

(No Model.)

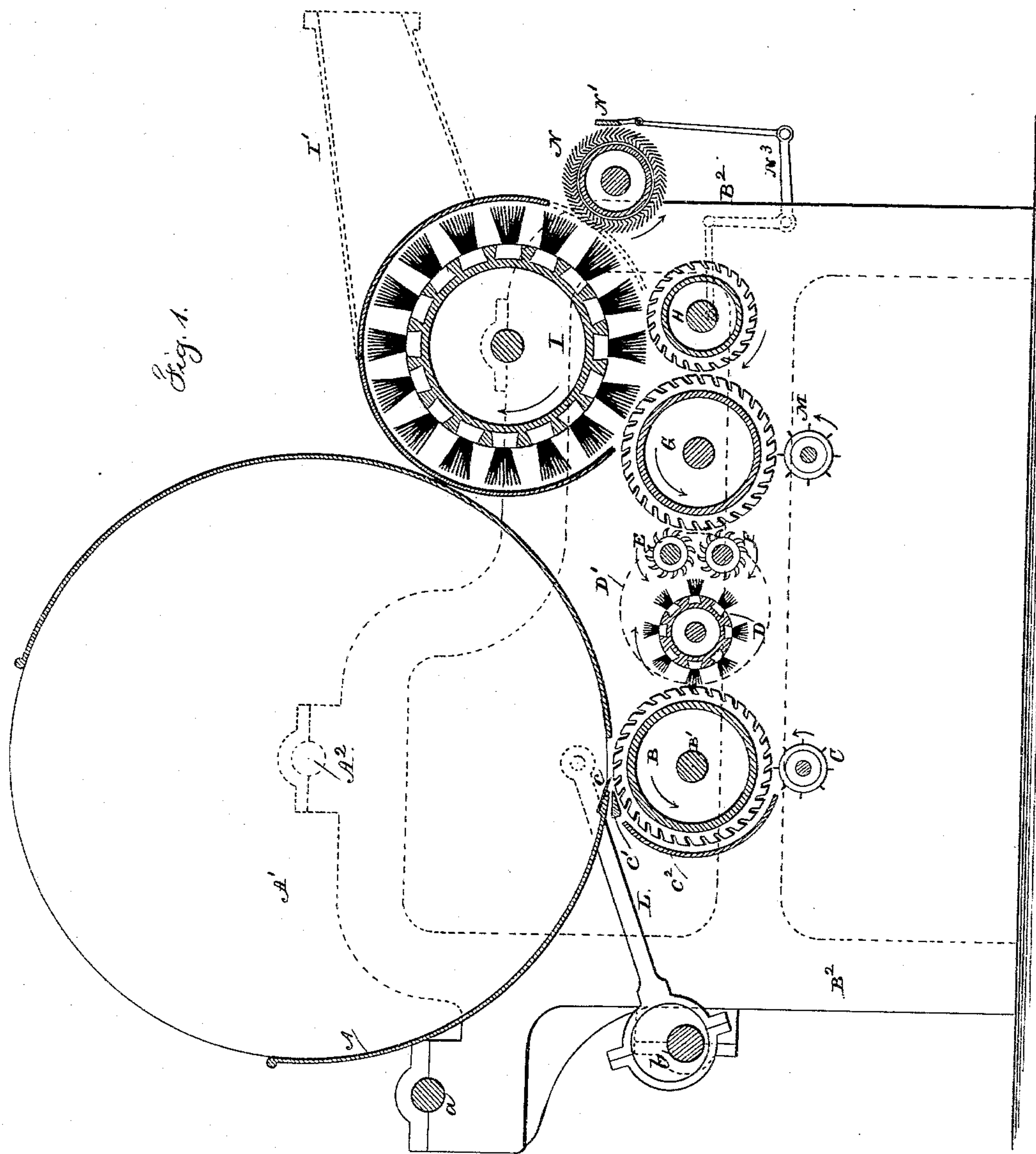
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S. R. PARKHURST.

MACHINE FOR FEEDING, OPENING, AND MIXING WOOL.

