(No Model.) 3 Sheets—Sheet 1.

W. L. CROWSON.

COMBINED CLEANER AND FEEDER FOR COTTON GINS.

No. 279,720. Patented June 19, 1883.

Fig. 1

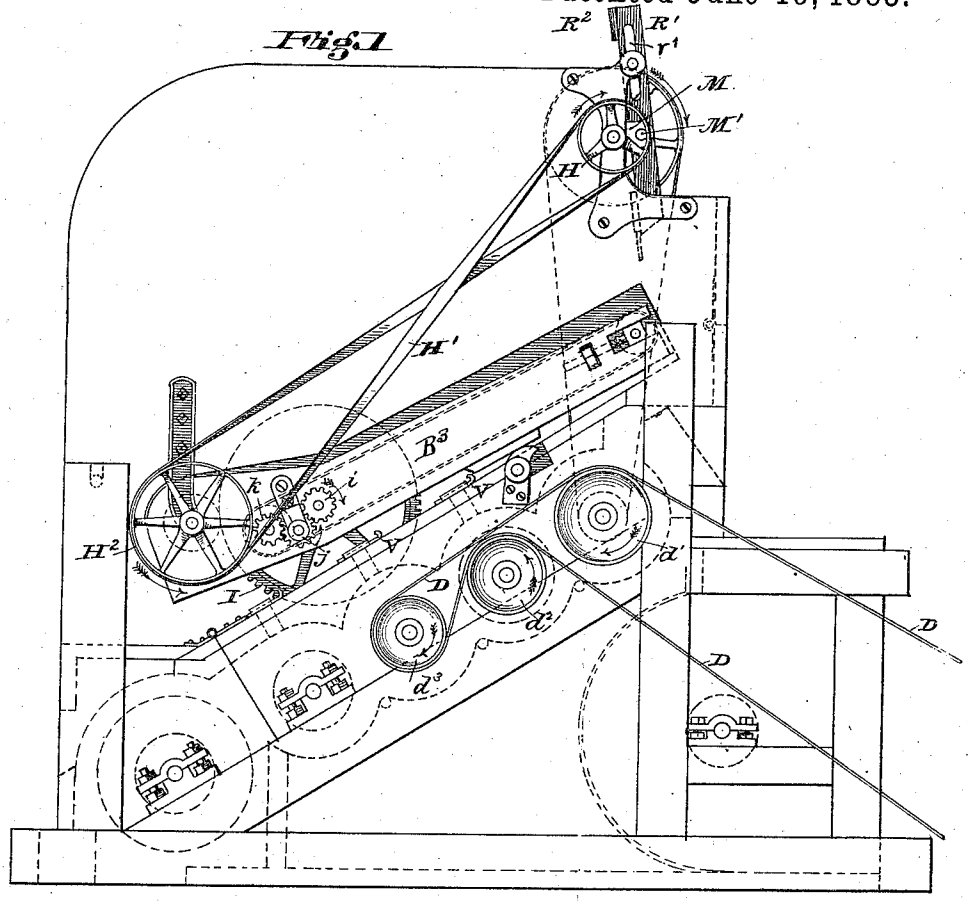


Fig. 2

