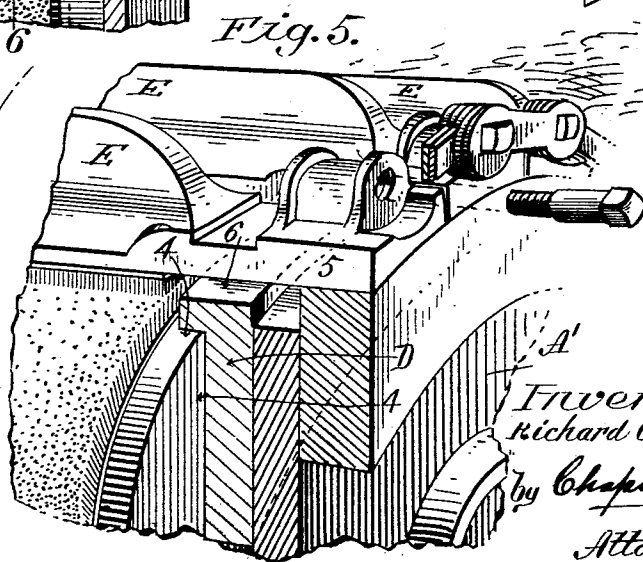
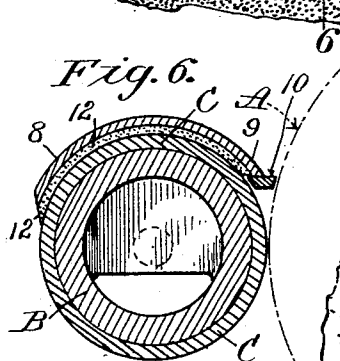
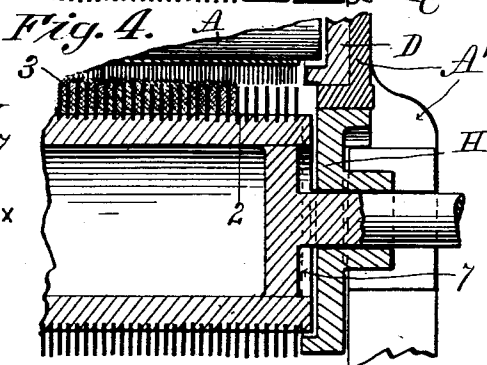
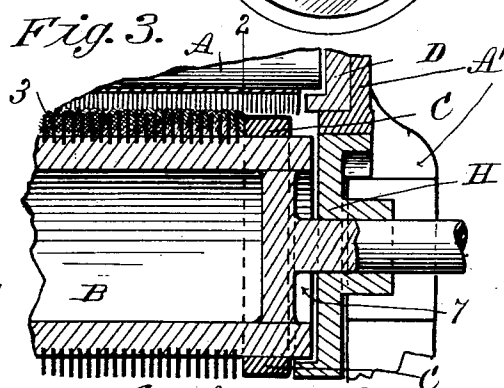
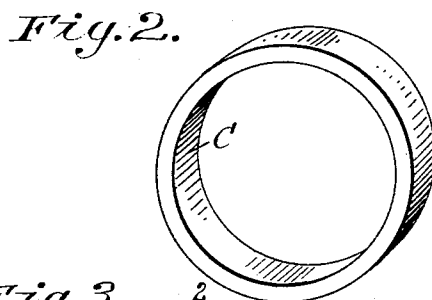
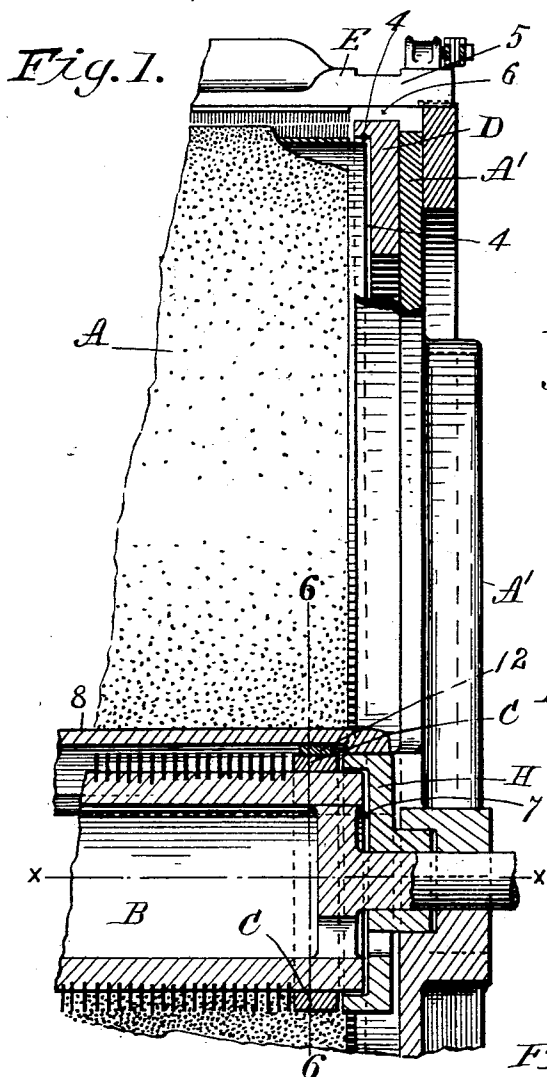


