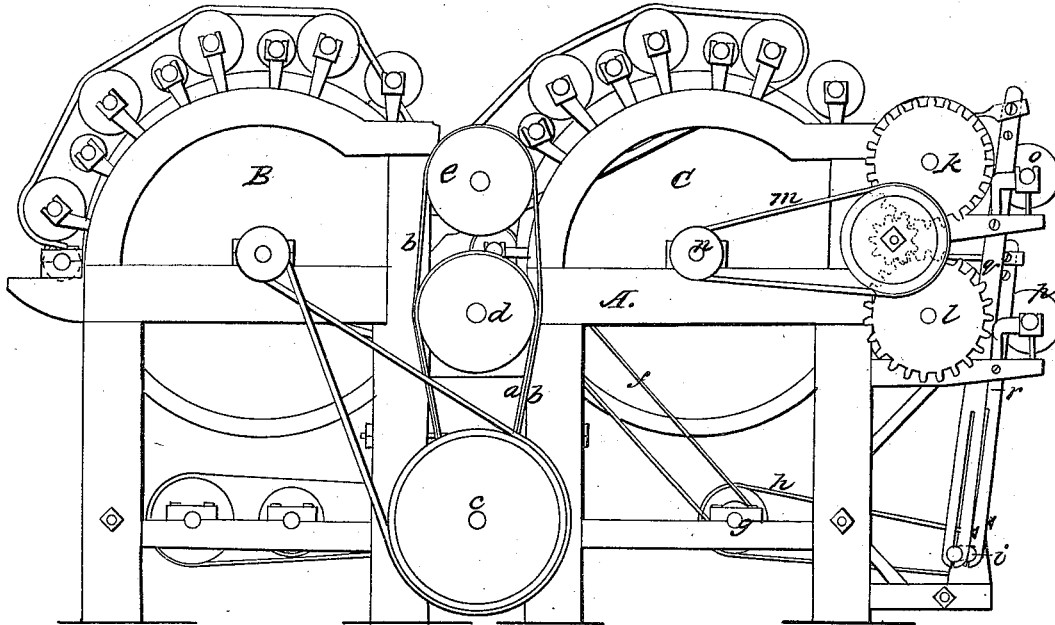


*M. W. Obenchain,*  
*Carding Machine.*

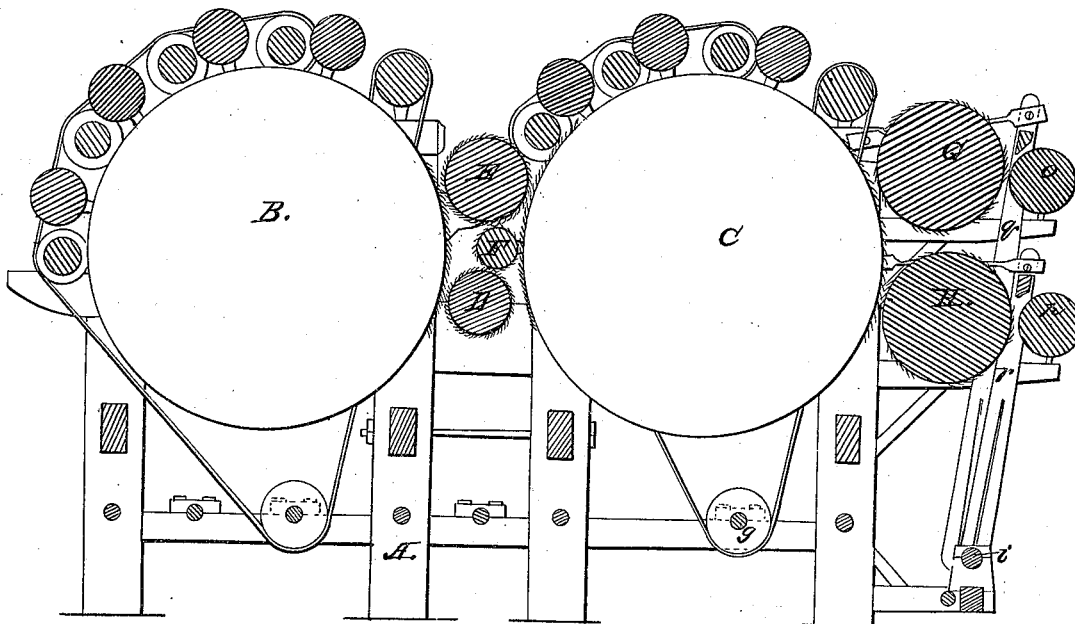
*Nº 4,642.*

*Patented July 20, 1846.*

*Fig. 1.*



*Fig. 2.*



# UNITED STATES PATENT OFFICE.

M. W. OBENCHAIN, OF SPRINGFIELD, OHIO.

## IMPROVEMENT IN CARDING-MACHINES.

Specification forming part of Letters Patent No. 4,642, dated July 20, 1846; antedated January 20, 1846.

