

3 Sheets—Sheet 1.

J. T. MEATS & J. S. EATON.
CARDING ENGINE.

Patented July 27, 1897.



Thomas J. Drummond

Inventors:
John T. Meads.
Joseph S. Eaton.
by Leroy Gregory. attys.

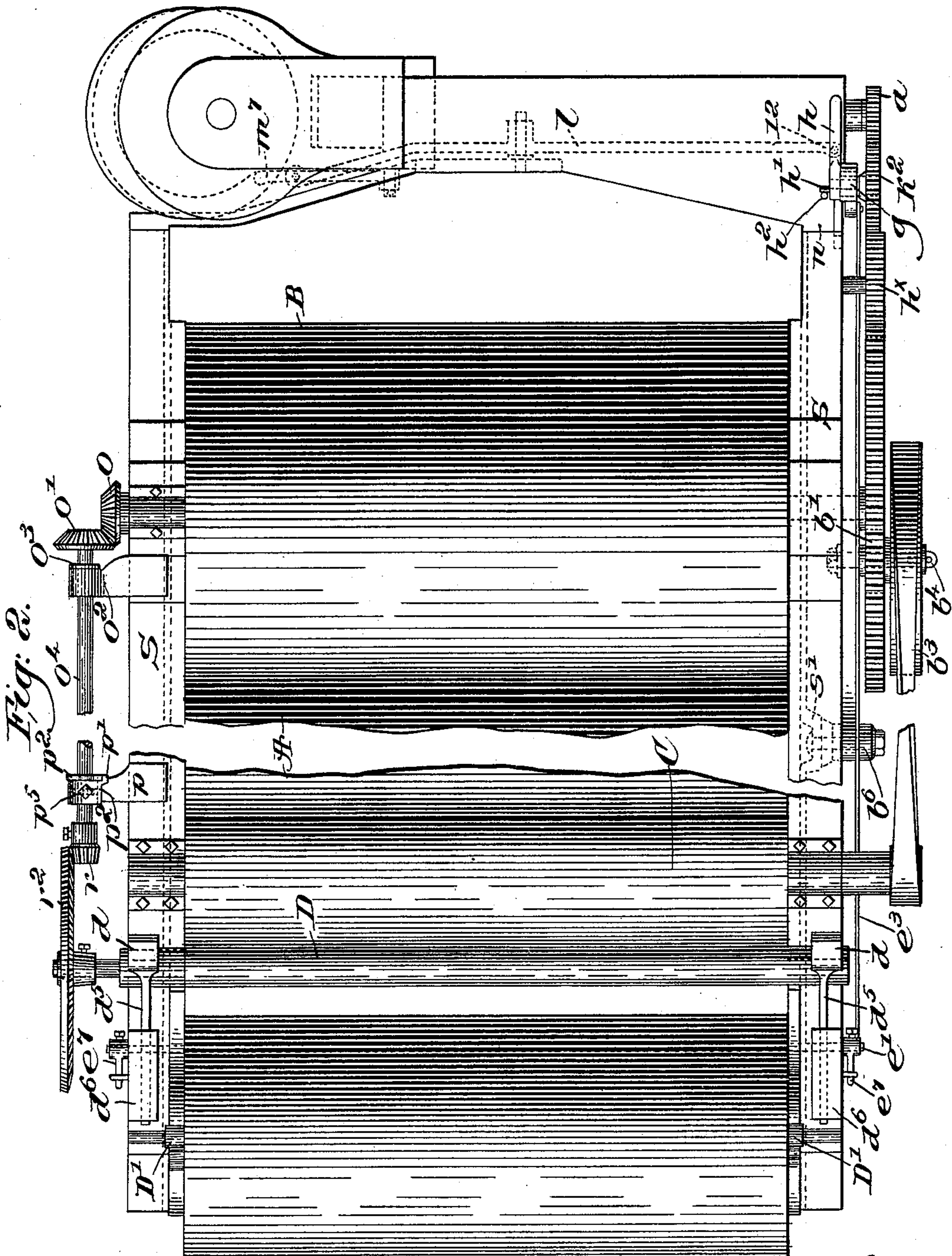
(No Model.)

3 Sheets—Sheet 2.

J. T. MEATS & J. S. EATON.
CARDING ENGINE.

No. 587,267.

Patented July 27, 1897.



Witnesses:
Edward F. Allen.

Thomas J. Drummond

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3 Sheets—Sheet 3.

CARDING ENGINE.

Patented July 27, 1897.



Edward F Allen.

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Invertors:

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Attys.

UNITED STATES PATENT OFFICE.

JOHN T. MEATS AND JOSEPH S. EATON, OF TAUNTON, MASSACHUSETTS,
ASSIGNORS TO THE MASON MACHINE WORKS, OF SAME PLACE.

