

R. Mansley.

Disintegrating Fibrous Plants.

*N^o 1,520.
32,524.*

Patented Jun. 11, 1861.

Fig. 2.

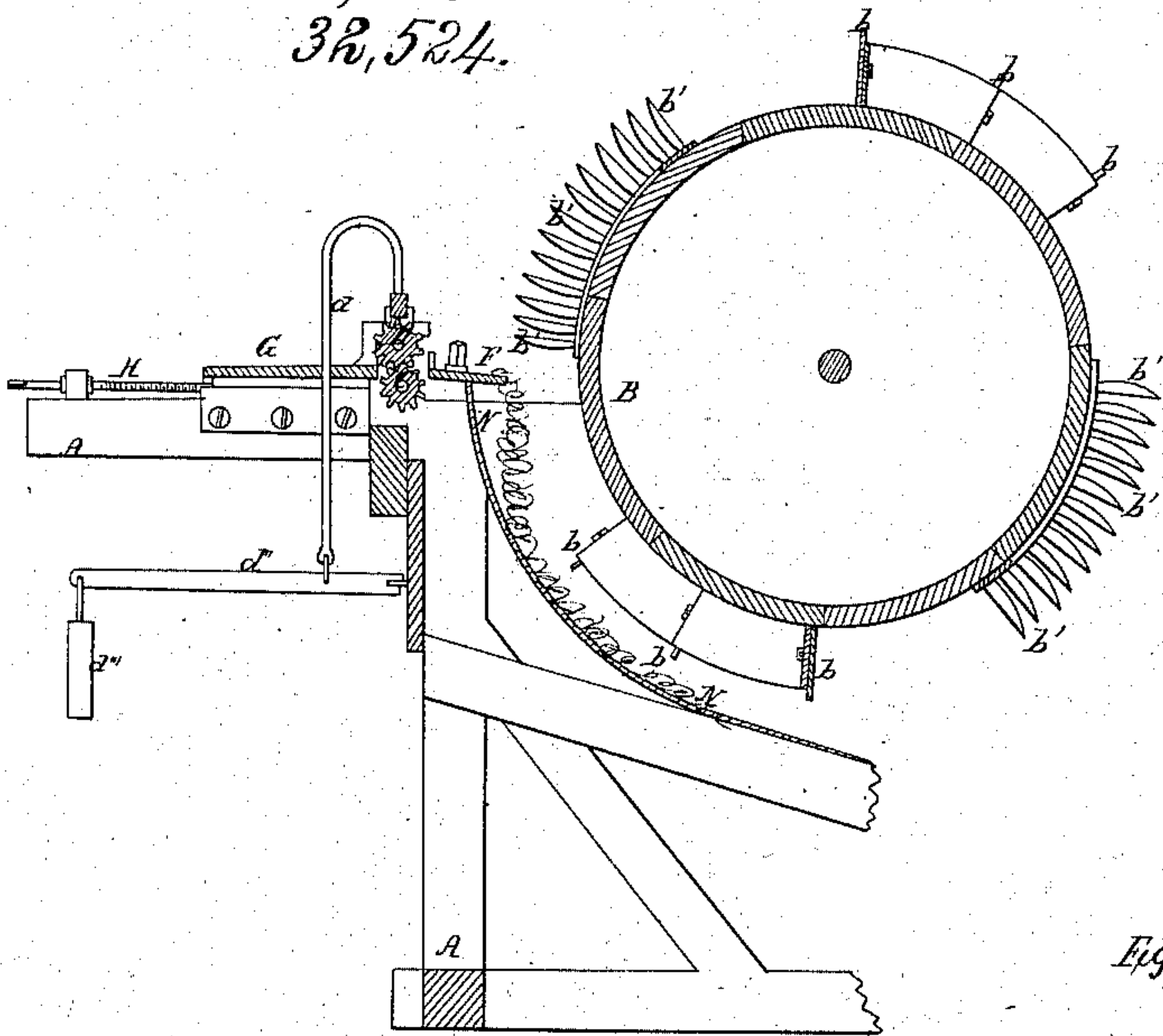


Fig. 3.

