

(No Model.)

5 Sheets—Sheet 1.

W. F. SNOWDON. COTTON PICKER.

No. 414,924.

Patented Nov. 12, 1889.

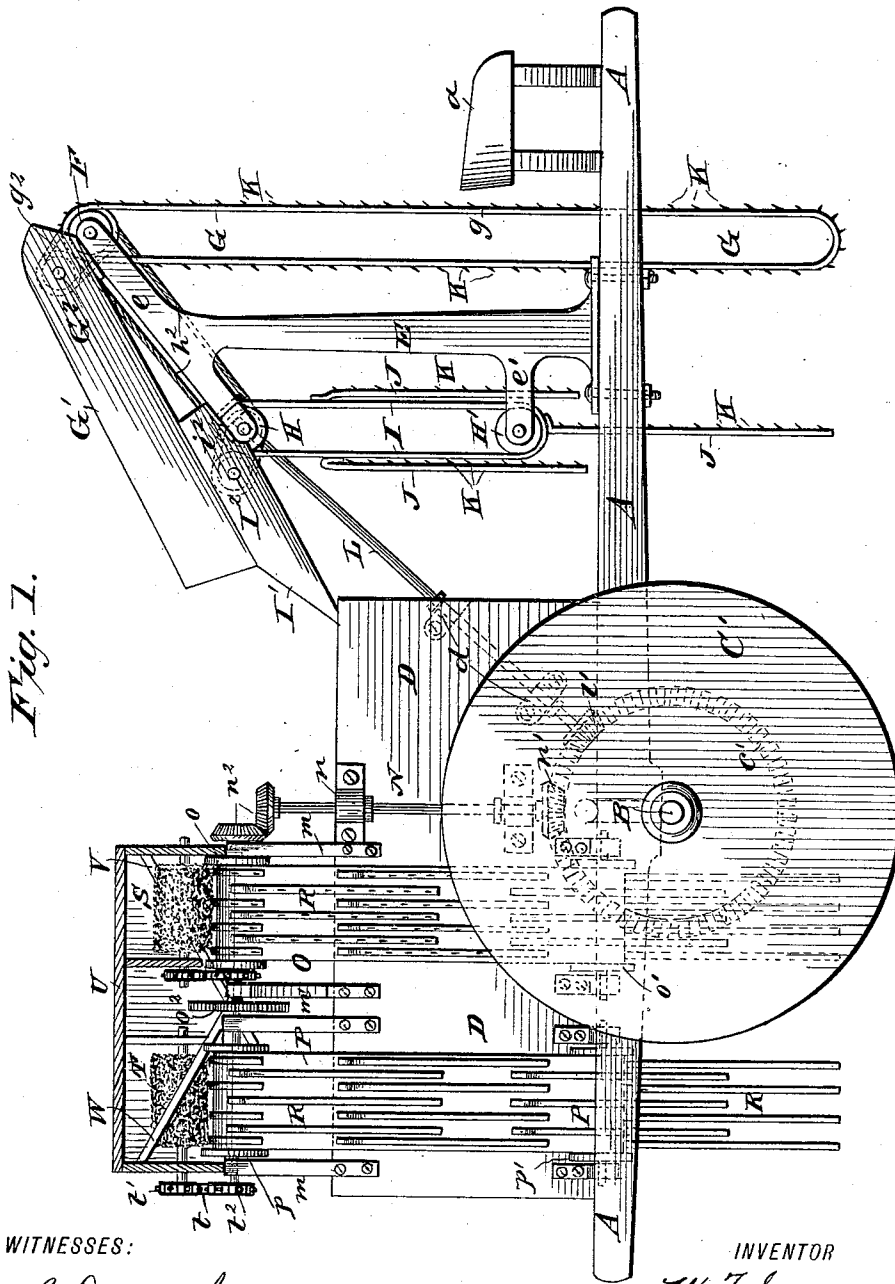


Fig. 1.

WITNESSES:

Phil C. Direrich.
C. Beitzwick

INVENTOR

W. F. Snowden

BY

Munn & Co.

ATTORNEY

(No Model.)

