

No. 661,383.

Patented Nov. 6, 1900.

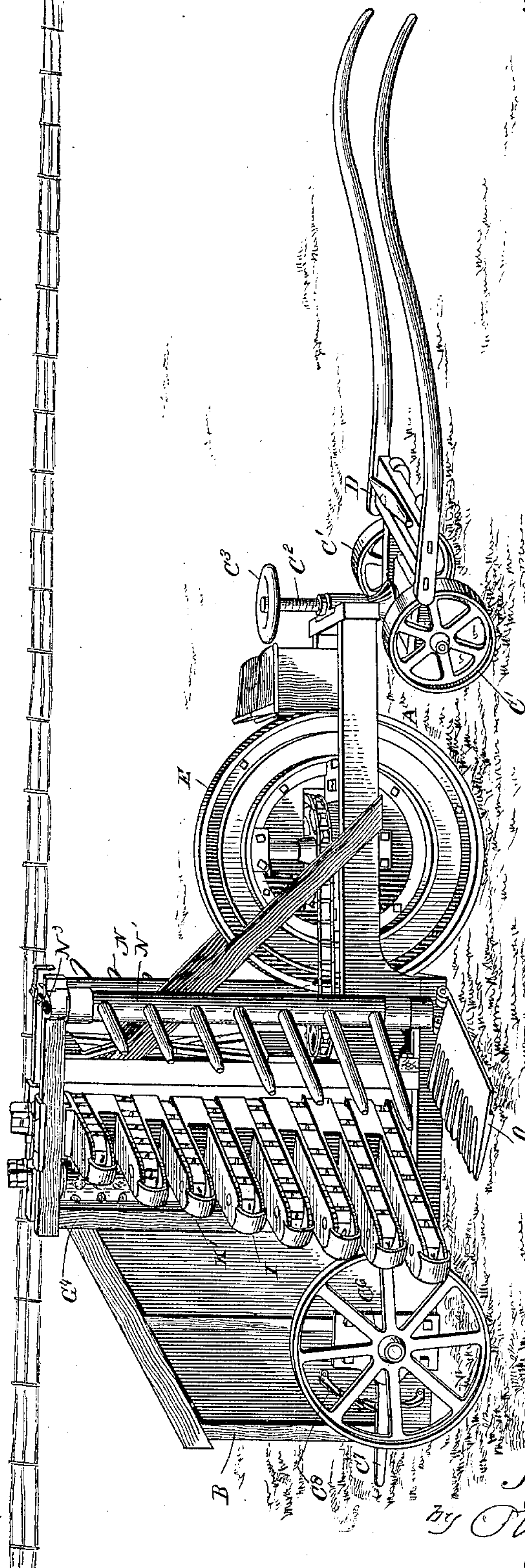
J. A. PEER.
AUTOMATIC COTTON PICKER.

(Application filed Apr. 13, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



Witnesses
J. C. Shaw
Chas. E. Brock

Inventor
John A. Peer,
By *McLara & Co.*
Attorneys

No. 661,383.

