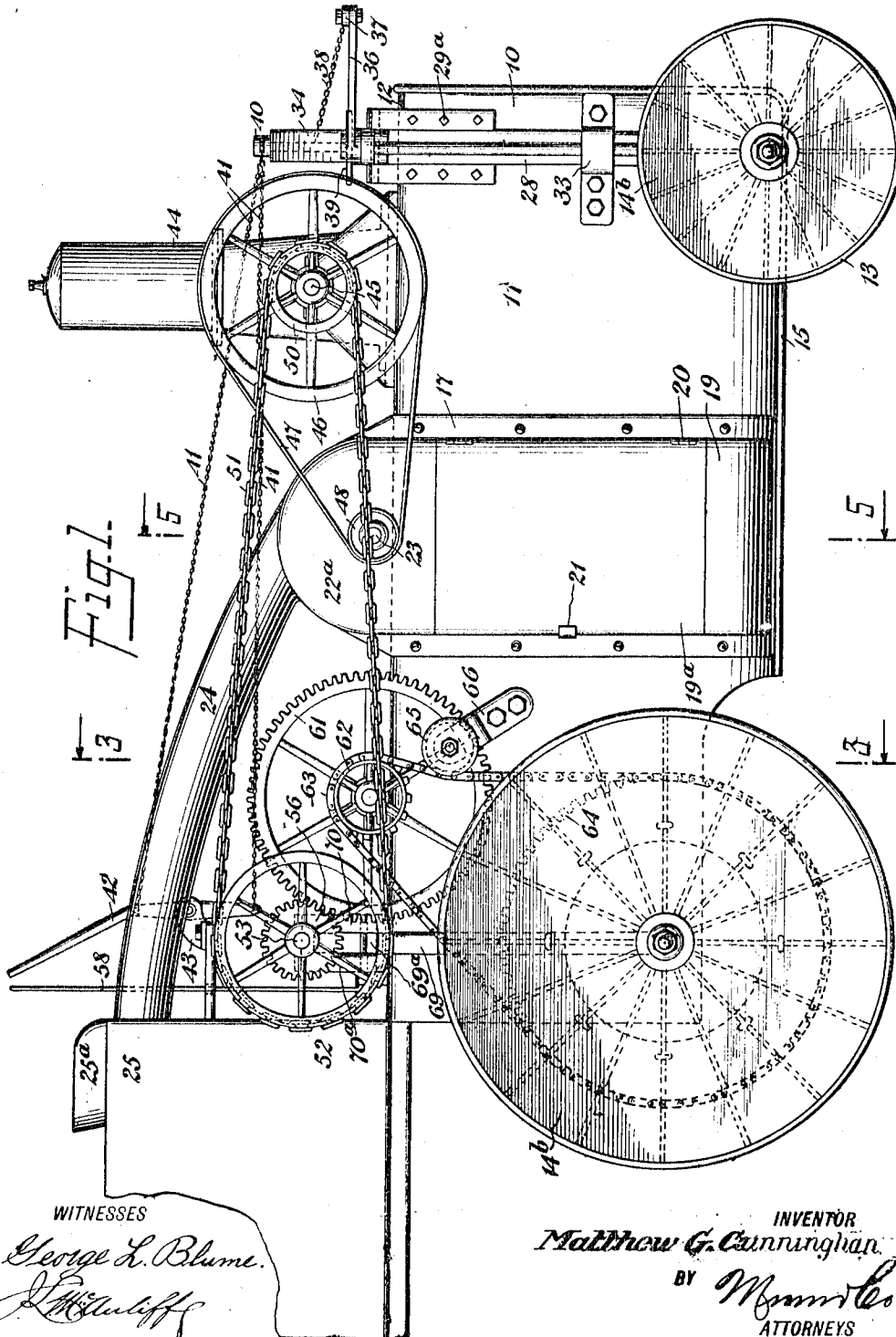


M. G. CUNNINGHAM.
COTTON PICKER.
APPLICATION FILED MAR. 4, 1914.

1,107,908.

Patented Aug. 18, 1914.

