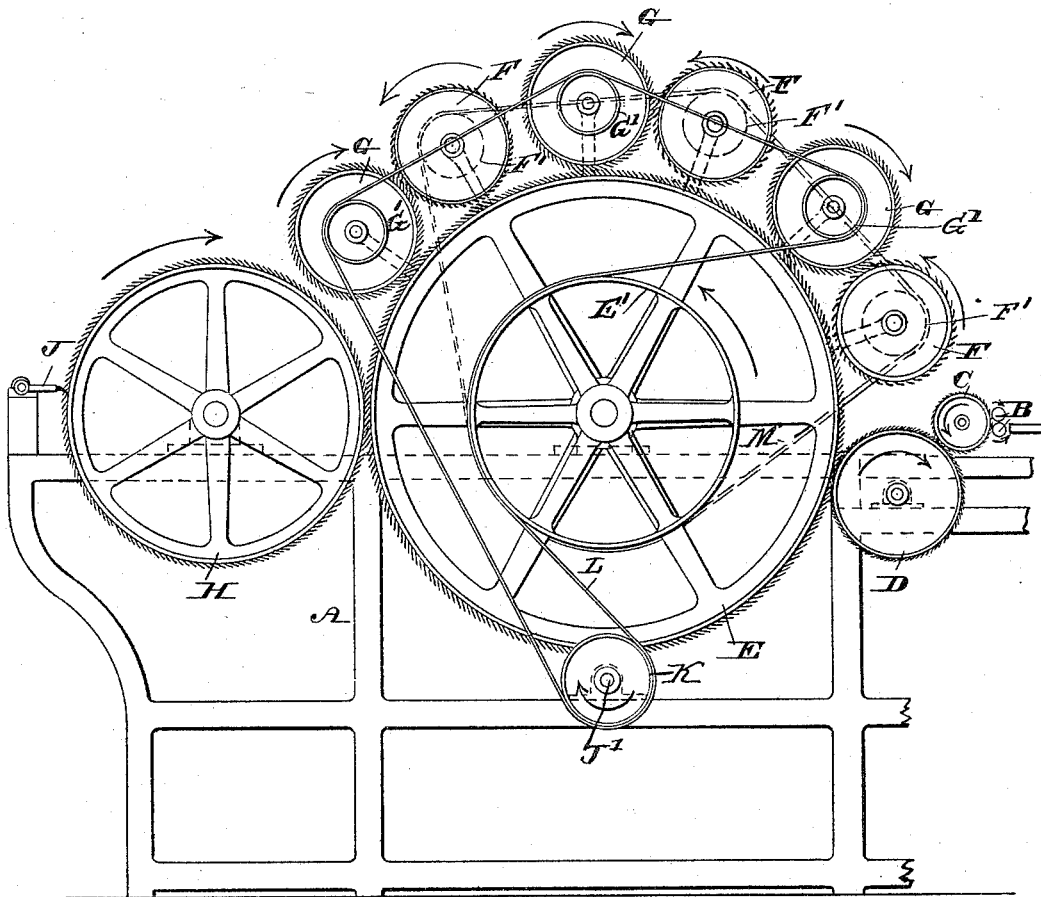


(No Model.)

L. CLARENBACH, Jr. & E. ZOLL.
CARDING ENGINE.

No. 493,752.

Patented Mar. 21, 1893.



WITNESSES:

Theo. Rolle.
Ino. A. Platt.

INVENTORS:

INVENTORS:
Louis Blarenbach
Emile Zoll
BY Quadersheim & Gintre
ATTORNEYS.

UNITED STATES PATENT OFFICE.

LOUIS CLARENBACH, JR., OF PHILADELPHIA, PENNSYLVANIA, AND EMIL ZOLL, OF HOLYOKE, MASSACHUSETTS.

CARDING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 493,752, dated March 21, 1893.

Application filed July 11, 1888. Serial No. 279,642. (No model.)

To all whom it may concern:

Be it known that we, LOUIS CLARENBACH, Jr., a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, and EMIL ZOLL, a subject of the Emperor of Germany, residing at Holyoke, in the county of Hampden, State of Massachusetts, have invented a new and useful Improvement in Carding-Engines, which improvement is fully set forth in the following specification and accompanying drawing.

Our invention relates to improvements in carding engines, and has for its object the more rapid carding of a given amount of stock, and for this purpose consists of the mechanism including workers, as herein set forth.

The accompanying drawing represents a side elevation of a carding engine embodying our invention.

