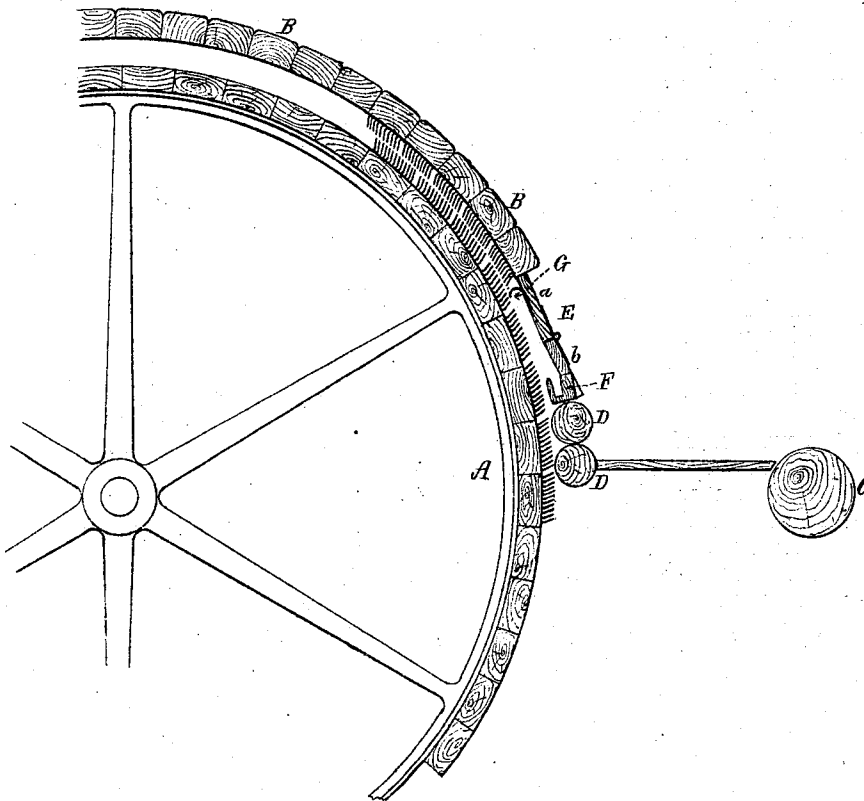


C. J. GOODWIN.

Improvement in Carding Machines.

No. 124,351.

Patented March 5, 1872.



Witnesses
S. N. Piper
L. N. Miller

Charles J. Goodwin.
by his attorney
H. W. Cady

UNITED STATES PATENT OFFICE.

CHARLES JORDAN GOODWIN, OF INDIAN ORCHARD, SPRINGFIELD, ASSIGNOR
TO HIMSELF AND EDWARD ATKINSON, OF BROOKLINE, MASS.

IMPROVEMENT IN CARDING-MACHINES.

Specification forming part of Letters Patent No. 124,351, dated March 5, 1872.

To all persons to whom these presents may come:

Be it known that I, CHARLES JORDAN GOODWIN, of Indian Orchard, of the city of Springfield, of the county of Hampden and State of Massachusetts, have invented certain new and useful machinery for carding cotton or other like material, and separating from it certain motes or matters; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, which denotes a vertical section of parts of a cotton-carding engine, with my addition or additions thereto, the object of such addition or additions being to discharge from the carding-engine and collect in a mass certain motes or matters, which, entering the machine with the fibrous material, would otherwise be found in the latter when carded.

Heretofore, the process of cleaning cotton has been imperfect, and, in my opinion, conducted on false principles, as will appear from consideration of the nature of the matters necessary to be removed. They consist of small bits or pieces of the boll and of the leaf of the cotton-plant, they being held among the fibers of the cotton, but not absolutely attached thereto. There are other matters in cotton, termed "nits," which are attached to the fiber, and are a sign or evidence of imperfect formation of it. My additions to the carding-engine are for the purpose of removing motes or extraneous matters from cotton or other fibrous material preparatory to its passage between the top flats and main card-cylinder of such engine. These motes or extraneous matters not being attached firmly to the fibers are removable therefrom. The processes heretofore adopted to effect their removal have been by opening and picking the cotton by machinery furnished with beaters, and sieves, and other equivalent devices, the intention being to shake or beat out the motes; but, owing to circumstances, all such modes of procedure have not had the desired effects, and it is still a desideratum to find some better or perfect mechanism to accomplish the end desired with the least injury to the staple. With most if not all the methods heretofore used to cleanse the cotton of its impurities, a considerable amount of the motes have remained in the bat,