4 SHEETS-SHEET 1



WITNESSES

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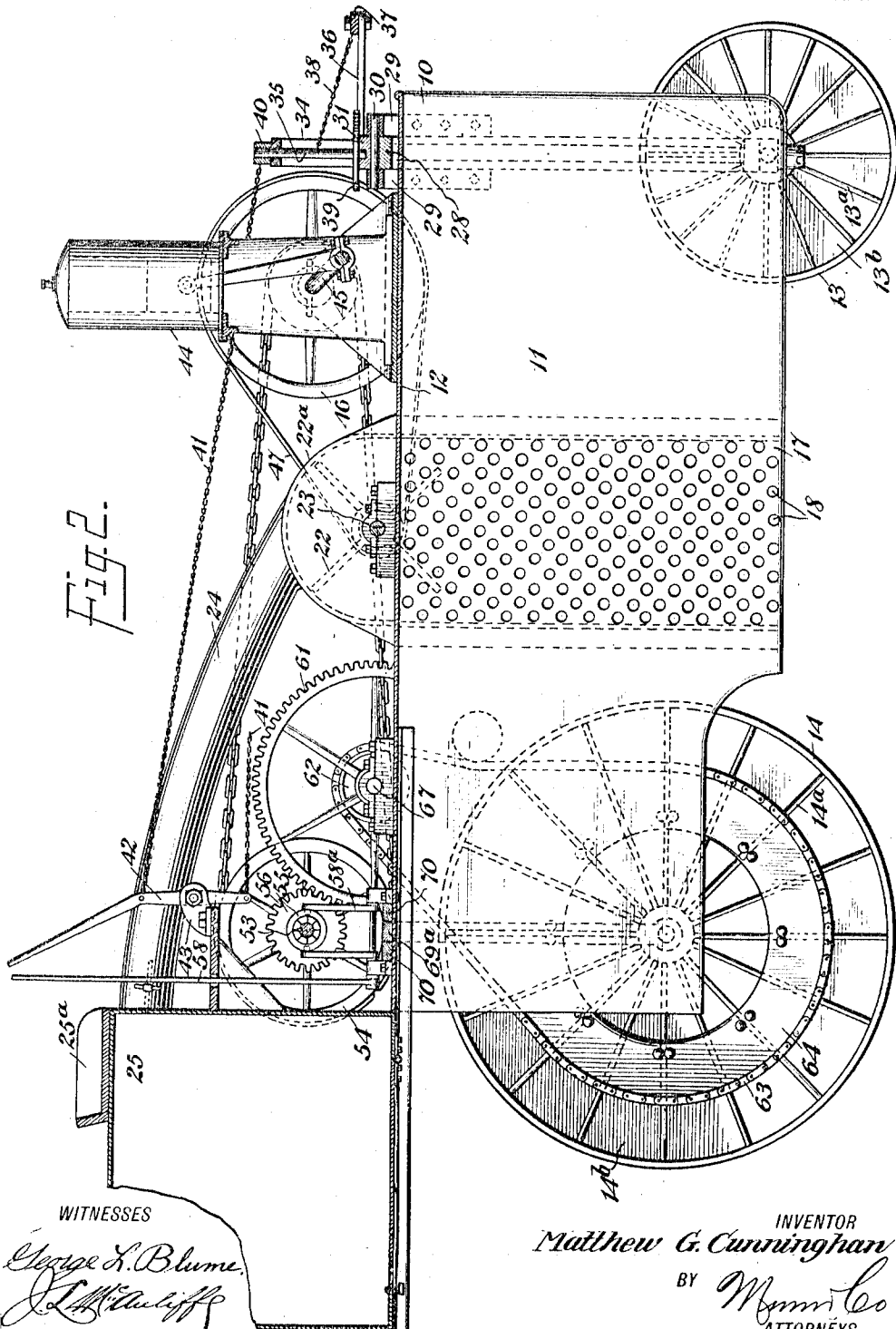
