drum F. From the rear end of this frame rise two standards G, which bend over as shown in Fig. 2, and act as supports for the upper end of a frame H, which rests on a pedestal I, projecting back from the bottom part of the frame A, and extending out laterally on each side of it as in Fig. 1. The frame H (which is of a width sufficient for the widest bat) runs on a way *a*, on the pedestal I, and has at its top a groove *b*, in which fits a feather *c*, projecting down from each of the standards G, by which it is steadied and guided; (this frame carries in suitable bearings the drums K and L, over which the apron M (in red Fig. 2) is distended. The distance apart of these drums will be governed by the required length of the bat. A presser roll N is hung in suitable bearings on the frame H, opposite to the roll E, on the frame A. It is pressed toward the latter roll by a spring *d* at each end of it, fastened to the frame H. The apron M as the drums K

and L are revolved passes between the rolls E and N in the direction of its arrow, and as the fiber is received onto the apron from the comb D, immediately over the roll E, the apron carries it down between the rolls E and N, where it is compressed onto the apron.

While the apron M is being carried around in the direction of its arrow it is also traversed laterally across the end of the machine for the purpose of distributing the fibers over every part of its outer surface. This is accomplished in the following manner: Two short standards O rising from the pedestal I support a long screw P, which extends across the end of the machine, and carries at its outer end a pulley Q. A lug R, with a corresponding female screw cut in it, embraces the screw P and is secured to the bottom of the frame H, so that as the screw P is turned in one direction the frame H is caused to traverse on the way *a* across the machine, when by any of the well known methods of reversing motion the screw is turned in the opposite direction and the frame is caused to traverse back again, thus the apron is constantly passing back and forth in front of the comb D to receive the fibers and a long card cylinder is rendered unnecessary. Motion is communicated to the drum L from a friction drum F, a rim *f* on the former running in contact with the latter. The different rolls and cylinders as well as the drum F and screw P are driven by suitable bands and pulleys from the main shaft S, or gearing may be used. The draw rolls 2 are driven at a greater speed than the rolls 1. One roll of each pair is covered with leather or other suitable substance to prevent the slip of the staple as it is drawn, thus by the greater velocity of the rolls 2 the staple is broken into short lengths before it is delivered to the brush cylinder B. The small shaft *h* on which the comb D is hung is vibrated by a rod *g* attached to a crank *i* on the end of the shaft. The other end of this rod is furnished with a collar which embraces an eccentric on the main shaft S.

The operation is as follows: The sliver of wool or of wool and cotton mixed, or separate slivers of each material are passed through a grate *m* fixed in the frame A in front of the rolls 1 by which the staple is drawn in, when the rolls 2 (which are set at the proper distance from the rolls 1 to

suit the length of staple) receive it and by their more rapid revolution tear it away from the rolls 1 and break the staple in shorter pieces making a greater number of
5 ends to be interlocked with each other when the bat comes to be full. From the rolls 2 the short fibers are received by the brush cylinder B and are carried by it to the card cylinder C which runs at a slower rate
10 than B. From the cylinder C they are taken off by the vibrating comb D, by which they are thrown over the roll E onto the apron M on a continuous thin sheet which as it passes down in the direction of the arrow
15 (Fig. 2) is compressed between the rolls E and N, by which the bat is consolidated. As before explained by turning the screw P in one direction and then in the other the frame H is traversed back and forth across
20 the end of the machine and the sheet of fibers is laid evenly over the whole surface of the apron which is next to the comb D, the apron being passed in front of the comb as often as is necessary to deposit the required
25 amount of fiber to make the bat of the desired thickness. By thus traversing the

apron I am enabled to make the bat of a more uniform thickness and consistency, and of any desired width, with a much less expensive machine than has heretofore been
30 used for this purpose, and by breaking the staple into shorter pieces I am enabled to prepare a bat of greater consistency which when full will produce a firmer and better cloth than can be made from the full
35 length of the staple.

What I claim as my invention and desire to secure by Letters Patent is—

1. Shortening the staple in the manner and for the purpose substantially as herein
40 set forth previous to forming the bat.

2. I claim the combination of the draw rolls 1 and 2 with a brush cylinder B, a doffer C and a suitable device upon which
45 to form the bat, operating in the manner substantially as described for the purpose specified.

MILTON D. WHIPPLE.

Witnesses:

THOS. R. ROACH,
THOS. L. GLOVER.