

No. 827,604.

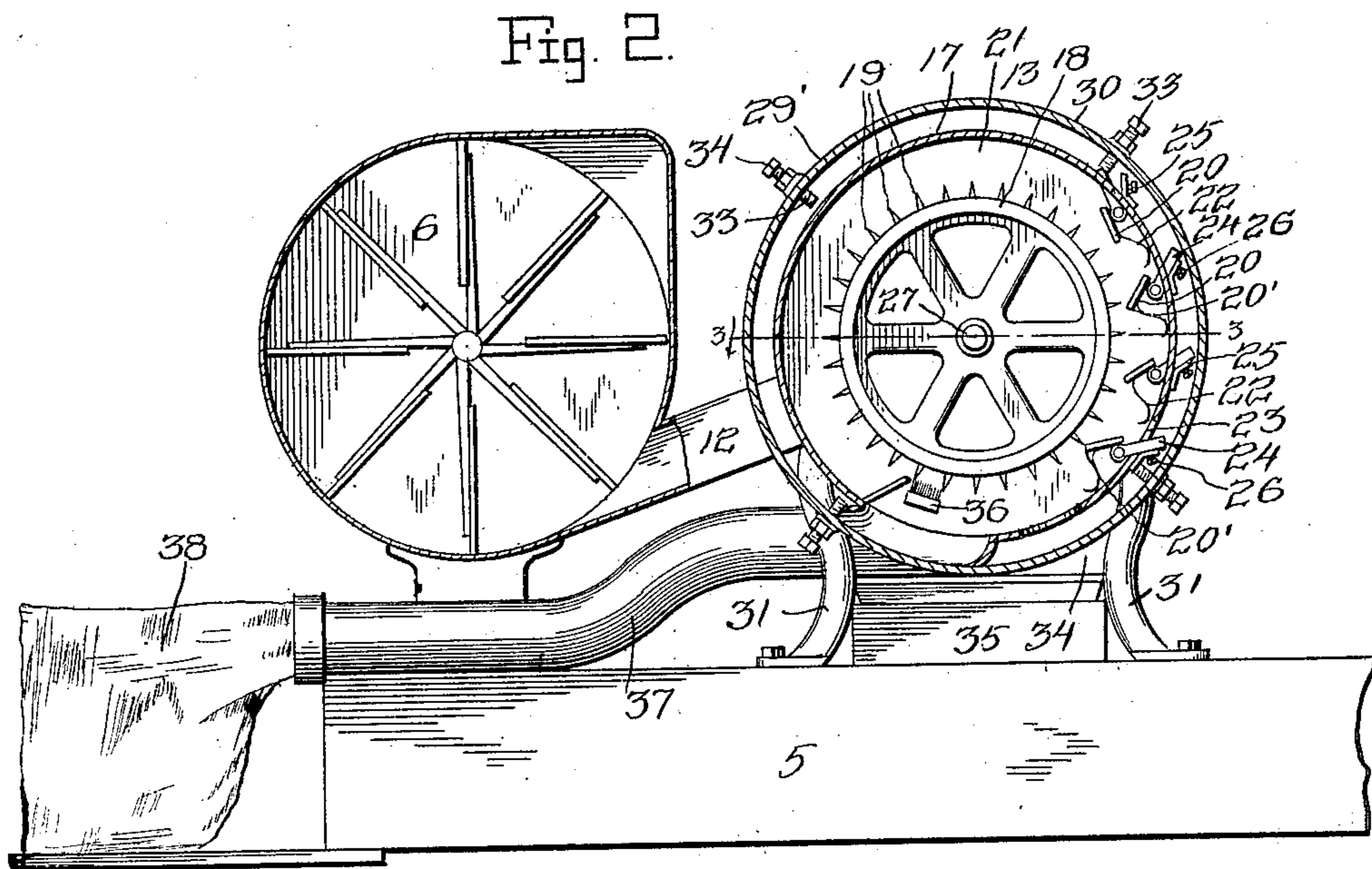
