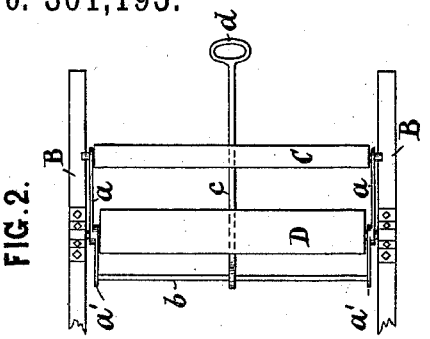
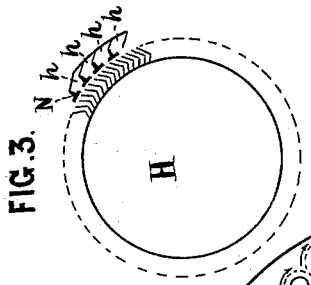
(No Model.)

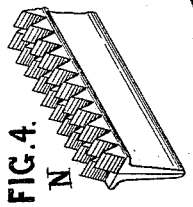
C. E. WHITWORTH.

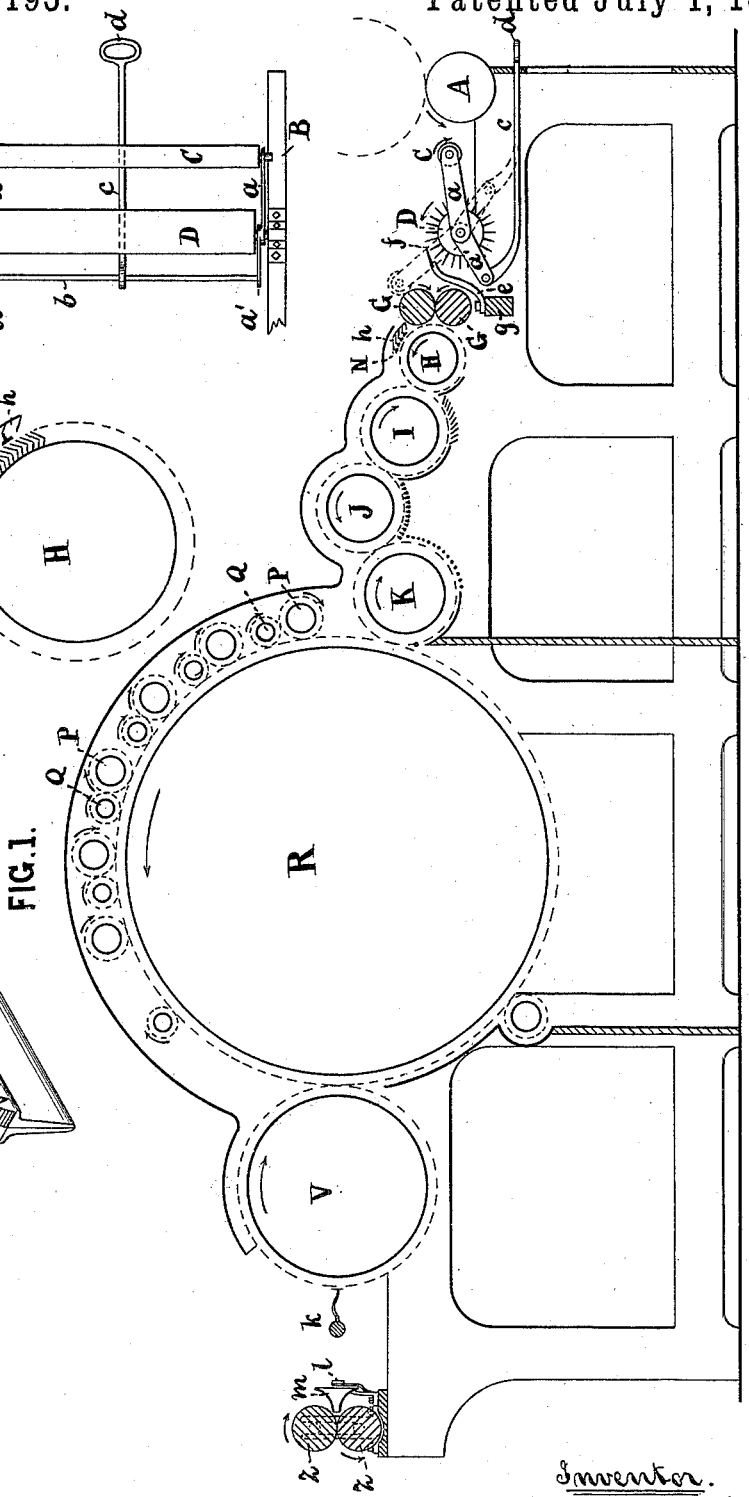
CARDING MACHINE.

