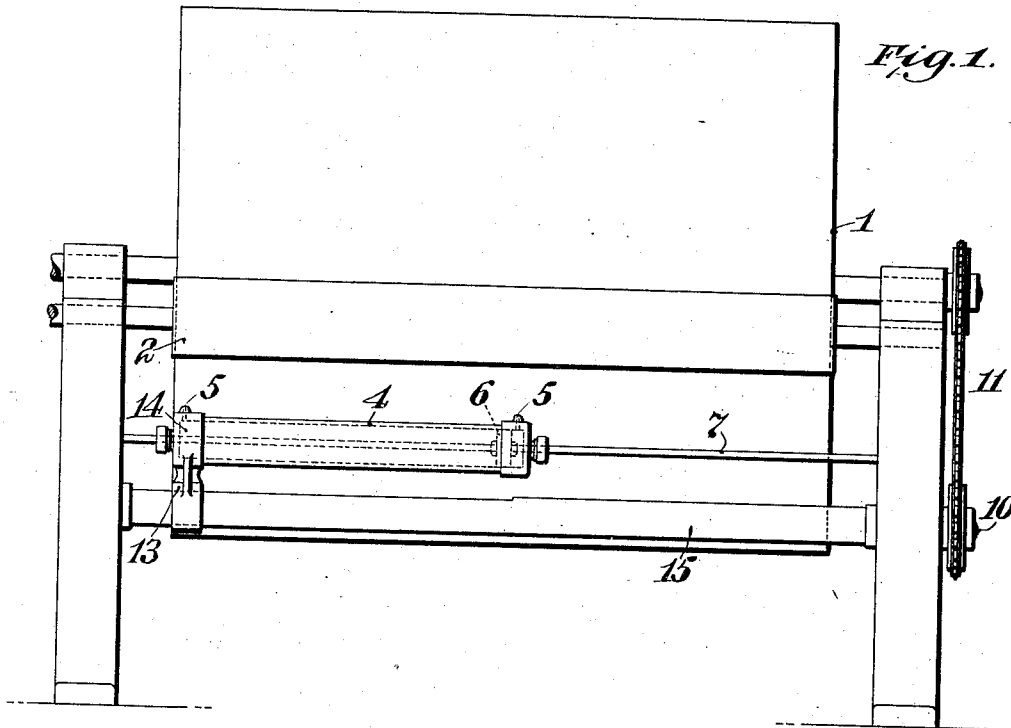
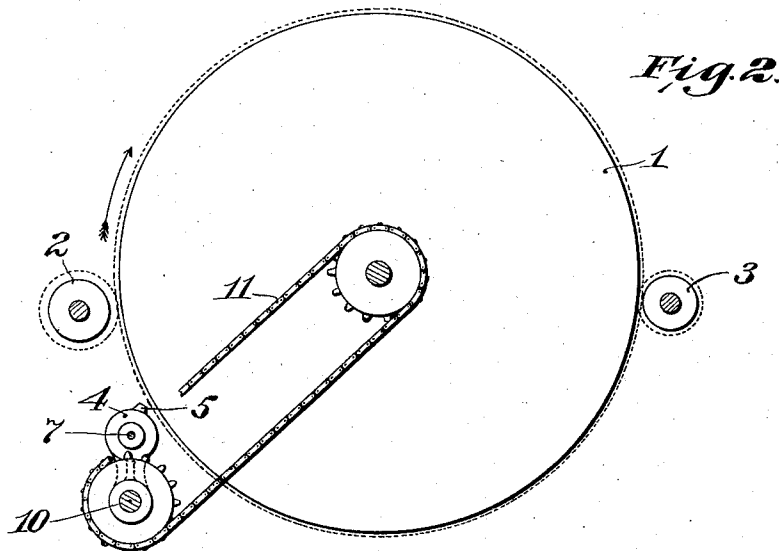


L. W. CAMPBELL.
CARDING MACHINE.
APPLICATION FILED MAR. 1, 1913.

1,079,393.

Patented Nov. 25, 1913.

2 SHEETS-SHEET 1.



Witnesses:

E. W. Durdeman
H. D. McPhail

Inventor:

