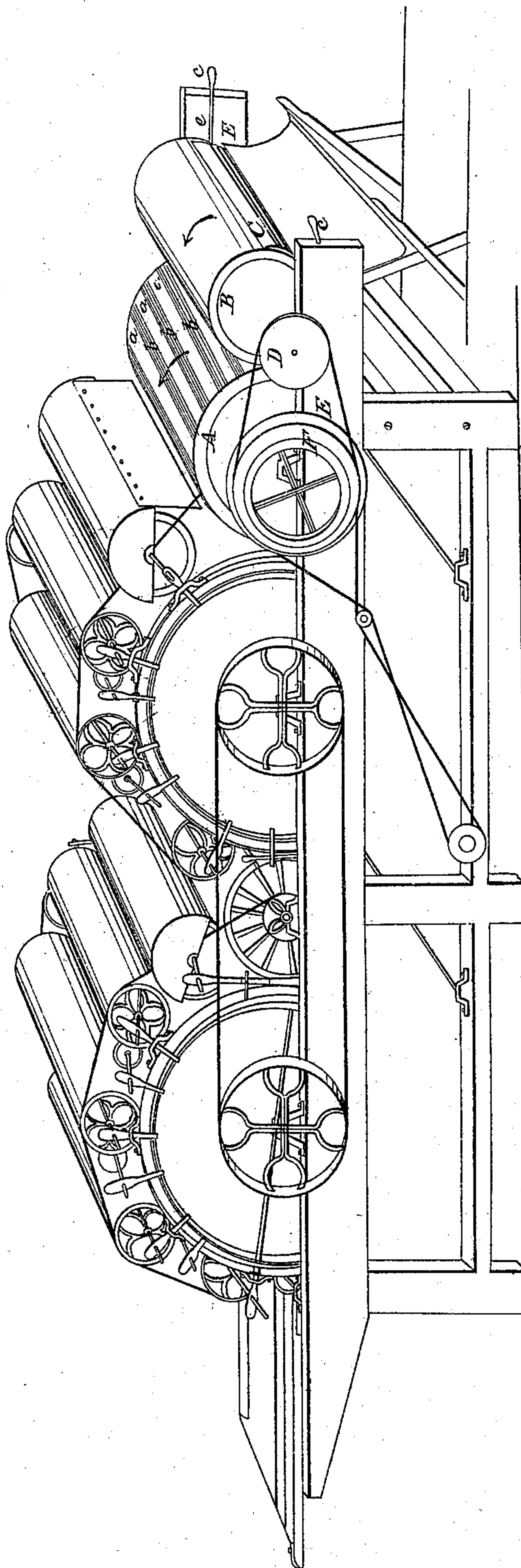


J. Mc Donald.
Carding Mach.

N^o 55,881.

Patented Jun. 26, 1866.



Witnesses.

W. A. Sullivan
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Inventor.

James Mc Donald

UNITED STATES PATENT OFFICE.

JAMES McDONALD, OF DETROIT, MICHIGAN.

IMPROVEMENT IN CARDING-MACHINES.

Specification forming part of Letters Patent No. 55,881, dated June 26, 1866.

To all whom it may concern:

Be it known that I, JAMES McDONALD, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement on the "Wool Custom Carding or Double Machine;" and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and letters of reference marked thereon.

The nature of my invention consists in this that narrow bits of wool-cards are placed on each of the spaces of the roll-doffer, hitherto left smooth and unfurnished with either wool cards or teeth of any kind. These bits of wool-card are similar to the ordinary wool-cards of the roll-doffer in all respects save that the teeth should not be quite so long and should be set contrariwise—*i. e.*, pointing in the opposite direction—to the regular card-teeth of the roll-doffer. These teeth catch any rolls of material that may happen to run over the roller, and drawing them into the machine prevent the cards from being flattened by these rolls going between the roller and the roll-doffer. Then, instead of the comb and crank heretofore and now used, a thin shell of semicircular shape, made of iron, tin, zinc, or any other metal which can be ground or made thin, smooth, and strong, is set, in combination with the roller, so as to take the wool from the roll-doffer and from the roll at once without comb or crank or intermediate roller. This shell must be set close to the under side of the roller and encircling the lower half thereof, but not so close as to rub against it. The back of the shell which is next to the roll-doffer must be set close to the roll-doffer, but not so close as to rub against it, and a little below or just up to its center.

This change in the construction and adjustment of the shell and the insertion of the teeth in the smooth spaces of the roll-doffer, as above described, enable the roller to be brought much nearer the roll-doffer than in the machine as heretofore and at present used, and also dispense with the necessity of using either comb, crank, or intermediate roller.

In using this improvement the pulley by means of which the band of the machine turns the roller should be made a little smaller, or

the pulley by means of which the band of the machine turns the roll-doffer a little larger, than in the machine as heretofore used, so as to somewhat increase the speed of the roller over that of the roll-doffer.

To enable others to use this improvement, I will proceed to describe its construction and operation.

I insert narrow bits of wool-card (marked *a*) in each of the smooth spaces of the roll-doffer, (marked *A*), not quite so long as the ordinary card-teeth (marked *b*) of the roll-doffer, and set contrariwise—*i. e.*, pointing in the opposite direction to them—but similar in every other respect. These teeth catch any rolls of material that might happen to run over the roller and draw them into the machine, thereby preventing the cards from being flattened by said rolls going between the roller and the roll-doffer.

Then, instead of the comb and crank hitherto and now used, I set a thin shell (marked *C*) of semicircular shape, made of tin, iron, zinc, or any metal which can be ground or made thin, smooth, and strong, in combination with the roller (marked *B*) and encircling the lower half thereof. The back of this shell, which is next the roll-doffer, must be set close thereto, but not so close as to rub against it, and a little below or just up to its center. To both the ends of this side of the shell are fastened pieces of iron bent at right angles, one end of each of which hangs and works in an iron loop fastened to the inside of each of the side beams (marked *E*) of the frame. To the other side of this shell are attached two strings, one at each end of this side of the shell, running to the ends of the side beams of the frame, and there attached to a pin (marked *e*) set into a hole bored into the end of the frame, and by turning these pins the strings (marked *e*) are tightened and pull the shell close to, or are loosened and let the shell fall from, the roller, as may be desired.

The back of the shell next to the roll-doffer must be ground very thin when carding fine wool, and the roller may be set much closer to the roll-doffer than in the old way of carding with the comb and crank.

The pulley marked *D* should be made a little smaller or the pulley marked *F* a little larger than in the machine as heretofore used, so as to

somewhat increase the speed of the roller over that of the roll-doffer.

I desire hereby expressly to disclaim all right to Letters Patent for the said machine known as the "wool custom carding or double machine," and any and every part thereof, excepting, however, the privilege of using in connection or combination therewith the improvement hereinbefore particularly described and set forth and hereinafter specifically claimed as my own invention.

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

1. The use of a thin shell in the place of the thick and wooden one heretofore used, which thin shell is set, in combination with the roller, for the purpose of taking the wool from the roll-doffer at once without comb, crank, or in-

intermediate roller, said shell being set closer up to the roller than heretofore, and made adjustable near to or far from the roller at will.

2. As a component part of said improvement above described, the insertion of narrow bits of wool-cards (the teeth of which should be a trifle shorter than and set contrariwise to the ordinary card-teeth of the roll doffer) in the spaces of the roll-doffer heretofore left smooth and unfurnished with cards or teeth, and the change above prescribed in the size of the pulleys, by means of which pulleys the band of the machine turns the roller and roll-doffer.

JAMES McDONALD.

Witnesses:

HENRY M. DUFFIELD,
HUGH GORDON.