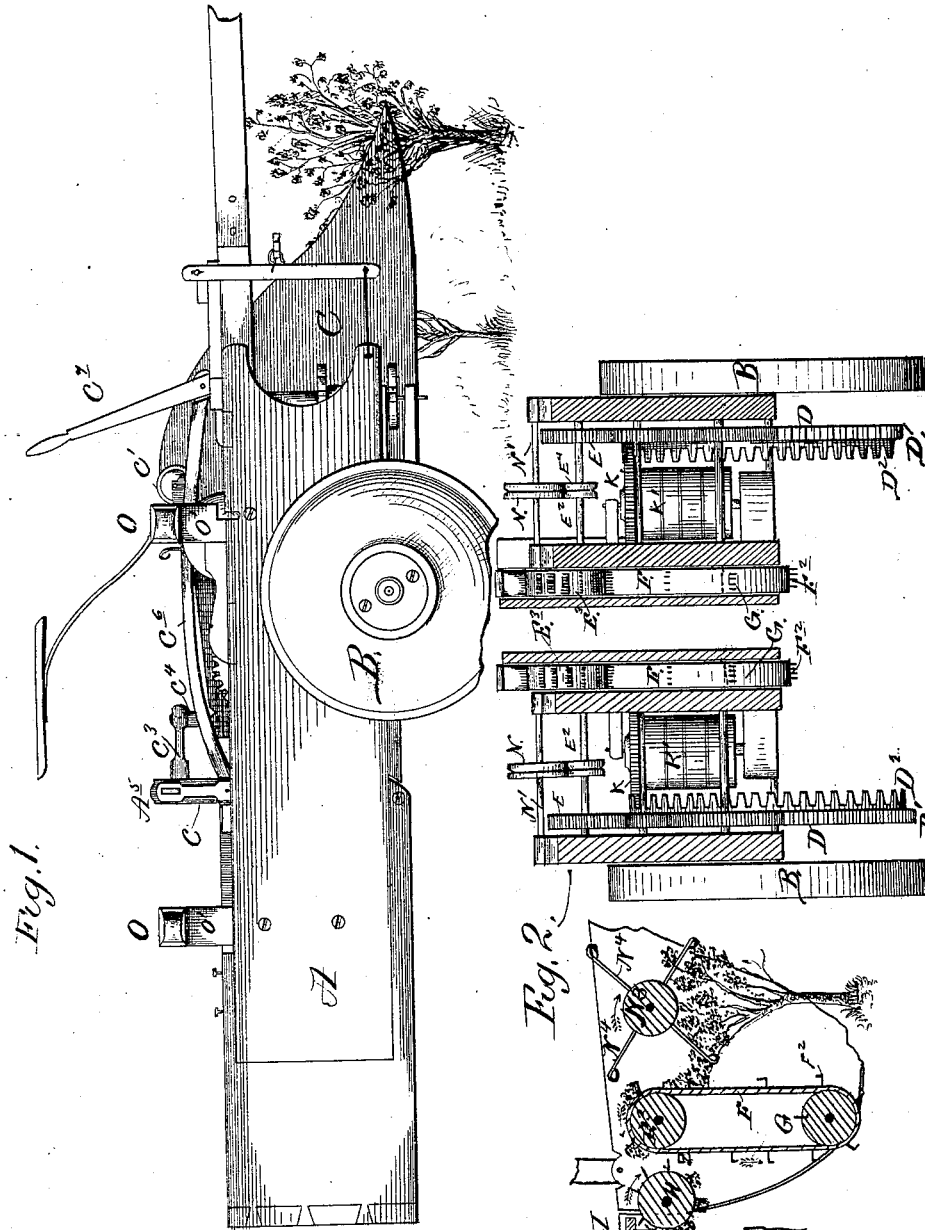


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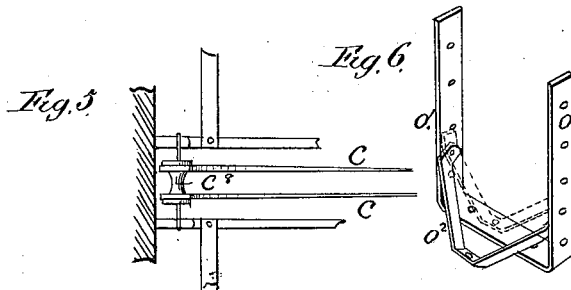
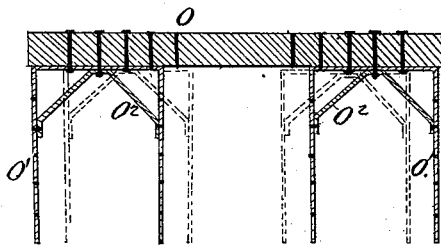
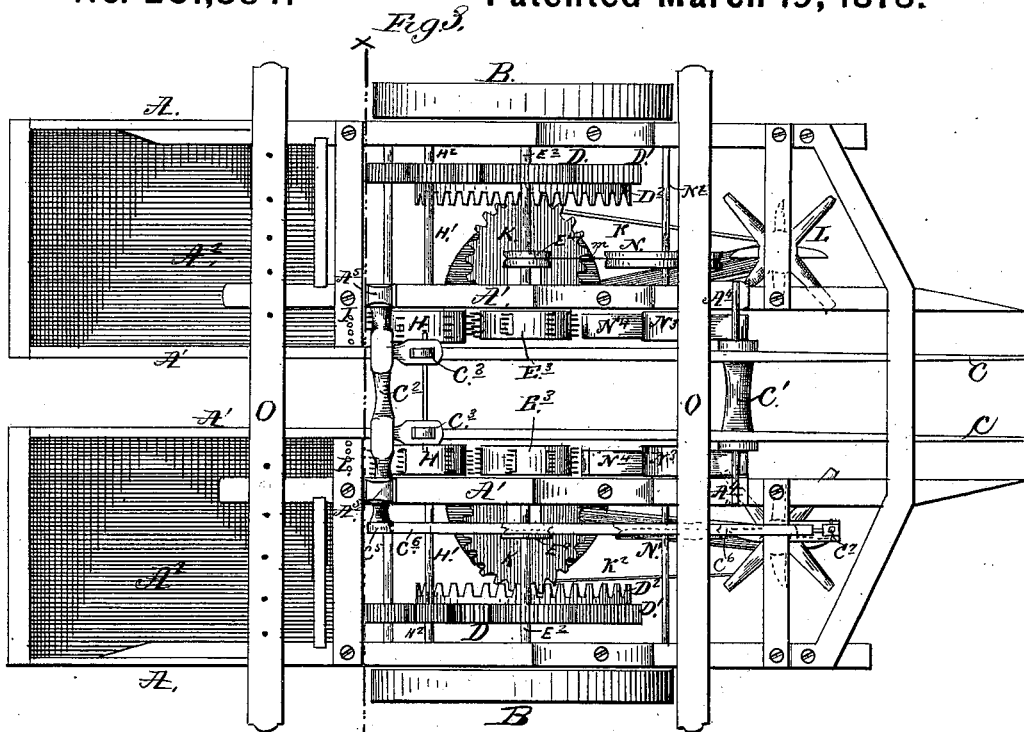
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# UNITED STATES PATENT OFFICE.

ISAAC BOONE, OF TROY, OHIO.

## IMPROVEMENT IN COTTON-HARVESTERS.

Specification forming part of Letters Patent No. **201,384**, dated March 19, 1878; application filed October 29, 1877.

*To all whom it may concern:*

Be it known that I, ISAAC BOONE, of Troy, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Cotton-Harvesters; and I do hereby declare that the following is a full, clear, and exact description of my invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The nature of my invention consists in the construction and arrangement of a cotton-picking machine, as will be hereinafter more fully set forth.

In the annexed drawings, which form part of this specification, Figure 1 is a side elevation. Fig. 2 is a cross-section on line *x x*. Fig. 3 is a top view. Fig. 4 is a section of cross-beam O. Fig. 5 is a top view of short stay-bolt C<sup>1</sup>. Fig. 6 is a perspective view of the plate of the cross-beam *c*. Fig. 7 is a section, showing the picking attachments of my machine.

A and A<sup>1</sup> are the outer and inner sides of the two main frames which support and contain the working parts of my invention. Said frames continue backward and form boxes A<sup>2</sup> A<sup>2</sup>, which receive the cotton when picked.

The entire machine is supported and carried by the axles of the main wheels B B, passing through the lower parts of the frames A A<sup>1</sup>. To the upper side and forward ends of side frames A<sup>1</sup> A<sup>1</sup> are secured bearings A<sup>4</sup> A<sup>4</sup>, and to the rear ends thereof are secured standards or bearings A<sup>5</sup> A<sup>5</sup>. Guide-boards C C are joined together by stay-bolt C<sup>1</sup>, the axle of which projects on both sides and rests in bearings A<sup>4</sup> A<sup>4</sup>, on which said guide-boards operate in a vertical direction. The ends of shaft C<sup>2</sup> rest in bearings A<sup>5</sup> A<sup>5</sup>, said shaft having forward-projecting arms C<sup>3</sup> C<sup>3</sup>, which are pivoted to short uprights C<sup>4</sup> C<sup>4</sup> on the upper rear corners of guide-boards C C.

