

H. Barbour. Carding Engine.

N^o 3,094.

Patented May 19, 1843.

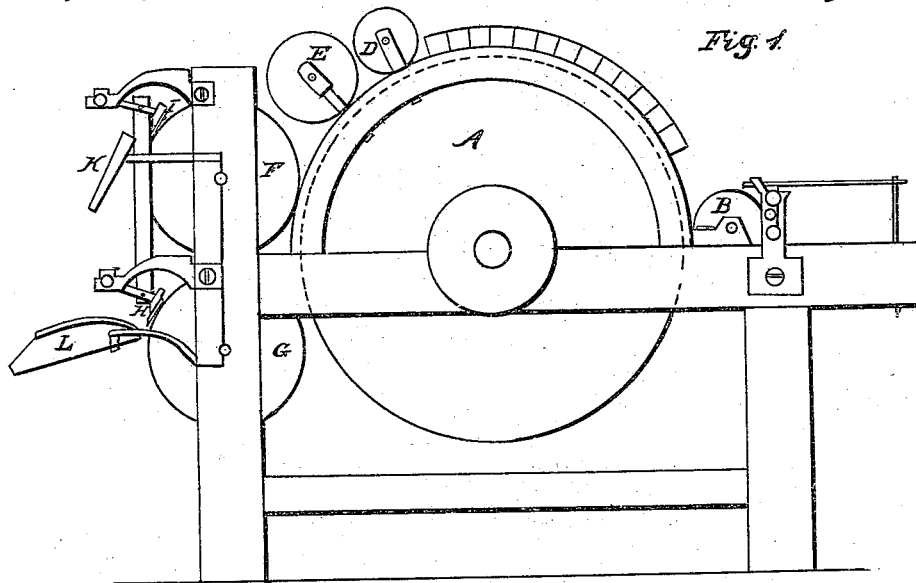


Fig. 1.

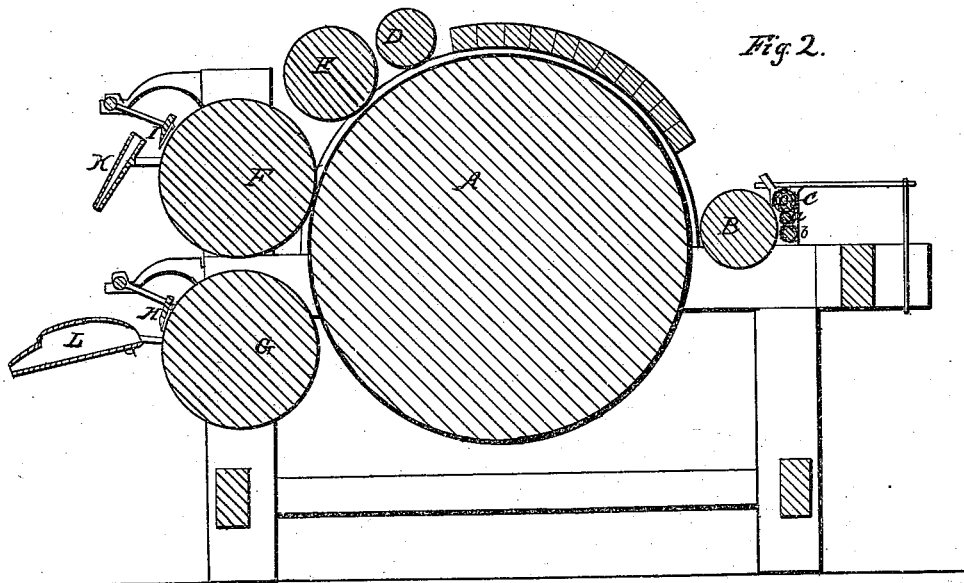


Fig. 2.

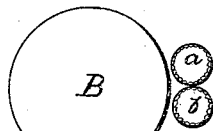


Fig. 3.

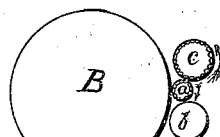


Fig. 4.

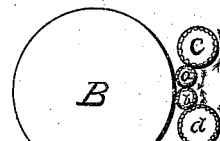


Fig. 5.

UNITED STATES PATENT OFFICE.

HORACE BARBOUR, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO JOHN GLEASON, H. C. GLEASON, AND N. D. WHITE, OF SAME PLACE.

IMPROVEMENT IN THE ARRANGEMENT OF FEEDING OR DELIVERY ROLLERS OF CARDING-ENGINES.

Specification forming part of Letters Patent No. 3,094, dated May 19, 1843.

To all whom it may concern:

Be it known that I, HORACE BARBOUR, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Engines or Machinery for Carding Cotton or other Fibrous Material; and I do declare that the following specification, taken in connection with the accompanying drawings of the said improvements, forms a full and exact description of the same.