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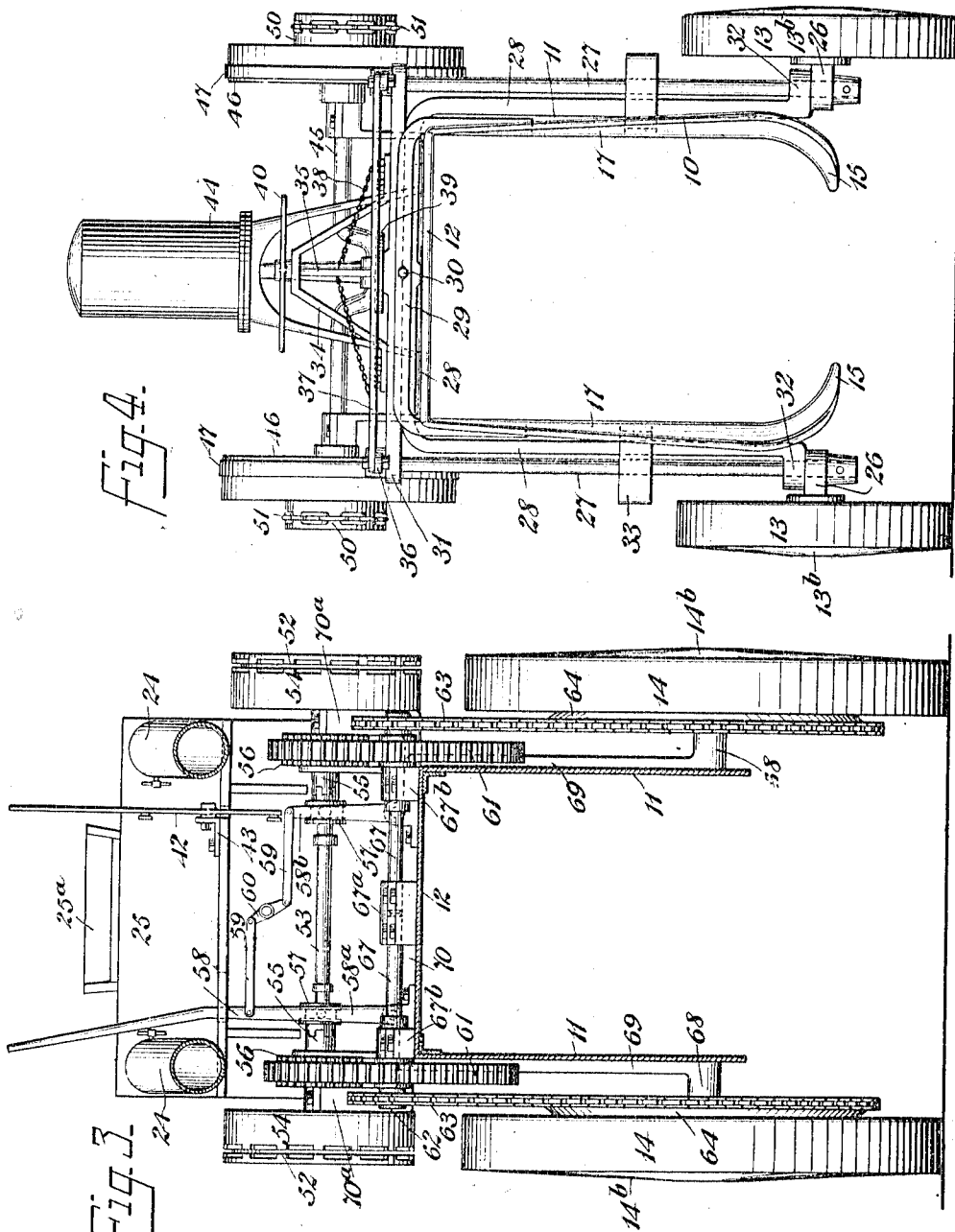
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4 SHEETS-SHEET 3.