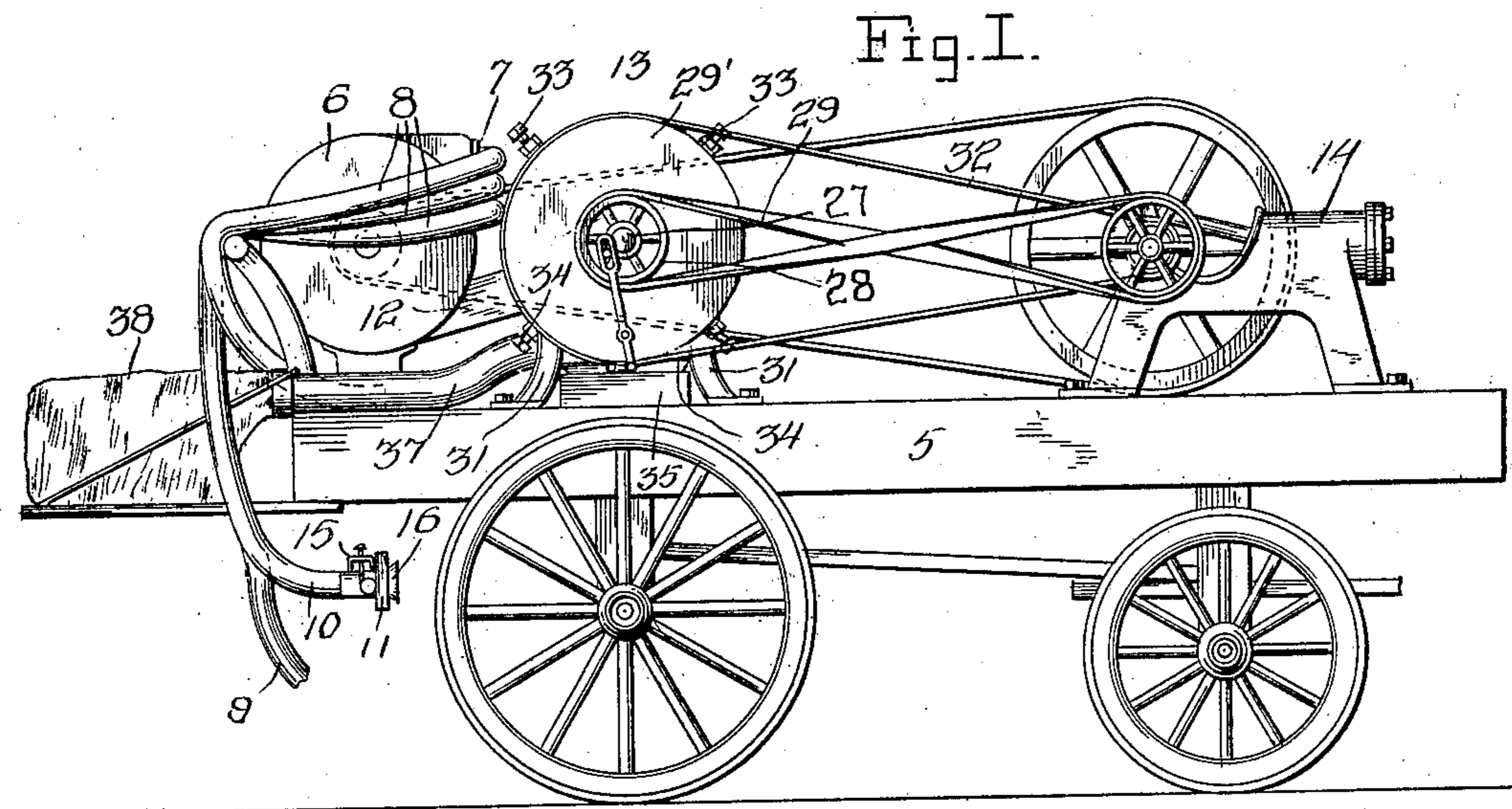
PATENTED JULY 31, 1906.