(No Model.)

R. GRIFFIN.
CARDING ENGINE.

No. 587,813.

Patented Aug. 10, 1897.



Witnesses:
J. H. Garfield
H. S. Clemons

Inventor:
Richard Griffin,
by *Chapman & Co*
Attorneys.

UNITED STATES PATENT OFFICE.

RICHARD GRIFFIN, OF HOLYOKE, MASSACHUSETTS.

CARDING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 587,813, dated August 10, 1897.

Application filed September 28, 1896. Serial No. 607,132. (No model.)

To all whom it may concern:

Be it known that I, RICHARD GRIFFIN, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Carding-Engines, of which the following is a specification.

This invention relates to carding-engines, and has for its object the prevention of the accumulation of waste fiber between the ends of the main cylinder and its "lining" and in the space between the underside of the "tops" and the periphery of said lining and between the ends of the "licker-in roll" and its guard or cap and between the said roll and its bonnet; and the invention consists of devices applied to the ends of the licker-in roll for the purpose above named, all as hereinafter described, and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is an elevation, partly in section, of one end of the main cylinder and licker-in roll of a carding-engine. Fig. 2 is a perspective view of a ring adapted to be fitted over each end of the licker-in roll. Fig. 3 is a plan view of one end of a licker-in roll having said ring applied thereto and showing also a portion of the main cylinder. Fig. 4 is a view similar to Fig. 3, showing the relation of the end of the licker-in roller to the main cylinder before the application of my improvement to said roll. Fig. 5 is a perspective view of the top of the main cylinder and showing the position of the tops relative to said cylinder-lining. Fig. 6 is a section through the licker-in roll and its bonnet.

Referring to the drawings, A represents the main cylinder of a carding-engine.

A' represents a portion of the frame of the machine.

B represents the licker-in roll; 8, its bonnet.

C represents a ring applied to each end of the licker-in roll.

D represents the wooden "lining," so called, fitted in between the ends of the main cylinder and the frame A', and E represents the tops of the carding-engine.

The drawings represent portions of a cotton-carding engine, and in this specification the description of the invention will apply more particularly to this class of machines;

but the invention is equally applicable to machines used for carding other fibers, as wool, hemp, ramie, &c.

In a cotton-card the "lap" 3 of cotton is not as wide as the licker-in roll B, under which it passes and by which it is fed into the card to the main cylinder A. It follows that the teeth of the licker-in roll, for a certain distance from each end thereof—say from line 2 to the end of the roll—are free from fiber, and by the much greater speed of rotation of the main cylinder as compared with the speed of the licker-in roll a draft of air is generated, which passes through the vacant spaces between the teeth on the ends of said roll and is directed against the ends of said main cylinder, which are approximately opposite or in the same plane with the ends of said licker-in roll. Said draft or current of air draws in with it into the space 4 between the ends of the main cylinder A and its lining D and into the space 6 under the ends 5 of the tops E, which pass close to the periphery of said lining, the loose floating fibers always present near a carding-engine, and also draws loose fibers from the edges of the lap 3, near the ends of the licker-in roll, which fibers accumulate in said spaces above named in quantities sometimes sufficient to clog the main cylinder. Such accumulations of waste are a serious source of annoyance and loss not only on account of the loss of material, but also because by the rotary motion of the cylinder in close proximity to the fixed parts said waste is rolled up into balls or tufts which frequently pass through the card and become part of the finished roving, thus making an imperfect yarn.