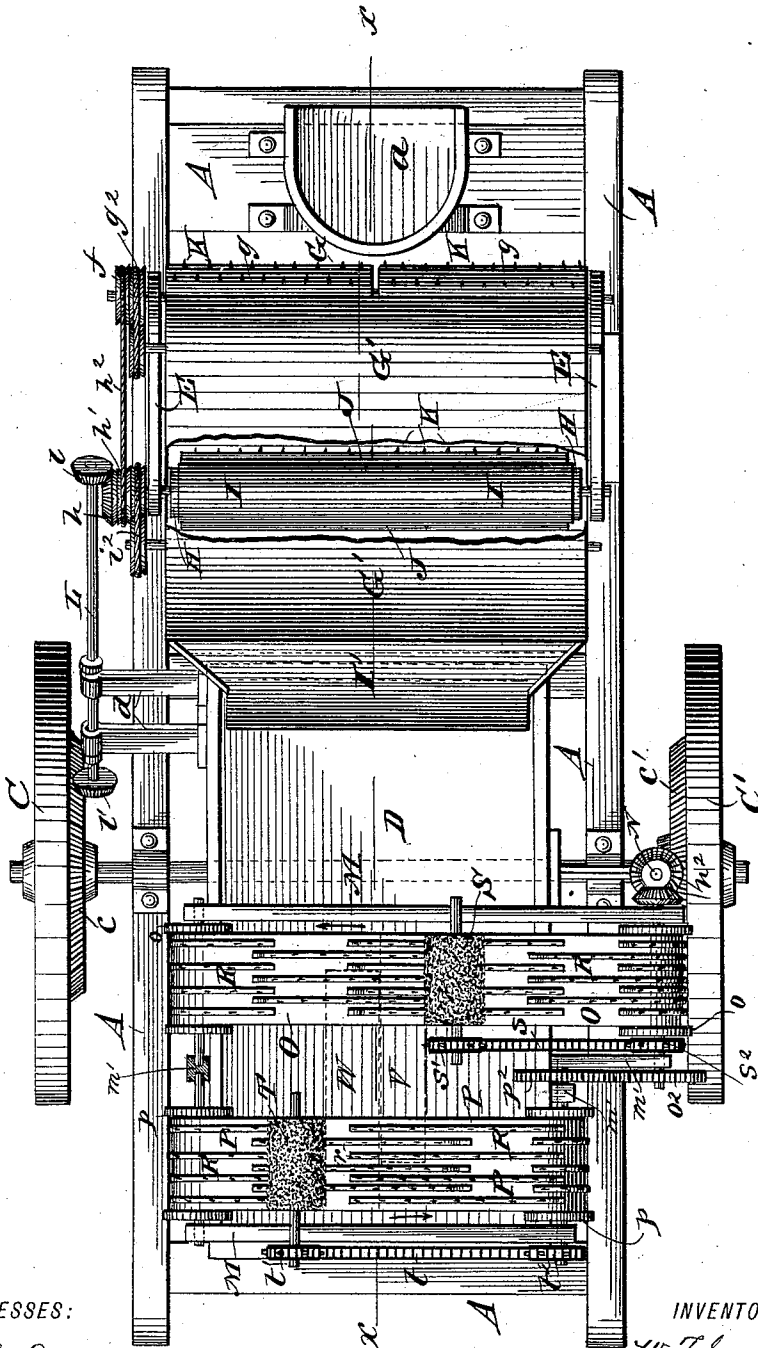
W. F. SNOWDON.
COTTON PICKER.

5 Sheets—Sheet 2.

No. 414,924.

Patented Nov. 12, 1889.

Fig. 2.



WITNESSES:

Phil. C. Dieterich.
to Sedgwick

INVENTOR

W. F. Snowden

BY

Munn & Co.

ATTORNEY

W. F. SNOWDON.
COTTON PICKER.

No. 414,924.

Patented Nov. 12, 1889.

