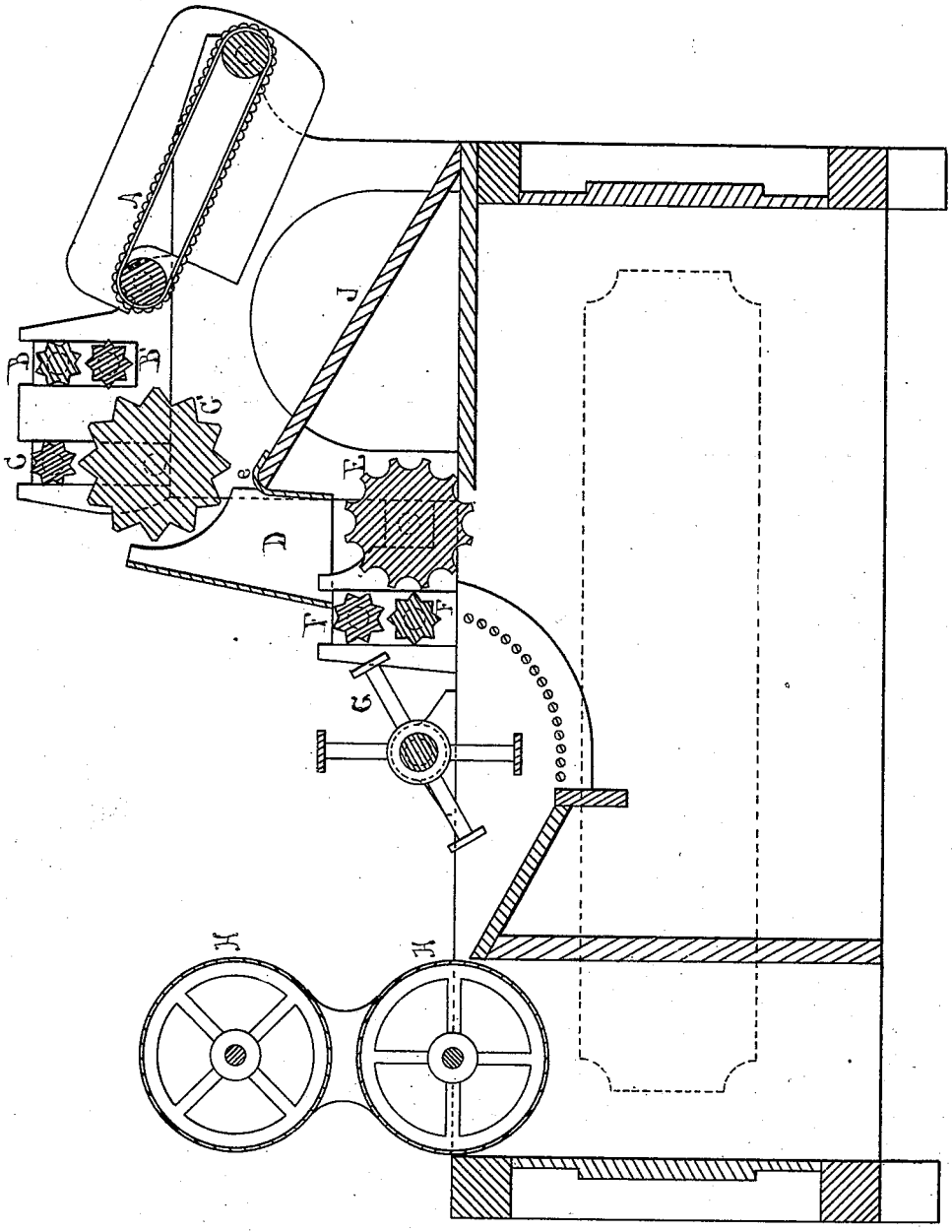
R. KITSON.

Cotton Opener and Cleaner.

No. 201,424. Patented March 19, 1878.



Witnesses.
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UNITED STATES PATENT OFFICE.

RICHARD KITSON, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN COTTON OPENER AND CLEANER.

Specification forming part of Letters Patent No. **201,424**, dated March 19, 1878; application filed December 30, 1876.

To all whom it may concern:

Be it known that I, RICHARD KITSON, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Opening and Cleaning Cotton and other Fibrous Materials, of which the following is a description:

My invention relates to certain improvements made upon the separating mechanism described in my application for Letters Patent for cotton-opener, filed July 1, 1876, and patented February 20, 1877, No. 187,538.

In the process of opening cotton or other fibrous materials, it has been found of great advantage to have the lower dividing-roll of the separating mechanism so placed, relative to the lower grasping-roll, that the peripheries of these two rolls shall be immediately adjacent to each other, in order that, since the adjacent sides of these two rolls are revolving in opposite directions, the lower dividing-roll may also serve as a stripping-roll, to strip the lower grasping-roll of any fibers which otherwise would be liable to get wound around the latter.

As the fibers of the cotton or other material to be opened by this separating mechanism are of various lengths, it is also of great advantage to place the nipping-line of the dividing-rolls at different distances from that of the grasping-rolls, according as the fiber of the material to be opened is long or short, in order that the gripe of the dividing-rolls upon the material may be at such a distance from the gripe of the grasping-rolls that the fibers will not be broken or injured while the lumps and bunches are being opened.

If, however, the dividing-rolls, as previously used, are adjusted to the different lengths of long fiber, and placed at a proper distance from the grasping-rolls, a space is left between the lower dividing and grasping rolls, through which some of the material may fall, and the fibers are also liable in this case to be wound around the lower grasping-roll, thus impeding the action of the separating mechanism.

The object of my present invention is to provide a separating mechanism which shall be capable of operating equally well upon material having long fibers, without any difficulty as to the fibers winding around the lower grasping-roll, and without breaking or injuring the fibers; and this result I accomplish by constructing the lower dividing-roll of such size as to bring the peripheries of these lower rolls adjacent to each other, thus causing the lower dividing-roll to strip all fibers from the grasping-rolls, and prevent them from winding around the latter; and by thus constructing the lower dividing-roll I am also enabled to bring the griping-lines of the dividing-rolls at any distance desirable from the holding-point of the grasping-rolls.

The figure represents a vertical section of a cotton-opener, showing my improved separating mechanism.

A is the feed-apron. B and B′ are the grasping-rolls. C and C′ are the dividing-rolls.

As previously constructed, I placed the centers of the shafts of these lower rolls in the same straight line; but by placing the shaft of the dividing-roll below that of the grasping-roll, I am enabled to make the former of any desired size. The shafts of the dividing-rolls are placed as before, so that their centers will be in the same perpendicular line.

By thus increasing the size of the lower dividing-roll, I am enabled to cause it to act as a stripping-roll, to prevent any winding of the fibers around the lower grasping-roll, and at the same time the tangential or griping line of these dividing-rolls may be placed at any distance from the griping or holding line of the grasping-rolls desirable on account of the length of fiber of the material to be operated upon, so that the fibers will not be broken or otherwise injured.

D is the condenser or gage-box, having an opening, *e*, at the top of the rear side of the box. E is the large fluted roll at the bottom of this box, and F F the feed-rolls which deliver the cotton to the beater G, from which it is thrown upon the screens H H. These parts and their operation are fully described in the specification of my said application.

I claim as new and of my invention—

In combination with the lower grasping-roll B′, the lower dividing-roll C′, placed substantially as described, so as to strip the grasping-roll, as and for the purpose set forth.

RICHARD KITSON.

Witnesses:

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