No. 733,383. PATENTED JULY 14, 1903.

M. J. GAHAGAN.

CARDING MACHINE.

APPLICATION FILED DEC. 26, 1901.

NO MODEL. 3 SHEETS—SHEET 1.

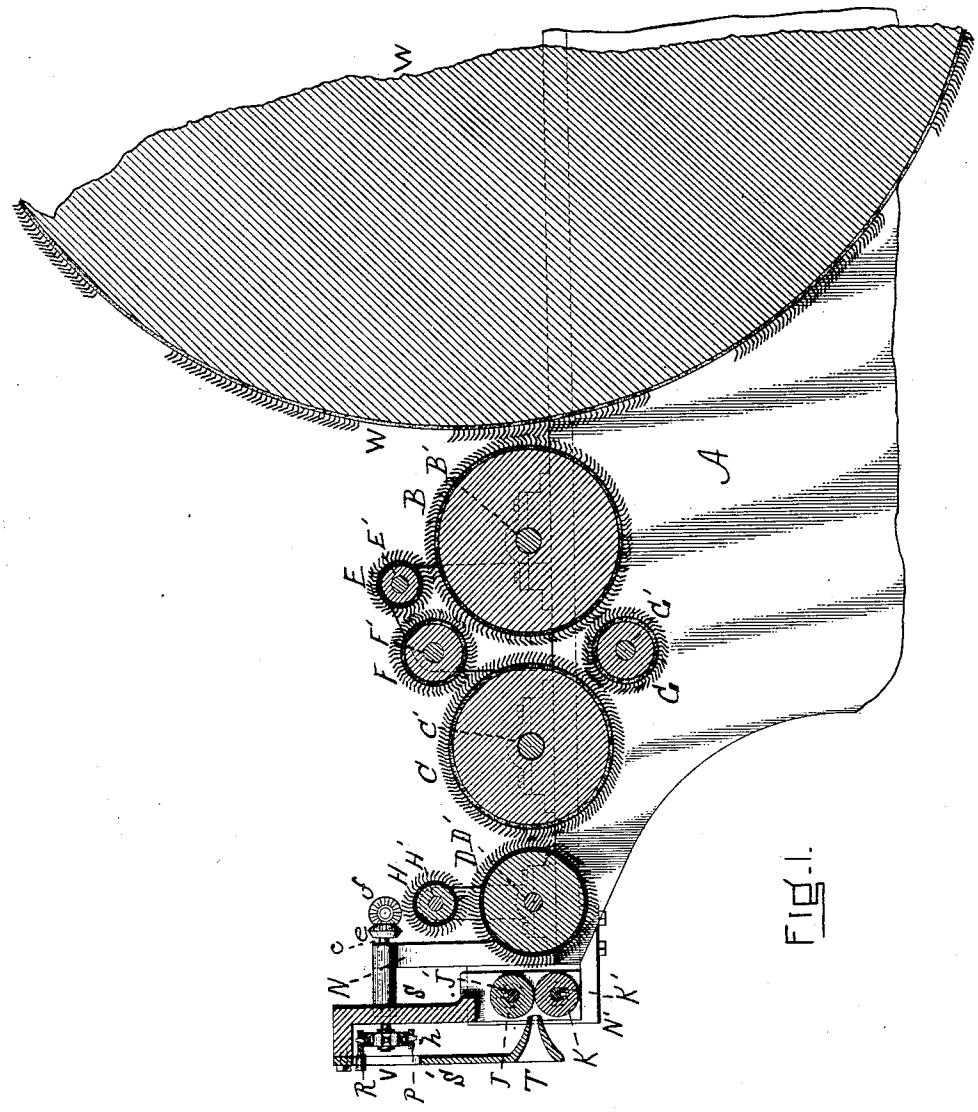

FIG. 1.

WITNESSES:

A. K. Hood.

M. L. Marshall

INVENTOR:

Michael J. Gahagan,

By his Att'y

Thomas A. Williams

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NO MODEL. 3 SHEETS—SHEET 2.

