No. 867,072. PATENTED SEPT. 24, 1907.

O. L. OWEN.

HORSETAIL FOR DRAWING OFF MECHANISMS.

APPLICATION FILED AUG. 26, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

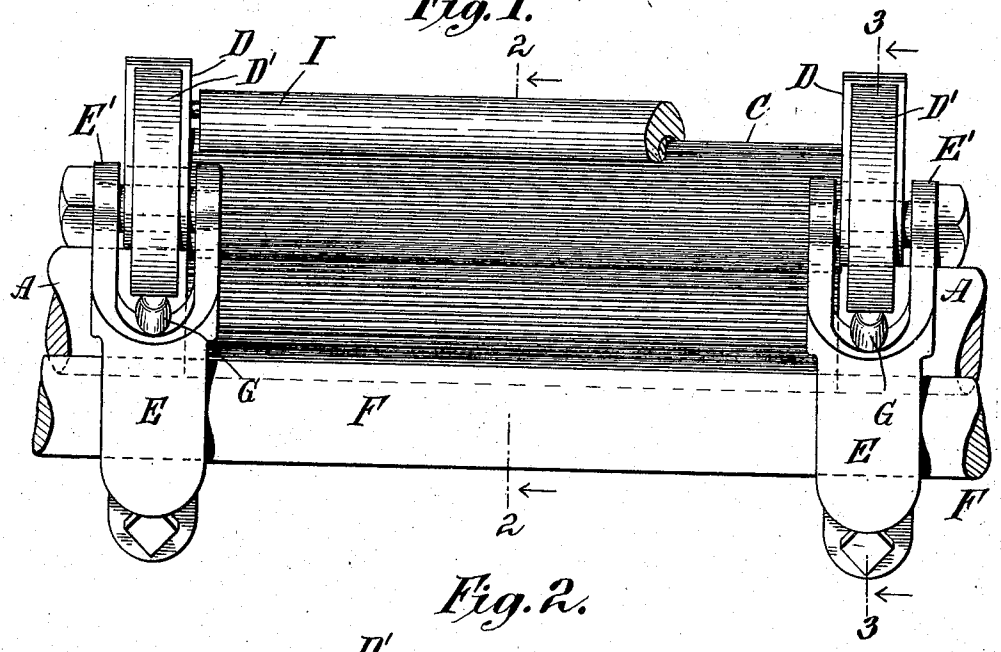
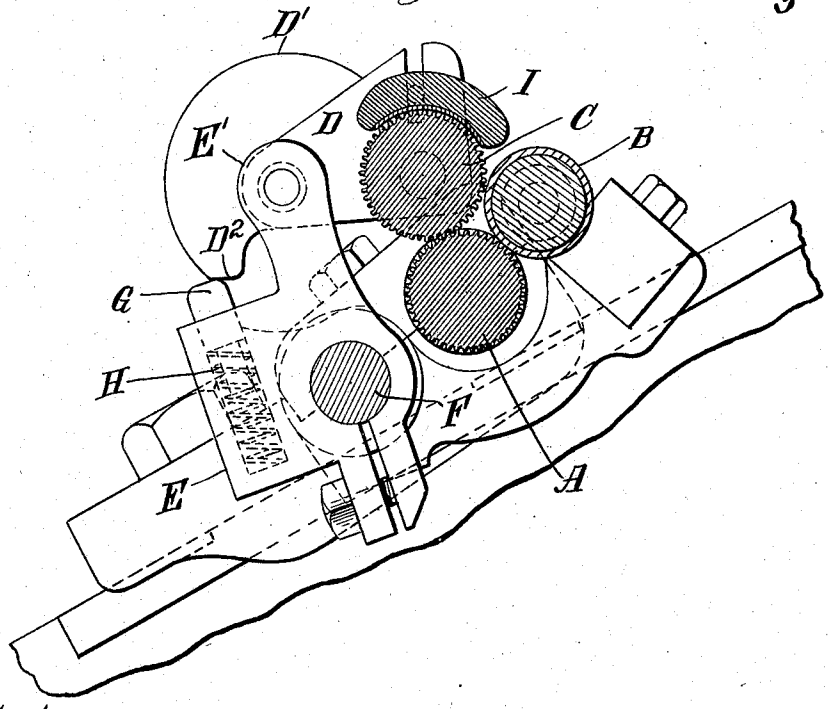


Fig. 2.