W. M. BERRY & W. G. BAUMGARDNER.

BOLL OPENING AND CLEANING MECHANISM FOR COTTON HARVESTERS.

APPLICATION FILED MAR. 21, 1905.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

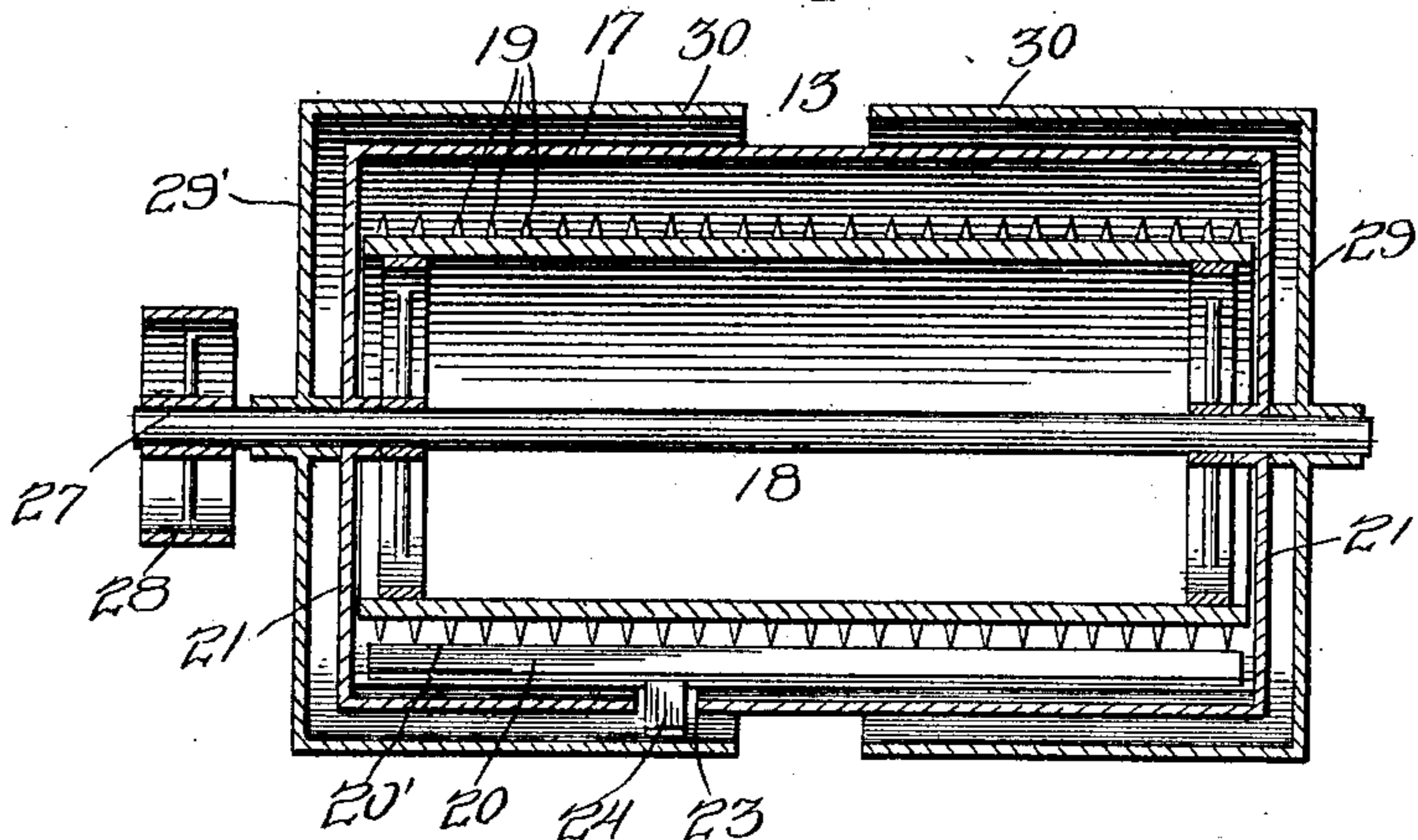
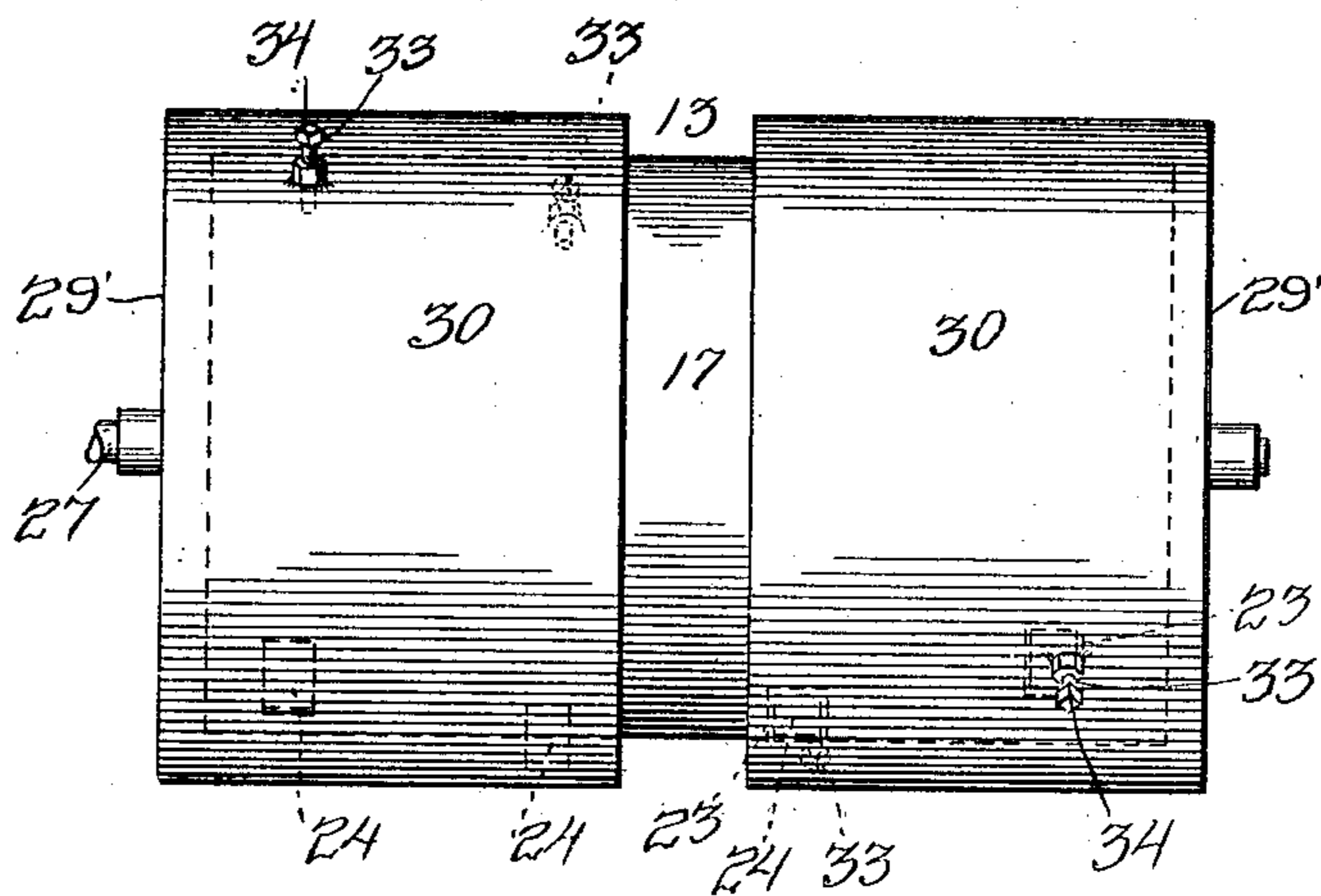


