No. 803,572. PATENTED NOV. 7, 1905.

W. B. EDRINGTON.

COTTON PICKING MACHINE.

APPLICATION FILED APR. 11, 1905.

3 SHEETS—SHEET 1.

Fig. 1.

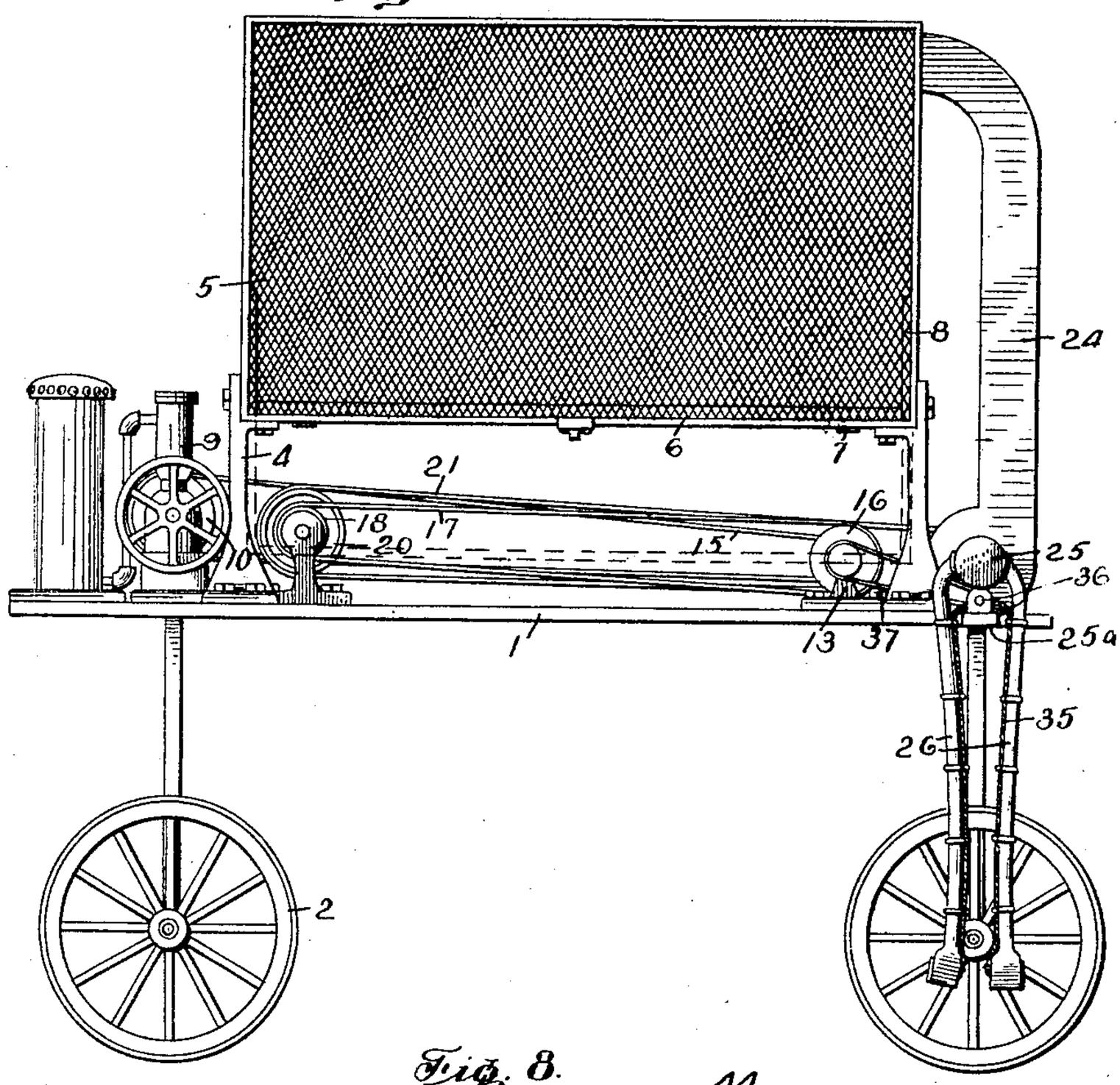
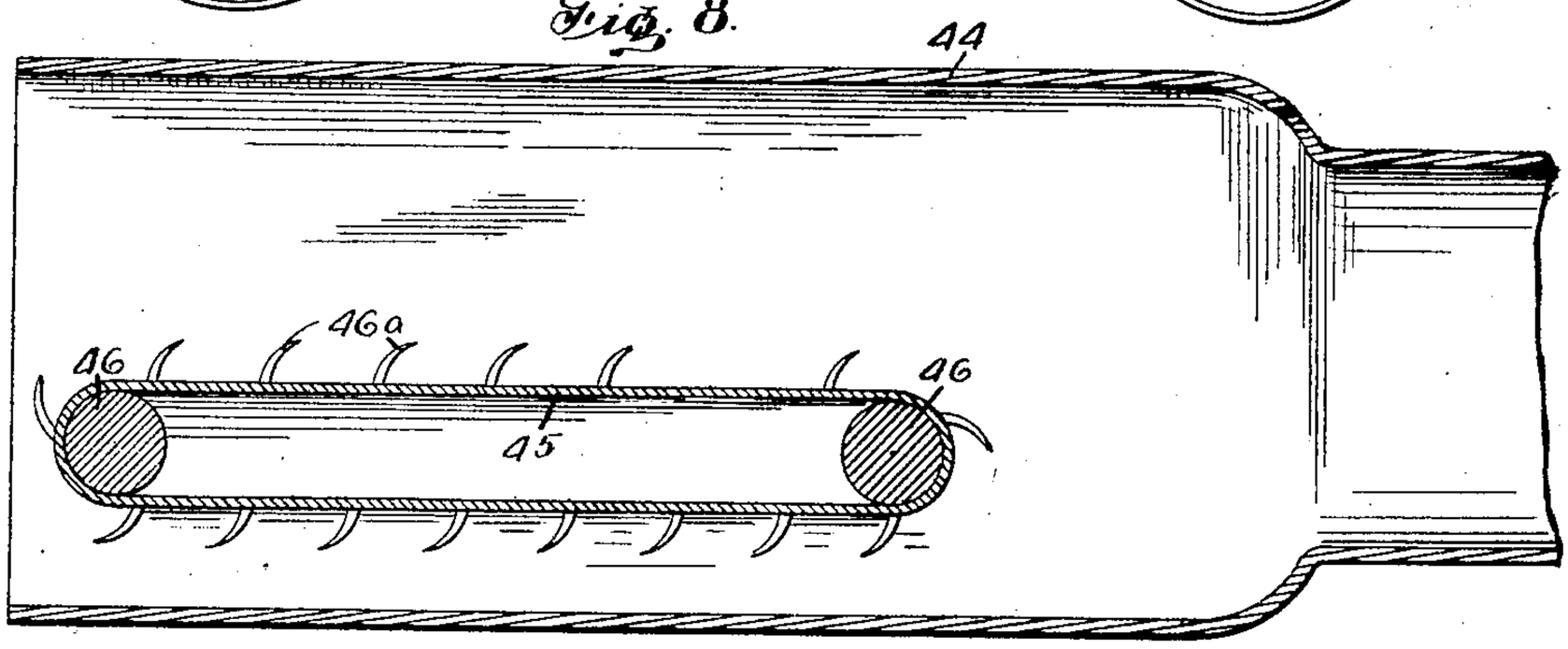