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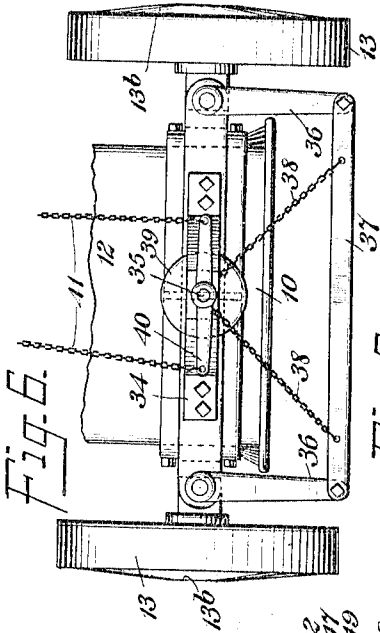


Fig. 7.

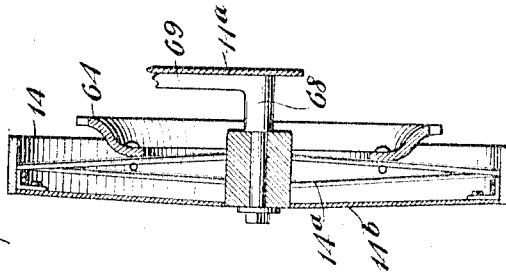
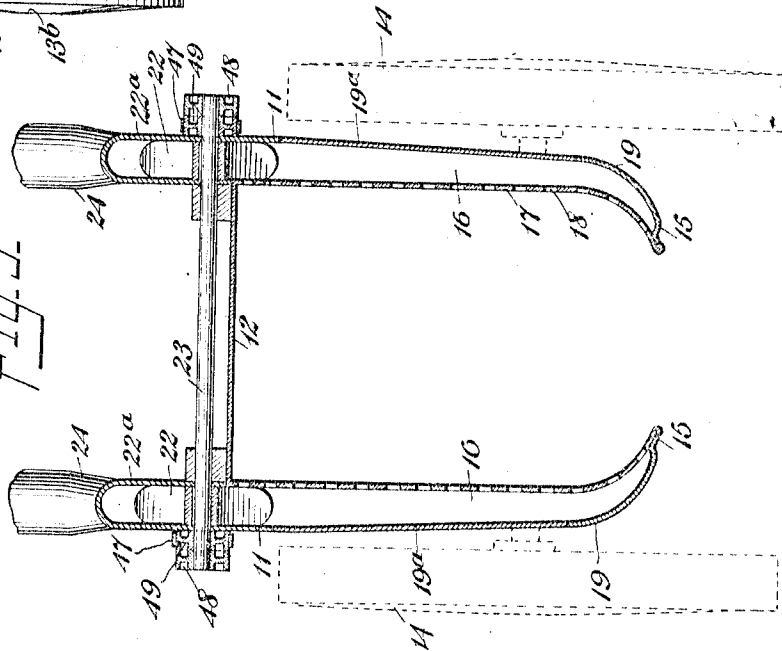


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

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COTTON-PICKER.

1,107,908.

Specification of Letters Patent.

Patented Aug. 18, 1914.

Application filed March 4, 1914. Serial No. 822,310.

To all whom it may concern:

Be it known that I, MATTHEW G. CUNNINGHAM, a citizen of the United States, and a resident of Corsicana, in the county of Navarro and State of Texas, have invented a new and Improved Cotton-Picker, of which the following is a full, clear, and exact description.

My invention relates to a wheeled cotton picker having a power-driven suction means to pick the cotton and deliver it to a receptacle, and the invention more particularly relates to a structure in which a body of inverted U-shape directly mounts the running wheels, as well as a motor and the necessary driving connection to propel the vehicle and to operate suction fans arranged in connection with suction boxes on the body. Furthermore, the suction boxes are formed in the sides of the body, there being double walls formed in the said sides between the front and back thereof. The inner walls of the suction boxes are advantageously continuous with the sides of the body, while the outer walls are formed by applied sheet metal. The inner walls are variously perforated to present inlet openings for the cotton at various heights and at various points between the front and the back ends of the U-shaped body, the result being that suction boxes of a very broad area are provided of compact form that will cause the suction to be effective in a manner to act upon the cotton bolls as variously positioned on the plants of a row over which the U-shaped body is propelled. In connection with the U-shaped body as referred to, a novel supporting means is provided for the front steering wheels, said means being adapted to the conformation of the body.

The invention resides in the novel features characterizing the distinctive construction and arrangement of the parts as hereinafter more particularly described.

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

Figure 1 is a side elevation of a cotton picker or harvester embodying my invention; Fig. 2 is a longitudinal vertical section; Fig. 3 is a transverse vertical section on approximately the line 3—3 of Fig. 1; Fig. 4 is a front elevation, but with rear parts omitted in the interest of clearness;

Fig. 5 is a fragmentary transverse vertical section taken through the suction boxes, as indicated by the line 5—5 of Fig. 1; Fig. 6 is a partial plan view showing the front portion of the harvester; and Fig. 7 is a transverse vertical section of one of the rear running wheels.