Leon W. Campbell
by Phillips Van Emmon & Fish
Attys

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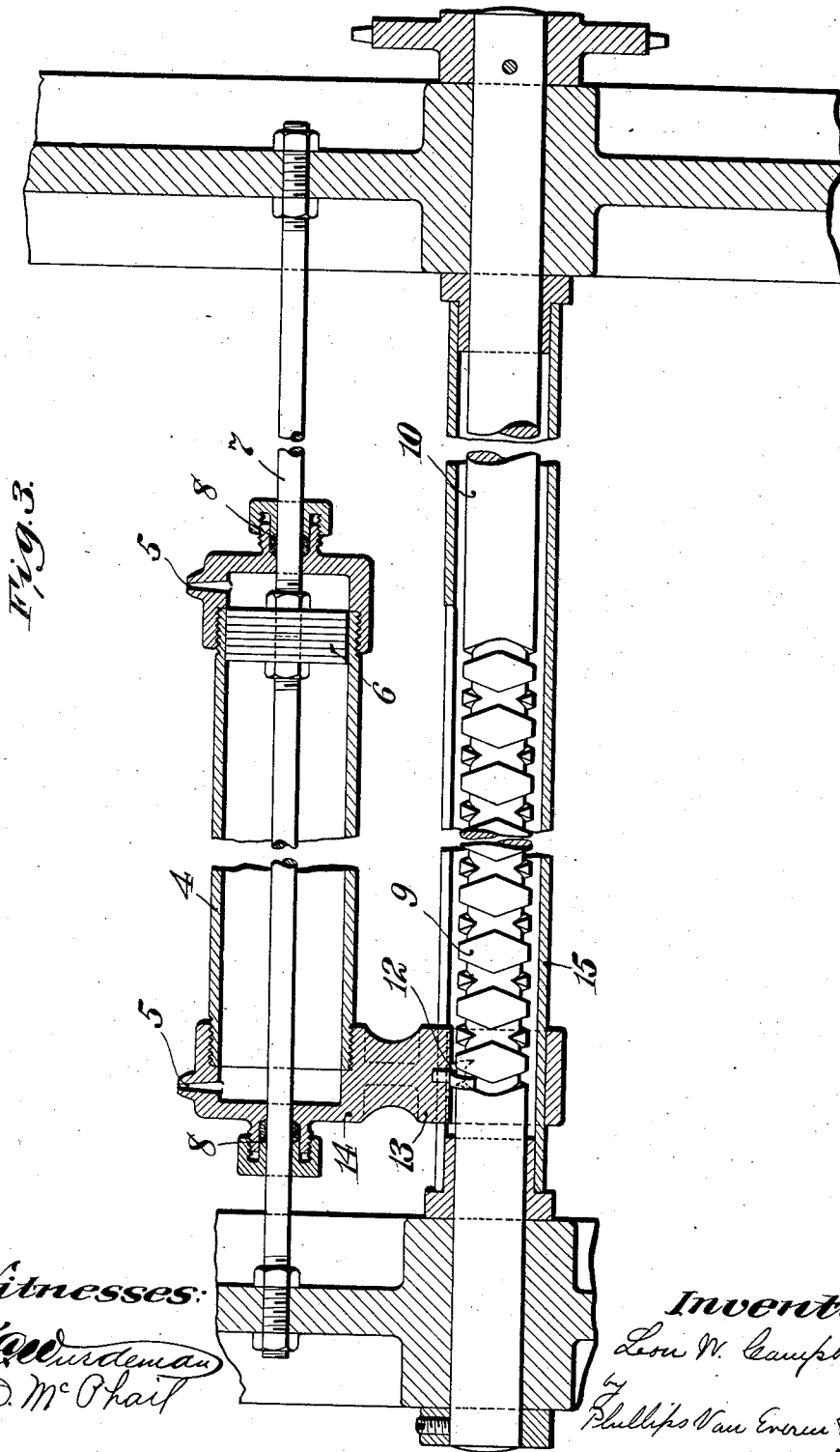


Fig. 3.

Witnesses:

E. J. Curdeman
K. D. McPhail

Inventor:

Leon W. Campbell
by *Phillips Van Ennen & Fish*
attys

UNITED STATES PATENT OFFICE.

LEON W. CAMPBELL, OF WOONSOCKET, RHODE ISLAND.

CARDING-MACHINE.

1,079,393.

Specification of Letters Patent.

Patented Nov. 25, 1913.

Application filed March 1, 1913. Serial No. 751,450.

To all whom it may concern:

Be it known that I, LEON W. CAMPBELL, a citizen of the United States, residing at Woonsocket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Carding-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to carding machines, and more particularly to means for preventing the accumulation of fiber on the card clothing of carding cylinders during the operation of the machine. In machines of this class the cotton or other fiber is usually carried over the top of the main cylinder, and after being carded, is removed from the surface of the cylinder by a doffing roll. Some of the fiber, however, will remain on the wires of the carding cylinder, and the gradual accumulation of these fibers will seriously interfere with the efficient operation of the machine.

It is the object of the present invention to provide novel and improved means for preventing the accumulation of the fibers on the carding cylinder, and to this end the invention consists in the features of construction and combinations of parts hereinafter described and referred to in the claims.

The invention will be readily understood from an inspection of the accompanying drawings and the following detailed description of the mechanism illustrated therein.

In the drawings, Figure 1 is an elevation showing the preferred form of the invention applied to a carding machine; Fig. 2 is a sectional elevation looking toward the right in Fig. 1; and Fig. 3 is a longitudinal sectional view through the devices for preventing the accumulation of fiber on the carding cylinder.

As shown in the drawings, the large carding cylinder of a carding machine is indicated at 1, the licker-in roll which feeds the fiber to the carding cylinder is indicated at 2, and the doffing roll which removes the carded fiber from the surface of the cylinder is indicated at 3. The devices for operating on the fiber between the licker-in and the doffing rolls are not shown, but may be of any suitable and well known construction.