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM MORTON BERRY AND WILLIAM GRAY BAUMGARDNER, OF
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BOLL OPENING AND CLEANING MECHANISM FOR COTTON-HARVESTERS.

No. 827,604.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed March 21, 1905. Serial No. 251,302.

To all whom it may concern:

Be it known that we, WILLIAM MORTON BERRY and WILLIAM GRAY BAUMGARDNER, citizens of the United States, residing at Highland Park, in the county of Hamilton, State of Tennessee, have invented certain new and useful Improvements in Boll Opening and Cleaning Mechanism for Cotton-Harvesters; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machinery for use in cotton-culture, and has for its object to provide a machine by means of which the cotton-bolls may be gathered from the stalks and which will also include means for removing the husks and other refuse from the cotton.

Other objects and advantages will be apparent from the following description, and it will be understood that modifications of the specific construction shown may be made and any suitable materials may be used without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side elevation of the complete invention. Fig. 2 is a view showing one end of the machine and illustrating the fan and threshing-cylinder, with portions of the casing thereof removed to illustrate the interior mechanism. Fig. 3 is a horizontal section of the threshing-cylinder, taken on line 3-3 of Fig. 2. Fig. 4 is a top plan view of the threshing-cylinder, the trip-screws and triggers of the husk-receiving plate being illustrated in dotted lines.