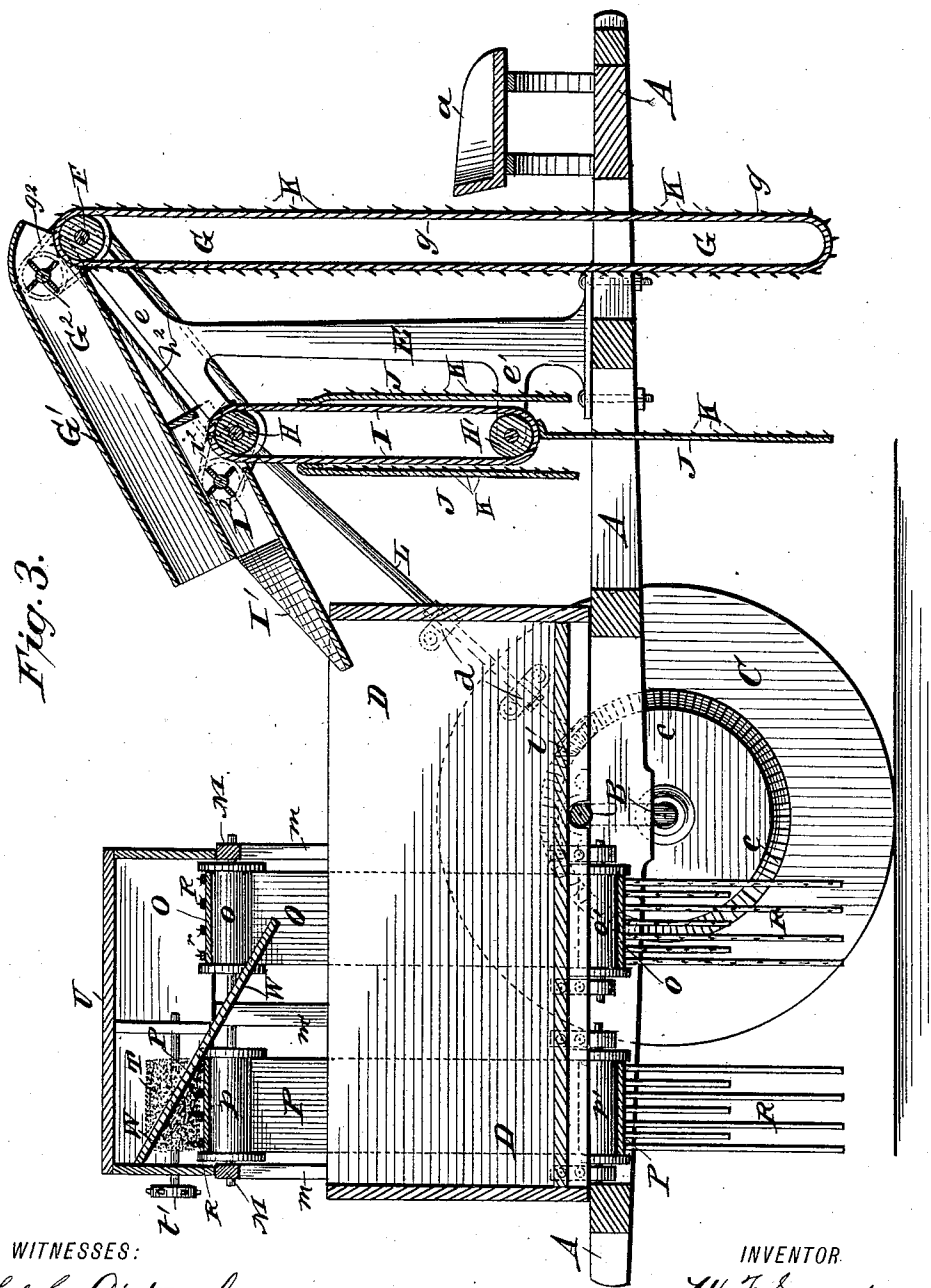


Fig. 3.

WITNESSES:
Phil C. Dieterich.
Co. Bedgwick

INVENTOR
W. F. Snowden
 BY *Munn & Co.*
 ATTORNEY

(No Model.)

5 Sheets—Sheet 4.

W. F. SNOWDON.
COTTON PICKER.

No. 414,924.

Patented Nov. 12, 1889.

Fig. 4.

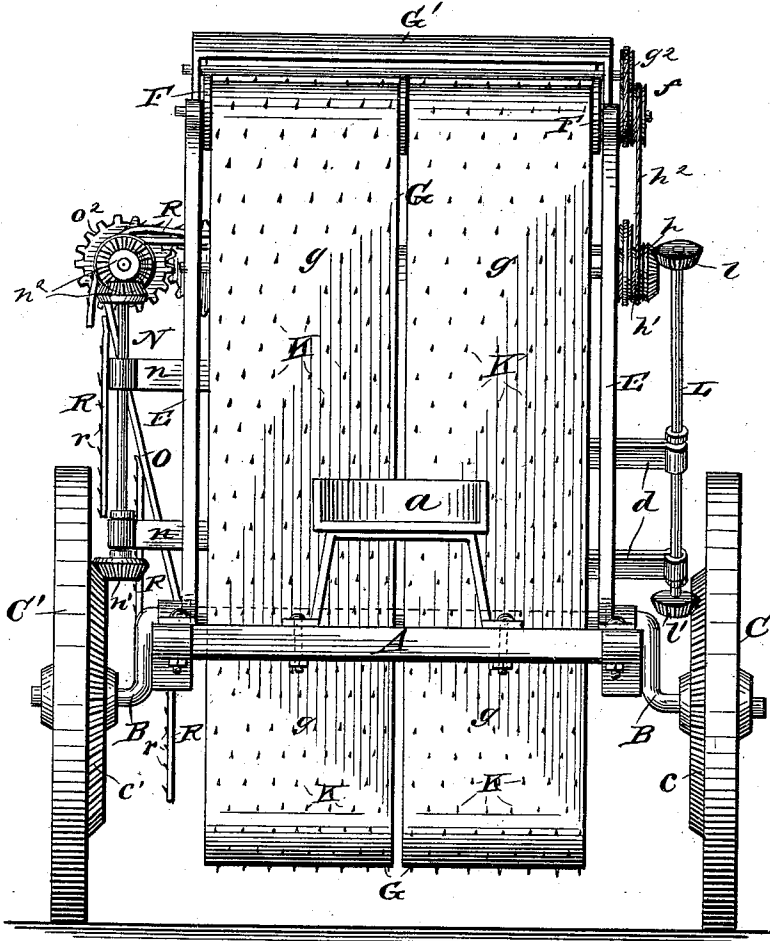
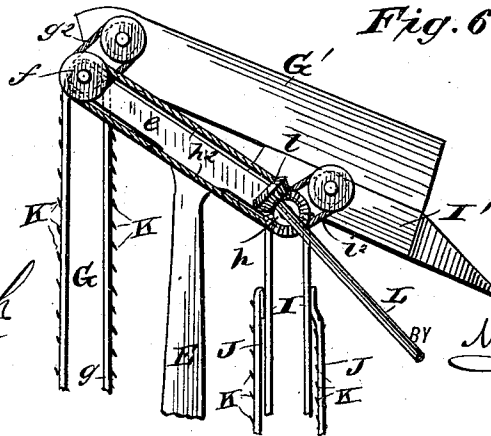


