

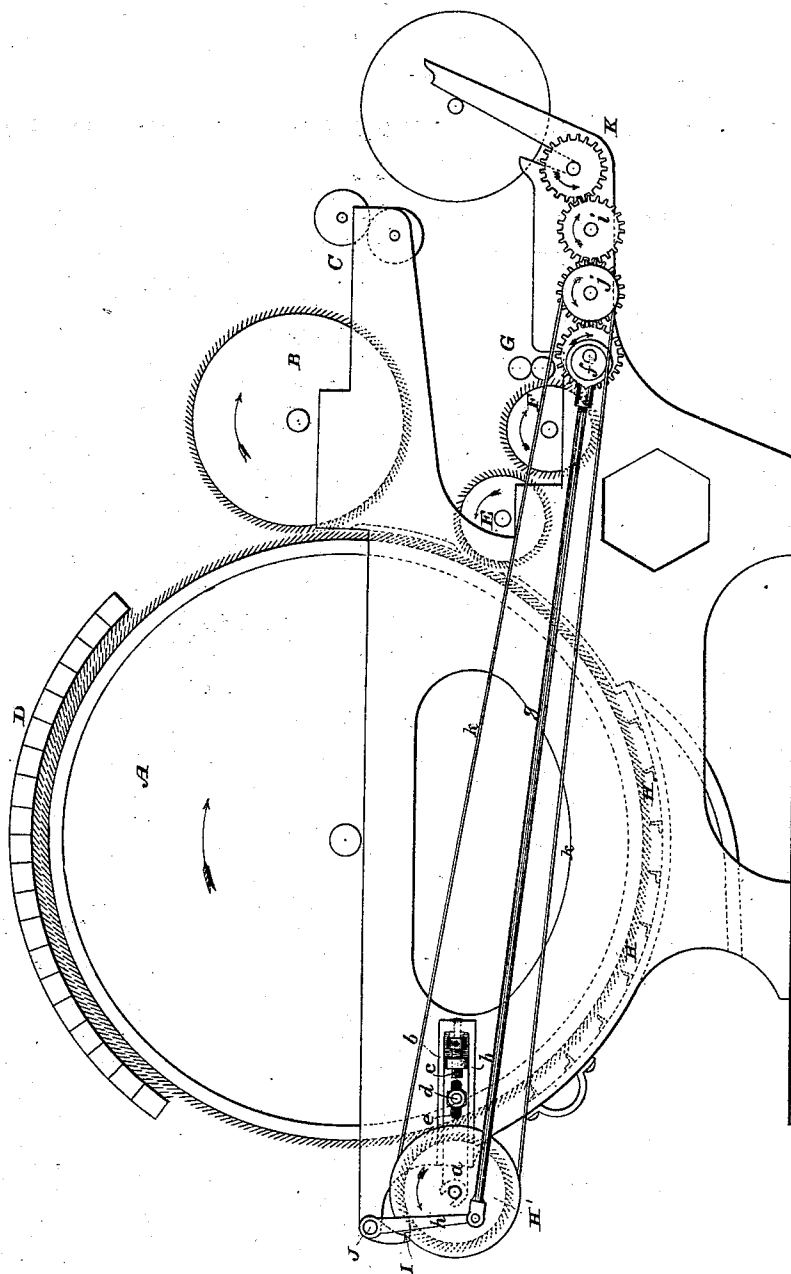
(No Model.)

W. E. WHITEHEAD.

CARDING MACHINE.

No. 275,447.

Patented Apr. 10, 1883.



WITNESSES

Wm A. Skunkle

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WILLIAM E. WHITEHEAD, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO THE
WHITEHEAD & ATHERTON MACHINE COMPANY, OF SAME PLACE.

CARDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 275,447, dated April 10, 1883.

Application filed August 14, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. WHITEHEAD, of Lowell, in the State of Massachusetts, have invented certain new and useful
5 Improvements in Carding-Machines, of which the following is a specification.

The object of this improvement is to enhance the capacity and efficiency of a carding-machine. This result I obtain by combining with
10 the top-flats a roll armed with wire clothing, which meets the cotton fiber on the main or carding cylinder before the same reaches the top-flats, and acts both as a preliminary carding device and also as a means for removing
15 from the main cylinder the motes, seeds, dust, and other refuse that would otherwise pass to the top-flats. I thus enhance the efficiency of the machine and its capacity for work. The fiber subjected to the preliminary action of the
20 roll is put in better condition to be subsequently acted on by the top-flats, and the top-flats, owing to the absence of the refuse which is taken up and carried off by the roll, are maintained in condition to do much more effective work than otherwise would be the case. This roll, which may be considered a combined
25 stripping and carding roll, is combined with mechanism by which it is continuously but slowly rotated, whereby it always presents to the cylinder a surface adapted for carding purposes, and also for receiving and retaining the refuse, and at the same time carries off this refuse to a point where the latter can be removed from the roll by an automatically-operating
30 comb.