and, as a consequence, have passed into the slivers and been twisted into the yarn, and subsequently woven into the cloth, to its detriment. My invention effects very thoroughly the intercepting of the said foreign substances as they are discharged from the cotton, just above the feed-rollers of the carding-engine. By thus intercepting the said motes or matters, they are prevented from being caught between the main card-cylinder and the top flats and again mingled with the cotton. In most if not all carding-engines there is a space between the feed-rolls and the lower of the top flats, such space at its rear being bounded by the "front board," and at its front by the card-cylinder. The rapid rotation of the card-cylinder produces a blast of air that separates the motes from the fibers of cotton while passing from the feed-rollers to the cylinder. They leaving the cylinder tangentially, as they are allowed to do, are assisted by this blast, and conveyed quickly into the receptacle. It has been found that most of the motes are here substantially separated from the fiber, since, if the "front board or boards" be removed, a current of motes will be seen thrown off and passing over the feed-rollers, and falling upon the lap or cotton outside.

The nature of my invention may be said to consist as follows: First, in a dirt-receptacle having a rigid lip, when arranged over the feed-rollers and with relation to the teeth of the main card-cylinder to operate as and for the purpose described. Second, in the combination of a deflector with the feed-rollers dirt-receptacle, with its lip and card-cylinder arranged as described, the deflector being below the top flats, and serving to intercept the motes and deflect them into the receptacle, and thereby prevent them from falling upon the lap or being thrown upon the cotton or fibrous material held by the main card-cylinder.

The drawing shows the main operative parts of a carding-engine, with which my additions are combined and coact; A being the main card-cylinder, B B the series of top flats, O the delivery-apron roller, and D D the feed-rolls. E is the "front board," made in two parts, *a b*, hinged together. F is the receiver, trough or box, arranged immediately over the feed-rollers and open at top. It may be ap-

plied to the frame of the engine so as to be capable of being removed therefrom and secured thereto, as circumstances may require. Above this receptacle is the deflector G, which projects from and extends horizontally along the "front board" on its inner surface, and between the receiver F and the first or lowermost top flat.

In the operation of the machine, the motes discharged from the cotton by the main card-cylinder while the cotton may be in the act of being delivered by the feed-rollers will be thrown upward against the deflector, and by it will be deflected into the box or reservoir, from which they may be removed as occasion may require. Thus they will be prevented from being thrown upon the cotton, so as to be carried between the cylinder and the top flats. The mote-receptacle has a rigid lip or side, C, arranged above the feed-rollers, and but a short distance from the teeth of the card-cylinder, such lip serving to cause the cotton to be well embedded into the spaces between the teeth of the cylinder, so that the longer fibers will not leave the cylinder opposite the dirt-receptacle. The motes and "fine fly" leave the cylinder tangentially opposite the receptacle. The motes being heavy are stopped by the deflector and allowed to drop into the receptacle, the "fine fly," which is very light, being by the deflector retained until seized and drawn away by the teeth of the cylinder. Where the lower top flat has its edge projecting inward beyond the front board so as to serve as a deflector, it will frequently happen that no other deflector need be used with the

receiver, in which case the receiver would have to be the main addition to the carding-engine to effect the purpose desired.

I arrange the dirt-receptacle directly over the feed-rollers, and with its inner side parallel, or about so, with and near to the teeth of the main card-cylinder; such being to cause the dirt-box, besides serving to catch the motes, to perform another function, as hereinbefore mentioned. My arrangement enables me to dispense with any movable flap to the dirt-box, such flap being an impediment to the correct operation of the machine, as being movable it is liable to be thrown up by the cotton which may accumulate underneath it, in which case the mass accumulated will be drawn away by the card-cylinder, whereby an uneven sliver is liable to be made.

I make no claim, broadly, to a mote-receptacle in combination with feed-rollers, as such a combination is shown in patent 103,889.

I claim—

1. The dirt-receptacle having the rigid lip, when arranged over the feed-rollers, and with relation to the teeth of the card-cylinder, to operate as and for the purpose described.

2. Also, the combination of the deflector with the feed-rollers, dirt-receptacle with its lip, and card-cylinder, when arranged as above described.

CHARLES JORDAN GOODWIN.

Witnesses:

R. H. EDDY,
J. R. SNOW.