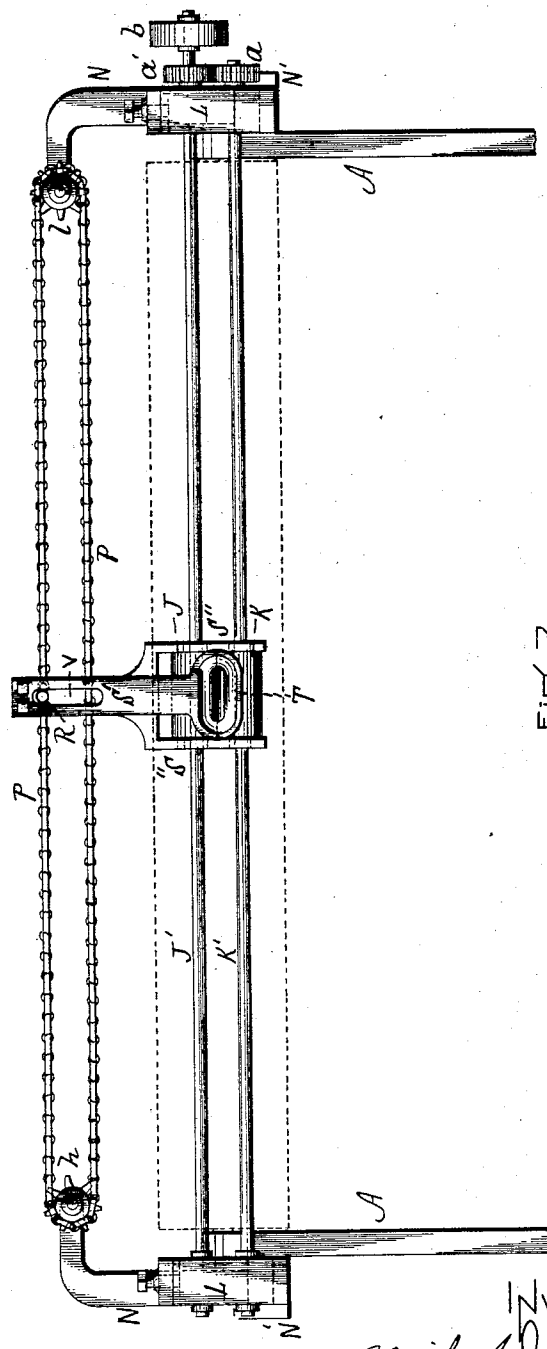

FIG. 2

WITNESSES:

A. K. Hood

M. L. Marshall

INVENTOR:

Michael J. Gahagan

By his Atty.

Henry C. Williams

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NO MODEL. 3 SHEETS—SHEET 3.

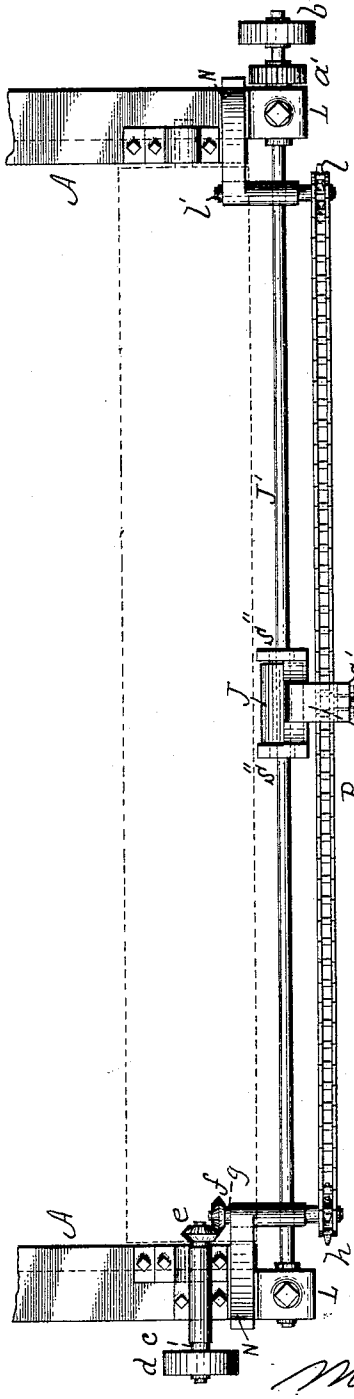

Fig. 3.

WITNESSES:

A. K. Hood.

M. L. Marshall

INVENTOR:

Michael J. Gahagan,

By his Atty.

Henry C. Williams

No. 733,383. Patented July 14, 1903.

UNITED STATES PATENT OFFICE.

MICHAEL J. GAHAGAN, OF SAXONVILLE, MASSACHUSETTS.

CARDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 733,383, dated July 14, 1903.

Application filed December 26, 1901. Serial No. 87,178. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL J. GAHAGAN, a citizen of the United States, residing in Saxonville, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Carding-Machines, of which the following is a specification.

In this invention the Apperly feed is done away with and my improved mechanism is substituted therefor, the principal object of such improved mechanism being to enable the continuous sliver or roving to be presented to the feeding mechanism endwise or "end on" instead of being presented in folds and to be fed by the feeding mechanism in the same manner, thus doing away with the folds or knuckles in the sliver. By doing away with these folds or knuckles—that is to say, by not doubling the sliver—bunching is avoided and there is no waste at the outer edges, as the sliver is entirely fed endwise without projecting at either edge and with less traverse than is the case in the Apperly feed.

The nature of the invention is fully described below and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section or sectional view of a sufficient portion of a carding-machine to illustrate my invention. Fig. 2 is a front elevation of the feeding mechanism. Fig. 3 is a plan view of the same.