Before proceeding to a more particular description of my invention I would state that I am aware that in a machine for carding hemp, flax, and hair a cylinder has been combined with
40 doffers for stripping the fiber from the cylinder, and then reversing it end for end before returning it to the cylinder, and with a roll armed with pins for the purpose of taking the dirt and refuse from the fiber before the latter reaches the doffers; but I know of no engine
45 for carding a comparatively short staple or fiber—such as cotton—having a roll arranged and operating to preliminarily card the fiber as well as to take from it the dirt and refuse, and

combined with a carding-cylinder and top-flats 50 which complete the carding work commenced by said roll, as is the case in my machine.

The manner in which my invention is or may be carried into effect will be readily understood by reference to the accompanying drawing, 55 which represents in side elevation so much of a carding-machine as is required to illustrate my improvement.

A is the carding or main cylinder, supported, together with the other working part of the 60 machine, in a frame of proper construction.

B is the doffer.

C are the delivery-rolls.

D are the top-flats, placed above the axis of the carding-cylinder, and arranged to operate 65 in the customary way.

E F are the lickers-in, which take the cotton drawn from the lap by the feed-rolls G.

At H are indicated, in dotted lines, stationary buckets or refuse-receptacles, substantially similar in function to the like devices 70 shown and described in Reissued Letters Patent No. 9,457, dated November 9, 1880.

The direction of rotation of the several revolving parts is indicated by the arrows. 75 The said parts are actuated in the usual way, as will be understood without further explanation by those skilled in the art to which my invention pertains.

I now proceed to describe the mechanism in 80 which my improvement resides.

At a point in front of the top-flats relatively to the direction of rotation of the carding-cylinder, and below a horizontal plane passing through the axis of said cylinder, is the combined carding and stripping roll hereinbefore referred to, (marked H'.) It is armed with teeth formed by covering it with coarse-wire clothing, and its journals are supported in bearings a, which are supported and can slide in guides 90 b, thus enabling the roll to be adjusted to the proper distance from the periphery of the carding-cylinder. As a convenient means for accomplishing this adjustment, a screw, c, for each sliding bearing is provided, said screw 95 being swiveled in the frame and screwing into the adjoining or inner end of the bearing; and to hold the bearing fast in any position to

which it may be brought, I make use of a bolt, *d*, which passes through a slot, *e*, in the bearing and screws into the frame.

In conjunction with the combined carding and stripping roll, I employ a comb, *I*, which in this instance has a reciprocating or oscillating movement, being attached to arms which project downwardly from a rock-shaft, *J*, mounted in suitable bearings in the machine-frame, and deriving its movement from any convenient source. In the arrangement shown in the drawing it is actuated from an eccentric, *f*, through the intermediary of an eccentric-strap and connecting-rod, *g*, which is jointed to a radially-projecting arm, *h*, on the shaft *J*. The eccentric is mounted on a short shaft having a gear-wheel or pinion, that is driven from the usual revolving lap-roll, *K*, through two intermediaries, *i j*, the lap-roll itself being driven in the customary way from the feed-rolls *G*; and to drive the roll *H'*, I make use of a belt, *k*, extending from a pulley on the intermediary *j* to a pulley on the roll or its shaft or journal. In this way a very slow movement of rotation is imparted to the roll.

When the machine is in action the combined carding and stripping roll acts, in conjunction with the main cylinder, to preliminarily card the fiber, and at the same time receives in the interstices or spaces between its teeth the motes, seed, and the like thrown off by the rapidly-revolving carding-cylinder, retaining also the short fibers of cotton, while the partially carded long fibers are not taken by it, but are carried around on the carding-cylinder

to be further acted on by the top-flats. The roll slowly revolves in a direction opposite to that in which its teeth point or incline, and constantly presents to the carding-cylinder fresh surfaces, which, as they fill up, gradually recede to give place to new surfaces. The filled portions of the roll, as they reach the comb, are by the latter stripped of the refuse matter, and are again in condition to act efficiently. The refuse matter, as it gathers on the comb, can from time to time be removed by an attendant.

Having described my improvement, I state in conclusion that I do not claim, broadly, the employment, in a carding-machine, of a roll acting in conjunction with the main cylinder for the purpose of receiving the refuse, &c., from the fiber thereon; but

What I do claim as new and of my invention is—

The combination, with the carding-cylinder and the top-flats, of the combined carding and stripping roll, arranged to preliminarily card and clean the fiber before it reaches the top-flats, mechanism for continuously and slowly revolving said roll, and the automatic comb or stripping device for said roll, under the arrangement and for joint operation as herein-before set forth.

In testimony whereof I have hereunto set my hand this 3d day of August, A. D. 1882.

WILLIAM ED WHITEHEAD.

Witnesses:

W. BAILEY,
A. T. ATHERTON.