Fig. 8.



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3 SHEETS—SHEET 2.

Fig. 2.

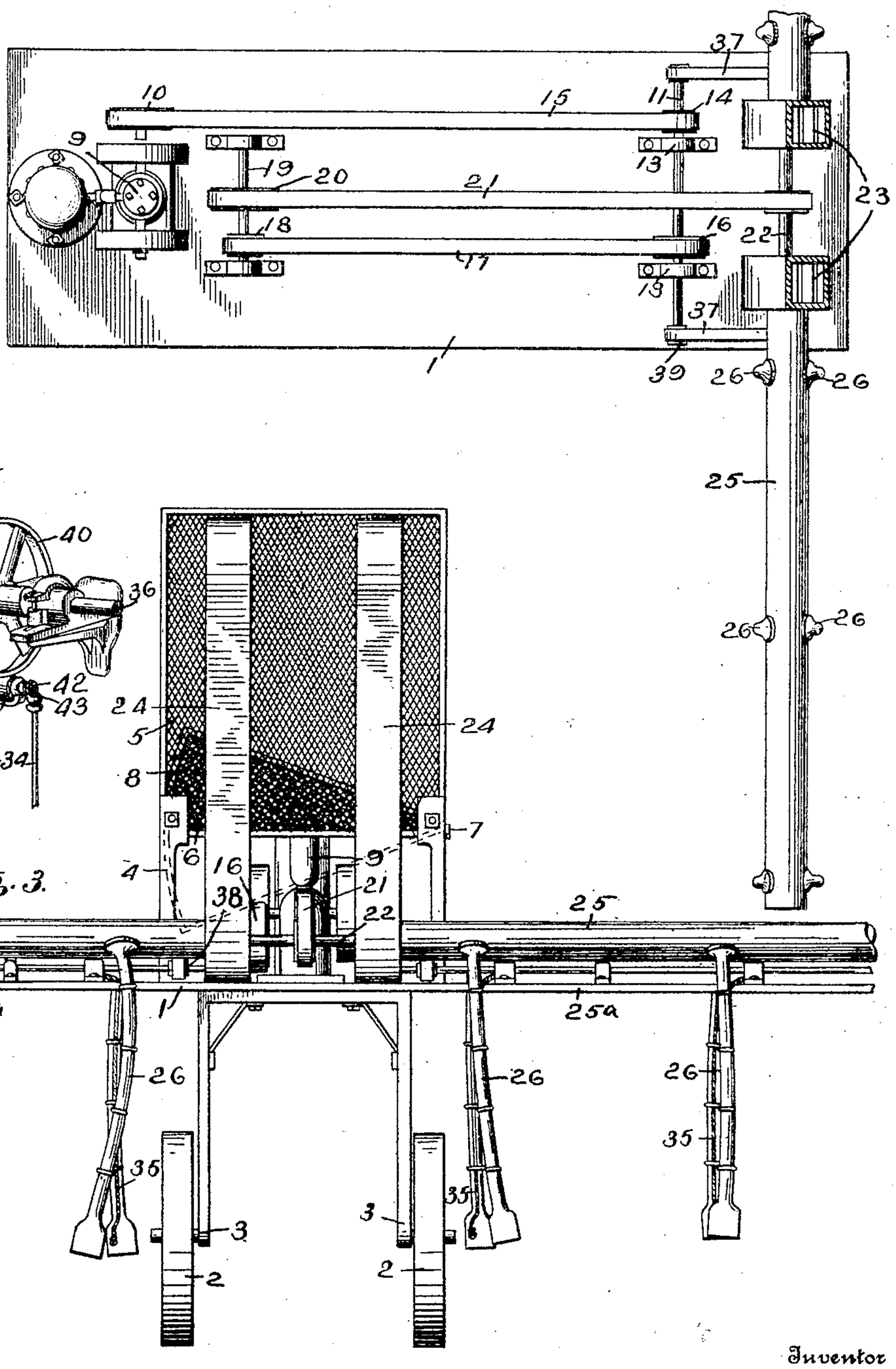

Fig. 3.

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3 SHEETS—SHEET 3.

Fig. 4.

