

(No Model.)

W. MERRITT.

DOFFER CLEANER FOR CARDING MACHINES.

No. 348,498.

Patented Aug. 31, 1886.

Fig. 1.

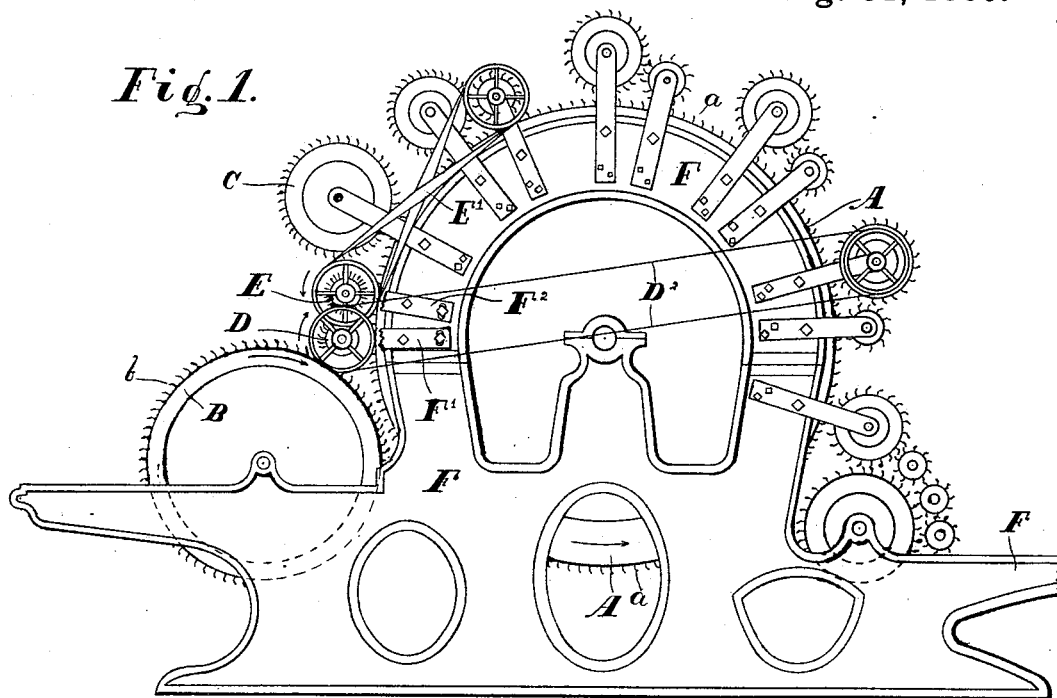


Fig. 2.

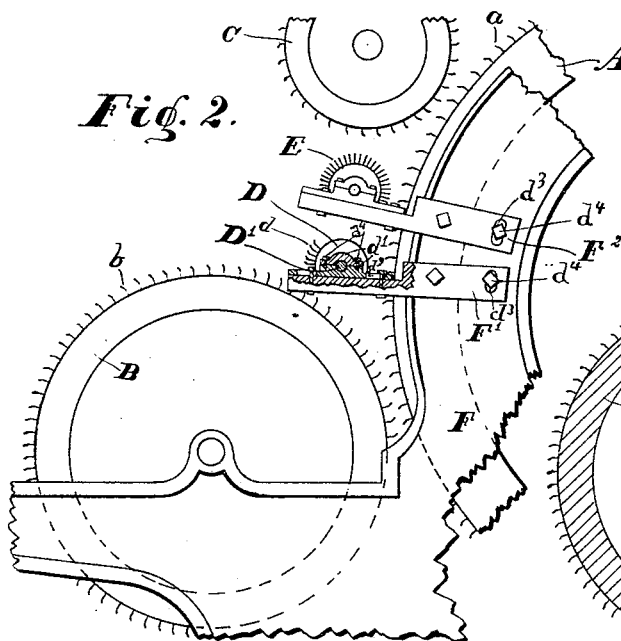
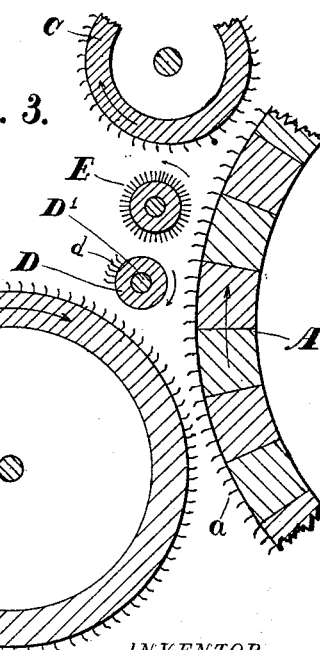


Fig. 3.



WITNESSES.

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DOFFER-CLEANER FOR CARDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 348,498, dated August 31, 1886.

Application filed March 24, 1886. Serial No. 196,339. (No model.)

To all whom it may concern:

Be it known that I, WORTH MERRITT, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Doffer-Cleaners for Carding-Machines, of which the following is a specification.

