

(No Model.)

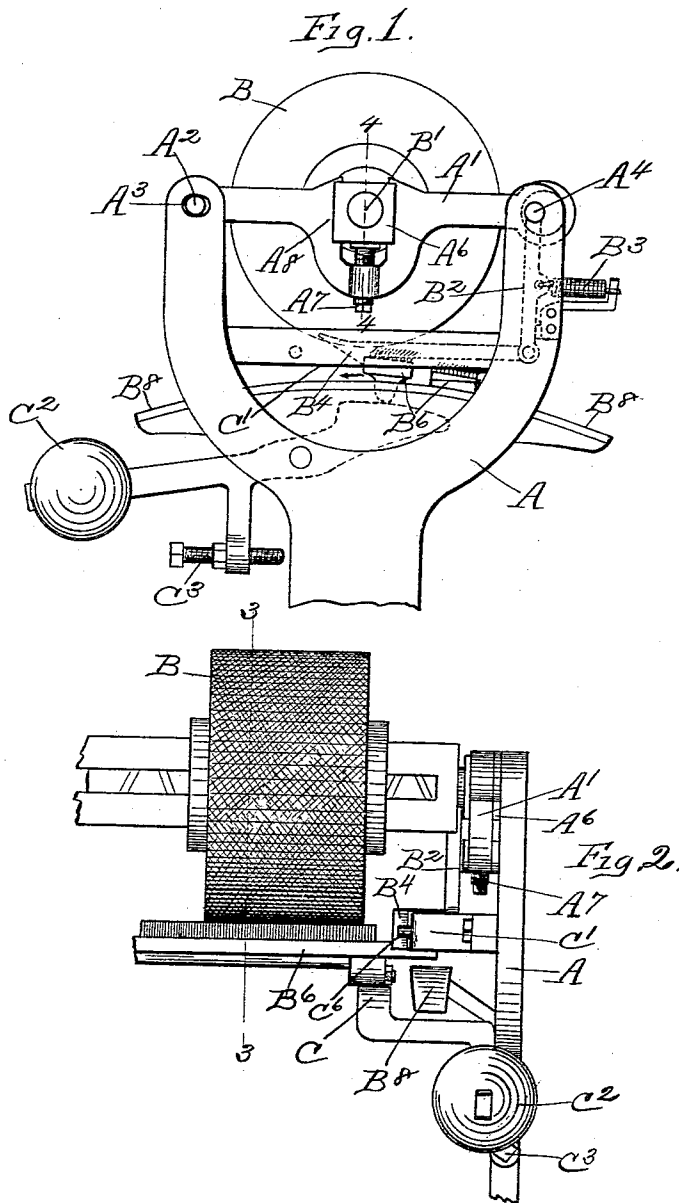
2 Sheets—Sheet 1.

J. E. PREST.

APPARATUS FOR CONTROLLING THE GRINDING OF FLATS OF
CARDING ENGINES.

No. 555,329.

Patented Feb. 25, 1896.