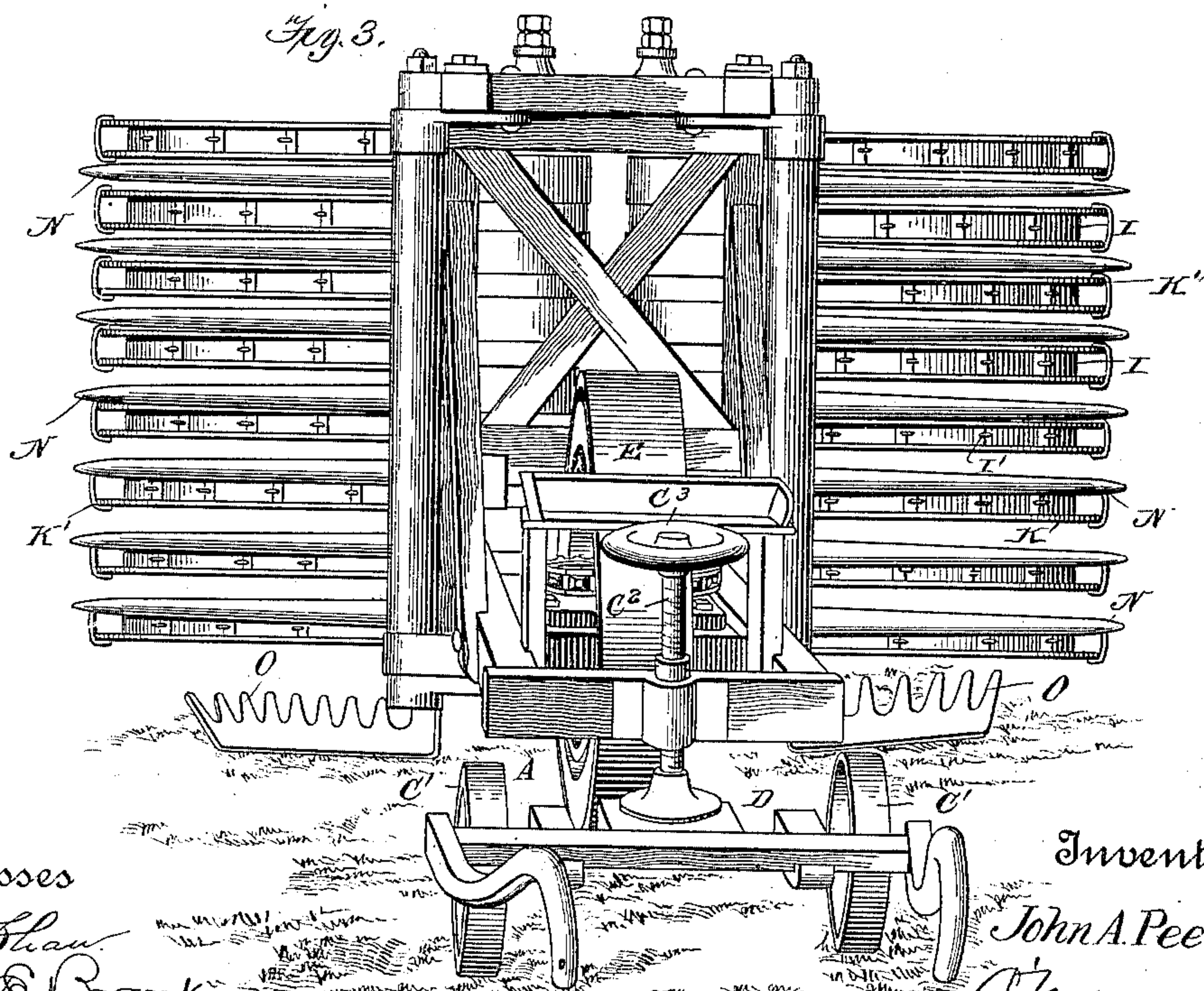
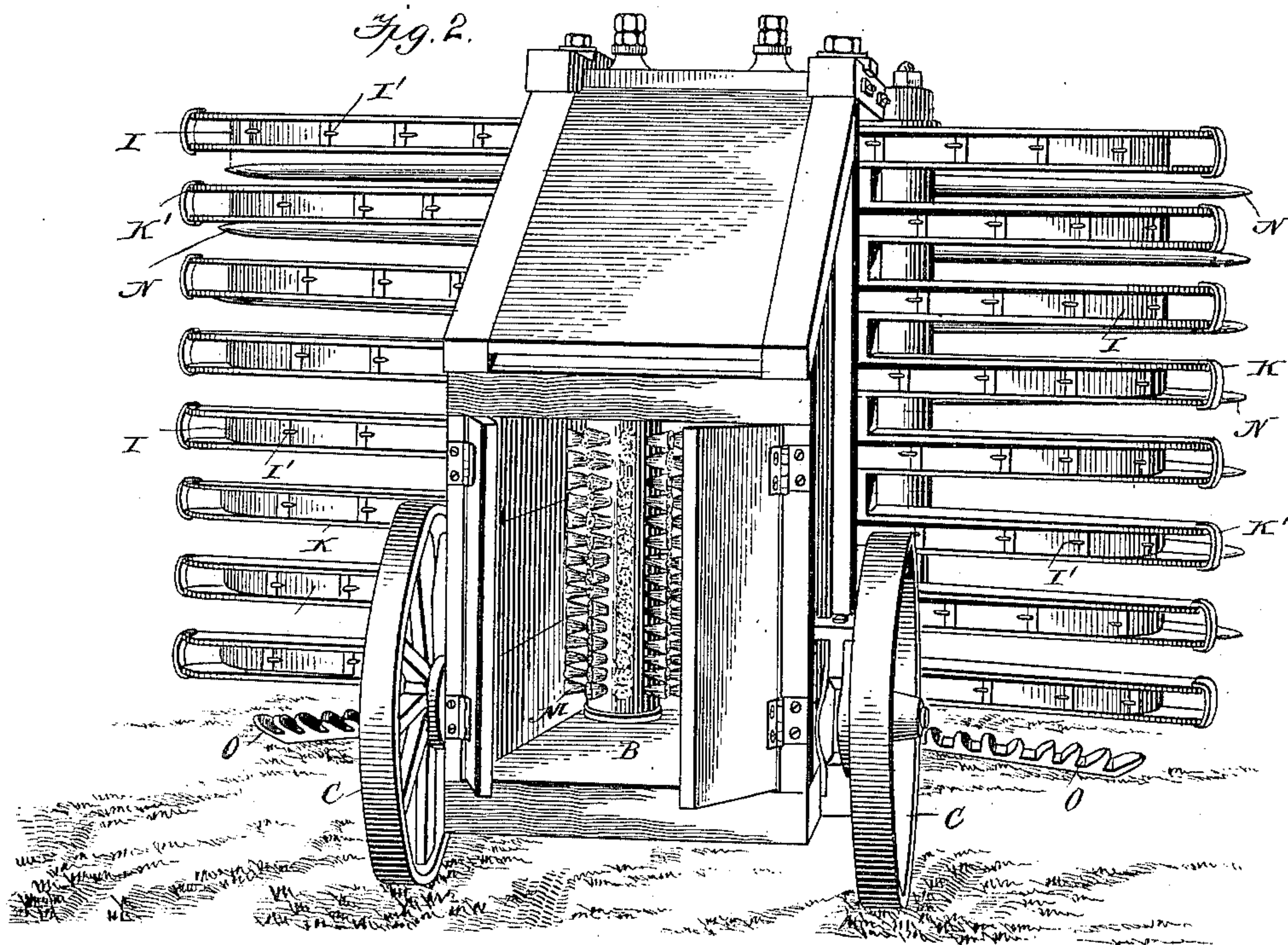
Patented Nov. 6, 1900.