Similar letters of reference indicate corresponding parts.

A represents portions of the frame, and W a portion of the cylinder provided with ordinary card teeth or clothing. Mounted in this frame at B′ is the tumbler B, and mounted in advance of said tumbler at C′ is the doffer C, and mounted in the same frame in advance of the doffer at D′ is the delivery-roll D. Above the tumbler is mounted at E′ the stripper-roll E, and mounted in the same frame intermediate with the tumbler B and doffer C, above and below the same, respectively, at F′ and G′, are the strippers F and G. Mounted in the frame above the delivery-roll at H′ is the fancy-roll H. These rolls are all placed with relation to each other, as indicated in Fig. 1, the teeth or clothing on the tumbler being in contact with the teeth on the cylinder, the clothing on the strippers E, F, and G being in contact with the clothing on the tumbler B, the clothing on the strippers F and G being in contact with the clothing on the tumbler B and doffer C, and the clothing on the fancy-roll H being in contact with the clothing on the delivery-roll D. The clothing on the tumbler and doffer are not in contact or engagement with each other.

J and K are respectively upper and lower feed-rolls or drawing-in rolls splined on horizontal shafts J′ and K′, respectively, and adapted to slide endwise or horizontally on said shafts. These shafts have bearings at their opposite ends in boxes L, supported by brackets N N′, and the said shafts have respectively mounted on one end intermeshing gears *a a′*, the upper shaft being driven by a suitable pulley *b*. (See Figs. 2 and 3.) Mounted on one of the brackets N, Figs. 1 and 3, is a shaft or stud *c*, driven by a suitable pulley *d* and provided with a bevel-gear *e*, which is in engagement with a similar gear *f* on the shaft or stud *g*, mounted on the same bracket. The opposite end of this shaft *g* is provided with a sprocket-wheel *h*, which is connected by the chain P with a sprocket-wheel *l* on a stud *l′*, mounted on the bracket N at the opposite side of the machine. A horizontal engaging pin R extends from this chain into a vertical slot V in the hanger or portion S′ of the carrier or traveler S, through which the shafts J′ and K′ extend and between the the sides S′ of which the rolls J and K are located. The lower end of this portion S′ is formed into the trumpet T. The sliver is fed endwise through the trumpet T between the rolls J and K. These rolls are horizontally placed, and consequently rotate on a vertical plane, their rotation being inward by reason of the gears *a* and *a′* on the shafts J′ and K′, to which said rolls are slidingly secured. The chain B moves the carrier S back and forth on the shaft J′ and K′ by means of the pin R in the slot V, and thus reciprocates the rolls J and K horizontally in front of the delivery-roll D. The sliver is therefore fed end on to the delivery-roll for substantially its entire length, vibrating back and forth horizontally, but always presenting its end, (not its side,) and hence never presenting any folds or knuckles. The sliver having been fed to the delivery-roll, the fancy-roll H in engagement with the delivery-roll "brushes it off,"

and the sliver is conducted to the doffer C, whose teeth are in mesh with the delivery-roll. From the doffer the sliver is conducted, by means of the upper strippers F E and lower stripper G, to the tumbler B, which delivers it to the cylinder W. Thus the sliver is fed by horizontally-placed, vertically-rotating, and horizontally-reciprocating feed-rolls without folds or knuckles and thoroughly distributed on its way to the cylinder without waste with a comparatively short traverse of the feed-rolls, a knock-off being unnecessary. The sliver on its path to the cylinder passes from the feed-rolls J K to the delivery-roll D between it and the fancy-roll H, thence to the doffer C, from which it is transferred above and below, respectively, by the strippers F and E and G to the tumbler B, from which it passes to the cylinder.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

In a carding-machine, the frame, and cylinder W; the tumbler B and doffer C mounted in the frame, the tumbler in advance of the doffer and the teeth of said tumbler being in mesh with the clothing on the cylinder; the delivery-roll D in mesh with the doffer; the stripper-roll E above and in mesh with the tumbler; the stripper-roll F above and in mesh with the tumbler and the doffer and also with the stripper-roll E; the stripper-roll G below and in mesh with both the tumbler and the doffer; the fancy-roll H above and in mesh with the delivery-roll D, all said rolls being provided with suitable clothing and being mounted in the frame, and the fancy-roll and strippers being comparatively small in diameter; upper and lower feed-rolls adapted to slide horizontally on their shafts; means for rotating said feed-rolls; traversing mechanism for reciprocating the feed-rolls horizontally in front of the feed; the carrier S inclosing the ends of the rolls, slotted at V, and provided with the trumpet T; and mechanism for reciprocating said carrier horizontally in front of the feed, substantially as described.

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

MICHAEL J. GAHAGAN.

Witnesses:

LYNETTE CLARK,

PATRICK E. O'BRIEN.