Fig. 6.



WITNESSES:
Phil. Co. Dirterich
e. Sedgwick

INVENTOR
W. F. Snowden
 BY *Munn & Co.*
 ATTORNEY

W. F. SNOWDON.
COTTON PICKER.

No. 414,924.

Patented Nov. 12, 1889.

Fig. 5.

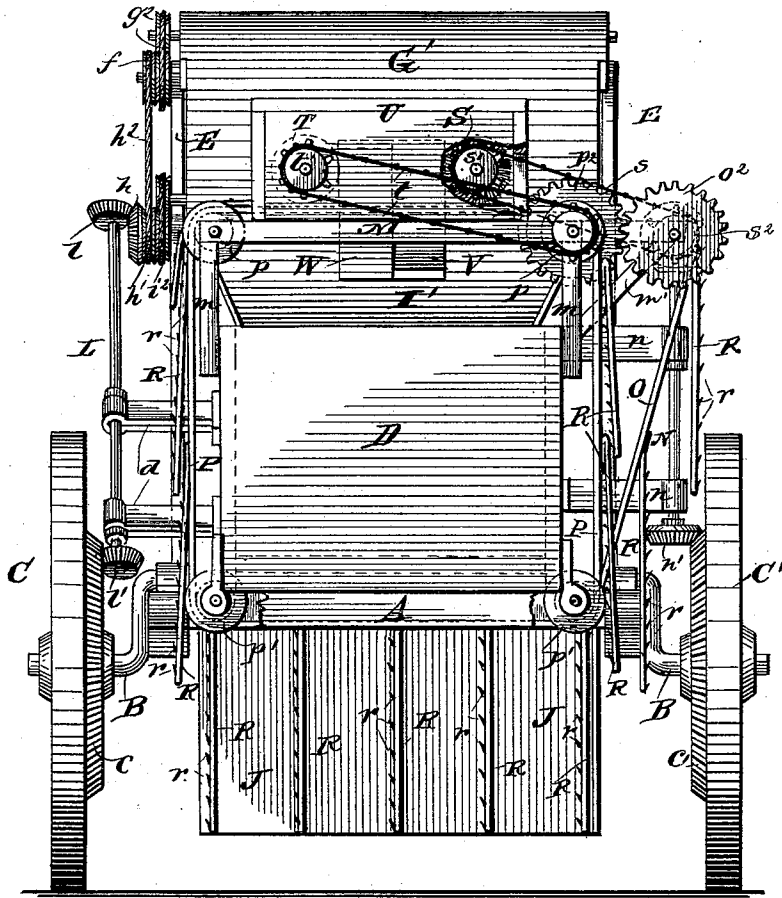
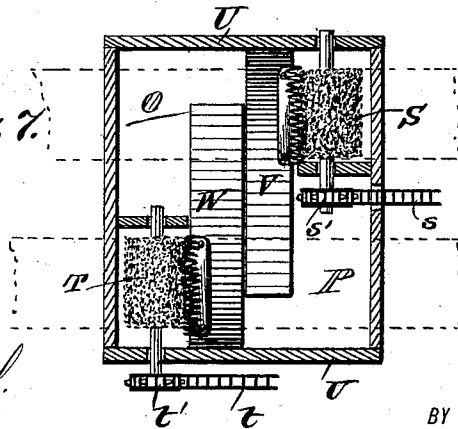


Fig. 7.