No. 323,523.

Patented Aug. 4, 1885.



Witnesses

Chas. H. Smith

J. Stail

Inventor

S. R. Parkhurst

per Lemuel W. Serrell

att.

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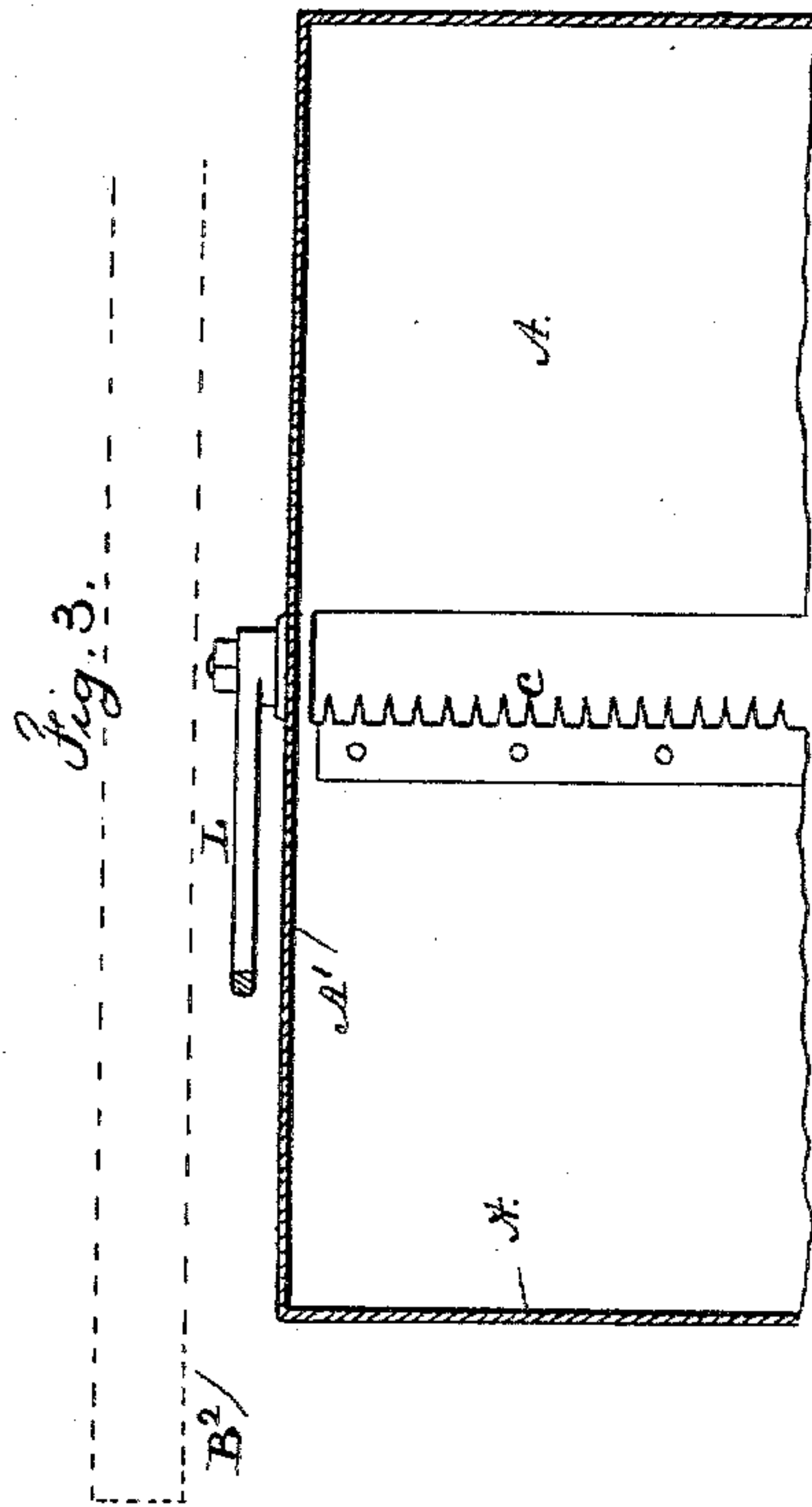
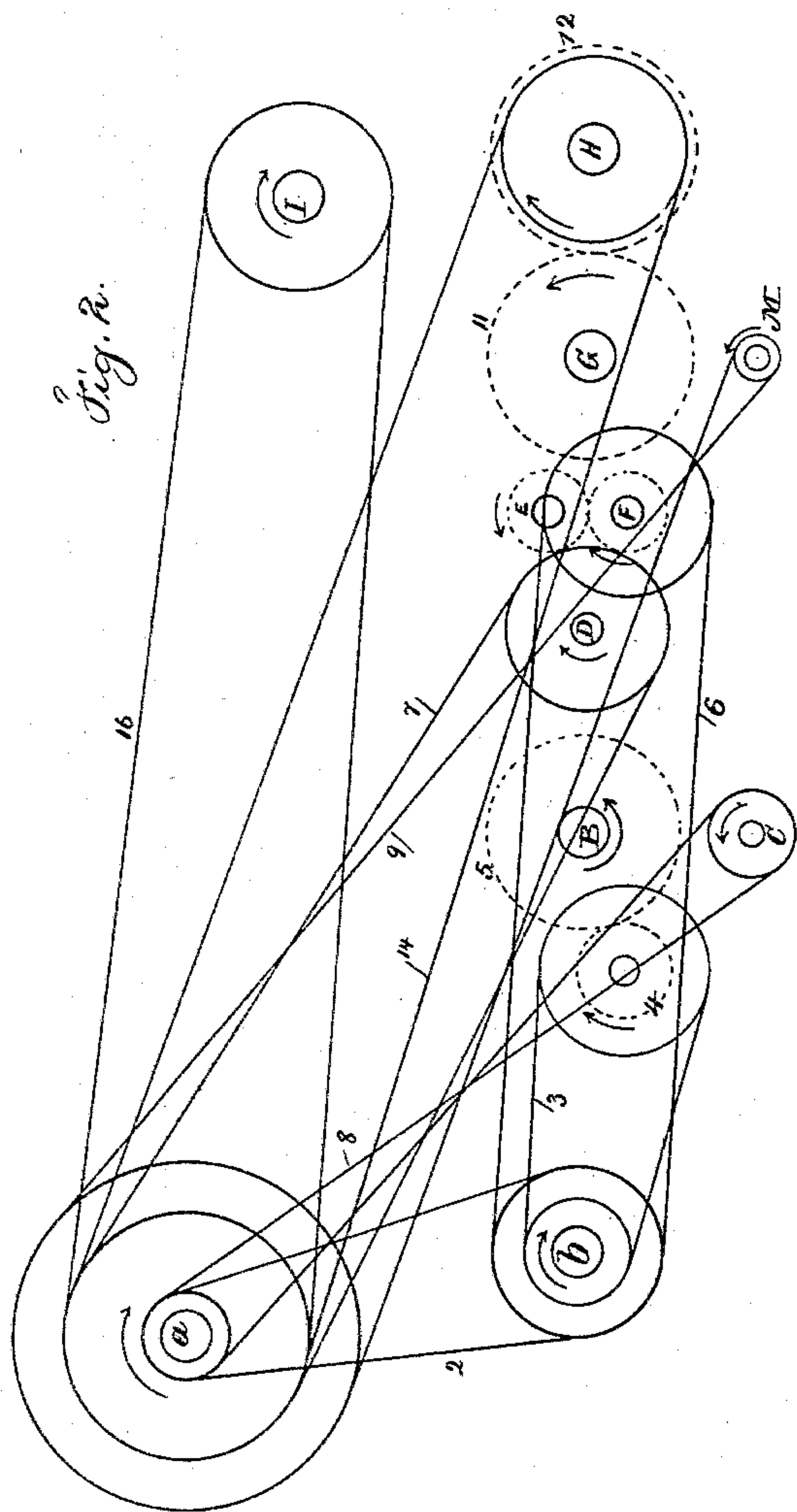
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UNITED STATES PATENT OFFICE.