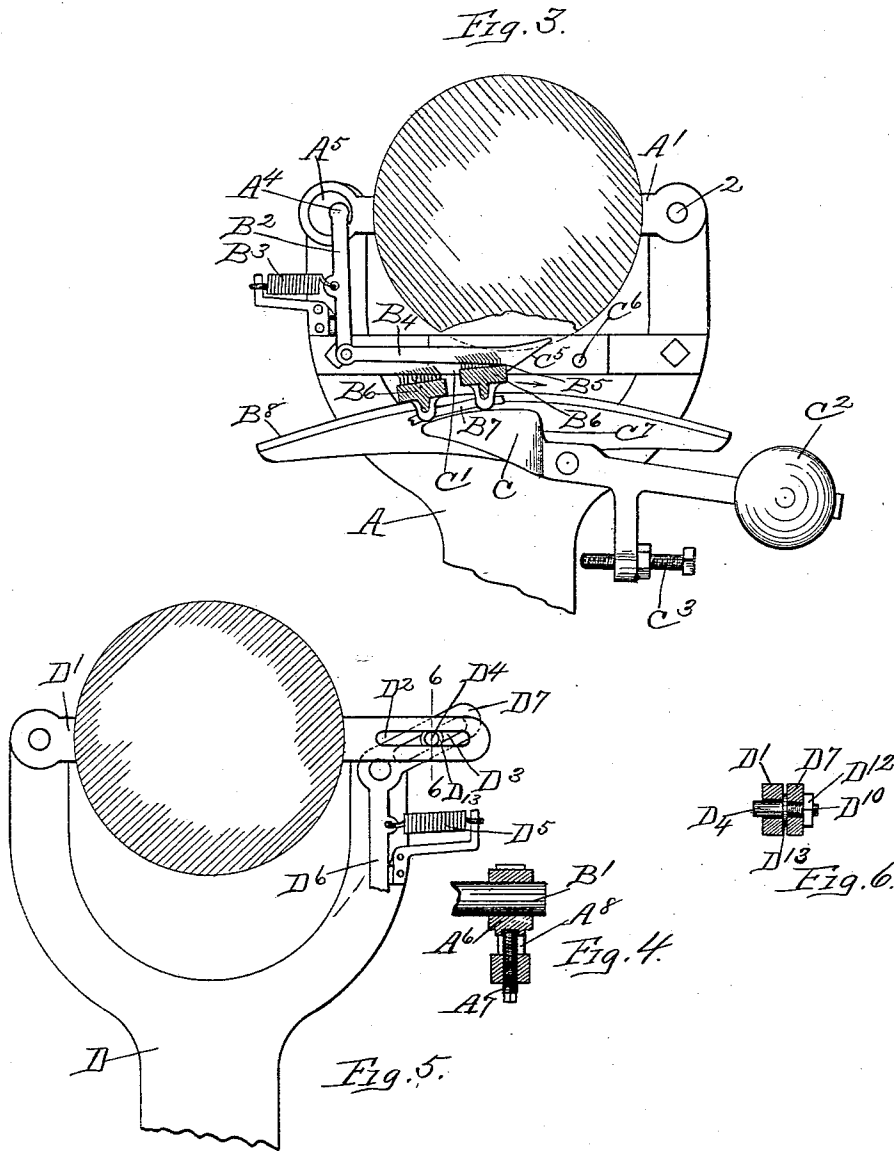
Witnesses:
G. H. Curtis
J. E. Curtis

Inventor:
John E. Prest,
By Mosher & Curtis
Attys

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UNITED STATES PATENT OFFICE.

JOHN E. PREST, OF COHOES, NEW YORK.

APPARATUS FOR CONTROLLING THE GRINDING OF FLATS OF CARDING-ENGINES.

SPECIFICATION forming part of Letters Patent No. 555,329, dated February 25, 1896.

Application filed October 1, 1895. Serial No. 564,273. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. PREST, a citizen of the United States, residing at Cohoes, county of Albany, and State of New York, have invented certain new and useful Improvements in Apparatus for Controlling the Grinding of Flats of Carding-Engines, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

Figure 1 of the drawings is an end view in elevation of my improved apparatus in position for use. Fig. 2 is a side elevation of the same with one end broken away. Fig. 3 is a vertical cross-section taken on the broken line 3 3 in Fig. 2. Fig. 4 is a vertical section of the grinding-roller bearings, taken on the broken line 4 4 in Fig. 1. Fig. 5 shows a modification. Fig. 6 is a vertical cross-section taken on the broken line 6 6 in Fig. 5.

For a fuller description and better understanding of the invention which forms the subject-matter of this application reference may be had to the drawings and specification of United States Letters Patent No. 519,771, issued to me May 15, 1894.

In my patented apparatus the flats of the carding-engine were successively carried, by a sliding grinding-block, past a grinding-roller rotary in stationary bearings in such a manner that the teeth of the inclined flat were uniformly engaged and ground by the roller.

In the apparatus which embodies my present invention the flats are successively moved along a stationary and horizontal slideway and the bearings of the grinding-roller are automatically moved toward each inclined flat as it passes the roller, whereby the teeth are uniformly engaged and ground by the roller, as will be hereinafter more fully described.

Referring to the drawings, A is a bifurcated bracket-frame, which supports in one arm one end of a lever A' by means of the pivot A²

contained in the elongated opening or bearing A³ in the bracket-arm. The other end of the lever is supported by the cam-shaft A⁴ rotary in bearings in the other bracket-arm, the cam A⁵, fixed on the cam-shaft, being rotary in an aperture in the oscillatory end of the lever A'. The lever A' supports immediately of its ends the bearing-box A⁶ adjustable vertically by means of the adjusting-screw A⁷, which supports the box in the vertical slideway A⁸ in the lever A'. The grinding-roller B has one of its end journals B' supported by and rotary in the bearing-box A⁶. The other end journal of the roller is supported by like mechanism. (Not shown.) Rotary movements of the cam-shaft in opposite directions will impart an oscillating movement to the roller-supporting levers, and approximately vertical movements to the bearing-boxes and roller.