As is well known, in carding machinery the doffer is liable to become clogged with the fibers of the material being carded, and it is therefore necessary to provide some means whereby said fibers may be raised from the teeth of the doffer-clothing and carried, preferably, back to the main cylinder; and this is the object of my invention. Said object is accomplished by interposing in the space between the main cylinder and doffer, beneath the fancy, a revolving cleaner having a strip of card-clothing upon one side, which will operate to remove the fibers from the doffer and carry said fibers into a position where they may be taken off by said main cylinder. This improves the carding of the stock, and prevents waste by keeping the doffer constantly clean, which enables it to receive the stock properly from the main cylinder. It also obviates the necessity of stopping the carding-machine to clean the doffer by hand, and permits the machine to be operated a much longer time without stopping for a complete cleaning than heretofore.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a side elevation of a carding-machine provided with my said invention; Fig. 2, a detail and partially sectional view on an enlarged scale showing the bearings and brackets which support the cleaner and supplemental cleaner, respectively; and Fig. 3, a detail section on an enlarged scale showing the particular parts constituting my said invention and portions of those immediately adjacent thereto.

In said drawings, the portions marked A represent the main cylinder; B, the doffer; C, a fancy; D, my cleaner; E, a rotary brush or secondary cleaner, and F the frame of the carding-machine. The ordinary workers and strippers are also shown, but without letters of reference. All these several parts, except my cleaner and the rotary brush or secondary cleaner

therefor, are of substantially the construction and arrangement usually employed in carding machinery of this class. All of the several parts revolve in the directions indicated by the arrows shown in connection therewith. The cleaner D is arranged as shown, so that the teeth of the strip of card-clothing secured thereto will, as it revolves, pass between the teeth of the card-clothing on the doffer and also in close proximity to the main cylinder. It operates to raise the fiber that may adhere to the doffer and carry it around to where it will be again taken up by the main cylinder A, which revolves at a greater peripheral speed than the cleaner. Said cleaner preferably consists of a cylinder having a suitable shaft, D', supported in bearings d' on brackets F', extending out from the frame of the carding-machine. This shaft is driven by a belt, D'', running to a pulley thereon from a similar pulley on the shaft of the first worker.

While I have shown a cylinder with a single strip of card-clothing attached, and regard this as the preferable form of cleaner, I might, of course, attach two or more strips without departing from my invention; and, instead of using a cylinder to attach the strip of card-clothing to a bar or section of a cylinder, supported by arms on the shaft, or any other suitable frame, would be the equivalent of a cylinder for this purpose, and operate in the same manner.

It is intended to have this cleaner mounted in adjustable bearings, in order that it may be accurately adjusted in its relation to the main cylinder and doffer, or the adjustment varied when required.

Slotted holes d³ for the bolts d', which secure the bearings in position, are shown (see particularly Fig. 2) as a means of adjustment for the bearings; but these are mere matters of mechanical detail and do not constitute the substance of my invention.

In practical operation it will be advisable in most cases to have the cleaner D set in such a position that the wires will pass close to, but not quite in contact with, those of the main cylinder, as this will leave the stock on the wires of said cylinder in better condition to be received by the wires of the doffer.

The direction in which the wires of this cleaner are bent, as will be observed by an ex-

amination of the drawings, is reverse to that of the wires on the cylinder, doffer, and fancy, and thus said wires operate altogether to raise up the fibers adhering to the teeth of the doffer, and not at all to press or pack them down. The small revolving brush or secondary cleaner E is mounted upon brackets F² and driven by the bolt E, and is arranged to assist in carrying the fibers raised by the cleaner D onto the cylinder A, and also serves to raise the stock on the teeth of the cleaner so that it will be taken off more easily by the main cylinder. This brush or secondary cleaner revolves faster than the cleaner D, and thus serves to raise the stock from said cleaner into a position to be better received by the main cylinder.

The operation is as follows: The wires *d*, as they revolve, pass between the wires *b* of the doffer, and comb out the stock or fibers and carry it around to a point where they are close to or in contact with the wires *a* on the cylinder, which will receive the stock or fibers from said wires *d*. The revolutions of the cleaner D are so timed as to successively operate upon different portions of the surface of the doffer B, so that its whole surface will eventually be cleaned, and this operation is continually repeated.

I am aware that the fancies of carding-machines have heretofore been brought down in close proximity to the doffer, and they serve to some extent as a cleaner, but on account of the direction in which the wires or teeth of the fancy are necessarily bent in order to accomplish its main purpose it cannot be effected as a cleaner.

Having thus fully described my said inven-

tion, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the main cylinder, the doffer, the revolving cleaner, arranged as shown, and a revolving brush or secondary cleaner, substantially as shown and described.

2. The combination, with the main cylinder and doffer of a carding-machine, of a cleaner set in close proximity to both, and a revolving brush set above said cleaner near the main cylinder, said cleaner and brush revolving in opposite directions, substantially as shown and described.

3. The combination, in a carding-machine, of the main cylinder, doffer, a doffer-cleaner, the teeth of which are bent in the opposite direction to those of said doffer, and a revolving brush or secondary cleaner, all substantially as set forth.

4. The combination of the main cylinder, doffer, a doffer-cleaner provided with teeth for only a portion of its circumference, and a revolving brush mounted to operate against the teeth of said doffer-cleaner, substantially as set forth.

5. In a carding-machine, the combination of the main cylinder, doffer, a doffer-cleaner mounted in the angle between said doffer and said main cylinder, and a revolving brush mounted above said doffer-cleaner, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 20th day of March, A. D. 1886.

WORTH MERRITT. [L. S.]

Witnesses:

C. BRADFORD,

CHARLES L. THURBER.