No. 301,193. Patented July 1, 1884.









Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES EDWARD WHITWORTH, OF BOSTON, MASSACHUSETTS.

CARDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 301,193, dated July 1, 1884.

Application filed November 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. WHITWORTH, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Carding-Machines, of which the following is a specification.

My invention relates to carding-machines, and more particularly to that class illustrated in Letters Patent No. 265,901, granted to me October 10, 1882; and the invention consists, first, in a means for raising the smooth roller away from the needle-roller without removing it from the machine; secondly, in a concave shield having a knife-edge, arranged between the needle-roller and the feed-rollers, for the purpose of removing the fiber from the needle-roller, so as to insure the delivery of all the fiber to the feed-rollers; thirdly, in the arrangement of a series of saw-teeth bars in connection with a receptacle or box over each tooth.

Referring to the accompanying drawings, Figure 1 is a longitudinal vertical section of a carding-machine embodying my improvements. Fig. 2 is an enlarged view in detail of the device for elevating the smooth roller. Fig. 3 is an enlarged view in detail of the breaker-roll, showing the position of the saw-teeth and dirt-receptacles. Fig. 4 is an enlarged view of the saw-teeth.

The general construction of the machine is similar to that shown and described in the patent above referred to, and requires no further particular description here, it being understood that the devices employed to actuate the several parts of the machine are substantially the same as shown in the patent granted to me October 10, 1882, No. 265,901, A being the lap-roller; C, the smooth roller; D, the needle-roller; G G, the feed-rollers; H, the breaker-roll; I, the discharging-roll; J, the carrier-roll, and K the licker-in. P and Q are the workers and strippers; V, the doffer; *k*, the doffer-comb, and Z Z are calender-rolls.

a a' are lever-arms fulcrumed on the axis of the needle-roller D—one arm at each end—as shown.

To the ends of the longer arms *a a* is journaled the smooth roller C, and the ends of the shorter arms *a' a'* are connected together by a rod or bar, *b*.

To the rod *b* is connected a rod, *c*, which extends back, and is provided with a handle, *d*, projecting from the rear of the machine. When a new lap is to be introduced into the machine for the action of the needle-roller and its accessories, the bar or rod *c* is drawn out, which pulls down the arms *a' a'* and raises the longer arms *a a* and removes the roller C away from the needle-roller, as shown by the dotted lines. When the lap is properly placed, the rod *c* is pushed back and the roller C resumes its position. I thus obviate the necessity of removing the roller C from the machine, as required in the machine above referred to in Patent No. 265,901.

Between the needle-roller D and the feed-rollers G G is arranged a concave shield, *e*, secured to a cross piece or bar, *g*, extending across the machine.

On the upper end of the shield *e* is a metal knife-edge, *f*, which is placed very near the ends of the needles or points of the needle-roller, and serves to remove the fiber from said needle-roller, so as to insure the delivery of all the fiber from the same.

A little to the rear of the upper part of the breaker-roll H is arranged a series of saw-teeth bars, N, as seen in Fig. 4. These bars are made in two parts, which are separated longitudinally and joined together, so that the teeth of one part shall be opposite the spaces between the teeth of the opposite part. The saw-teeth bars are similar to those shown in my former patent, above referred to, and the object of placing them as shown is to more effectually aid in clearing the fiber of seeds and other extraneous matter which are deposited in receptacles *h h*, placed over the said saw-teeth bars, and which are thus prevented from again returning to the fiber. At the front of the machine are the calender-rolls Z Z, to which the sliver is conducted.

What I claim as my invention is—

1. The combination of the roller C, the lever-arms *a a'*, the needle-roller D, rod or bar *b*, and the rod *c*, substantially as and for the purpose set forth.

2. The concave shield *e*, having the knife-

edge *f*, in combination with the needle-roller D and feed-rolls G G, as and for the purpose specified.

3. The combination, with the breaker-roll H, of the saw-teeth bars N, arranged above the said breaker-roll, and the receptacles *h*, as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES EDWARD WHITWORTH.

Witnesses:

JOS. H. ADAMS,

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