

(No Model.)

2 Sheets—Sheet 1.

J. VAUGHAN.

STOP MECHANISM FOR CARDING ENGINES.

No. 501,387.

Patented July 11, 1893.

Fig. 2.

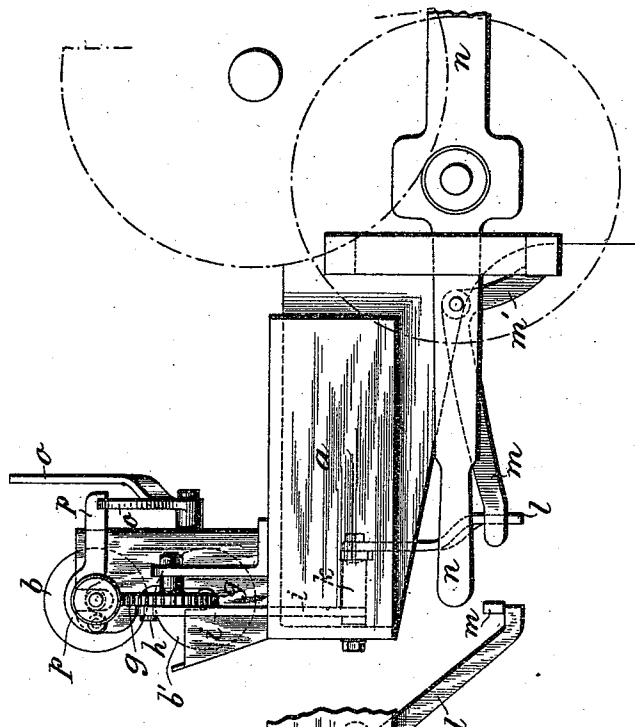
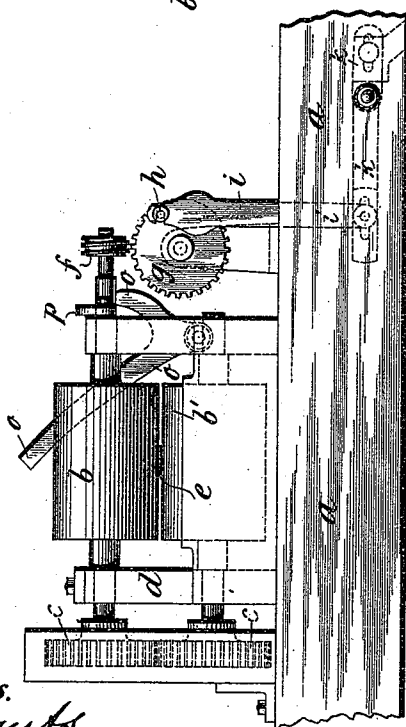


Fig. 1.



Witnesses.

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(No Model.)

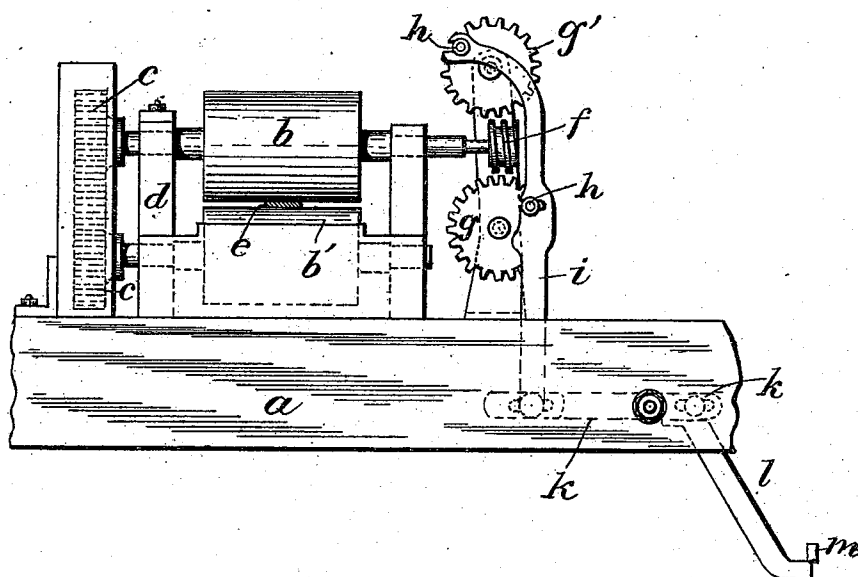
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Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN VAUGHAN, OF ASHTON-UNDER-LYNE, ASSIGNOR TO JOHN BULLOUGH,
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STOP MECHANISM FOR CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 501,387, dated July 11, 1893.

Application filed August 29, 1892. Serial No. 444,401. (No model.) Patented in England July 23, 1889, No. 11,716.