In constructing the practical embodiment of the invention as illustrated, a body designated generally by the numeral 10 is made of inverted U-shape in cross section, thereby presenting depending spaced sides 11 ranging lengthwise of the machine, and a top 12 constituting the U-bend of the body. The body mounts front running wheels 13, which are arranged as steering wheels as herein-after explained, and mounts rear running wheels 14 to which power is applied for propelling the apparatus. At the forward end, and for the major portion of the length of the U-shaped body, the sides 11 are deflected at their lower edges toward each other, as at 15, to restrict the bottom longitudinal opening presented by the body for the passage of the row of plants over which the apparatus is to be propelled. The arrangement assists in gathering the stalks of the row in the upright form, and the inturned terminals also assist in preventing the direct dropping of any detached cotton bolls so as to momentarily retard their falling and assist in holding them in the body until the suction boxes are reached.

The suction boxes, designated generally by the numerals 16, are provided in connection with each side 11, each box being formed with double walls, of which the inner wall 17 is formed by and continuous with a side 11 of the box. The inner walls 17 are variously perforated to provide inlet openings 18 for the cotton. As the boxes extend substantially from the inturned bottom edges 15 to the top 12 and have considerable width lengthwise of the body, boxes of a broad area are provided, so that cotton bolls variously positioned on the stalks will be effectively acted upon by the suction. The outer wall 19 of each box is desirably formed with a door 19^a hinged along a vertical edge as at 20, and adapted to be held by any suitable fastener catch 21, as indicated in Fig. 1. The doors thus provide clean-out openings for the suction boxes.

In connection with the suction boxes, suction fans 22 are provided, in fan housings 22^a mounted on the upper ends of the suction

boxes and continuous with the walls thereof. The said fans are mounted on a transverse shaft 23 driven from a suitable motor on the body, as hereinafter explained.

5 Blower tubes 24 lead from the fan housings 22^a rearwardly to discharge the cotton to any receptacle provided for the purpose, there being indicated in the present instance, a receiver box 25 mounting a seat 25^a 10 for the operator.

The front wheels 13 are mounted on stud axles 26 and these are suitably secured to vertical rods 27 which range along the depending arms of an inverted U-shaped yoke 28. The said yoke conforms in general to the cross sectional form of the body 10, and straddles the said body, the cross bar or U-bend of the said yoke ranging across the top 15 12 of the body between transverse U-shaped brackets 29, which are suitably secured to the body by rivets or bolts 29^a (Fig. 1). A pivot pin 30 extends through the cross bar of the yoke 28 and through the said brackets 29, and rockably mounts the yoke so that it 25 may tilt in the vertical plane. Bearings are provided on the yoke 28 for the turning of the rods 27 to turn the steering wheels 13. In the present instance, the bearings for the upper ends of the rods 27 are formed by the ends of a cross bar 31 in rigid relation to the cross bar of the yoke 28, while the lower bearings 32 consist of the outwardly bent lower ends of the depending arms of the yoke. By the described arrangement a limited tilting movement of the yoke 28 on its 35 pivot pin 30 will be permitted, so that a wheel 13 at one side may rise relatively to the opposite wheel to conform to slight irregularities in the surface of the field. In the rocking movements of the yoke 28, the side arms thereof and the rods 27 have guided lateral movement in fixed brackets 33 secured to the sides 11 of the body, and projecting laterally.

45 In order to turn the rods 27 for giving steering movements to the wheel 13, an arched bracket 34 is secured to the yoke, that is to say, to the top of the cross bar 31 rigid with said yoke. A vertical rock shaft or capstan 35 has bearings in the bracket 34, and connection is had between said capstan and the rods 27 as follows: Forwardly extending arms 36 are in fixed relation to the rods 27 and are pivotally connected by a 50 cross bar from which chains 38 lead to the capstan 35. To turn the capstan the lever arms 40 thereof connect by chains 41 with a lever 42 fulcrumed on a bracket 43 or the like adjacent to the operator's seat 25^a. The 60 chains 41 connect the respective arms 40 with the lever at opposite sides of the fulcrum of said lever, so that the vibrating of the lever will serve to turn the capstan, and through the described connections direct the 65 steering wheels 13 in an obvious manner.

Any approved form of motor may be employed, an internal combustion motor being conventionally shown and indicated by the numeral 44. On the crank shaft 45 of the motor belt pulleys 46 are mounted, over 70 which belts 47 run to fast and loose pulleys 48 and 49 on the shaft 23 of the suction fans 22 (see Fig. 5). The belt and pulleys permit the fans to be thrown out of operation by shifting the belts by any well known 75 expedients, illustration of the same being omitted. It is to be understood that any equivalent driving means may be employed between the motor and the fans.