*To all whom it may concern:*

Be it known that I, M. W. OBENCHAIN, of Springfield, in the county of Clark and State of Ohio, have invented new and useful Improvements in Machines for Carding Wool; and I do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes my invention from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a longitudinal elevation, and Fig. 2 a longitudinal vertical section.

The same letters indicate like parts in both figures.

My first improvement consists in the employment of a second doffer above the usual doffer between the two main carding-cylinders to prevent the wool from accumulating on the single doffer heretofore used, and in employing, in combination with these and between them, a stripper to transfer the wool from them to the second main cylinder.

My second improvement consists in the employment of two roll-doffers covered with longitudinal strips of cards placed at equal distances apart and so arranged and moved relatively to each other, the spaces between the cards being equal in width to the cards, that one shall begin to doff as the other finishes.

In the carding-engines generally used for making rolls but one doffer is used, and as its surface is covered with cards in longitudinal strips, each strip separated from the others by vacant spaces of about the same width, the doffer only removes the wool from the carding-cylinder during one-half of the time; hence the rolls are made of wool unequally carded, for as the cylinder makes two or more revolutions while one of the strips on the doffer passes it necessarily makes about the same number of revolutions while one of the spaces passes, and as during this time the wool is not stripped from the cards it is carried around and carded over. This difficulty is avoided in making continuous slivers by having the filleting-cards on the doffer winding around, so that they strip continuously, and when two doffers are used the filleting-cards on one doffer correspond with the

spaces between the cards on the other, each doffer taking off continuous slivers from the cylinder; but by this my first improvement I am enabled to make nearly double the quantity of rolls in the same space of time and to take the wool from the cylinder regularly.

In the accompanying drawings, A represents the frame of the machine properly adapted to the various parts in the usual or any desired manner, and B C the first and second main carding-cylinders provided with strippers, fancies, &c., in manner well known.

D is the doffer usually employed between the two carding-cylinders to transfer the fibers from the first to the second; but it only runs in contact with the first, and above it there is another doffer E, of little greater diameter, which runs in contact with the two carding-cylinders, and the space between these two doffers is occupied by a stripper F, which takes the fibers from the two doffers and transfers them to the second carding-cylinder, a portion of the fibers taken from the first cylinder by the upper doffer E being transferred to the second main cylinder by it and the rest by the stripper F. These doffers may be covered with filleting or sheet cards; but I prefer the former.

Motion is communicated to the doffers D and E by bands *a* and *b* from a shaft *c* to pulleys *d* and *e* on the arbors of the doffers or in any other desired manner, and the stripper is driven by a band *f* from a shaft *g*, that communicates motion by a band *h* to the crank-shaft *i*, that operates the combs in the usual manner. The upper and lower roll doffers G H are of the same size and about forty inches in circumference with their surfaces provided with longitudinal fillet-cards of about four inches in width, the spaces between the fillet-cards being nearly of the same width. The fillets and spaces of these two rollers must be so arranged relatively to each other and the surface of the second carding-cylinder that the fillets on the second doffer H will begin to take the fibers from the cylinder when those on the first doffer G leave them, that the action may be regular. With the view to insure this regularity of action the motions of the two doffers are connected by cog-wheels *k l*, of equal diameters on their arbors, and both carried by an intermediate cog-

wheel, (represented by dotted lines,) which receives motion from the shaft of the second carding-cylinder by a band *m* over a pulley *n* on its arbor.

The two combs *op* are operated in the usual manner by connecting-rods *qr* and cranks on shaft *i*, the cranks or comb *o* being opposite the cranks that operate the other comb *p*, so that one comb descends as the other ascends.

The cranks on one end of the shaft *i* only are represented in the drawings.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The employment of the additional doffing-roller between the two main carding-cylinders for the purpose of taking the fibers from the first main carding-cylinder and

transferring them to the second with more regularity than heretofore, as described.

2. In combination with this, the stripper, which works between the two doffers and which transfers the fibers from them to the second main carding-cylinder, as described.

3. The employment of two roll-doffers with longitudinal fillet-cards arranged substantially as herein described, whereby a much greater number of rolls can be made in the same space of time and of better quality than with the single doffer in consequence of the regular action on the carding-cylinder.

M. W. OBENCHAIN.

Witnesses:

JAMES LEFFEL,

C. F. MCWILLIAMS.