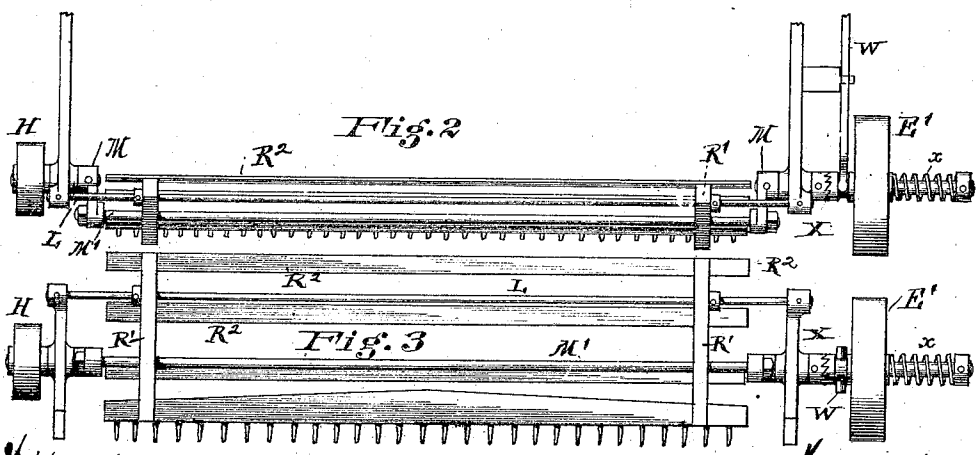


Fig. 3

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Fig. 4

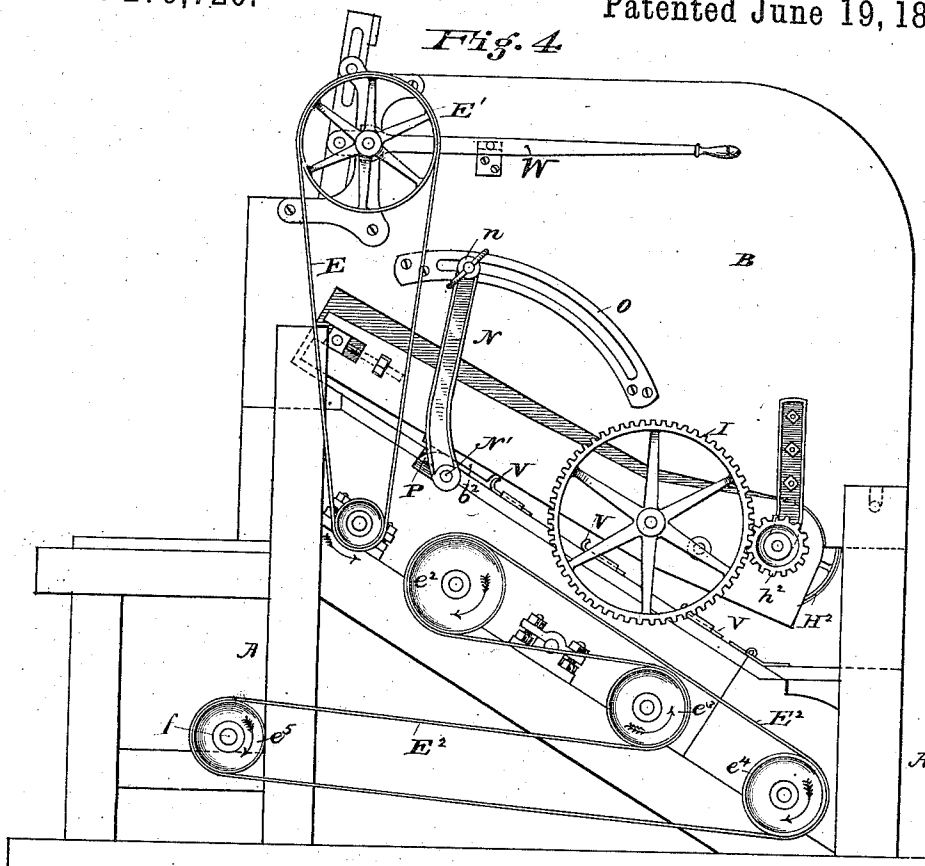
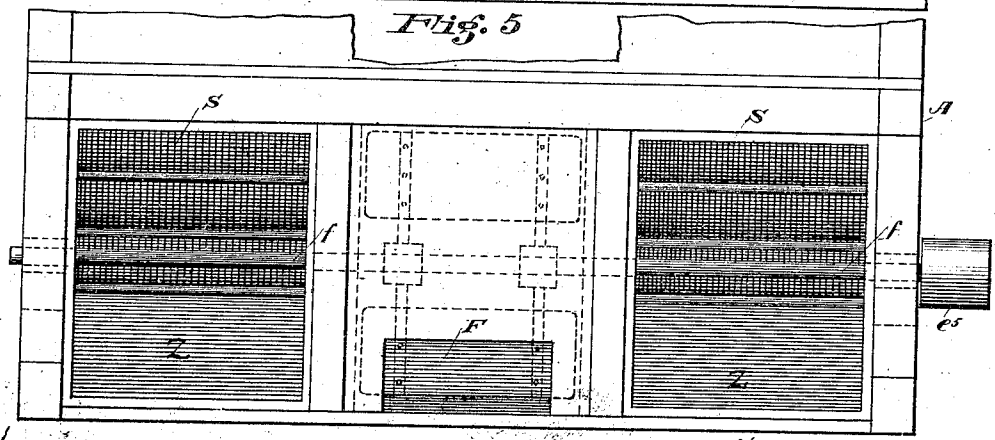