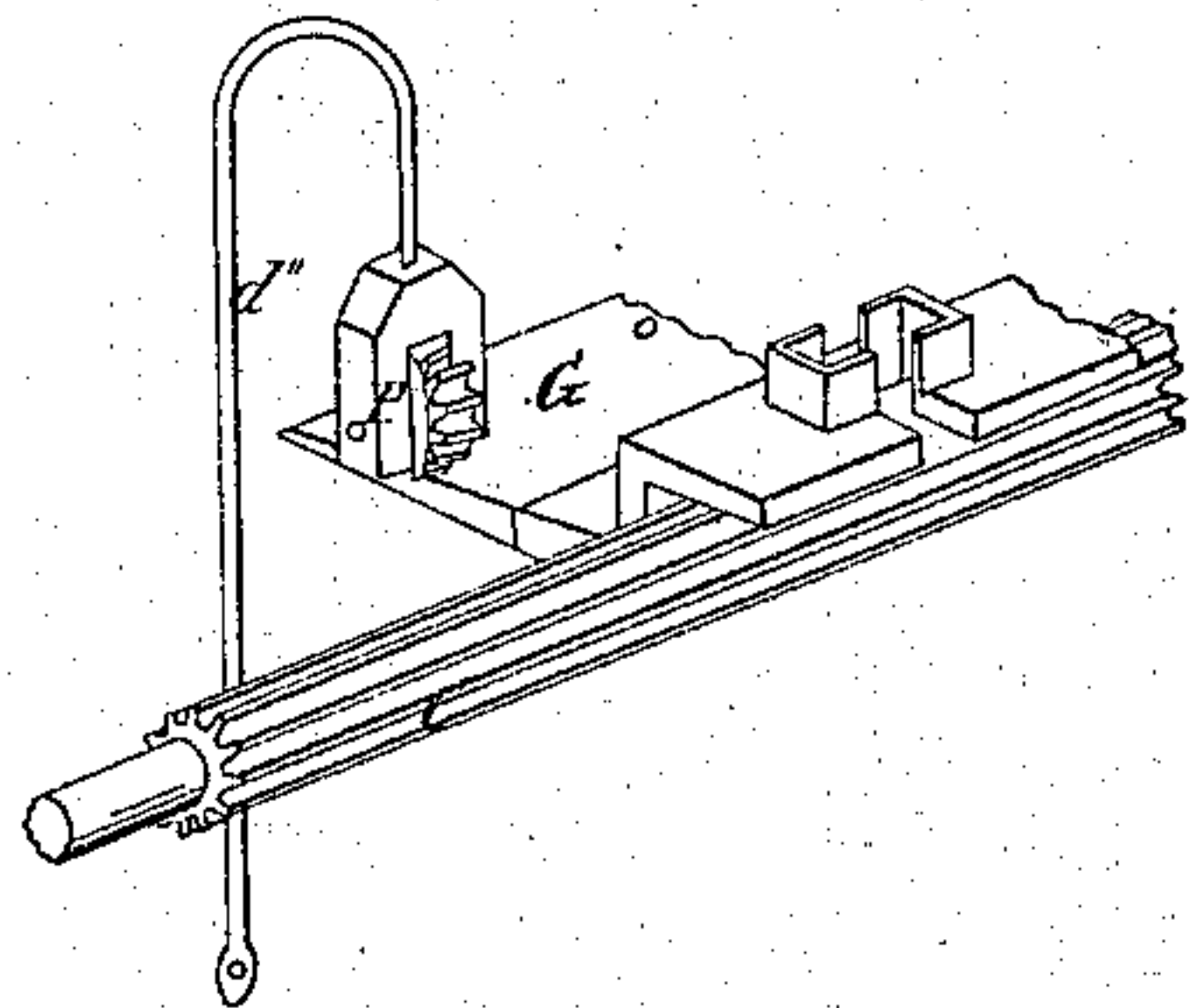