Referring now to the drawings, the present invention comprises a wheeled frame 5, upon which the portions of the present invention are mounted. Upon the rearward portion of this frame there is disposed a rotary fan 6, which is disposed longitudinally of the frame and which has a vertically-arranged series of T's 7 engaged in its forward edge portion, the arms of these T's extending horizontally, and connected with the arms of the T's there are a plurality of flexible pipes 8, which are bifurcated adjacent to their free ends to form branching pipe-sections 9 and 10, each of

these sections having a hand operating picking device 11 at its outer extremity.

The fan 6 is arranged to exhaust the air from the tubes 8, thus causing currents of air to pass through the tubes into the casing of the fan, and an exhaust-pipe 12 communicates with the casing and is arranged to discharge into a threshing-cylinder mounted upon the frame 5 forwardly of the fan. A gasoline-engine 14 or other source of power is mounted upon the frame 5 at the forward end thereof and is connected with the fan 6 for operation of the latter.

In use the pickers of each pipe 8 are operated by a single person who holds the free ends of the sections 9 and 10 by means of handles 15, provided for the purpose, one of these pickers being held in each hand with the pipes 8, to which they are connected, extending rearwardly of the operator. The pickers include forwardly-extending funnel-shaped mouthpieces 16, in which the cotton-bolls may be introduced, and the pickers include mechanism for removing the bolls from the stalks. The mouthpieces 16 communicate with the interior of the pipe-sections 9 and 10, and the suction within these sections conveys the bolls through the tubes into the casing of the fan 6, from which they are discharged through the pipe 12 into the threshing-cylinder 13.

The cylinder 13 includes a casing 17, in which there is journaled a horizontal roller 18, disposed concentrically of the casing 17 and in spaced relation to the inner surface thereof, and this roller 18 carries a plurality of outwardly-extending pins 19 upon its surface.

At the opposite side of the casing 17 from that at which the pipe 12 communicates therewith there are a plurality of husk-receiving plates 20, which extend longitudinally of the casing and which lie with their inner edges 20' in position to be just cleared by the pins 19 when the cylinder 18 is rotated, and these plates 20 are pivoted adjacent to their outer edges between the ends of the casing, this pivotal mounting of the plates permitting of movement of the inner edge portions thereof downwardly and away from the cylinder 18. As shown, the plates 20 slant upwardly and outwardly from the cylinder, and they are held in this position

yieldably by means of strap-springs 22, which are secured at one end to the plates and which bear at their opposite ends against the inner surface of the cylinder 17. Formed in the casing 17 adjacent to each of the plates 20 there is an opening 23, and these openings occupy planes which are spaced from each other longitudinally of the casing, so that a circumferential line drawn around the casing and intersecting one of these openings will intersect none of the others. Secured to each of the plates 20 and extending outwardly through the adjacent opening 23 there is a trigger 24, and these triggers are arranged for upward movement of their outer ends to move the plates 20 away from the roller 18 and against the action of the springs 22, as illustrated. Secured to the outer surface of the cylinder 17 below each of the openings 23 there is a bracket 25, and these brackets have screws 26 engaged therein and arranged to receive the triggers 24 thereagainst, the screws being adjustable to vary the movement of the triggers.

A shaft 27 is journaled longitudinally of the casing, and it is upon this shaft that the roller 18 is mounted, the shaft having a pulley-wheel 28 thereupon exteriorly of the casing, which receives a belt 29, driven by the source of power 14. The shaft 27 extends beyond the ends of the casing and has mounted thereupon at each end of the casing a wheel 29', these wheels having inwardly-extending flanges 30, which are spaced from each other at their inner edges, the supporting-legs 31 of the casing extending downwardly between these flanges. The flanges have belts 32 engaged therewith, which are driven by the source of power 14 and which are arranged to rotate these flanges in a direction opposite to that of the roller 18.

Engaged in the flanges 30 there are a plurality of radially-extending screws 33, which project beyond the inner and outer faces of the flanges and which have heads 34 at their outer ends, by which they may be operated to project different distances beyond the inner surfaces of the flanges. These screws are so disposed that one of the triggers 24 lies in the path of movement of each screw, so that as the flanges are rotated the plates 20 are tripped to discharge therefrom any matter resting thereupon. The screws are arranged to trip the plates successively, the succession running from the uppermost plate to the lowermost plate, so that any matter resting upon the uppermost plate is deposited upon the one next below, and so on until the matter passes from the lowermost plate, when it falls into a discharge-chute 34', from which it passes to a suitable receptacle 35.