J. A. PEER.
AUTOMATIC COTTON PICKER.

(Application filed Apr. 13, 1898.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses

J. C. Shaw
Chas. E. Brock

Inventor

John A. Peer,

by O. Mearns
Attorneys

No. 661,383.

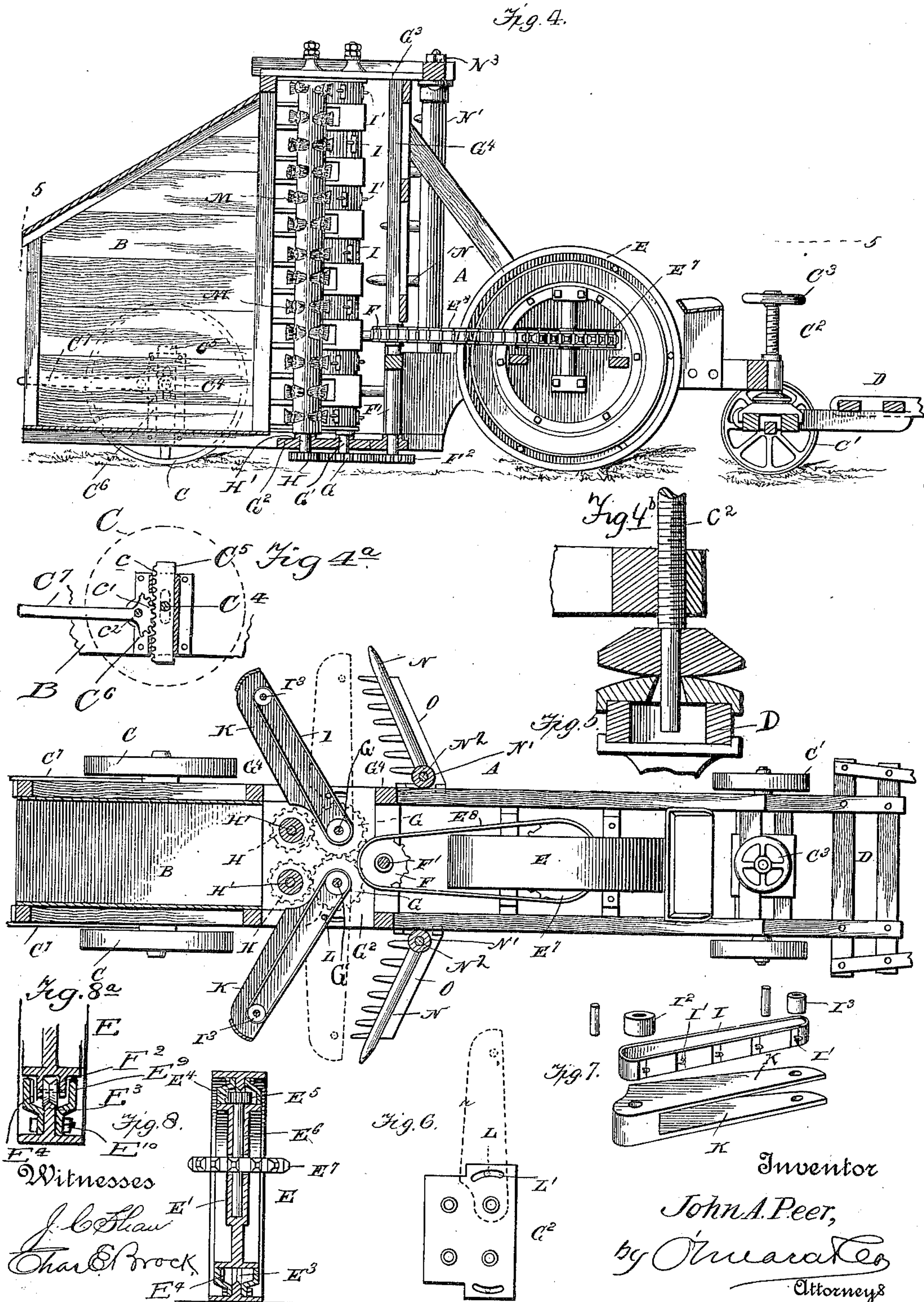
Patented Nov. 6, 1900.

