2 Sheets—Sheet 1.

C. H. CHAPMAN.

Mechanism for Automatically stopping the Feed-Rolls of Carding-Engines.

No. 195,982. **Patented Oct. 9, 1877.**

Fig. 1.

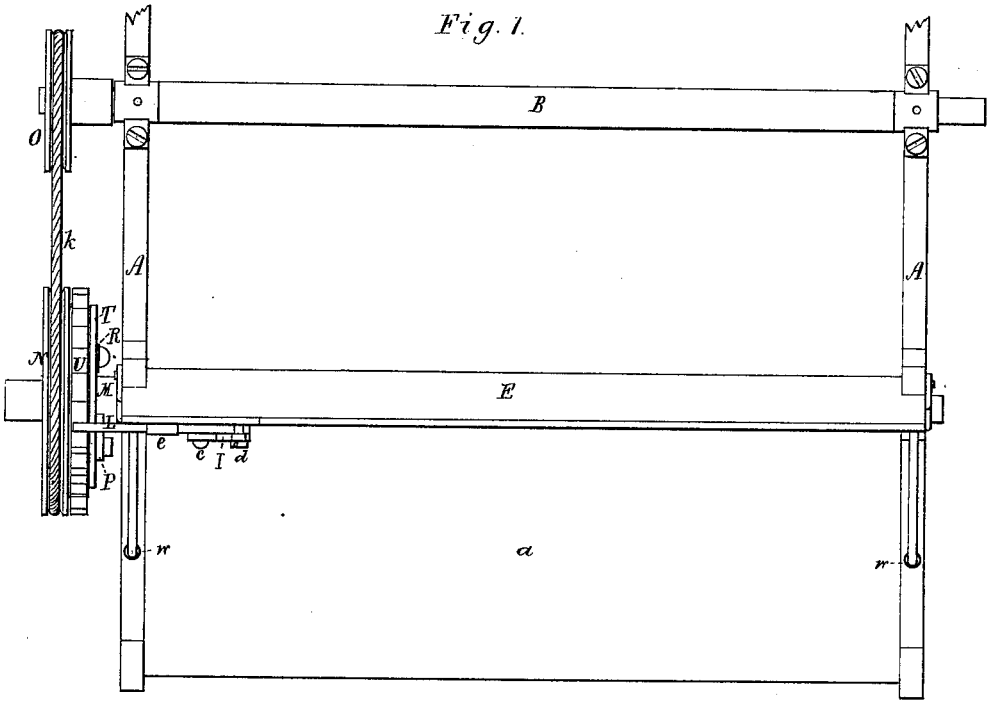
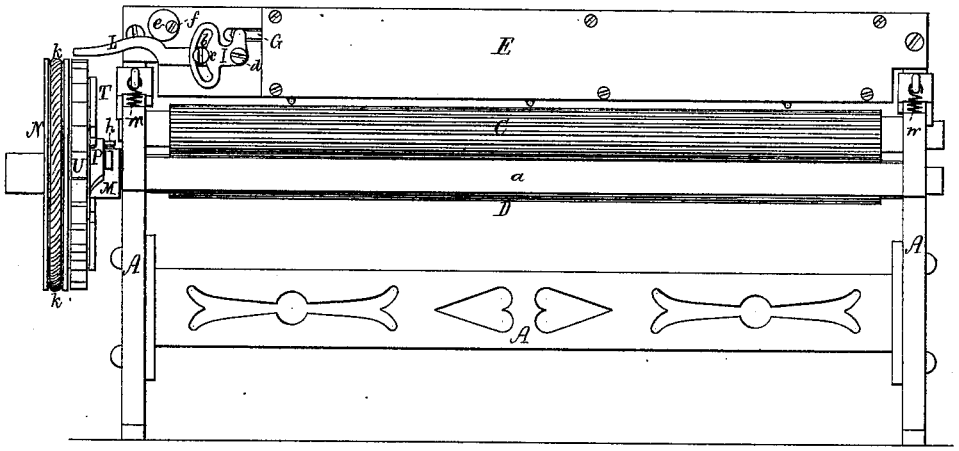


Fig. 2.



Witnesses.
S. N. Piper
L. A. Müller

Inventor
Charles Henry Chapman
by his attorney
R. H. Eddy

2 Sheets—Sheet 2.

C. H. CHAPMAN.

Mechanism for Automatically stopping the Feed-Rolls of Carding-Engines.

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Fig. 3.