When the cotton is discharged into the cylinder 17 from the fan 6, it strikes against the pins 19 of the roller 18 and is carried around by the roller until it strikes the plates 20.

Its engagement with the plates causes the separation of the husks from the cotton, the former remaining upon the plates, while the latter, adhering to the pins, is carried on by the roller. The husks are discharged from the plates in the manner described above, and to remove the cotton from the roller a brush 36 is disposed within the casing longitudinally thereof and beyond the plates 20 in the direction of rotation of the roller and lying in close relation to the pins of the roller, so that cotton clinging to the pins will be engaged by the brush and removed therefrom. A cotton-discharge chute 37 is located at the bottom of the casing and is arranged to receive cotton from the brush 36, the chute 37 being arranged for engagement of a bag 38 with its outer end to receive the cotton from the chute. As shown in the drawings, the roller 18 is arranged to rotate in such a way that cotton adhering to the pins thereof comes first into engagement with the uppermost plate 20 and then into engagement with the remaining plates successively.

What is claimed is—

1. A mechanism of the class described comprising a casing, a spiked roller journaled within the casing means to deliver material to the spiked-roller pipe, plates disposed within the casing and lying normally in position for engagement by matter carried by the spikes said plates being arranged for the reception of portions of said matter thereupon, and being arranged for movement out of their normal positions to discharge such matter therefrom, means for holding the plates yieldably in their normal positions, means for moving the plates successively out of their normal positions and means located beyond the plates for removing matter from the spikes of the roller.

2. A mechanism of the class described comprising a casing, a spiked roller journaled in the casing and arranged to receive matter upon its spikes, plates located within the casing and lying normally in position for engagement successively by matter carried by the spikes of the roller and to receive portions of such matter thereupon, means for holding the plates yieldably in their normal positions, members carried by the plates and extending outwardly of the casing and members mounted exteriorly of the casing for rotary movement around the casing and arranged for engagement of the first-named members to move the plates successively out of their normal positions.

3. A cotton-cleaner comprising a casing, a spiked roller journaled within the casing and arranged for matter to be threshed upon its spikes, plates within the casing and arranged to receive thereupon portions of matter engaged with the spikes, said plates being arranged for tipping movement to discharge matter therefrom, a receptacle disposed to

receive matter discharged from the plates, means for tipping the plates successively, and means located beyond the plates for disengaging matter from the spikes of the roller.

5 4. A cotton-cleaner comprising a revoluble roller, spikes carried by the roller and arranged for the reception of matter to be threshed thereupon, plates arranged to receive thereupon portions of matter carried
10 by the spikes, said plates being arranged for tipping movement to discharge such matter therefrom, and means for tipping the plates successively.

15 5. A cotton-cleaner comprising a revoluble roller, spikes carried by the roller and arranged for the reception of matter to be threshed thereupon, plates located adjacent to the roller for engagement by matter carried by the spikes and arranged for the reception of portions of such matter thereupon,
20 said plates being disposed one above another, and being arranged for movement to discharge matter therefrom, each of said plates being arranged to discharge such matter upon
25 the plate next below, means for holding the plates yieldably in operative position, and means for moving the plates into their discharging position.

30 6. A cotton-cleaner comprising a cylindrical casing having an ingress-opening therein for the passage of matter to be threshed into the casing, a roller journaled longitudi-

nally within the casing, spikes carried by the roller and arranged for the reception of matter to be threshed from the ingress-opening, 35 plates located at opposite sides of the roller from the ingress-opening and disposed one above another, said plates being arranged for engagement by matter carried by the spikes and for the reception of portions of such matter thereupon, means located beyond the
40 plates for removing matter from the spikes, said plates being arranged for tipping movement to discharge matter therefrom, each plate being arranged for the reception of matter next above, members carried by the
45 plates and extending outwardly of the casing, other plates mounted exteriorly of the casing for movement into engagement with the outwardly-extending members to move
50 the plates into discharging position, means for holding the plates yieldably in their receiving positions, and a driving-shaft mounted in the casing, means to tip the plates, and means to drive the roller and said tipping
55 means.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM MORTON BERRY.

WILLIAM GRAY BAUMGARDNER.

Witnesses:

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R. E. DUFFY.