J. A. PEER.
AUTOMATIC COTTON PICKER.

(Application filed Apr. 13, 1898.)

(No Model.)

3 Sheets—Sheet 3.



UNITED STATES PATENT OFFICE.

JOHN A. PEER, OF NEW ORLEANS, LOUISIANA.

AUTOMATIC COTTON-PICKER.

SPECIFICATION forming part of Letters Patent No. 661,383, dated November 6, 1900.

Application filed April 13, 1898. Serial No. 677,461. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. PEER, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Automatic Cotton-Picker, of which the following is a specification.

My invention is an improvement in cotton-picking machines; and it consists in the novel features hereinafter described, reference being had to the accompanying drawings, which illustrate one form in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description and claims.

Referring to the said drawings, Figure 1 represents a perspective view of a cotton-picker embodying my invention. Fig. 2 is a rear view. Fig. 3 is a front view. Fig. 4 is a vertical longitudinal sectional view of the machine. Fig. 4^a is a detail view of the mechanism for adjusting the rear wheels vertically. Fig. 4^b is a detail sectional view of the connection between the front truck and the forward part of the frame of the machine. Fig. 5 is a top plan view, partly in section. Fig. 6 is a top plan view of one of the bearing-plates. Fig. 7 is a detail perspective view of one of the picker-belts and its guard or finger, showing the parts detached. Fig. 8 is a vertical transverse sectional view of the traction-wheel. Fig. 8^a is a detail sectional view of a portion of the driving-wheel, showing one of the guide-rollers.

The object of my invention is to provide a machine which will pick only the ripe cotton without breaking or injuring the cotton-plants, and thus leave the unripe bolls to ripen upon the plants and to be picked later when in a ripened condition.

In the drawings, A represents the frame of the machine provided at its rear end with a cotton-receiving box B.

C C represent the rear supporting-wheels, which are each connected to the frame so as to be independently adjusted vertically. In this instance I provide the frame on each side with a guide-plate C^b, secured to the frame A and to the box B, and provided with a vertical guide in which slides a block C⁵, provided with a horizontal axle C⁴, which projects through a slot in the plate C^b. The

block C⁵ is provided on its rear face with a rack *c*, the teeth of which mesh with the teeth of a gear-segment *c'*, pivoted at *c*² to the plate C^b and provided with an operating hand-lever C⁷, extending rearwardly. The lever C⁷ is adapted to be locked in its adjusted positions, and in this instance I have shown the side wall of the box B provided with a lock-plate C⁸, having a series of notches or teeth to engage the lever C⁷.