Referring to the drawing: A, designates the frame of the carding engine; on the frame are mounted the feed rollers B, the lick-in roller C, the tumbler D, the main cylinder E, the workers F, the fancies G, and doffer H, to all of which power may be communicated in any suitable manner. As shown in the drawing, power for operating the said fancies G is communicated by the belt L connected with the driving wheel K, and pulleys or wheels G' on the shafts of said fancies, the said belt also communicating motion to the main cylinder E. A belt M connected with a pulley E' on the shaft of the main cylinder communicates motion to the workers F by means of the pulleys F' on the shafts of said workers, it being noticed that the said belts L and M are so arranged as to rotate the said fancies G and workers F in opposite directions.

J designates the doffer comb which is properly supported and operates with the doffer H, as usual in such cases.

Each of the fancies is contiguous to one of the workers, forming a pair; in the present case there are three pairs of fancies and workers, but to the number of the same, we do not limit ourselves, as the same may be increased or decreased as desired. The teeth of the workers are nearly but not quite in contact with the teeth of the main cylinder.

The direction of rotation of the several parts is shown by the arrows.

The card wires of the workers project in the same direction as those of the fancies and cylinder, said workers and fancies rotating in reversed directions. The speed of the workers at their peripheries is approximately the same as that of the main cylinder at its periphery, the speed of the fancies being in proportion to the main cylinder as usual, that is to say the speed of the fancies is from twenty-five to seventy-five per cent. greater than that of either the main cylinder or workers, this being in accordance with the nature of the stock to be worked.

The operation is as follows: The stock to be carded is carried by the feed rollers B to the lick-in roller C, and from thence conveyed by the tumbler D to the main cylinder E. The stock then reaches the first worker F, where it is carded and some of it carried around said worker until it reaches the adjacent fancy G, whose action is to lift the stock, said stock then reaching the cylinder through the rotation of said fancy and advancing with the main stock on said cylinder. The stock then passes under the first fancy, where it is lifted preparatory to the carding action of the next worker, when it is further carded, the subsequent operations being similar to those hereinbefore described, until the carded stock reaches the doffer, which as is evident directs it to the comb J, by which it is removed. It will be seen that the strippers usually employed are dispensed with, and that the fancies permit the workers to be run at a high rate of speed because they prevent the stock from lapping or gathering around the workers.

In carding engines as heretofore constructed, the bulk of the stock is repeatedly carried around the worker and but a small part of the stock is carded at the time, but by our engine the bulk of the stock traverses from the feed rollers to the doffer solely on the surface of the main cylinder, and the fibers are laid straight out or parallel, thus effecting the rapid carding of the stock, and the production of smoother rovings than heretofore.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination in a carding engine, of

- a main cylinder, with one or more pairs of workers and fancies, the fancy and worker of each pair being contiguous and partially surrounding said cylinder substantially as described. 5
2. A main cylinder, in combination with a worker and fancy, and means for rotating said parts, the card wires of the workers projecting in the same direction as those of said fancy and cylinder, said worker and fancy rotating in reversed directions, substantially as described. 10
3. A main cylinder in combination with a worker and a fancy, the teeth of said parts projecting in the same direction, and said parts being provided with operating mechanism, said fancy and worker being contiguous and adjacent to said main cylinder substantially as described. 15
4. A carding engine having a main cylinder and a doffer, a series of contiguous workers and fancies surrounding the main cylinder between the tumbler and doffer, mechanism substantially as described for operating the main cylinder, and mechanisms substantially as described for rotating said fancies and workers in opposite directions, and at different speeds, said parts being combined substantially as described. 20 25
5. A carding engine having a main cylinder, a series of pairs of fancies and workers arranged around a portion of said main cylinder, mechanisms substantially as described for operating said main cylinder and fancies, and mechanism for operating said workers, said fancies being rotated at a higher rate of speed than either the workers or main cylinder, said parts being combined substantially as and for the purpose set forth. 35
6. A carding device having a main cylinder, pairs of contiguous fancies and workers partially surrounding said cylinder, the teeth of the workers being free from the teeth of the said cylinder, and meshing with the teeth of the fancies, mechanism connected with a main driving shaft for operating said cylinder and fancies, and mechanism also connected with said driving shaft for operating the said workers, said parts being combined substantially as described. 40 45

LOUIS CLARENBACH, JR.
EMIL ZOLL.

Witnesses to signature of Louis Clarenbach, Jr.:

JOHN A. WIEDERSHEIM,
JAMES F. KELLY.

Witnesses to signature of Emil Zoll:
HENRY SPOFFORD,
R. G. KILDUFF.