WITNESSES:

Phil. C. Deterick.
e. Sedgwick

INVENTOR

W. F. Snowden

BY

Munn & Co.

ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM FRANK SNOWDON, OF BROOKLYN, NEW YORK.

COTTON-PICKER.

SPECIFICATION forming part of Letters Patent No. 414,924, dated November 12, 1889.

Application filed February 2, 1889. Serial No. 298,501. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FRANK SNOWDON, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Cotton-Picker, of which the following is a full, clear, and exact description.

My invention relates to a machine specially designed for automatically picking fiber from ripened bolls of cotton-plants, and has for its object to provide a simple, comparatively inexpensive, and efficient machine of this character.

The invention consists in certain novel features of construction and combinations of parts of the cotton-picker, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved cotton-picker, partly in vertical section. Fig. 2 is a plan view of the machine, partly broken away, and with the upper rear casing removed and the combing-boards or chute-aprons of the laterally-working belts indicated in dotted lines. Fig. 3 is a longitudinal vertical sectional view of the complete machine, taken on the line *x x* in Fig. 2. Fig. 4 is a front elevation of the machine. Fig. 5 is a rear view thereof. Fig. 6 is a detail view in elevation of the head portions of the front frame and adjacent parts of the two front picker-belts of the machine, the view being taken at the reverse side to that shown in Fig. 1; and Fig. 7 is a detail plan view, partly in section and in dotted lines, and representing the relative arrangement of the laterally-operating rear picker-belts and the brushes and aprons discharging the picked cotton therefrom.

The main frame A of the machine consists of suitable side and cross bars, and is supported on an axle B, which is preferably arched or cranked, and on opposite ends of which are mounted the wheels C C', on which the machine travels and by which the picking mechanism is actuated. At the front of the frame A is placed a seat *a* for the driver or attendant, and at the rear end of the frame, between the wheels, is placed a box D, into which the cotton is discharged from the picking mechanism, as hereinafter more fully ex-

plained. If preferred, baskets or other receptacles may be placed in the box D to receive the cotton and facilitate its removal from the machine.

Two standards E E, secured to the forward parts of the machine side bars, are formed with rearwardly-inclined head portions *e e*, to the front ends of which is journaled a roller or long pulley F, over which runs an endless picker-belt G, consisting really of two sections or belts *g g*, placed edge to edge, and both hanging down through the machine-frame A to within a foot (more or less) of the ground, so as to reach the cotton fiber in the ripened bolls at the rear sides of one row of plants as the machine moves forward over the field. In the lower rear ends of the standard-heads *e e* is journaled a roller H, and below it, in arms *e'*, projecting rearwardly from the standards E, is journaled another roller H', and onto these two rollers H H' an endless belt I is placed. This belt is provided with a series of aprons or flaps J, which are shown the full width of the belt, to which they are attached at one end, so as to alternately dip down over and into the cotton plants as the belt is rotated. The belt G, or its two parts *g g*, and also the aprons J of the belt I are faced or armed with suitable teeth or spurs K, preferably made of wire, and adapted to catch the cotton fiber and pull it from the bolls as the machine moves along the plants and the belts are rotated. These belts, which may be made of leather, canvas, or any other suitable material, are both operated from one driving-shaft L, which has at its upper end a bevel gear-wheel or pinion *l*, which meshes with a like pinion *h* at one end of the roller H, which also carries a pulley *h'*, from which a belt *h²* passes to a pulley *f* on the roller F of the front belt G. At its lower rear end the shaft L is provided with a bevel wheel or pinion *l'*, which meshes with a bevel gear-wheel *c*, fixed to the wheel C, which assures operation of both belts G I in the same direction, or upward at their forward sides, from the main wheel C and shaft L.

An inclined rearwardly-extending chute G' is arranged at and supported from the standard heads *e* to receive the running cotton-filled or loaded side of the belt G, and an inclined rearwardly-extending chute I' is ar-

ranged below and at the rear end of the chute G' , so as to receive the running cotton-filled side of the belt I or I J. The chute G' discharges onto the chute I' , which conducts all the cotton into the box D, onto the front of which the rear end of the chute I' is supported. In the chute G' is journaled next the belt G a rotating brush or comb G^2 , which sweeps the cotton from said belt and throws it down the chute, and a like rotating brush or comb I^2 , working in the chute I' next the belt I J, sweeps the cotton from this belt and throws it down said chute. The rotating brush or comb G^2 is actuated by a belt g^2 , running from a pulley on the roller F to a pulley on the brush-shaft, and the brush I^2 is operated by a belt i^2 , running from a pulley on the brush-shaft to a pulley on the shaft of the roller H; hence the brushes are also operated from the shaft L, driven by the wheel C, this making an economical and efficient distribution of the motive power from but one of the ground-wheels to drive the entire front cotton-picking, belt-cleaning, and cotton-discharging mechanisms. The shaft L has substantial support in bearings d , fixed to one side of the cotton-box D.