In accordance with the present invention, the accumulation of fiber upon the carding cylinder is prevented by directing a jet of air against the surface of the carding cylinder at some point between the doffing roll 3 and the licker-in roll 2, in such manner that the air loosens any fibers which may have adhered to the wires of the carding cylinder and have been carried past the doffing roll. The loosening of these fibers enables them to be readily removed by the doffing roll with the fiber fed on to the carding cylinder by the licker-in roll when they are next acted on by the doffing roll. The accumulation and matting together of the fibers upon the wires of the carding cylinder in such manner as to interfere with the efficient operation of the machine is thus prevented. As shown, the devices for directing the jet of air against the surface of the carding cylinder comprises a cylinder 4 mounted to travel lengthwise across the surface of the carding cylinder, and provided with one or more nozzles 5 for directing a small jet of air against the surface of the cylinder. A piston 6 is arranged within the cylinder 4, and as the cylinder moves back and forth across the carding cylinder the piston acts to force the air within the cylinder out through the nozzle 5, so that a gentle current of air is directed against the carding cylinder. The blower cylinder 4 is preferably of a length substantially one-half the length of the carding cylinder, and is provided at opposite ends with the small discharge nozzles 5, and the piston 6 is preferably located midway the length of the carding cylinder.

As shown in the drawings, the piston 6 is secured upon a rod 7 which extends across the face of the carding cylinder, and is secured in the side frames of the machine. The cylinder is arranged to slide along the piston rod 7, and is provided at each end with a stuffing box 8 through which the rod passes. The cylinder is slowly reciprocated during the operation of the carding machine by a double reversing screw 9 formed on a shaft 10 which is driven from the shaft of the carding cylinder through a sprocket chain 11. The double reversing screw is connected with the cylinder through a traveler 12 which engages the screw and is carried by a sleeve 13 formed on the head 14 of the cylinder. The sleeve 13 may slide on the shaft 10, but is preferably formed to slide on

a tube 15 which surrounds the shaft 10, and is provided with a slot engaged by a rib on the sleeve.

During the movement of the cylinder 4 toward the right from the position indicated in Figs. 1 and 3, the piston 6 will force the air within the cylinder out through the left-hand nozzle 5 as this nozzle travels from the left end of the carding cylinder to the center of the cylinder. After the cylinder 4 has completed its movement toward the right it will be reversed and moved toward the left, and during this movement the piston 6 will act to force the air within the cylinder out through the right-hand nozzle 5 during the travel of this nozzle from the right end of the cylinder to its center. During the travel of the cylinder 4 back and forth across the carding cylinder, therefore, the entire surface of the carding cylinder will be subjected to the action of the fine jets of air which are directed against the cylinder by the nozzles 5. The air issuing from a nozzle 5 in a comparatively fine jet will pass between any fibers adhered to the wires of the carding cylinder, blowing these fibers to one side, and will strike against the solid surface of the cylinder and spread along the surface beneath the fibers carried on the wires. The air will therefore loosen any fibers which adhere or cling to the wires, so that the fibers will be carried away with the fiber fed to the carding cylinder by the licker-in roll when such fiber is acted upon by the doffing roll.

While it is preferred to employ the specific construction and arrangement of parts shown and described, it will be understood that this construction and arrangement is not essential, and may be varied and modified without departing from the invention.

Having explained the nature and object of the invention, and specifically described one form of machine in which it may be embodied, what I claim is:—

1. A carding machine, having, in combination, a carding cylinder, a cylinder provided with a nozzle for directing air against

the carding cylinder, a piston within the cylinder, and mechanism for reciprocating the cylinder across the carding cylinder.

2. A carding machine, having, in combination, a carding cylinder, a cylinder provided with a nozzle at each end for directing air against the carding cylinder, a stationary piston within the cylinder, and mechanism for reciprocating the cylinder.

3. A carding machine, having, in combination, a carding cylinder, a cylinder of a length substantially half that of the carding cylinder and provided with a nozzle at each end for directing air against the carding cylinder, a stationary piston within the cylinder arranged approximately midway of the carding cylinder, and means for reciprocating the cylinder.

4. A carding machine, having, in combination, a carding cylinder, a rod extending across the face of the carding cylinder, a piston secured to the rod, a cylinder surrounding the piston, nozzles at each end of the cylinder, and mechanism for reciprocating the cylinder.

5. A carding machine, having, in combination, a carding cylinder, a rod extending across the face of the carding cylinder, a piston secured to the rod substantially midway of the carding cylinder, a cylinder surrounding the piston of a length substantially one-half the length of the carding cylinder, nozzles in each end of the cylinder, and mechanism for reciprocating the cylinder.

6. A carding machine, having, in combination, a carding cylinder, a rod extending across the face of the carding cylinder, a piston secured to the rod, a cylinder surrounding the piston and provided with a nozzle at each end, a rotary shaft provided with a double reversing screw, and a sleeve connected with the cylinder and provided with a traveler engaging the screw.

LEON W. CAMPBELL.

Witnesses:

N. D. McPHAIL,
BURTON W. CARY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."