As a means for operating the cam-shaft, I provide the same with a rock-lever B², fixed on the shaft and controlled by the spring B³. The rock-lever is actuated by means of the hook B⁴, pivoted at one end upon the lower end of the rock-lever and provided at its other end with the catch or offset B⁵, adapted to be successively engaged by each of the moving flats B⁶ as their teeth engage the roller.

The flats are connected by chain B⁷ (shown in part only) in the usual well-known manner and ride along the track B⁸ until they strike the guide C, which forces them successively up against the stationary slideway-guide C', the guide C being actuated by the weight C² and controlled by the adjustable stop C³.

The operation of the apparatus is as follows: The flats, being carried in the direction of the arrow by their connecting-chain in the usual well-known manner successively into engagement with the weight-actuated guide C, are forced by said guide upward until their beveled ends strike the stationary slideway-guide C', which maintains all the flats in engagement therewith in the same horizontal plane and at the same angle of inclination. The hook is so formed that its catch is engaged by each flat just as the flat engages the roller. As the flat advances, it carries the hook with it, thereby actuating the cam-shaft and cam to depress the roller-supporting levers and lower the roller just fast enough to

engage the successive teeth on the inclined flat as it passes beneath the roller. As the flat passes the roller, the inclined nose C³ on the hook engages the stop C⁶, fixed on the stationary slideway-guide, and gradually lifts the hook until it disengages it from the flat after the grinding of that flat is completed. The controlling-spring immediately restores the parts to the position shown in Fig. 1, the ground flat passing on over the cut-away or depressed portion C⁷ of the weight-controlled guide, when it is supported by the track B⁸.

By varying the adjustment of the bearing-box A⁶, I am able to vary the amount which the apparatus will grind from the teeth in one operation of grinding and to compensate for wear of the parts, and I am also able by my improved apparatus to secure very great uniformity and precision.

In Figs. 5 and 6 I have shown the lever D' which supports the grinding-roller bearings pivoted at one end to one arm of the bracket D, and at its other end by a loose pivotal connection to one arm D⁷ of an angle-lever pivoted upon the other arm of the bracket. The angle-lever is controlled by a spring D⁵ and its other arm D⁶ is adapted to be connected with a flat-engaging hook. (Not shown.) The pivotal connection between the lever D' and the angle-lever comprises a stud D⁴, loosely rotary, and movable longitudinally in the slot D² in lever D', and having a screw-threaded stem D¹⁰ integral therewith and separated therefrom by an integral flange D¹³. The threaded stem is inserted through an elongated slot D³ in the angle-lever arm D⁷, along which slot it is adjustably movable, and secured therein by the nut D¹² and flange D¹³.

A uniform movement of the angle-lever can be made to impart varying movements to the roller-supporting lever by means of the adjustable pivotal connection shown, the adjustment being accomplished by loosening the nut D¹² and sliding the stud and threaded stem

along their respective slots toward the pivot of the angle-lever to diminish the movement of the roller, and from said pivot to increase the movement of the roller. The pivotal connection is locked in its adjusted position by tightening the nut D¹².

What I claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus for controlling the grinding of flats of carding-engines, the combination with a stationary slideway for the flats, of a grinding-roller rotary in a bearing-support pivoted at one end and oscillatory toward and from the slideway, and flat-actuated mechanism for imparting oscillating movements to the roller-bearing support, substantially as described.

2. In an apparatus for controlling the grinding of flats of carding-engines, the combination with a stationary slideway and means for moving the flats successively along the slideway, of a grinding-roller, roller-supporting levers, lever-actuating cams, and means for operating the cams, whereby the roller is moved toward and from the slideway, substantially as described.

3. In an apparatus for controlling the grinding of flats of carding-engines, the combination with a stationary slideway, and means for moving the flats successively along the slideway, of a grinding-roller, roller-supporting levers, lever-actuating cams, a spring-controlled, cam-actuating lever, a flat-engaging hook pivoted upon the cam-actuating lever and provided with an incline, and a hook-releasing stop in the path of the hook-incline, substantially as described.

In testimony whereof I have hereunto set my hand this 28th day of September, 1895.

JOHN E. PREST.

Witnesses:

FRANK C. CURTIS,
J. G. CURTIS.