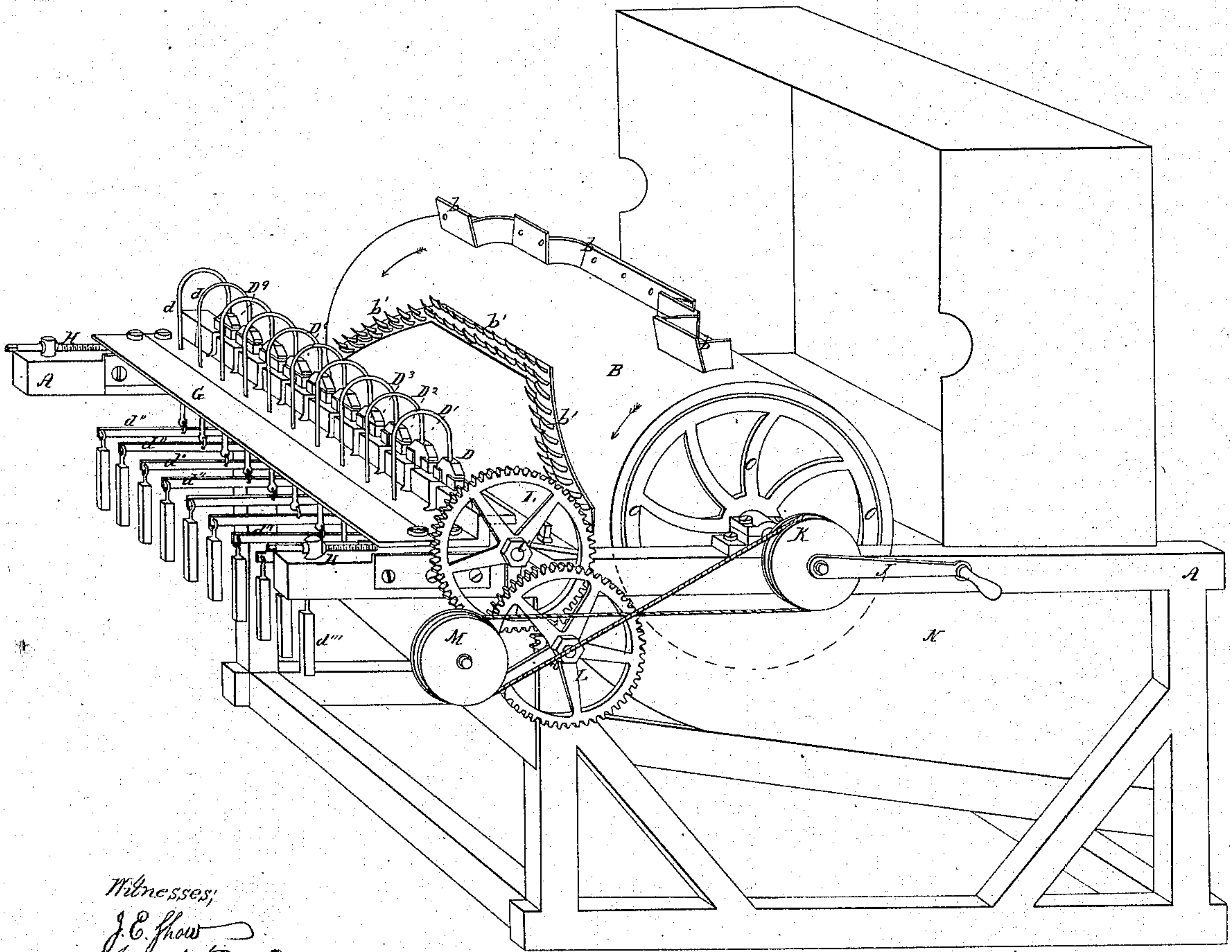