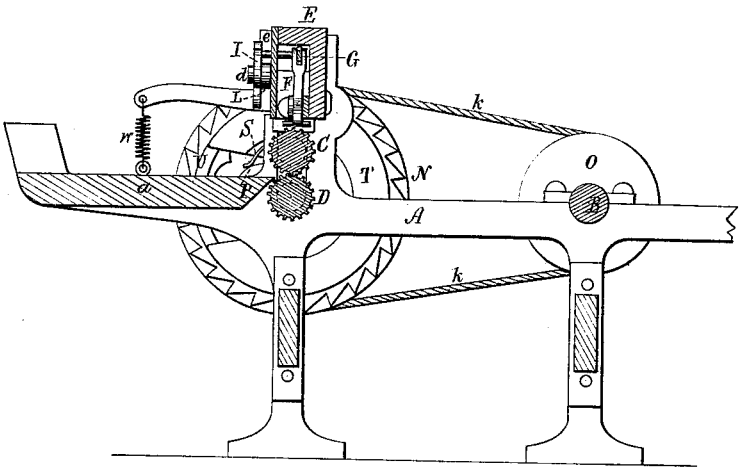


Fig. 5.

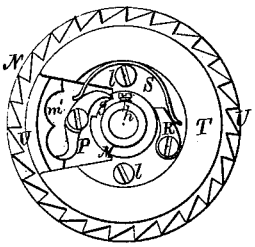


Fig. 6.

Fig. 7.

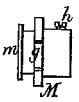


Fig. 8.

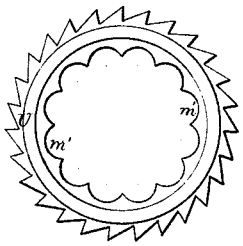
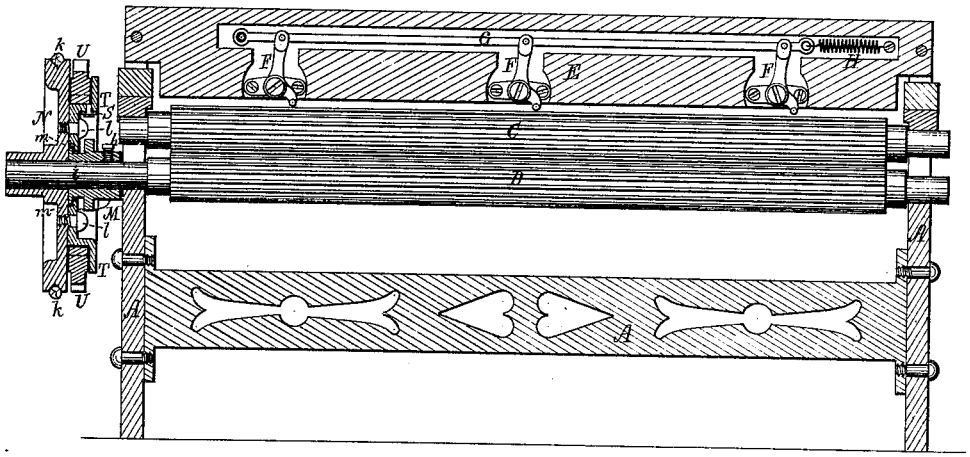


Fig. 4.



Witnesses.
S. N. Pike
L. M. Miller

Inventor
Charles Henry Chapman
by his attorney
R. H. Eddy

UNITED STATES PATENT OFFICE.

CHARLES H. CHAPMAN, OF SHIRLEY, ASSIGNOR TO HIMSELF AND GEORGE REED, OF FITCHBURG, MASSACHUSETTS.

IMPROVEMENT IN MECHANISMS FOR AUTOMATICALLY STOPPING THE FEED-ROLLS OF CARDING-ENGINES.

Specification forming part of Letters Patent No. **195,982,** dated October 9, 1877; application filed August 2, 1877.

To all whom it may concern:

Be it known that I, CHARLES HENRY CHAPMAN, of Shirley, of the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement on Carding-Engines; and do hereby declare the same to be described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a rear elevation, and Figs. 3 and 4 vertical sections, of the feed-rollers and part of the frame of a carding-engine with my invention in connection therewith.

Such invention is for the purpose of arresting the motions of the feed-rollers of a carding-machine, or stopping them from feeding the cotton or fibrous material to the main card-cylinder, when there may be in the said material, and between such rollers, any bunch or matter liable to injure the teeth of such cylinder or those of any other part used in conjunction therewith.

My said invention consists in mechanism as hereinafter described for such purpose; also, in the combination of the said mechanism and the feed-rollers, all being substantially as set forth.

In the drawings, A denotes part of the frame of a carding-engine; B, the shaft of the main card-cylinder; and C and D, the feed-rollers, the platform *a*, for receiving the cotton or fibrous material to be carded, being arranged with such rollers in the ordinary way.

There is placed within a bar, E, disposed over the feed-rollers and extending across the frame, as shown, a set of levers, F F F, each of which is pivoted to the bar, and has its upper or longer arm hinged to a horizontal rod, G, provided with a spring, H, for retracting it. The shorter arms of the levers terminate in contact, or very nearly so, with the upper feed-roller. The said rod is pivoted to one arm of a bent lever, I, whose other arm has a curved slot, *b*, formed in it, as shown, to receive a clamp-screw, *c*, screwed into an arm, L, which, with the lever I is supported on one fulcrum, *d*, all being arranged as represented. The adjustable bent lever I, combined with the arm L, serves as a means of determining the distance of the lower arms of the levers F from the upper feed-roller.