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by Peterson & Jenner Attys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

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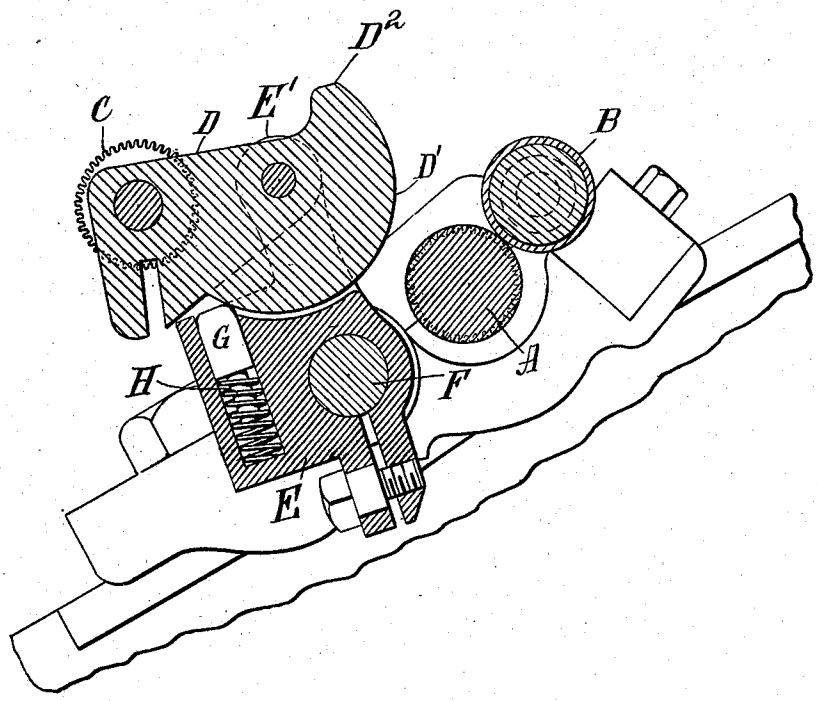
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

OSCAR L. OWEN, OF WHITINSVILLE, MASSACHUSETTS, ASSIGNOR TO THE WHITIN MACHINE WORKS, OF WHITINSVILLE, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

HORSETAIL FOR DRAWING-OFF MECHANISMS.

No. 867,072. Specification of Letters Patent. Patented Sept. 24, 1907.

Application filed August 26, 1905. Serial No. 275,867.

To all whom it may concern:

Be it known that I, OSCAR L. OWEN, a citizen of the United States, residing in Whitinsville, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Horsetails for Drawing-Off Mechanisms, of which the following is a full, true, and concise specification.

This invention relates to the horsetails of mechanisms for drawing off cotton or other similar fibers, and consists in the provision of a spring-pressed roller-carrying means which is specially serviceable for supporting the clearing rollers in high speed cotton combing machines. In such machines the clearing roller, which is usually fluted, is idly mounted in meshing engagement with a fluted drawing-off roller, the latter being rapidly rotated, alternately in opposite directions. These two rollers, if not fluted, must at least be held in intermeshing or geared engagement with each other by some suitable means the equivalent of the flutes, so that the idle clearing roller will be constrained to move at all times in perfect unison with the drawing-off roller. The sudden reversal of motion of these rollers, especially when running at high speeds, is apt to dislodge or disengage the clearing roller from the other to the serious detriment of the work, and the present invention aims to remove this element of danger by providing a simple and efficient means for holding the two rollers constantly in working engagement.

Referring to the accompanying sheet of drawings forming a part hereof, Figure 1 is a side elevation of a clearing roller supported by the improved means of this invention. Fig. 2 is a transverse section of Fig. 1 on the line 2, 2, thereof, and Fig. 3 is a transverse section through one of the horsetails in open position.

The reference character A designates the fluted drawing-off roller of a cotton combing machine which is adapted to be rotated alternately in opposite directions, as above mentioned, and coöperates with the leather detaching roller B and the clearing-roller C to effect the drawing off and piecing of the combed staple according to the usual and well understood manner which need not be herein described.