The wheels C C are mounted on the short axles C⁴ C⁴, and by means of the constructions just described each wheel can be adjusted independently up and down with respect to the main frame of the machine, so that the machine can be adjusted to travel in a level or horizontal position when working on a hillside.

The front end of the main frame is provided with two supporting-wheels C' C' on the axle of a truck D, pivoted to the main frame by means of a vertical screw-shaft C², extending through a threaded aperture in a part secured to the main frame and provided at its upper end with a hand-wheel C³. By turning this hand-wheel and shaft the front end of the frame can be raised and lowered with respect to the truck D and the ground. The front truck is provided with shafts, as shown, or other means for drawing the machine along.

A traction-wheel E is arranged between the side members of the main frame adjacent to the forward end of the frame, which revolves about a stationary disk E', rigidly secured to the frame and provided with grooved guide-wheels E², which engage an annular centering rim or web E³, extending inwardly from the peripheral portions of the traction-wheel E. The said traction-wheel E is also provided with an annular gear-ring E⁴, the teeth of which mesh with the teeth of a gear-wheel E⁵, mounted upon a vertical shaft E⁶, which is journaled in bearings secured to the stationary disk E'. This vertical shaft E⁶ is provided with a sprocket-wheel E⁷, which operates a driving sprocket-chain E⁸, which passes around the said sprocket-wheel and around a sprocket-wheel F on a vertical shaft F', mounted in suitable bearings in the main frame in rear of the traction-wheel. The traction-wheel E is also provided with an an-

nular guard or flange E^9 , which covers and protects the gear-wheel E^5 on the side opposite to the gear-ring E^4 , and the said gear-ring and annular guard are preferably secured to the traction-wheel by bolts E^{10} , which pass through said ring and guard and through the inwardly-extending centering flange or web E^3 , as shown.

As the machine is drawn along the engagement of the traction-wheel with the ground will cause it to revolve upon the guiding wheels or rollers E^2 and the gear-ring E^4 will cause the pinion E^5 and shaft E^6 to rotate at high speed, thereby rotating the sprocket-wheel E^7 and sprocket-chain E^8 and transmitting motion to the vertical shaft F' .

The shaft F' is provided at its lower end with a pinion F^2 , which meshes with one of two pinions G G , mounted upon the lower ends of vertical shafts G' G' , which are mounted in the framework of the machine. In the present instance I have provided the bottom of the machine with a bearing-plate G^2 and the top of the machine with a similar bearing-plate G^3 , in which the vertical shafts G' G' are mounted, and the two pinions G G are so arranged as to mesh with each other, so that the shafts G' G' are driven in opposite directions.

In rear of the vertical shafts G' G' are a pair of vertical shafts H' H' , carrying revolvable brushes. Each of the brush-shafts H' H' is provided at its lower end with a pinion H , which meshes with the pinion G immediately in front of it and receives motion therefrom. The brush-shafts H' H' are also mounted in suitable bearings in the plates G^2 G^3 , before referred to.

Secured to the machine-frame and projecting laterally therefrom on each side is a vertical series of horizontal picker-belts separated from each other a distance sufficient to permit the branches and unmaturing bolls of the plants to pass between them without injury. In the drawings I have illustrated one form in which these belts may be arranged. Upon each of the vertical shafts G' is mounted a vertical series of horizontal outwardly-extending flat arms or fingers or plates K , spaced a suitable distance apart, and between each alternate pair of fingers K are mounted the horizontal picker-belts I , provided with picker teeth or projections I' . Each of these belts is carried at its inner end upon a pulley I^2 , secured to and revolving with the shaft G' , and at its outer end by a roller I^3 , mounted between the ends of two adjacent fingers K . It will be seen that the space between alternate pairs of fingers K is entirely unobstructed and will permit free passage of branches and unmaturing bolls. The fingers of each pair which carry the belts are provided at their outer ends by a guard K' , which prevents the cotton picked by the projections on the picker-belt from being swept off as said projections pass around the outer roller. The fingers K will normally extend in a di-

rection outwardly and rearwardly from the shafts G' G' , as shown in full lines in Fig. 5; but they may be swung outwardly more or less, if desired, to enable them to be operated between adjacent rows of cotton-plants separated a greater or less distance.