CARDING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 587,267, dated July 27, 1897.

Application filed July 27, 1896. Serial No. 600,630. (No model.)

To all whom it may concern:

Be it known that we, JOHN T. MEATS and JOSEPH S. EATON, of Taunton, in the county of Bristol and State of Massachusetts, have
5 invented an Improvement in Carding-Engines, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This improvement in carding-machines has for its object to provide mechanical means whereby the doffer, the feeding mechanism, and the coiler mechanism may be automatically stopped when the coiler-can is full or
15 there is present on the roller at the feeding mechanism a bunch or foreign substance which in its passage through the machine would be liable to injure the wire covering used on the lick-in or main cylinder. We
20 have also so devised the parts of our machine that the feeding mechanism and doffer may be stopped quickly by hand or foot or by the filling of the coiler-can, and the means for rotating the feed-roll may be instantly rendered
25 inoperative.

Figure 1, in side elevation, represents a sufficient portion of a carding-machine with our improvements added to enable our invention to be understood. Fig. 2 is a partial top or
30 plan view, on a larger scale, with the main cylinder and the frame broken out. Fig. 3 is a right-hand end of the machine shown in Fig. 1. Fig. 4 is a detail, enlarged, of one of the supports for the rotating rod used to actuate
35 the feed-roll. Fig. 5 shows the auxiliary lever g , pivoted on the lever b^5 .

In the drawings, S represents the side frames of the carding-machine, it having suitable bearings to support the main cylinder A . The
40 doffer B , the lick-in C , the feed-roll D , and the lap-roll shaft D' are and may be all as common in usual carding-machines.

The coiling-can will be substantially such as shown in United States Patent No. 461,171,
45 dated October 13, 1891, and its top casing will contain and cover a tube-gear r^3 , such as shown in said patent, it rising when the material laid by it in the can fills the latter full to overflowing.

50 The doffer-shaft b has fast on it at one end

a toothed wheel b' , the doffer deriving its movement from a pinion b^2 , which is clutched to the hub of a pulley b^3 , turning on a stud b^4 , carried by a lever b^5 , having its fulcrum on a stud-bolt b^6 , made adjustable vertically
55 in a slot s^2 of a boss s' on the side frame.

Any desired speed may be imparted to the doffer with relation to the lick-in and main cylinder by taking out the stud b^4 and changing the pinion b^2 for one of the desired size,
60 the stud-bolt b^6 being adjusted up or down to enable the pinion b^2 and gear b' to properly mesh.

In order to stop the rotation of the doffer in case of a lump or foreign substance getting
65 between the under side of the feed-roll D and the usual plate or table on which the bat lies and travels, we have pivoted over the journals of the feed-roll levers d^5 , provided each with a heavy weight d^6 , and said weights are
70 joined by arms e^5 to arms e^7 of a rock-shaft e' , said rock-shaft having a second arm e , through a hole or slot in which is extended one end of a rod e^3 , the opposite end of which is connected to the upper end of an auxiliary
75 lever g , pivoted to the lever b^5 at g' , the lever b^5 working in a guide b^x . The upper end of the auxiliary lever has pivoted upon it at h^3 a cam-handle h , provided with a short arm having its end shaped to leave a point 3, said
80 short arm also carrying a projection h' . The pin h^2 of the handle h is so located that when the said handle is in its full-line position, Fig. 2, the cam-point h' of the said handle will rest on the apron or plate n and the lever b^5 will
85 be held in position to keep the pinion b^2 and gear b' in mesh; but when the said handle is turned over to the left, as shown by dotted lines, Fig. 2, the pinion and gear will be out
90 of mesh.

The auxiliary lever g has at a short distance below its upper end (see Fig. 5) an oblong hole g^5 , considerably longer and somewhat wider than the diameter of the stud k^3 , on which is mounted to rotate an intermediate
95 gear k^2 , the said lever being free to be moved up and down laterally on said stud. The gear k^2 engages a gear h^x , which is in turn engaged by the gear b' , the said intermediate gear k^2 also engaging a pinion a on a shaft a' , it in
100

practice carrying one of the usual calender-rolls commonly used in connection with carding-machines.