STEPHEN R. PARKHURST, OF MONTCLAIR, NEW JERSEY, ASSIGNOR TO
EMILY R. PARKHURST, OF SAME PLACE.

MACHINE FOR FEEDING, OPENING, AND MIXING WOOL.

SPECIFICATION forming part of Letters Patent No. 323,523, dated August 4, 1885.

Application filed November 3, 1884. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN R. PARKHURST, of Montclair, in the county of Essex and State of New Jersey, have invented an
5 Improvement in Machines for Feeding, Opening, and Mixing Wool, of which the following is a specification.

The object of this invention is to feed wool with uniformity and automatically into an
10 opening and mixing machine, that removes burrs and foreign substances, and delivers the material in a form adapted to be supplied to other woollen machinery, such as the carding and roving machines, so as to dispense
15 with the picking and mixing machines heretofore made use of, and thereby dispense with several of the operations heretofore usually employed, and prevent the injury to and loss of wool heretofore experienced, especially in
20 the picker-room.

In the drawings, Figure 1 shows a vertical section of a burring-machine containing my improvements. Fig. 2 is a diagram of the belt and gear connections by which the re-
25 spective parts may be driven, and Fig. 3 is a sectional plan of one end of the feeding-hopper.

The toothed cylinder B, upon the shaft B', is driven by competent power in the direction of the arrow, and above the same, between the frames B² of the machine is a hopper, A, formed of a shell, preferably of metal, and about three-quarters of a cylinder. A' are
30 ends to this hopper, and A² are pivots or gudgeons upon which the hopper receives an oscillating motion from the revolving shaft b. For this purpose an eccentric on the shaft and a rod, L, to one end of the hopper may be employed; or there may be two eccentrics and
35 rods, one at each end of the hopper. In the bottom of this hopper, and directly over the top of the toothed cylinder B, is a slot running longitudinally of the cylinder B, and at one edge of this slot there is a comb, c, and beneath the hopper A, and between the same and
40 the cylinder B, there is a stationary bar, c'.
45

When the machine is in use, the wool is thrown in mass into the hopper A, and spread out with moderate uniformity, and the oscillating motion of the hopper forms the wool
50 into a long roll parallel to the axis of the hop-

per, and resting in the bottom thereof, and the teeth of the cylinder B catch into and draw the wool through the opening in the bottom of the hopper, and as said hopper vibrates, the comb-teeth at the edge of the opening enter
55 the locks of wool and hold the same back as the lock is opened by the drawing action of the teeth of such cylinder B, and as the comb draws back over the stationary bar c' the latter acts as a stripper to clean the wool out of
60 the comb, so that the said wool may be drawn along by the teeth of B, and spread with uniformity upon the said cylinder B, and passed to the opening, cleaning, carding, or mixing
65 appliances, and when the wool in different colors is thrown into the hopper the same is mixed in forming the roll, and it is taken off by the said cylinder B, and the different colors are delivered from such cylinder B with uni-
70 formity.

In order to separate burrs and foreign substances I make use of a stripper or guard, C, that revolves in the direction indicated, and more thoroughly opens and spreads the locks
75 of wool upon the teeth of the cylinder B, as well as knocking out the burrs.

I preferably employ a shell of sheet metal at c² to prevent the locks of wool falling off the cylinder B.

The wool may be removed from the toothed
80 cylinder B by a cylinder having teeth or card clothing, as indicated by the dotted line D'; but I prefer to use the revolving brush D, that removes the locks of wool from D and impales them upon the teeth of the rollers E F, which
85 rollers are similar to the feed-rollers shown in my Patent No. 238,709. The teeth of these rollers E F aid in opening the locks of wool, and the brush as it passes by the wool upon the teeth still further opens the locks and
90 brushes out impurities.

I find it preferable that the relative speed of the parts should be regulated, so that while the surface of the toothed cylinder B moves a distance of one, the ends of the brushes D
95 should move a distance of about six, and the feed-rollers a distance of about four.

