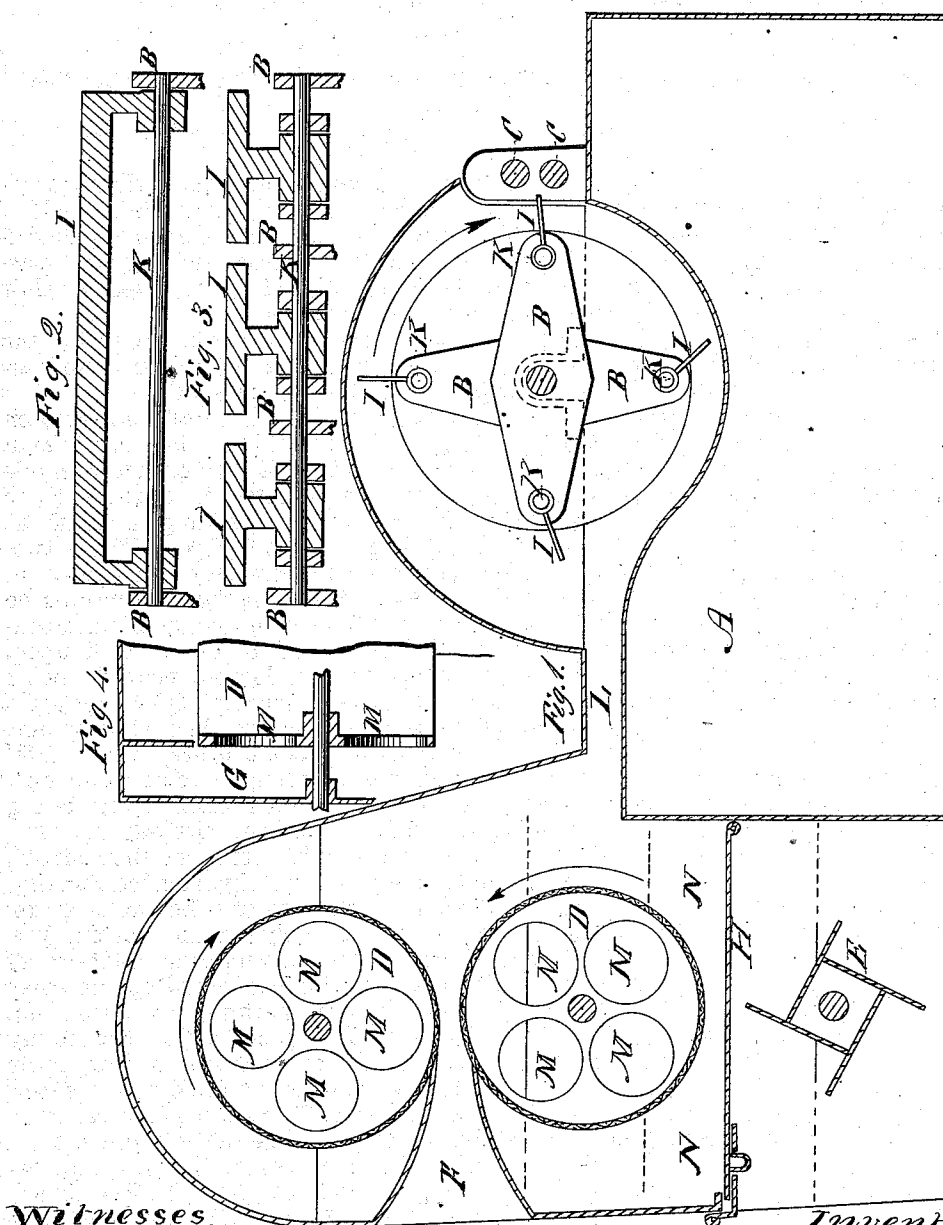


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Beater for Cotton-Openers, &c.

No. 159,487.

Patented Feb. 2, 1875.



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UNITED STATES PATENT OFFICE.