To one end of the shaft C<sup>2</sup> is secured a downward-projecting arm, C<sup>5</sup>. To the lower end of this arm is pivoted rod C<sup>6</sup>, which passes to the forward end of the machine, and is there pivoted to hand-lever C<sup>7</sup>. The forward movement of this hand-lever C<sup>7</sup> (by the driver) will

operate the shaft C<sup>2</sup>, so as to cause the arms C<sup>3</sup> C<sup>3</sup> to draw the rear end of the guide-boards upward, which operation lowers the forward points of the guide-boards, so that the said points will pass just above the lower branches of the cotton-plant, as seen in Fig. 1, which causes the said lower branches (containing the ripened cotton in the first picking) to pass along the outer sides of the guide-boards back to the picking devices, hereinafter described, while the upper branches of the plant (containing the unripened cotton) are caused to pass between the guide-boards, and are passed over uninjured, without coming in contact with the picking devices.

In the second or later pickings the arms C<sup>3</sup> are moved backward, pressing the rear ends of the guide-boards downward, and causing their forward points to rise, so that the guide-boards will pass inside the higher branches of the plant, the cotton upon which has ripened, and is ready for the picking devices, which come into contact therewith after the passage of the guide-boards.

In the last picking stay-bolt C<sup>1</sup> is removed, leaving its axle to support the guide-boards; also, shaft C<sup>2</sup> is replaced with a shorter shaft, having arms C<sup>3</sup> C<sup>3</sup>, closer together, Fig. 5. Guide-boards C C are thus brought immediately together, so that they pass inside all the branches of the plant, which are then operated upon by the picking devices, as before stated.

It is obvious that the driver can raise or lower the points of the guide-boards, according to the height of the ripened cotton on the plant which he may be approaching. This separating of the branches containing the ripened cotton from those containing the green, allowing the green cotton to be passed over uninjured, I claim has great advantages over all other cotton-picking machines.

I will now describe the cotton-picking devices.

D is the drive-wheel, having the axle of the main wheel for its axle, to which it is made firm, causing it to revolve therewith. On the outer circumference of drive-wheel D is gear D<sup>1</sup>, which gears at its upper side with pinion E, which, being made firm with shaft E<sup>2</sup>, revolves belt-pulley E<sup>3</sup>. F is the picker-belt, provided with rows of claws F<sup>2</sup>, short dis-

tances apart. The picker-belt passes around the pulley E<sup>3</sup>, from which it receives its motion, and thence downward and around pulley G. It then passes upward on the forward side, carrying its claws therewith, so that when the guide-boards pass along inside the branches of the cotton-plant, and the picker reaches the branches, the claws F<sup>2</sup> take hold and draw the ripened cotton from the pods, and carry it upward and over pulley E<sup>3</sup>, and downward on the rear side until it comes in contact with a rapidly-revolving wheel, H, which is provided with short straight wire projections, which pass between the claws of the picking-belt and take the cotton from the claws. The cotton is thus carried downward on the forward side of the wheel H, and upward on its rear side, where it is taken off by downward-projecting needles or wires I. Thus, the cotton is deposited in the receiving-boxes A<sup>2</sup> A<sup>2</sup>. The said wheel H is caused to revolve rapidly by being firmly secured to axle H<sup>1</sup>, which, in turn, has a small pinion geared with the large drive-wheel D.

To facilitate bringing the branches of the plant in contact with the picker-band, on the inner side, and near the outer circumference of drive-wheel D, is a bevel-gear, D<sup>2</sup>, which gears into a like beveled smaller gear, K, on the same shaft as gear K; and revolving therewith is pulley K<sup>1</sup>, around which passes belt K<sup>2</sup>, thence around a pulley on the lower end of the shaft of the feeding device L. This feeding device L is provided with a number of radiating arms, and is caused to revolve horizontally by band K<sup>2</sup>. As the said arms revolve inwardly on the front side, and rearwardly on the inside, they prevent any branches from getting between side frames A A<sup>1</sup> as the machine advances, thus causing all branches to stand between side A<sup>1</sup> and guide-board C, to be operated upon by the picker-belt as the machine passes.