Fig. 5



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Fig. 6

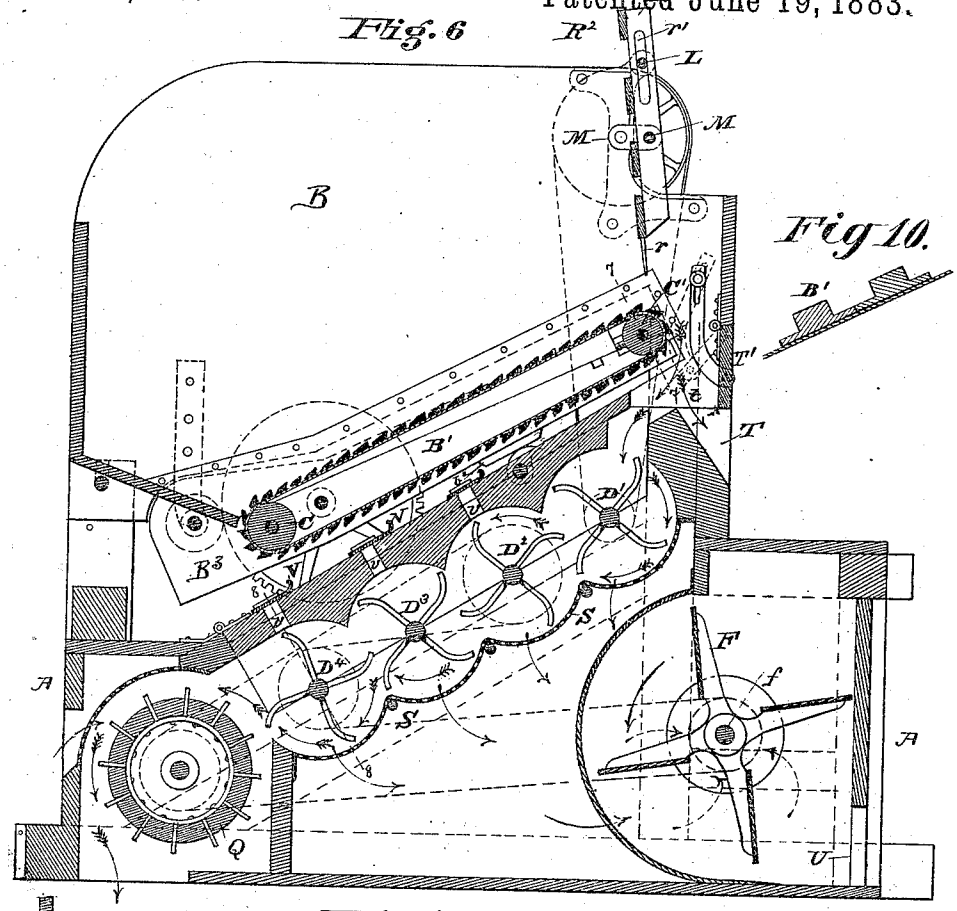


Fig. 10.