In suitable upper frames M, supported by struts or braces m from the cotton-box D, and in standards m' , rising from the sides of the box, are journaled on their longitudinally-ranging shafts two pairs of long pulleys or rollers $o o$ and $p p$, and below these rollers are journaled in bearings on the box D corresponding pairs of pulleys or rollers $o' o'$ and $p' p'$. On the rollers $o o'$ is placed an endless belt O, and on the rollers $p p'$ is placed an endless belt P. These belt-rollers are so located at the corners of the cotton-box that the belts O P mounted on them rotate in a substantially-rectangular course around the box and transversely of the machine; but the belt O is driven at the upper side toward the left hand, while the belt P is driven at the upper side toward the right hand or in the opposite direction. Each of these belts O P is provided with a series of thongs or straps R, held to it only at one end, and provided with a series of teeth or barbs r , like those K of the front picker-belts. The teeth r of the belt O operate in the cotton plants to remove the fiber therefrom and carry it upward at the right-hand side of the machine, while the teeth of the belt P take the fiber from the plant and carry it upward at the left-hand side of the machine, both belts being stripped of fiber above the cotton-box by suitable brushes, from which the cotton falls down inclined combing-boards or guides to the box, as hereinafter more fully explained. The successive rows of toothed thongs R r on the belts O P are connected at one end to the belts, preferably at distances apart equaling about half the length of the thongs; hence one row of thongs overlaps between the following row, as shown most clearly in Figs. 1 and 2 of the drawings. These two trans-

versely-traveling endless picker-belts O P are both actuated from one driving-shaft N, which is journaled in bearings n , fixed to the box D, and carries at its lower end a bevel-pinion n' , which meshes with a bevel gear-wheel c' , fixed to the ground-wheel C' of the machine. Bevel gears or pinions n^2 transmit motion from the upper end of the shaft N to the upper right-hand roller o of the belt O, thereby operating this belt, and the shaft of this roller o carries a gear-wheel o^2 , which meshes with a gear-wheel p^2 on the shaft of the upper right-hand roller p , thereby operating the rear transverse belt P, but in a reverse direction to that in which the belt O travels; hence the belts O P move upward at opposite sides of the machine to carry the cotton gathered by their toothed thongs R r from either side toward the transverse center of the upper open end of the cotton-box D.

The brushes S T, which remove the cotton from the belts O P, respectively, are journaled in bearings provided in an upper casing U, which covers the brushes and the central upper parts of the belts O P, and also covers the reversely-inclined comb-boards V W, which remove the cotton from the brushes and conduct it into the box D. The brush S is rotated by a chain belt s , which runs from a wheel s' on the brush-shaft to a wheel s^2 on the shaft of the upper right-hand roller o , from which the picker-belt O is driven, and the brush T is rotated by a chain belt t , which runs from a wheel t' on its shaft to a wheel t^2 on the shaft of the upper right-hand roller p , by which the picker-belt P is driven through the agency of the gear-wheels $p^2 o^2$, operated from the roller o . It will thus appear that both the picker-belts O P and their cleaning-brushes S T are all operated from the one shaft N, driven from the ground-wheel C' of the machine.

The brush-casing U is supported on the picker-belt-roller frame M in a manner allowing removal of the casing for convenient access to the brushes S T and their reversely-inclined comb-boards V W. Figs. 1, 2, and 7 of the drawings most clearly show that the comb-board V is supported in the casing U so that its upper part comes in contact with the periphery of the brush S, and the comb-board W is set so that its upper part touches the periphery of the brush T, and both boards thus remove from the brushes the cotton which they take from the picker-belts O P and discharge it into the box D, into which the lower ends of the comb-boards project. Those portions of the boards V W which are in contact with the brushes S T will preferably be toothed like a comb or will be provided with comb-like plates, which enter the brush material and thoroughly clear the brushes of cotton as they rotate toward the comb-boards.