WILLIAM E. WHITEHEAD, OF MILLS PLATTIN, ENGLAND, AND ABEL T. ATHERTON, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN BEATERS FOR COTTON-OPENERS, &c.

Specification forming part of Letters Patent No. **159,487**, dated February 2, 1875; application filed July 23, 1873.

To all whom it may concern:

Be it known that we, WILLIAM E. WHITEHEAD, of Mills Plattin, county of Lancaster, England, and ABEL T. ATHERTON, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a certain Improvement in Machines for Opening, Cleaning, and Lapping Cotton and other fibrous materials; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making part of this specification—

Figure 1 being a longitudinal vertical section of a cotton opening, cleaning, and lapping machine constructed with our improvement; Fig. 2, a central longitudinal section of one of the swinging whippers described in this specification; Fig. 3, a similar section of a compound swinging whipper, or several whippers swinging on the same pivot-rod; Fig. 4, a section of a part detached.

Like letters designate corresponding parts in all of the figures.

The nature of our invention consists in the employment of whippers which have extended whipping surfaces or edges parallel, or nearly parallel, with the feed-rolls, and which swing freely in circles at such distances from one another, and from the shaft of the reels or spiders on which they are mounted, as to be severally independent and unobstructed in their separate swinging motions, and yield back within the full pathway of their revolution when an unusual quantity of cotton is fed to them, while acting with entire efficacy thereon, as hereinafter specified.

In the drawings, A represents the frame of the machine; B B, the reels or spiders, on which the whippers are mounted; C C, the feed-rolls; D D, the cage-cylinders; E, a draft-fan; F, an opening at the rear of the machine, through which the cotton is delivered and formed into laps; G, one of the draft air-chambers at the ends of the cage-cylinders; H, a door, opening from the cage-cylinder chamber to the chamber of the draft-fan; I I, the whippers; K K, the pivot-rods, on which the whippers swing; L, a passage lead-

ing from the whipper-chamber to the cage-cylinder chamber; M M, openings in the ends of the cage-cylinders, to form communications between the interior thereof and the draft-passages G G; and N, a chamber or recess below the lower cage-cylinder.

We here claim no novelty in any part of the machine, except in the construction and arrangement of the whippers I I.

The whippers I I are severally mounted on pivot-rods K K, which have their bearings in the reels or spiders B B. Either a single whipper may be mounted on each rod K, as shown in Fig. 2, thus extending in length as far as the length of the feed-rolls C C, or two, three, or more whippers may be mounted on each rod, as indicated in Fig. 3, according to the width of the machine, or the kind or condition of the material to be operated upon. These pivot-rods are located near the outer ends of the reels or spiders B B, allowing a distance from the shaft of the reel or spider, and distances from one another, at least sufficient to enable the whippers to swing or turn on their respective rods without interfering with the said reel-shaft, or with one another.

The whippers swing freely on their pivots, so that, though, when fully extended radially, they reach as close to the feed-rolls as required to act properly on the cotton, yet, when bunches or any unusual quantity of cotton are presented to the whippers, they yield back in their pathway by turning on their rods, so as to pass by the obstructing cotton, and no harm follows, and still the blows of the whippers on the cotton are perfectly effectual, finally resulting in a thorough separation or opening of the cotton fibers.

The beating-surfaces of the whippers extend along the full length of the feed-rolls C C, parallel, or nearly so, therewith, so that the entire breadth of the cotton fed thereto is struck by the beaters, and with equal force and effect thereon.

What we claim as our invention, and desire to secure by Letters Patent, is—

In a machine for opening and cleaning cotton and other fibrous material, whippers I I,

having extended surfaces or edges parallel, or nearly parallel, with the feed-rolls C C, and swinging freely in circles at sufficient distances from one another, and from the shaft of the revolving reels or spiders B B, on which they are mounted, to be severally independent and unobstructed in their swinging motions, and to yield within the full pathway of their

revolution when an unusual or matted quantity of cotton is fed to them, substantially as herein specified.

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