Fig. 7

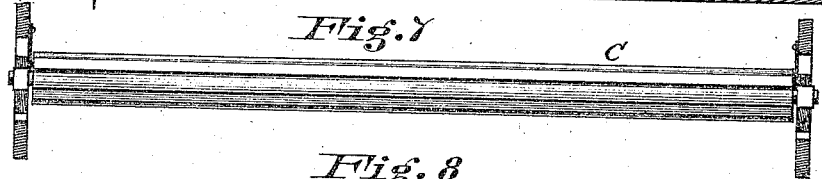


Fig. 8

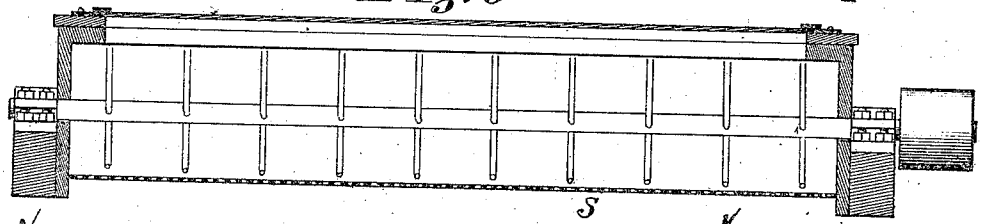
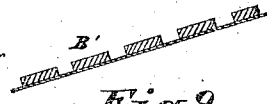


Fig. 9.



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UNITED STATES PATENT OFFICE.

WILLIAM L. CROWSON, OF MEMPHIS, TENNESSEE.

COMBINED CLEANER AND FEEDER FOR COTTON-GINS.

SPECIFICATION forming part of Letters Patent No. 279,720, dated June 19, 1883.

Application filed May 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. CROWSON, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented a certain new and useful Improvement in Combined Cleaners and Feeders for Cotton-Gins, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The present invention relates to the class of cleaners and feeders for cotton-gins exemplified in my Patent No. 237,255, granted February 1, 1881; and it consists in the construction and combination of devices hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a plan view of the feed-rake with stopping mechanism attached. Fig. 3 is an elevation of the feed-rake with stopping mechanism attached. Fig. 4 is an elevation of the side of the machine opposite to that shown in Fig. 1. Fig. 5 is an end view of the lower part of the machine, showing the position of fan and traps at each side. Fig. 6 is a longitudinal section of the machine. Fig. 7 is a plan of the roller carrying and giving motion to the feed-apron. Fig. 8 is a longitudinal section, showing the construction of the beater. Figs. 9 and 10 are detail sectional views of the feed-apron having the slats arranged thereon so as to form seed-cells.

The case and frame are shown at A A.

B is the cotton-box, the bottom of which consists of an endless apron, B′, supported by driving-roll C and a stretching-roll, C′. These rolls are journaled in a shoe or frame, B^3, which is fitted into the bottom of the cotton-box in an adjustable manner, for the object hereinafter stated.

The two side views, Figs. 1 and 4, illustrate the gearing and banding of the wheels for giving motion to the several parts of the machinery.

D is the main belt, and its passage over pulleys d' d^2 d^3 causes the rotation of the beaters D′ D^2 D^3. The belt E from the opposite end of the beater D′ drives the pulley E′, as shown in Fig. 4, giving motion to the oscillating rake, and the belt E^2, (also shown in Fig. 4,) carried around pulleys e^2 e^3 e^4 e^5, gives motion to fourth beater, D^4, and to the fan F, on the shaft f of which said pulley e^5 is keyed. The endless apron B′ derives motion from the pulley H on the rake-shaft, transmitted through the belt H′, pulley H^2, pinion h^2, cog-wheel I, pinion i, and small idle-pinion j to the pinion k on the shaft of the driving-roll C, so as to give the required direction and speed.

I will now describe the oscillating rake and the mode of operating the same.

The head of the rake consists of upright oscillating bars R′ R′, with horizontal connecting-bars R^2 R^2 running transversely to the machine. The upright bars R′ are slotted, as shown at r', to allow the passage of the bar L, which forms the axis of oscillation. The said upright bars R′ are supported by a second transverse bar, M′, passing loosely through them, and fixed at its ends to crank-arms M, carried by the shafts of the pulleys E′ and H. The revolution of the crank-arms M gives to the lower ends of the uprights an oscillation of greater amplitude than that of the crank itself. The construction and operation are such that the teeth r in their oscillation descend to within a short distance of the roller C′, and, moving backwardly therefrom, carry back any surplus cotton. The continued oscillation carries the teeth upward and backward, releasing the cotton from the teeth, and in the upper movement the teeth are carried forward to the place of beginning, ready to again throw back any surplus cotton.