The rollers B and C are mounted so as to be normally in contact with the roller A, and they therefore partake of is intermittent motion. The clearing roller C, which is shown as being fluted its entire length, meshes with the corresponding flutes of the drawing-off roller, and is carried by its end gudgeons C′ in two pivoted horsetails or carrier-arms D D. The latter are pivotally mounted in supporting brackets E E secured to the shaft F or other stationary part, so that the roller C may be lifted or swung out of engagement with the roller A and turned back into its inoperative position, indicated by Fig. 3.

A spring means is interposed between the pivoted arm and the supporting bracket and is so constructed or arranged that it holds the roller C in meshing engagement with the drawing-off roller when the former is in its closed position (Fig. 2), but exerts no closing pressure on the arm when it is swung back on its pivot, a certain extent, to its retracted or inoperative position, as shown in Fig. 3. This spring means is susceptible of embodiment in a variety of forms and is shown herein as a spring detent consisting of a plunger G and helical spring H confined within a socket in the bracket E and bearing upwards with its end against the curved face of a rib or sector D′ formed on the arm D.

The bracket is formed as a yoke with two hinge ears E′ E′ between which the arm and its sector D′ is secured by the pivot, and the socket for the plunger and spring is also located between the ears and preferably extends in a direction which is tangential to the said pivot.

The face of the sector is disposed so as to confine the plunger in its socket, sliding over the beveled end of the plunger, as it is swung from open to closed position and vice versa without allowing the plunger to exert any closing pressure upon it. The rear end of the sector, however, is formed with a ledge or bearing seat D^2 against which the spring-pressed plunger is adapted to act to force the free opposite end of the horsetail downwardly and thereby hold the clearing roller in meshing engagement with the roller A. The sector may be concentric with the pivot if desired, but is preferably formed slightly eccentric as shown herein, so as to have a camming action on the plunger, which depresses it, as the sector is swung open.

It will be observed that the foregoing construction permits the clearing roller to be normally held in meshing engagement with the drawing-off roller under a constant pressure and also to be turned backwards out of such engagement in which position it remains, while the spring is uneffective to close it.

The clearing cover I which ordinarily rests on the clearing roller, is supported in the usual notches in the horsetail as shown in the drawing.

I am aware that horse-tails for clearing-rollers have heretofore been employed in conjunction with springs or weights for urging them toward the lower rollers, but in such cases the horse-tails have either not been capable of being turned back to their inoperative position, or if capable, the weight or spring has had to be specially removed and then replaced when the roller was restored to operative position, and such construction I

do not intend to claim herein. In no case of which I am aware has the spring or weight been rendered temporarily ineffective by the movement of the top roller to its inoperative position so that the said roller can be replaced under the pressure by simply turning it into engagement with its lower roller, and this feature I wish to be understood as claiming broadly in the following claims.

Having described my invention, what I claim and desire to secure by Letters Patent of the United States is as follows:

1. In a drawing mechanism, a lower roller, a top roller and pivoted arms for the latter adapted to carry the same from its operative position, in engagement with said lower roller, to an inoperative position away from said roller, in combination with means tending normally to urge said arms toward the lower roller but rendered ineffective for such purpose by the movement of said top roller to its said inoperative position.

2. The combination with the drawing-off roller of cotton combing machines, of a clearing roller therefor removably held in intermeshing engagement with said drawing-off roller, a pair of pivoted carrier-arms for said clearing roller and spring detents coöperating with said arms to maintain the clearing roller in meshing engagement with the drawing-off roller after said arms are swung a predetermined extent toward their closed position.

3. In drawing-off mechanism, a pivotally mounted horsetail and a support therefor, in combination with a spring detent carried by one of said parts and acting on the other to hold the horsetail in close position after it has been swung on its pivot a preretermined extent.

4. In drawing-off mechanism, a pivoted horsetail provided with a sector terminated in a thrust receiving seat, in combination with a spring detent adapted to slide relatively on said sector and to act on the seat thereof to close the horsetail.

5. In drawing-off mechanism, a horsetail bracket having a socket therein and a spring detent housed in said socket in combination with a horsetail pivoted to said bracket, a portion of said horsetail having sliding engagement with the detent and located to confine the same within the socket.

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

OSCAR L. OWEN.

Witnesses:

HARMON O. NELSON,

JOSEPH B. ADAMS.