In order to secure the fingers and the picker-belts carried thereby rigidly in any position to which they may be adjusted upon their pivotal connection with the shafts G' G' , I provide in this instance a vertical clamping-rod L for each vertical series of fingers, which extends through an aperture in each finger and through curved slots L' in plates G^2 G^3 , concentric with the shafts G' G' . Each rod L is provided at its lower end with a head or a nut and at its upper end with a clamping-nut, by means of which the said rod can be secured in position with respect to the plates G^2 G^3 , thus holding all the belts and fingers in the vertical series in their adjusted positions.

The rotary brushes (indicated at M) are mounted upon the brush-shafts H' H' in such position that they engage the rear faces of the picker-belts adjacent to the inner portions of the belts, said brushes being for the purpose of removing the cotton from the picker-belts and depositing it within the cotton-box B of the machine.

Forward of the picking-belts the machine is provided on each side with a vertical series of horizontal separating or rake arms N , which are secured to a vertical bar N' , pivotally mounted in the machine, in this instance by means of a bolt N^2 , passing vertically through the same and through the framework of the machine and provided with means for securing it in different adjusted positions. This bolt N^2 is shown as provided with nuts N^3 , by means of which the vertical bar N' and the rake-arms N can be rigidly secured in the positions to which they are adjusted. The arms N are located in line horizontally with the spaces between the picker-belts and serve the purpose of separating and dividing the branches of the plants, so as to present them as uniformly as possible to the action of the picker-belts. The bottom part of the frame of the machine is also provided with laterally-extending guards O a short distance above the ground, which guards are inclined upwardly from their front edges toward their rear edges and are preferably hinged to the frame of the machine, as shown. These guards O serve the purpose of raising portions of the plants which have fallen upon the ground, so as to present the branches thereof to the picking mechanism, and they are allowed to yield upwardly by means of their hinge connection with the frame to enable them to pass over obstructions. These guards O O are sufficiently strong so that if they come into contact with an immovable obstacle, such as a stump or other obstruction, they will arrest the machine and prevent the rake-arms N

and fingers K from coming into violent contact with such obstructions, thus protecting them from injury.

In operation the machine is drawn through the field between two adjacent rows of cotton-plants, the picker guards or fingers being adjusted so as to extend laterally between and among the branches of the plants as the machine is drawn forward. The picker-belts are driven at a very high rate of speed; but as the forward sides of said belts travel outwardly and rearwardly the motion of the picking projections with respect to the cotton-plants is comparatively slow and gentle, such as not to tear or injure the plants themselves, but to simply remove the ripe fluffy cotton therefrom, leaving the unmatu-
 20 the picking-belts is carried inward on the rear sides of the belts, and the cotton is brushed from the picker-belts, as before described, by the brushes M M.

By means of the devices before described the rear supporting-wheels can be independently adjusted up or down to hold the main body of the machine level on a side hill, and by means of the adjustable connection between the front portion of the main frame and the truck the pressure of the traction-wheel E upon the ground can be regulated according to the condition of the soil.

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

1. In a cotton-picking machine, the combination with the main body, of a laterally-extending picker-belt, mounted upon rollers having vertical axes, and means for driving the said belt so that its forward side will move outwardly, substantially as described.

2. In a cotton-picking machine, the combination with the main body, of a vertical series of horizontally-disposed belts laterally extending, mounted upon rollers provided with vertical axes, said belts being separated to permit the branches of the plants and unmatu-
 45 vertical axes, said belts being separated to permit the branches of the plants and unmatu-
 50 rered bolls to pass between them, and means for driving the said belts so that their forward sides will move outwardly, substantially as described.

3. In a cotton-picking machine the combination with the main body, of a vertical series of horizontally-disposed belts laterally extending, mounted upon rollers provided with vertical axes, said belts being separated to permit the branches of the plants and unmatu-
 55 vertical axes, said belts being separated to permit the branches of the plants and unmatu-
 60 rered bolls to pass between them and mechanism for driving all of said belts so that the forward sides thereof will move outwardly, substantially as described.

4. In a cotton-picking machine the combination with the main body, of a vertical series of laterally-extending horizontally-disposed belts, mounted upon rollers having vertical axes, said belts being spaced a distance apart to permit branches of the plants and unmatu-
 65 rered bolls to pass between them, means for

adjusting said belts to cause them to lie at different angles to the main body of the machine and driving mechanism for said belts, substantially as described.