Over the arm L there is an eccentric stop, *e*, which is secured to the bar E by a clamp-screw, *f*. This eccentric stop answers as a means of adjusting the arm L with reference to the annulus U, hereinafter described.

Fig. 5 is an inner side view of the mechanism applied to the shaft of the lower feed-roller.

The first portion of such mechanism is a wheel, M, which has in its periphery a single notch, *g*. (See Fig. 6, which is an end view, and Fig. 7, a top view, of such wheel.)

A set-screw, *h*, screwed into the hub of the wheel, serves to fasten the wheel to the shaft *i* of the said lower feed-roller.

Besides the notched wheel M there is placed on the shaft *i* concentrically a pulley or wheel, N, about which and a driving pulley or wheel, O, fixed on the shaft B, an endless band, *k*, is arranged. The wheel N turns freely on the shaft, and has pivoted to it a lever-pawl, P, that bears against the periphery of the wheel M, and, with another or auxiliary pawl, R, is forced against such by a bow-spring, S, arranged as shown, and fixed at its middle or crown to a chambered and notched journal, T, fastened to the inner side of the wheel N by screws *l l*.

The hub of the wheel M has a flange, *m*, at its inner end. The journal T extends into the space between such flange and the side of the wheel, and thus serves to keep the wheel in connection with the wheel N, so that by the clamp-screw of the wheel M both of such wheels may be held in position on the shaft of the lower feed-roller.

The journal T, shaped as shown, supports an internally-notched ratchet-annulus, U, a side view of which is shown in Fig. 8. The annulus has teeth projecting from its outer edge, and notches *m'* in and around its inner periphery, as represented. It turns freely upon the journal T, its object being to force the lever-pawl P out of engagement with the notch of the wheel M. The pawl P and notched wheel M are to engage the wheel N with the lower feed-roller shaft, in order to cause it to be revolved by such wheel N. It will there-

fore be evident that while the pawl is out of engagement with the wheel M the shaft will not be revolved by or with the wheel N, which will revolve on, and independently of, such shaft, the card-cylinders being also in motion, and the feed-rollers being stopped at the same time.

The operation of the machinery may be thus described: In case of a hard bunch or improper matter passing into the bite of the feed-rollers, the upper of them will be forced upward by it against the small levers F, and will move them so as to cause them to move the rod G in a manner to depress the arm L into the space between two of the teeth of the annulus U. This will arrest the said annulus or prevent it from revolving while the arm may be in engagement with it. The wheel N, continuing to revolve, will cause the pawl P to be so acted on by the annulus as to move the said pawl out of engagement with the notched wheel M, whereby the lower feed-roller will be so disconnected from the wheel N as not to be revolved with it. Thus the feed-rollers will stop or not revolve while the bunch or foreign substance may be between them. As soon as it may be removed from them by an attendant the upper one will be depressed by its pressure-springs *w w*, and the rod G will be retracted by the spring H, whereby the arm L will be raised out of engagement with the annulus, and the wheel N will be put in engagement with the feed-roller shaft, and will revolve it.

The object of the pawl R is to enable an attendant to reverse the motion of the feed-rollers, in order to allow him to remove the obstruction. This he effects by turning back the wheel N, whereby the pawl will be carried into the notch of the wheel M, and, by its action against the end of such notch, the pawl will cause the said wheel M and the lower feed-roller to be revolved.

I claim as of my invention as follows:

1. The combination of the carding-engine feed-rollers C D and one or more levers, F, the rod G, spring H, adjustable lever I, arm L, toothed annulus U, notched wheel M, lever-pawl P, wheel N, and notched journal T, all arranged, and applied essentially as set forth.

2. The combination of one or more levers, F, the rod G, spring H, adjustable lever I, arm L, toothed annulus U, notched wheel M, lever-pawl P, wheel N, and notched journal T, constructed, arranged, and applied substantially as set forth.

3. The combination of the auxiliary pawl R, pivoted to the journal T, with the said journal T and one or more levers, F, the rod G, spring H, adjustable lever I, arm L, toothed annulus U, notched wheel M, lever-pawl P, and the wheel N, all arranged and applied substantially as set forth.

4. The combination of the auxiliary pawl R, pivoted to the journal T, with the feed-rollers C D, and one or more levers, F, the rod G, spring H, adjustable lever I, arm L, toothed annulus U, notched wheel M, lever-pawl P, the wheel N, and the said journal T, all arranged and applied substantially as set forth.

5. The combination of the adjustable eccentric stop *e* and its clamp-screw *f* with the arm L, adjustable lever I, rod G, spring H, one or more levers, F, toothed annulus U, notched wheel M, lever-pawl P, wheel N, and journal T, all being constructed, arranged, and applied to the feed-rollers C D, essentially in manner and to operate therewith as specified.

CHARLES HENRY CHAPMAN.

Witnesses:
R. H. EDDY,
JOHN R. SNOW.