Fig. 1.



*Witnesses:
J. E. Shaw
Geo. T. Newton*

*Inventor,
Richard Mansley*

UNITED STATES PATENT OFFICE.

RICHARD MANSLEY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR OPENING ROPE.

Specification forming part of Letters Patent No. 32,524, dated June 11, 1861.

To all whom it may concern:

Be it known that I, RICHARD MANSLEY, of the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Machines for Opening Rope into Tow or Oakum; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, in which—

Figure 1 is a perspective view, the cover of the machine being thrown back; Fig. 2, a transverse section; Fig. 3, a perspective view of a part of the feeding apparatus.

In Fig. 1, A is a frame; B, a cylinder, upon which are fastened two sets of beaters, *b*, and two sets of knife-blades, *b'*, which sets are shown in Fig. 2. The beaters are constructed in sections, and when these latter are arranged so as to act successively upon the ropes, the machine operates with a more steady motion and with less expenditure of power than would be required if each set of beaters formed an unbroken line parallel to the axis of the cylinder. The sections may be increased or diminished in number, and they may be placed on the cylinder, each parallel to the axis, between spiral lines running from one end to the other end of the cylinder, or otherwise varied in their arrangement, as desired; but the best arrangement for them is shown in Fig. 1, where the middle section is about equal in length to the sections which are set back on either side of it, since by this arrangement the tow is drawn from the ends toward the middle of the cylinder. Each section of the beaters is faced with a detachable plate secured by bolts. By this device the plates, when their edges are worn with use, can be turned and caused to present their different longitudinal edges for action upon the ropes. The knife-blades *b'* are set in sectional iron plates arranged on lines about parallel to the general direction of the beaters, as shown in Fig. 1. The blades have edges, straight or curving, from about their bases to their points, which points, when the cylinder is in motion, describe the same circle that is described by the edges of the face-plates of the beaters.

C is the lower single feed-roller, which is fixed in its bearings.

D D', &c., are upper separate feed-rollers, each revolving on its own independent axis or

shaft, and each of these shafts having its bearing so supported as to allow of its vertical motion. To each of the blocks or other devices so supporting these rollers, and which are designated in Fig. 3 by the letter P, is secured one end of a bent rod, *d*, the other end of which is attached to a lever, *d''*, to which is appended a weight, *d'''*. The advantages of this construction are that the different upper rollers being fed each with a separate rope, and one of the ropes having run through, the action of the remaining upper rollers is not impaired or affected, for each one, having a separate bearing, acts entirely independent of the other. The ropes may also be of different sizes. Time is also saved and more work effected, for by raising the levers *d''*, thereby raising the upper rollers, D D', &c., ropes can be inserted to meet the action of the bars *b* and knife-blades *b'*, instead of waiting for them to be drawn in by the action of the rollers. These are, I think, advantages over any machine for the same or similar purposes yet invented.

F, Fig. 2, is a beating-bar, over which move the ropes, which are acted upon at the edge of the bar by the beaters and knife-blades.

G is a feed-board, over which the ropes are fed into the machine.

The whole feeding apparatus, made up of beating-bar, feed-rollers, and weights, may be set by the screws H nearer to or farther from the points of the knife-blades, as may be necessary to suit the different sizes of rope to be opened. The pulley K, in connection with the pulley M and the cogged gearing marked L, Fig. 1, give motion to the feed-rollers.

N is an underlining of tin or sheet-iron, over which the tow passes from the machine.

I construct the frame of wood or cast-iron, the cylinder of wood, with internal cast-iron braces O, to strengthen the cylinder and support its journals; the beaters of cast-iron; the face-plates, knife-blades, and beating-bar of steel; the feed-rollers and other parts, the material of which is not hereinbefore described, of cast-iron.

When the machine is in operation the cylinder moves toward the feed-rollers in the direction of the arrows. The beaters and knife-blades, by striking the rope at the edge of the beating-bar, unstrand the rope and open the strands into tow. An operator inserts the ends of the ropes—one rope for each small

feed-roller—between the feed-rollers, which feed them in until they are opened to within six or eight inches of their ends. The remaining parts are then withdrawn and reversed, the unopened ends being inserted, in order to prevent the passing through of unopened strands.

The draft Fig. 1 represents a crank, J, for the application of hand-power; but the working-machine is run by steam or water power, and has a pulley for belting, which pulley may be placed at either end of the cylinder.

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

1. The combination of the separate upper feed-rollers, D D', &c., their supports P, and the rods *d*, connecting them with the levers *d''*, and weights *d'''*, the whole arranged substantially as described, and for the purpose aforesaid.

2. The combination of the beaters *b*, knife-blades *b'*, and the adjustable feeding apparatus, the whole constructed and arranged substantially as described.

RICHARD MANSLEY.

Witnesses:

JNO. A. BURTON,

J. E. SHAW.