5. In a cotton-picking machine, the combination with the main body, of a vertical series of laterally-extending fingers, pivotally connected to the said main body, a series of picker-belts mounted upon rollers having vertical axes between certain of said fingers, said belts being separated from each other to permit branches and unmatu-
 75 rered bolls to pass between them, and means for driving said belts so as to cause their forward sides to travel outwardly, substantially as described.

6. In a cotton-picking machine, the combination with the main body, of a vertical series of laterally-extending fingers, pivotally connected to the said main body, a series of picker-belts mounted upon rollers having vertical axes between certain of said fingers, said belts being separated from each other to permit branches and unmatu-
 85 rered bolls to pass between them, and means for driving said belts so as to cause their forward sides to travel outwardly, and means for adjusting said fingers and the belts carried thereby to different angles with respect to said main body, substantially as described.

7. In a cotton-picking machine, the combination with the main body, of a vertical series of horizontally-disposed fingers extending laterally therefrom, a series of belts mounted between certain of said fingers, upon rollers provided with vertical axes, said belts being separated to permit branches and unmatu-
 100 rered bolls to pass between them, driving means for said belts and guards secured to the said fingers and extending across the ends of said belts to prevent the cotton picked thereby from being brushed off by contact with the plants, substantially as described.

8. In a cotton-picking machine, the combination with the main body, of a vertical series of laterally-extending fingers, pivotally connected to the said main body, a series of picker-belts mounted upon rollers having vertical axes between certain of said fingers, said belts being separated from each other to permit branches and unmatu-
 110 rered bolls to pass between them, and means for driving said belts so as to cause their forward sides to travel outwardly, a clamping-rod extending vertically through all of said fingers and through slots provided in parts connected with the main body of the machine and a securing device for said rod, whereby said fingers and said belts may be adjusted to different angles with respect to said main body, substantially as described.

9. In a cotton-picking machine, the combination with the main body provided with a vertical shaft, of a vertical series of horizontal fingers pivotally mounted upon said shaft and separated from each other, a series of rollers secured to said shaft between certain of said fingers, a series of vertical rollers secured be-
 130

tween the outer ends of certain of said fingers, a series of picker-belts carried by said rollers, and disposed horizontally one above another, said belts being separated a distance
5 to permit branches and unmatuired bolls to pass between them, and means for driving said vertical shaft to cause the forward sides of said belts to move outwardly, substantially as described.

10 10. In a cotton-picking machine, the combination with the main body, of a vertical series of horizontally-disposed belts laterally extending, mounted upon rollers provided with vertical axes, said belts being separated
15 to permit the branches of the plants and unmatuired bolls to pass between them, driving mechanism for said belts, and a vertical series of horizontal rake-arms located forward of and in line with the spaces between said
20 belts, substantially as described.

11. In a cotton-picking machine, the combination with the main body, of a vertical series of horizontally-disposed belts laterally extending, mounted upon rollers provided
25 with vertical axes, said belts being separated to permit the branches of the plants and unmatuired bolls to pass between them, a vertical series of rake-arms pivotally secured to said main body forward of said belts each of
30 said arms being in a horizontal line with one of the spaces between two adjacent belts, substantially as described.

12. In a cotton-picking machine, the combination with the main body, of a vertical series of horizontally-disposed belts laterally
35 extending, mounted upon rollers provided

with vertical axes, said belts being separated to permit the branches of the plants and unmatuired bolls to pass between them, a pair of rear supporting-wheels secured to said
40 main body, a pair of front supporting-wheels, a traction-wheel intermediate said front and rear wheels operatively connected with said belts, and means for adjusting said front wheels with respect to the main body to vary
45 the weight upon said traction-wheel, substantially as described.

13. In a cotton-picker, the combination of the main frame, of the front and rear wheels supporting said frame, the rear wheels being
50 independently adjustable, the adjusting-screw for raising and lowering the front end of the frame, the stationary disk carrying a rotary shaft provided with a drive-sprocket, the traction-wheel revolving about the said
55 stationary disk and imparting motion to the rotary shaft, the belt and brush shafts together with the intermediate gearing devices for communicating a motion to the said belt and brush shafts, the endless belts and spac-
60 ing-arms arranged on the belt-shafts, the brushes arranged upon the rotary brush-shafts, the box or receiver carried upon the rear end of the main frame, the separating or rake arms, and the guards upon the lower
65 sides of the main frame all arranged and adapted to operate substantially as shown and described.

JOHN A. PEER.

Witnesses:

CHAS. E. BROCK,
CLARENCE SHAW.