To all whom it may concern:

Be it known that I, JOHN VAUGHAN, a subject of Her Majesty the Queen of Great Britain, residing at Ashton-under-Lyne, in the county of Lancaster, England, have invented a certain new and useful Improved Stop Mechanism for Carding - Engines, (for which I, jointly with The Hurst Mills Company, Limited, of Ashton-under-Lyne aforesaid, have obtained Letters Patent in Great Britain under date of July 23, 1889, No. 11,716,) of which the following is a specification.

The object of the invention is to construct a simple and efficient stop mechanism to be applied to carding engines employed for carding fibrous substances to cause the stoppage of the engine whenever the sliver breaks or from any other cause is not being properly delivered that is to say in proper thickness. The nature of the invention and the manner in which the same is to be performed or carried into practical effect will be readily understood on reference to the annexed sheet of drawings and the following explanation thereof.

Figure 1 on the annexed drawing, is a front elevation; Fig. 2, a side or end view, and Fig. 3 a side or end view of a modified form, of a pair of calendering rollers and part of the delivery end of a carding engine showing the application of the invention thereto, *a* being part of the framing and *b, b'* the calendering rollers. These rollers are driven direct by spur gearing *c* in the usual manner and one of the journals of the upper roller *b* is so mounted in its bearings *d* that it can rise and fall to a limited extent so as to exercise a certain amount of pressure on the sliver as usual. Whenever the sliver is absent or becomes too thin the top roller *b* falls into contact (or nearly so) with the bottom roller *b'* and when the sliver is being delivered between them in the proper thickness the upper roller *b* is raised from contact with the lower one *b'* by the thickness of the sliver *e* (say about one-sixteenth of an inch more or less) as shown at Fig. 1.

For the purposes of this invention I prolong the axle of the upper roller *b* at one end, and upon this prolongation I mount a worm *f*. Beneath this I mount a worm wheel *g* carried

on a suitable stud, it being so arranged that when the sliver is present it raises the worm *f* out of gear with the worm wheel *g* (see Fig. 1.) but when the sliver is absent or becomes too thin the falling of the top roller *b* brings the worm *f* into gear and causes the worm *f* to turn the worm wheel *g*. Upon the face of the worm wheel *g* is a pin *h* which is connected by a link *i* to one end of a lever *k* the other end of which is provided with an arm *l* which comes beneath the long arm of a catch-lever *m* carried by the ordinary "doffer-lever" *n*. The catch *m'* supports the doffer lever *n* in the position shown at Fig. 2, so long as the sliver is being delivered in proper thickness, but as soon as the top roller *b* falls and allows the worm *f* to come into gear with the worm wheel *g* and cause the latter to revolve, the pin *h* depresses the link *i* and releases the catch *m'* and allows the doffer lever *n* to fall and stop the machine by throwing the driving gear out of action in the usual way. The link *i* is connected with the pin *h* by a hook or slotted hole so that it can be thrown out of gear when not required to be worked. If it be desired to stop the engine also when the sliver becomes too thick this may be effected by having a second worm wheel *g'* above the worm *f* as shown in Fig. 3 and connecting the same to the lever *k* in a similar manner, but in this case the pin *h* will have to be on the other side of the center. I prefer however for this purpose to mount at the back of the rollers *b, b'* a cranked lever *o* the short arm of which catches against the lower side of a bent lever *p* which rests upon the axle of the top roller *b* so as to hold the long arm of the lever *o* suspended above the sliver as shown at Fig. 1. As soon however as the increasing thickness of the sliver raises the roller *b* it releases the catch and allows the long arm of the lever *o* to fall and break the sliver, the absence of which from between the rollers *b* and *b'* immediately causes the stoppage of the engine.

What I claim is—

1. In a carding engine, a pair of calendering rollers, the upper of which carries a worm on its axle, in combination with a worm wheel with which the worm is normally kept out of contact by the thickness of the sliver passing

between the rolls, a link attached to said worm wheel, the doffer lever, a catch attached to same, and connection between the link and catch adapted to release the latter and permit the doffer lever to fall and stop the machine when the sliver breaks or its thickness is reduced, substantially as described.

2. In a carding engine, and in combination, a pair of calendering rollers, the upper of which carries a worm on its axle a worm wheel with which the worm is normally kept out of contact by the thickness of the sliver passing between the rolls, the doffer lever, a catch attached to same, and connection between the worm wheel and catch adapted to release the latter and allow the doffer lever to fall when the sliver breaks or is reduced in thickness, a pivoted cranked lever, a second lever which normally holds the same up but is raised by the axle of the top roller when the thickness of the sliver increases and allows the cranked lever to fall and break the

latter thereby putting into operation the stop motion aforesaid, substantially as described.

3. In a carding machine, a pair of calendering rollers the upper of which carries a worm on its axle in combination with a worm wheel with which the worm is normally kept out of contact by the uniform thickness of the sliver passing between the rolls, a link attached to said worm wheel, the doffer lever, a catch attached to same, and connection between the link and catch adapted to release the latter and permit the doffer lever to fall and stop the mechanism when the sliver varies in thickness, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN VAUGHAN.

Witnesses:

JOSEPH PLEASANTS,
JAMES BULMORE.