Figure 1 of the drawings above mentioned represents a side elevation, and Fig. 2 a vertical central and longitudinal section, of a carding-machine having my improvements appended thereto.

A, Figs. 1 and 2, represents the main drum or card-cylinder, and B is the runner or urchin or cylinder which receives the cotton from the fluted rollers. D and E are other card rollers or cylinders, these several cylinders being covered with card-teeth and arranged, moved, and operating together in the usual manner.

It has been customary heretofore to use but two fluted rollers in order to convey the cotton to the cylinder B, and these rollers, being very long and necessarily small in their diameters, often spring apart from each other, and thus permit more of the fibrous material to pass between them than is desirable. My first improvement consists in arranging above these rollers, which are represented at *a* and *b*, Fig. 2, a third roller *c*, whose periphery is fluted like that of each of the others, and which engages with the upper of them.

Fig. 3 is an enlarged view of the cylinder B and fluted rollers *a b* as the same are ordinarily constructed and arranged, while Fig. 4 exhibits them of different diameters—that is, the diameter of *a* is much less than that of *b*, and they are combined together, and have a third fluted roller *c*, of larger diameter than that of the roller *a*, disposed above the upper of them. The cotton passes between the rollers *a* and *b* and thence to the cylinder B, and by inspection of the figure it will be observed that the distance of the point of junction of the peripheries of the rollers *a* and *b*, Fig. 4, from the periphery of the cylinder B is much less than the distance of the point of junction

of the rollers *a* and *b* in Fig. 3 from the periphery of the cylinder. Therefore, by supporting the smaller roller *a* by means of the third or supplementary fluted roller *c*, I am enabled to successfully operate on cotton of a shorter staple than can be carded by the ordinary arrangement of the fluted rollers. Besides, by the application of a roller *c* above the roller *a* and increasing the diameter of the lower roller *b* I can obviate the difficulty above mentioned of the springing of the rollers apart from each other. The peripheries of the rollers *a* and *b* should be placed as near to that of the cylinder B as is possible, to insure their correct operation together, while that of the upper roller *a*, which should rest upon the roller *c* sufficiently to prevent it from springing upward, is arranged at a greater distance than the others from the cylinder B.

Fig. 5 represents the two fluted rollers *a* and *b* of equal but much smaller diameters than those ordinarily used, each roller being supported by a supplementary fluted roller, applied to it as seen in the drawing. By such a disposition of the rollers a very short staple can be carded by the machine. These fluted rollers are moved and pressed down upon each other by means usually resorted to for effecting the same.

My next improvement consists in using a supplementary doffer or cylinder G, which is placed directly under the main doffer F, as seen in Fig. 2. This doffer G has a vibrating comb H arranged in front of it, and acting similar to that (*viz.*, I) of the upper doffer. As the card end of the fleece is removed from the upper doffer by the comb mechanism I it passes through the tin-plate or brass funnel K, by which it is contracted, and from thence it is continued downward and joined to the fleece removed by the lower doffer, and which passes through the second funnel-plate L. By employing a second doffer and nicely adjusting the relative distances of the doffers from the main cylinder, so that the doffer which first receives the fibrous material shall remove one-half of the quantity presented and the other doffer the remainder, the following advantages are obtained: The main cylinder is more effectually cleaned than by the ordinary arrangement of the mechanism, thereby

preventing the staple from being repeatedly carried around with the cylinder, which causes more or less breaking and knotting of the fibers as well as the accumulation of more or less waste upon the cylinder, to the injury of the cotton. The combing operation is more thoroughly effected and a much greater quantity of material can be carded in a given time. A poor quality of cotton can be carded, so as to be made available in the manufacture of fine goods. The slips or slivers of the staple being taken from two doffers and brought together and made to pass through one condensing-guide improves the sliver, making it more even and uniform.

The requisite movements of the doffer cylinders and combs may be obtained in any convenient manner generally employed for such purposes.

Having thus explained my invention, I shall claim—

The particular method herein described of arranging the delivering fluted rollers or applying the same to the cylinder B—that is to say, forming one of the said delivering-rollers smaller in its diameter than the other and supporting the smaller by means of a supplementary roller *c*, also by constructing the said delivering-rollers of equal or unequal diameters and supporting both of them by a fluted roller applied to each, by which peculiar arrangements I am enabled to successfully operate on cotton of a very short staple.

In testimony that the foregoing is a true description of my said invention and improvements I have hereto set my signature this 4th day of March, in the year 1843.

HORACE BARBOUR.

Witnesses:

JOHN A. KNOWLES,
ITHAMAR W. BEARD.