In view of the above description a brief statement of the general operation will suffice, as follows: As the machine is driven along over a row of cotton plants the outer or

front upwardly-traveling face of the belt G will first come in contact with the plants, and the inner edges of the two parts *g g* of the belt will first touch the centers of the plants, and as the plants have general rounded form the belt parts *g g* will open or separate and gradually twist around sidewise to conform to the rounded contour of the plants and give the belt-teeth K a good chance to strip the ripened cotton fiber from the rear, top, and both sides of the plants. The toothed aprons J of the belt I will next enter the plants and by dropping freely between them and moving along their tops will remove ripened cotton-fiber which had escaped the action of the front pendent flexible belt G. The cotton taken up by these belts G I J will be removed from them by the brushes G² I² and passed down the chutes G' I', which deliver the fiber to the box or receptacle D. As these operations of the front picker-belts continue, the laterally-traveling rear belts O P will drop their toothed thongs R into the plants from opposite sides and between the plants and will strip from them the ripened cotton-fiber which had escaped the action of the front toothed belts, and as the brushes S T remove the cotton from these belts O P the comb-boards V W will sweep the cotton from the brushes into the cotton-box D.

The teeth on the endless belts or belt aprons or thongs will be comparatively short and set very closely together—something like the teeth in carding combs or cylinders—to prevent injury to the cotton-plants while removing the ripened fiber from the bolls.

Any ordinary or approved clutch mechanism (not necessary to show or describe) may be provided to throw the shafts L N out of gear with the ground-wheels while the machine is traveling on the road to or from the cotton-field.

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

1. A cotton-picker constructed with a frame, upper and lower lateral rotating rollers thereon, and an endless belt traveling around said rollers and provided with toothed aprons attached thereto at one end and dipping into and between the plants to pick the cotton therefrom, substantially as herein set forth.

2. A cotton-picker constructed with a frame, upper and lower lateral rotating rollers thereon, an endless belt traveling around said rollers and provided with toothed aprons attached thereto at one end, a delivery-chute next the upper belt-roller, and a device sweeping the cotton from the belt-aprons into the chute, substantially as herein set forth.

3. The combination, in a cotton-picker, of a frame, a front lateral rotating roller thereon, a toothed endless belt hung freely from said roller to reach the plants, upper and lower lateral rollers rotating behind the front pendent belt, an endless belt running on the lateral rollers and provided with toothed

aprons attached thereto at one end, delivery-chutes above said belts, and devices sweeping the cotton from the belts into the chutes, substantially as herein set forth.

4. The combination, in a cotton-picker, of a frame, a front lateral rotating roller thereon, a toothed endless belt hung freely from said roller and consisting of two vertically-divided sections adapted to part or yield from the center of the belt to conform to the plants, upper and lower lateral rollers rotating behind the front pendent belt, an endless belt running on the latter rollers and provided with toothed aprons attached thereto at one end, delivery-chutes above said belts, and devices sweeping the cotton from the belts into said chutes, substantially as herein set forth.

5. In a cotton-picker, the combination, with a frame, of rollers F H H', journaled thereon, an endless belt hung freely from the roller F, and an endless belt I, running on the rollers H H' and provided with toothed aprons J, substantially as herein set forth.

6. In a cotton-picker, the combination, with a wheeled frame, of rollers F H H', journaled thereon, an endless toothed belt hung freely from the roller F, an endless belt I, running on the rollers H H' and provided with toothed aprons J, a shaft L, geared with one of the machine-wheels and with the roller H, and a belt *h*², connecting the rollers H F, substantially as herein set forth.

7. In a cotton-picker, the combination, with a wheeled frame, of rollers F H H', journaled thereon, an endless toothed belt hung freely from the roller F, an endless belt I, running on the rollers H H' and provided with toothed aprons J, chutes G' I' above the endless belts, brushes G² I² in said chutes, a shaft L, geared with one of the machine-wheels and with the roller H, a belt *h*², connecting the rollers H F, a belt *g*², connecting the roller F and brush G², and a belt *i*², connecting the roller H and brush I², all arranged for operation substantially as herein set forth.

8. A cotton-picker constructed with a frame, a cotton-receiving box thereon, and a toothed belt traveling transversely around the box to pick cotton from the plants, substantially as herein set forth.

9. A cotton-picker constructed with a frame, a cotton-receiving box thereon, a toothed belt traveling transversely around the box to pick cotton from the plants, and devices, substantially as specified, sweeping the cotton from the belt into the box, substantially as herein set forth.

10. A cotton-picker constructed with a frame, a cotton-receiving box thereon, and two toothed belts traveling transversely around the box in reverse directions to pick cotton from the plants, substantially as herein set forth.

11. A cotton-picker constructed with a frame, a cotton-receiving box thereon, two toothed belts traveling transversely around

the box in reverse directions to pick cotton from the plants, and devices, substantially as specified, sweeping the cotton from the belts into the box, substantially as herein set forth.