The apron n is provided with a pin or stop h^2 , which is so located as to form a stop against which the projection h' may strike. This pin h^2 is so located that when the arm g is in its elevated position and the pinion b^2 engages the gear b' the left-hand wall of the hole g^5 bears against the stud k^3 , the handle h being then in its horizontal position, with the projection h' against the pin h^2 , the weight of the said lever and its parts keeping the said projection and pin in contact. When the handle h is in its full-line position, the part 3 of the short arm bears upon the apron n a little to the left of a perpendicular line drawn from the pivot h^3 of said handle, and the weight of the parts tends to keep the handle down against the upper end of a rod l^2 , to be described; but when said handle is turned over, as will be described, far enough to the left to carry said part 3 to the right of said perpendicular line then the weight of the lever g and its actuated parts will act and throw the said handle into the dotted-line position and the pinion b^2 will be disengaged from the gear b' . The handle h may be so turned over through the movement of the lever g to the left by or through the action of the rod e^3 as when a lump or foreign substance carries under the feed-roll to the left the lever d^5 , or said lever g may be moved to the left by pressure on the projection g^4 , the said lever in its movement to the left causing the right-hand wall of the hole or slot g^5 to bear against the said stud k^3 , such movement of the said lever in either of these ways carrying the projection h' to meet the pin or stop h^2 and then turn the handle h to let the lever g drop and effect the disengagement of the pinion and gear referred to.

The rod l^2 referred to rests at its lower end on a horizontal lever l , the movement of which may also act to lift the handle h and turn it over into the dotted-line position. The opposite end of the lever l supports the lower end of a rod n^6 , which contacts with one end of a lever n^4 , pivoted at n^8 on the top casing of the usual coiler mechanism, the opposite end of said lever resting just above the usual tube-gear n^3 , through which the roving passes and by which the said roving is coiled in the usual can, and when the can is full the accumulated roving tips the said gear sufficiently to turn the lever n^4 and causes the rod r^6 to move the handle h and rod l^2 to lift and turn the handle h until the point is to the right of the vertical center line referred to. So also said lever l may be moved by the acting of the foot on a treadle m^7 , it pulling down a rod l^3 , engaging the said lever.

The feed-roll D is rotated from the shaft b of the doffer, it having a bevel-gear o , which engages a bevel-gear o' or a side shaft o^4 , in turn provided at its opposite end with a bevel-

gear r , which engages a larger bevel-wheel r^2 , fast on the end of the journal of said feed-roll.

The side shaft o^4 rotates in bushings $o^3 p^2$, mounted in brackets $o^2 p$, respectively, said bushings each having a suitable projecting handle, as shown by Fig. 4. The holes in these bushings for the said side shaft are out of the center of the bushings $o^3 p^2$ for a distance sufficient to enable the semirotation of the bushings from the full into the dotted line position, Fig. 4, to disengage the gear o' from o and r from r' , when the feed-roll D may be turned freely backward or forward by hand.

The bearing p has a stop p' , against which the arm of the bushing p^2 rests when the shaft o^4 is in its working position.

The longitudinal movement of the bushings p^2 and o^3 may be restrained by a suitable screw, as p^5 , in the bearing entering the annular groove in the bushing.

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

1. The doffer, its gear; a lever provided with a pulley having a connected pinion to engage said gear; an auxiliary lever pivoted to the lever carrying said pulley and pinion; and a handle pivoted on said auxiliary lever and provided with a point 3 and a projection h' ; an apron on which said point rests, and a pin or stop which is engaged by the projection of said handle when the latter is in a position to hold up the said auxiliary lever and effect the engagement of the said pinion and gear; combined with a rod cooperating with said handle, the tube-gear of the coiler-can, a lever partially overlapping said tube-gear, and devices intermediate said lever and the rod cooperating with said handle to actuate said rod and turn said handle to permit the descent of the said auxiliary lever and to effect the disengagement of said pinion and gear when the can is full, substantially as described.

2. The doffer, its gear; a lever provided with a pulley having a connected pinion to engage said gear, an auxiliary lever pivoted to said lever carrying said pulley and pinion; a handle pivoted on said auxiliary lever and provided with a point and projection, and an apron provided with a stop: combined with the lap-feeding roll, devices intermediate said lap-feeding roll and said auxiliary lever to move it laterally and cause the projection of said handle to meet the said stop and turn the said handle to permit said auxiliary lever to drop and effect the disengagement of said pinion and gear, substantially as described.

3. In a carding-machine, a doffer having an attached gear, a lever provided with a pulley having a pinion to engage said gear; an auxiliary lever pivoted to said lever carrying said pulley and pinion, means to temporarily hold said auxiliary lever elevated with the said pinion and gear in engagement, a rod

connected to said auxiliary lever, a rock-shaft
e' having an arm connected with said rod, a
lap-feeding roll, and means between it and
the said rock-shaft e' to turn the latter on
5 the arrival under the lap-feeding roll of any
hard substance or lumps which would dam-
age the card-clothing of the machine, where-
by, by the movement of said rod, the auxiliary
lever may be released and lowered to effect
10 the disengagement of the pinion and gear and

the stopping of the doffer, substantially as
described.

In testimony whereof we have signed our
names to this specification in the presence of
two subscribing witnesses.

JOHN T. MEATS.

JOSEPH S. EATON.

Witnesses:

HORACE A. CROSSMAN,

THOS. G. COX.