To prevent the tops of the branches of the plant from extending above the picker-belt, a small cord-pulley, E<sup>4</sup>, is secured to shaft E<sup>2</sup>. Around this pulley a cord, m, is passed, and then crossed, and thence passed around pulley N, which is secured to shaft N<sup>1</sup>. On the inner end of said shaft N<sup>1</sup> is secured another feeder-pulley, N<sup>3</sup>, with radiating flat arms N<sup>4</sup>, which are as wide as the space between side frame A<sup>1</sup> and guide-board C. This feeder-wheel N<sup>3</sup> is caused to revolve downward on the front side, and rearward on the under side, thus carrying the branches of the cotton back to the picker-belt F, and preventing the branches from extending above the same. The arms N<sup>4</sup> of feeder N<sup>3</sup> press the top of the branches of the plant against the picker-belt, and hold it there while the picker-claws draw the cotton from the branches.

It is observed that there are two distinct sides of my machine, containing like working parts, respectively. These sides are secured at short distances from each other by cross-beams O O across the top of the rear and for-

ward ends of the machine. These cross-beams have attached, by bolts, to their under sides the iron frame or support O<sup>1</sup> O<sup>1</sup>, in the shape of an inverted U, the sides of which are braced and made strong by the stays O<sup>2</sup>. This iron frame or support O<sup>1</sup> is shown in an inverted position in Fig. 6, where the stay O<sup>2</sup> is thrown out of position and its true position shown in dotted lines.

The sides of these iron frames or supports project downward, and are attached by bolts to main frames A A<sup>1</sup>, respectively, thus strongly securing the two sides of the machine at a short distance from each other. In the first picking these iron supports O<sup>1</sup> O<sup>1</sup> are placed to the end of the cross-beam O, so as to hold the two inner sides of boxes A<sup>2</sup> A<sup>2</sup> of the machine and the guide-boards C C at sufficient distance from each other to allow the top or branches of the plant containing the unripened cotton to stand between said inner sides of boxes A<sup>2</sup> A<sup>2</sup> and guide-boards C C without injury as the machine advances.

In the second picking the iron supports O<sup>1</sup> O<sup>1</sup> are adjusted toward the middle of the cross-beam O, as shown in Fig. 4; also, stay-bolt C<sup>1</sup> is replaced with the shorter stay-bolt C<sup>3</sup>, (shown in Fig. 5;) also, shaft C<sup>2</sup> is replaced with a shorter one, as before described.

In the last picking the supports O<sup>1</sup> are adjusted still farther toward the middle of the cross-beam O, and stay-bolt C<sup>3</sup> is removed, so that the inner sides of boxes A<sup>2</sup> A<sup>2</sup> and guide-boards C C are brought immediately together, causing all the branches of the plant to pass along the outer sides of the guide-boards C C and back to the picker-band, as before described.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The guide-boards C, made to operate in a vertical direction on pivots situated at their upper central part, substantially as and for the purpose set forth.

2. In a cotton-picking machine, the combination of the picker-belt F with the wheel H and strippers or clearers I, substantially as and for the purpose set forth.

3. In a cotton-picking machine, the clearers or strippers I, arranged substantially as and for the purpose set forth.

4. The combination of the picking devices F H I with the gear E<sup>1</sup>, shaft E<sup>2</sup>, pulley E<sup>3</sup>, pulley G, and shaft H<sup>1</sup> and shaft H<sup>2</sup>, all being operated by the main drive-wheel D, substantially as and for the purpose set forth.

5. A cotton-picking machine made in two parts, each part having similar mechanism, and with a narrow open passage between, to allow the unripened cotton to stand between said parts without injuring the said cotton as the machine advances, substantially as and for the purpose set forth.

6. The combination of the guide-boards C, stay-bolt C<sup>1</sup>, shaft C<sup>2</sup>, with its projecting arms C<sup>3</sup> C<sup>3</sup>, connecting-rod C<sup>6</sup>, and lever C<sup>7</sup>, all the

parts mentioned being arranged substantially as and for the purpose set forth.

7. In a cotton-picking machine, the feeder N<sup>3</sup>, having radiating arms N<sup>4</sup>, for pressing the branches of the plant against the picking devices and holding the same thereto while being picked, substantially as described.

8. In a cotton-picking machine, the combination of the cross-beams O with their supports, said supports being adjustably con-

nected to cross-beams O by bolts or their equivalents, substantially as specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ISAAC BOONE.

Witnesses:

A. A. HOSMER,  
H. J. GRAY.