I provide also driving connections between 80 the motor 44 and the rear running wheels 14. As here shown, the driving means is as follows: On the shaft 45 adjacent to the belt pulleys 46, are sprocket pulleys 50, over which chains 51 run, said chains running 85 also over chain pulleys 52 on a counter shaft 53 in the rear of the motor. Desirably, in practice, belt pulleys 54 are arranged in connection with the chain pulleys 52, or otherwise rigidly secured on the countershaft 53, 90 in order that power may be transmitted from the said pulleys 54 for general purposes, whereby to utilize the power of the motor when desired for operating a pump, a cream separator, or any other domestic or 95 farm device. Gearing and belts transmit power from the countershaft 53 to the wheels 14 as follows: Sleeves 55 on the countershaft are provided with pinions 56, and said sleeves and collars 57 have mating clutch 100 elements, the collars being adapted to be shifted by a hand lever 58, for throwing the pinions 56 into and out of operation. The lever 58 shifts the collars 57 through the medium of shifting forks 58^a, 58^b, of 105 which the one fork 58^a is in fixed relation to the said lever. The opposite fork 58^b is rocked indirectly from the shifting lever 58^a through any suitable link and lever connections 59, 60. The pinions 56 mesh with gear 110 wheels 61, integral with which are sprocket pinions 62. Sprocket chains 63 run over the pulleys 62 and over sprocket wheels 64, rigid with the rear running wheels 14. A tension idler 65 on a bracket 66 may be employed 115 in connection with the chains 63. The gear wheels 61, as best seen in Fig. 3, are mounted upon a divided countershaft 67 adjacent ends of which have bearings in a box 67^a on the top 12 of the body, while the ends of the 120 shafts have bearings in suitable boxes 67^b. The mounting of the gear wheels 61 on the members of a divided shaft thus permits the relative turning of the pinions, making the provision of a differential unnecessary. 125 The rear running wheels 14 turn on stud axles 68, consisting of out-turned ends on the depending arms 69 of an inverted U-shaped yoke, of which 69^a indicates the top cross bar. Said cross bar is secured in any 130

suitable manner to the top 12 between brackets 70, said brackets having uprights 70^a in which the shaft 53 has bearings.

5 The front wheels 13 are shown as formed with spokes 13^a, and with a dished disk 13^b at the outside of the spokes to prevent the entrance and the clogging of stalks; similarly, the rear wheels in addition to the spokes 14^a have dished disks 14^b covering
10 the wheels at the outside.

The provision of the U-shaped body 10 which directly mounts the running wheels, motor, and driving elements, and the arrangement of the suction boxes on the sides
15 of the body as described, result in a simple and very strong construction, and promote efficiency in operation, convenience in forming and assembling the parts, and simplicity of construction and control.

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

1. In a cotton picker, a box-like body of inverted U-shape open at front and back and
25 presenting an elongated bottom opening contracted at the front portion, running wheels mounted on the depending sides of the body, a motor mounted on the top of said body, suction means, and driving connections be-
30 tween the motor and suction means, a portion of the sides of the body between the ends of the latter having double walls forming broad suction boxes at opposite sides extending substantially from the bottom to
35 the top of the sides, the suction boxes being

in communication with the suction means, the inner wall of each suction box having numerous inlet openings for the entrance of cotton at various points over the area of the said box, the outer wall of the suction
40 boxes having doors.

2. In a cotton picker, a body of inverted U-shape, an inverted U-shaped yoke on the body, said yoke comprising a top cross bar and depending side arms, the said cross bar
45 being pivotally mounted at its center on the body for vertical rocking movement, vertical rods ranging along said side arms, bearings on the yoke at each side for the said rods, running wheels on the lower ends of
50 the rods, and means for turning said rods.

3. In a cotton picker, a body of inverted U-shape having cotton-picking means, steering wheels at the front of the body, vertically disposed rockable rods mounting said
55 wheels, a U-shaped yoke pivotally mounted at its center on the body to rock in a vertical plane and having bearings for said rods, laterally projecting guide brackets on the body forming guides for the yoke and rods, ad-
60 ditional brackets on the top of the body between which the top bar of the yoke is positioned, and means for rocking the rods.

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

MATTHEW GILBRETH CUNNINGHAM.

Witnesses:

DEA W. CALDWELL,
JOSEPH WESLEY EDENS.