The device forming the subject of this invention obviates all of the above objections, and the application thereof to a card results in a very considerable saving of fiber and in the production of a roving free from the balls or tufts above mentioned and is constructed and applied as follows: In applying this device to a carding-machine the licker-in roll is removed and the teeth thereof cut off flush with the face of the roll from each end thereof toward the center for a sufficient distance—say from the end of the roll to about the line 2, Figs. 3 and 4—to permit of the placing on each end of the said roll a ring C, such as is

illustrated in Fig. 2 of the drawings and shown in its proper position on one end of said roll in Figs. 1 and 3. This ring may be made of any material of suitable hardness, but preferably of metal, and is turned to such internal diameter as to make it fit snugly on the ends of said licker-in roll, and the thickness of the walls of said ring is substantially equal to the height of the teeth of said roll from the face thereof to the points of the said teeth, whereby when the roll is placed in its position in the card the exterior surface of the ring C and the points of the teeth will be in the same plane and will lie in close proximity to the points of the teeth of the card-clothing with which the main cylinder is covered.

In Figs. 3 and 4 the cotton lap 3 (indicated by cross-hatching) is shown between the teeth of the licker-in roll and the teeth of the main cylinder, and it is seen that said ring occupies the space on said roll formerly occupied by the teeth thereof which received no cotton, owing to the impracticability of applying said lap to the full width of said roll. It is thus seen that the space through which the current of air is drawn into the main cylinder is entirely stopped off by the application of the said ring C to the ends of the roll B, and loose fibers cannot be drawn into said card, and all of the parts thereof are kept substantially free from accumulations of waste, as described. A further advantage resulting from the application of the said rings C to the roll B is the prevention of the accumulation of waste in the space 7 between the end of the roll B and its guard or cap H, as the fiber cannot work over the end of the roll and roll up between the fixed guard and the end of said roll.

It has been found that in running a card having the rings on the end of the licker-in roll, as described, waste accumulates under the bonnet or guard 8, Figs. 1 and 6, where it will not accumulate if the rings C are not applied on said roll, for if the said rings are not there the waste passes into the main cylinder, as above set forth. To stop this accu-

mulation, which occasionally will get through the card in tufts, it has been found necessary to close up the space between the inner surface of the bonnet 8 and the exterior surface of the said rings contiguous thereto from the point 9, where the said bonnet rests on the bar 10 between the main cylinder and the licker-in roll, to the opposite side or edge of the bonnet, which covers about as much of the surface of said roll, as shown in Fig. 6. The means preferably used in closing this space is one or more strips of leather 12, or some similar material, riveted or otherwise secured to the inside surface of the said bonnet, so that said material will bear lightly on the rings C when the bonnet is set down in position. In Fig. 1 said bonnet is shown in longitudinal section, and in Fig. 6 in cross-section, through one of said rings C. Said bonnet rests on the caps H, Fig. 1, as is customary in cards of this class, and said strips 12 do not bear with any appreciable weight on said rings.

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

1. A licker-in roll for carding-engines having rings on each end thereof, as described, combined with the bonnet for said roll having strips, as 12, secured to the inner surface thereof, above and in close proximity to said rings, substantially as set forth.

2. In a carding-engine, in combination, a licker-in roll having a ring on each end thereof between the teeth thereon and the end of the roll, said rings having a circumferential surface substantially in plane with the extremities of said teeth thereon, and the main cylinder of said engine having clothing thereon whose borders, adjoining the ends of the said cylinder, extend over the surfaces of said licker-in-roll rings, substantially as set forth.

RICHARD GRIFFIN.

Witnesses:

K. I. CLEMONS,
J. D. GARFIELD.