The toothed cylinders G and H are revolved in the directions indicated by the arrows, and while the surfaces of the aforesaid parts are
100

moving the distance named the surface of cylinder G should move about a distance of eight, and the surface of cylinder H a distance of about four. The result of these movements is that the wool is opened by a comparatively rapid movement of the teeth of cylinder G, while the locks are held between the rollers E and F; but the directions of motion are such that the teeth of the cylinder G draw the wool entirely out of and from between the teeth of the rollers E F, and the teeth of the cylinder H hold back the locks and open the same, because the teeth of the cylinder G are moving at a greater speed.

The delivery-cylinder I is preferably armed with wire teeth, usually straight, similar to the teeth upon revolving brushes, and these act from heel to point of the respective teeth on the cylinders G and H, and remove all the wool, and at the same time open the said wool still further.

The wool may be thrown off the brush-blower I by the action of the atmosphere and centrifugal force, in which case the trunk (shown by dotted lines at I') may be used to convey the wool to a room; but I prefer to use a doffer-cylinder, N, and a comb or vibrator, N', for delivering the wool in the form of a bat or a sliver, as desired. These parts N N' being of ordinary character and well known do not require further description; but I have shown a bent lever, N³, with a connecting-rod to a crank-pin on the shaft of the cylinder H, and a connecting-rod to the doffer-comb to move the same.

I also employ a stripper or guard, M, to still further remove foreign substances by acting against the wool while upon the cylinder G.

It will be seen by this machine the rough or crude wool is by one operation opened, cleaned, and delivered in the form of a bat ready for any of the ordinary operations of carding, &c., thus dispensing with the ordinary mixing-picker, and the lint-room connected with the same.

In the diagram Fig. 2, the driving-shaft *a* is shown as connected by pulleys and a belt, 2, to the shaft *b*, and from this the belt 3 drives a pinion, 4, that gives motion to the gear-wheel 5 on the shaft B' of the cylinder B. The belt 6 drives the roller F, and this and the roller E are geared together. The belt 7 from *a* drives the brush D. The belts 8 and 9 actuate the strippers C and M, respectively. The

shafts of the toothed cylinders G H are geared together at 11 12, and the shaft of the cylinder H is driven by a belt, 14, and pulley. The shaft of the brush I is driven by a belt, 16, and pulley. This diagram illustrates the connections, and I remark that the gears and pulleys are placed some at one side of the machine and some at the other side.

I claim as my invention—

1. The combination, with a revolving toothed cylinder, of a feeding-hopper having a longitudinal opening in the bottom portion above the toothed cylinder, pivots to support the hopper, and a crank or equivalent mechanism for giving to the hopper an oscillating motion, and a comb fixed to the hopper at one side of the longitudinal opening, substantially as set forth.

2. The combination, with a revolving toothed cylinder, of a feeding-hopper having a longitudinal opening in the bottom, mechanism, substantially as specified, for moving the hopper transversely to the toothed cylinder, a comb upon the hopper at the longitudinal opening, and a stationary guard between the hopper and the cylinder, substantially as set forth.

3. The combination, with a revolving toothed cylinder, of a feeding-hopper having a longitudinal opening over the toothed cylinder, means for moving the hopper across above the toothed cylinder, and a revolving stripper acting to separate the burrs, substantially as set forth.

4. The combination, with a revolving toothed cylinder, of a feeding-hopper having a longitudinal opening over the toothed cylinder, teeth upon the hopper at the opening, a brush to remove the wool from the cylinder, the toothed cylinders F E G, and delivering-cylinder I, substantially as set forth.

5. The combination, with the cylinder B, stripper C, and the slotted oscillating hopper A, of the toothed cylinders G H, the toothed cylinders between the cylinder B and the cylinder G, the delivery-cylinder I, the doffer-cylinder N, and comb and belts and pulleys or gearing to revolve the respective cylinders, substantially as set forth.

Signed by me this 27th day of October, A. D. 1884.

S. R. PARKHURST.

Witnesses:

WILLIAM G. MOTT,
HAROLD SERRELL.