To regulate the space between the end of the feed-apron B′ and the oscillating rake, the frame B^3, in which said apron is mounted, having its fulcrum-point at b^2, is raised or lowered by means of the lever N, working at its upper end in segment O, and secured by thumb-screw n. The lower end of lever N is keyed to a shaft, N′, carrying cams P, which work on the under side of the adjustable apron-frame, and by the motion of the lever is made to raise or depress said frame, thus lessening or increasing the space between the end of the feed-apron and the rake. It will be seen that the more elevated the end of the feed-apron is relatively to the rake the less cotton will pass through, and vice versa.

The feed-apron B′ is composed of a suitable belt and slats rabbeted, as shown in Fig. 10, or arranged, as shown in Fig. 9, so as to form ribs and cells, the object of which is to allow

space in which the seed may lie and be held, so that the rake, while separating the cotton and throwing back the surplus, will not be able in its backward movement to drive the seed all back.

The direction of motion of the several parts of the machine and the path of the cotton are indicated by feathered arrows and the air-current by featherless arrows. The cotton, after passing along with the feed-apron and being raked over by the oscillating rake, is then, by the suction of the fan, drawn onto and under the beater D', revolving forward, next over and onto the beater D^2, moving in a contrary direction, then to the third beater, D^3, and the fourth beater, D^4, revolving in same direction as the first beater, then over flanged roller Q into the gin below. By the opening at T the seed and heavy foreign matters—such as nails, &c.—fall out in the direction indicated by the arrow *t*. A door, T', hinged to the casing so as to move in an inward direction, serves as a medium for varying the size of this opening, as is seen in Fig. 6. A slotted brace and set-screw are generally employed for retaining the door T' in any position in which it may be placed. Through the screen S, beneath the beaters, all dust is drawn out by the suction of the fan F. The opening U in the casing of the fan permits access to the fan-chamber for cleaning purposes, and chambers Z at the sides of said fan-casing receive the dirt or refuse matter which drops through the screens S, these chambers being sufficiently large to permit workmen to enter the same for removing the contents thereof. The openings *v* above the beaters are for the purpose of regulating the current of air to the cotton while being agitated by the beaters. This air passes through the cotton and through the screen to the fan, and in its passage it carries with it dust and such leaf or trash as will pass through the meshes of the screen, and by the fan it is expelled. These openings are provided with slides V to open and close the same, so that the amount of air passed through can be regulated, the grade of cotton determining the force or volume of air-blast which is necessary.

The machine is thrown in and out of gear by the movement of the lever W, which acts on a clutch, X, and by the spiral spring *x* is kept in position while working. To throw out of gear, the lever is pressed inward against the side, and by means of a cord fastened to the end of the lever and passing through eyes and down through the floor the starting and stopping are placed under control of the ginner below.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a cotton-gin feeder, the combination of the vertically-adjustable traveling feed-apron having slats or ribs arranged to form seed-cells, the oscillating rake arranged at the upper or discharge end of said apron, and the cotton box or receiver having a discharge opening or chute located at the upper end of said feed-apron, with a beater-chamber, beaters, and suction-fan, substantially as and for the purpose set forth.

2. In a cotton-gin feeder, the combination of the cotton-box B, having opening T and adjustable shutter T', with the traveling feed-apron terminating near said opening, as and for the purpose set forth.

3. In a cotton-gin feeder, the combination of the series of beaters, a casing inclosing said beaters, the vertically-adjustable frame, a feed-apron mounted on said frame over the beater-casing, and the delivery regulator or rake arranged above the said apron, as and for the purpose set forth.

4. In a cotton-gin feeder, the combination of the transverse bar M', crank-arms M, pulleys E' and H, and their shafts, clutch X, and lever W, with the slotted arms R', rake-head *r'*, connecting-bars R^2, and transverse bar L, as and for the purpose set forth.

WM. L. CROWSON.

Witnesses:
NATHAN STEDMAN,
HIRAM COX.