5 12. A cotton-picker constructed with a frame, a cotton-receiving box thereon, and an endless belt traveling transversely around the box and provided with toothed thongs attached thereto at one end and picking the
10 cotton from the plants, substantially as herein set forth.

13. A cotton-picker constructed with a frame, a cotton-receiving box thereon, an endless belt traveling transversely around the
15 box and provided with toothed thongs attached thereto at one end and picking the cotton from the plants, and devices, substantially as specified, sweeping the cotton from the belt-thongs into the box, substantially as herein
20 set forth.

14. A cotton-picker constructed with a frame, a cotton-receiving box thereon, and two endless belts traveling transversely around the box in reverse directions and provided with toothed thongs attached thereto
25 at one end and picking the cotton from the plants, substantially as herein set forth.

15. A cotton-picker constructed with a frame, a cotton-receiving box thereon, two
30 endless belts traveling transversely around the box in reverse directions and provided with toothed thongs attached thereto at one end and picking the cotton from the plants, and devices, substantially as specified, sweeping the cotton from the belts into the box,
35 substantially as herein set forth.

16. In a cotton-picker, the combination, with a frame, a cotton-receiving box thereon, and rollers *o o o' o'*, journaled at the corners
40 of the box, of a toothed belt traveling transversely on the rollers around the box, substantially as herein set forth.

17. In a cotton-picker, the combination, with a frame, a cotton-box thereon, and rollers
45 *o o o' o'*, journaled at the corners of the box, of a belt *O*, provided with toothed thongs *R* and traveling transversely around the box, a brush *S*, taking the cotton from the belt, and an inclined comb-board *V*, sweeping the
50 cotton from the brush into the box, substantially as herein set forth.

18. In a cotton-picker, the combination, with a frame, a cotton-box thereon, and rollers *o o o' o' p p p' p''*, journaled at the corners of the
55 box, of two toothed belts traveling transversely on the rollers around the box and in reverse directions, substantially as herein set forth.

19. In a cotton-picker, the combination, with
60 a frame, a cotton-box thereon, and rollers *o o o' o' p p p' p'*, journaled at the corners of the box, of belts *O P* on the rollers and provided with toothed thongs *R* and traveling trans-

versely around the box in reverse directions, brushes *S T*, taking the cotton from the belts
65 *O P*, and inclined comb-boards sweeping the cotton from the brushes into the box, substantially as herein set forth.

20. In a cotton-picker, the combination, with a wheeled frame, a cotton-box thereon, and a
70 toothed belt traveling transversely around the box, of a driving-shaft geared with the belt-driving roller and one of the machine-wheels, substantially as herein set forth.

21. In a cotton-picker, the combination, with
75 a wheeled frame, a cotton-box thereon, a toothed belt traveling transversely around the box, and a brush taking the cotton from the belt, of a driving-shaft geared with the belt-driving roller and one of the machine-
80 wheels, and gearing connecting the belt-driving roller and brush to drive both from one shaft, substantially as herein set forth.

22. In a cotton-picker, the combination, with
85 a wheeled frame, a cotton-box thereon, and two toothed belts ranging transversely around the box, of a shaft geared with the driving-roller of one belt and one of the machine-wheels, and gearing connecting one belt-driving roller with the other belt-driving
90 roller and giving the two belts reverse movements transversely around the box from one driving-shaft, substantially as herein set forth.

23. In a cotton-picker, the combination, with
95 a wheeled frame, a cotton-box thereon, two toothed belts ranging transversely around the box, and brushes taking the cotton from the belts, of a shaft geared with the driving-roller of one of the belts, gearing connecting the rollers of the two belts to operate them
100 in reverse directions, and gearing connecting the belt-rollers with the brushes, substantially as described, whereby the belts and brushes are actuated from one driving-shaft,
105 as set forth.

24. In a cotton-picker, the combination, with
110 a frame, of a front endless toothed belt hung and operated from an upper roller, an endless belt provided with toothed aprons attached thereto at one end and traveling on
115 upper and lower rollers behind the front belt, a cotton-receiving box on the frame, brushes and chutes taking the cotton from said belts and delivering it to the box, two rear toothed belts traveling in reverse direc-
120 tions transversely around the cotton-box, brushes and comb-boards removing the cotton from the two rear belts and delivering it to the box, and gearing, substantially as specified, actuating the belts and brushes from
the machine-wheels, all arranged for operation substantially as herein set forth.

WILLIAM FRANK SNOWDON.

Witnesses:

HENRY L. GOODWIN,
EDGAR TATE.