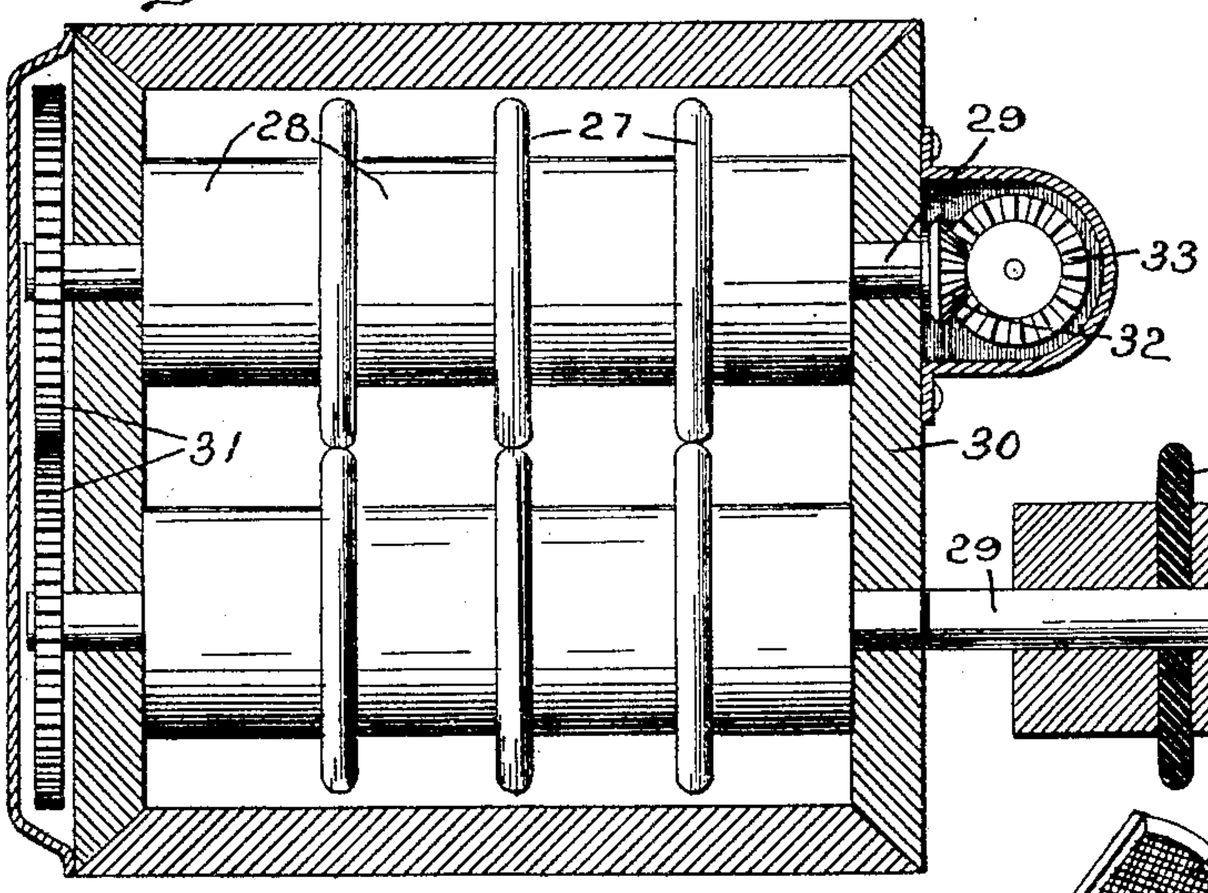


Fig. 6

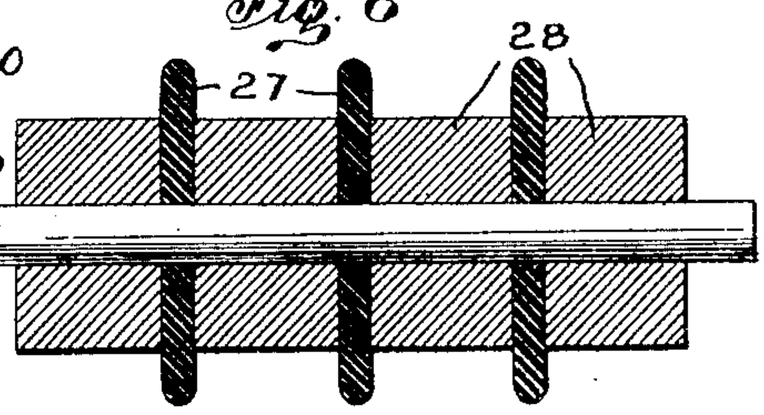


Fig. 9.

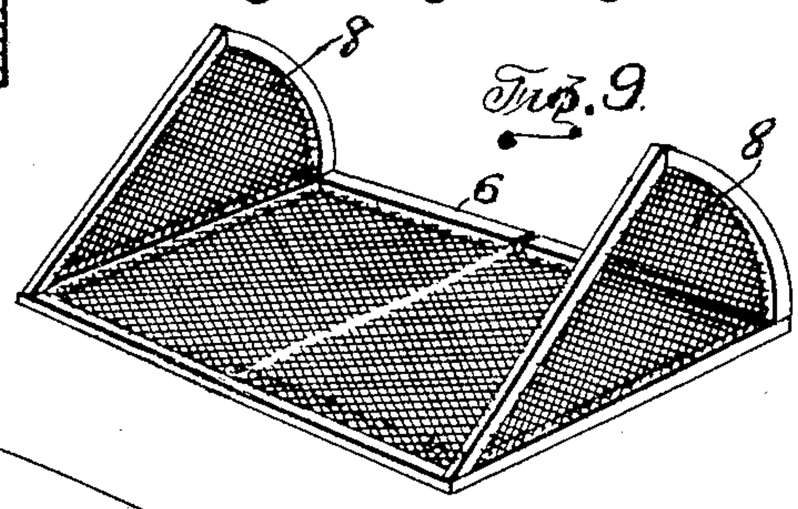
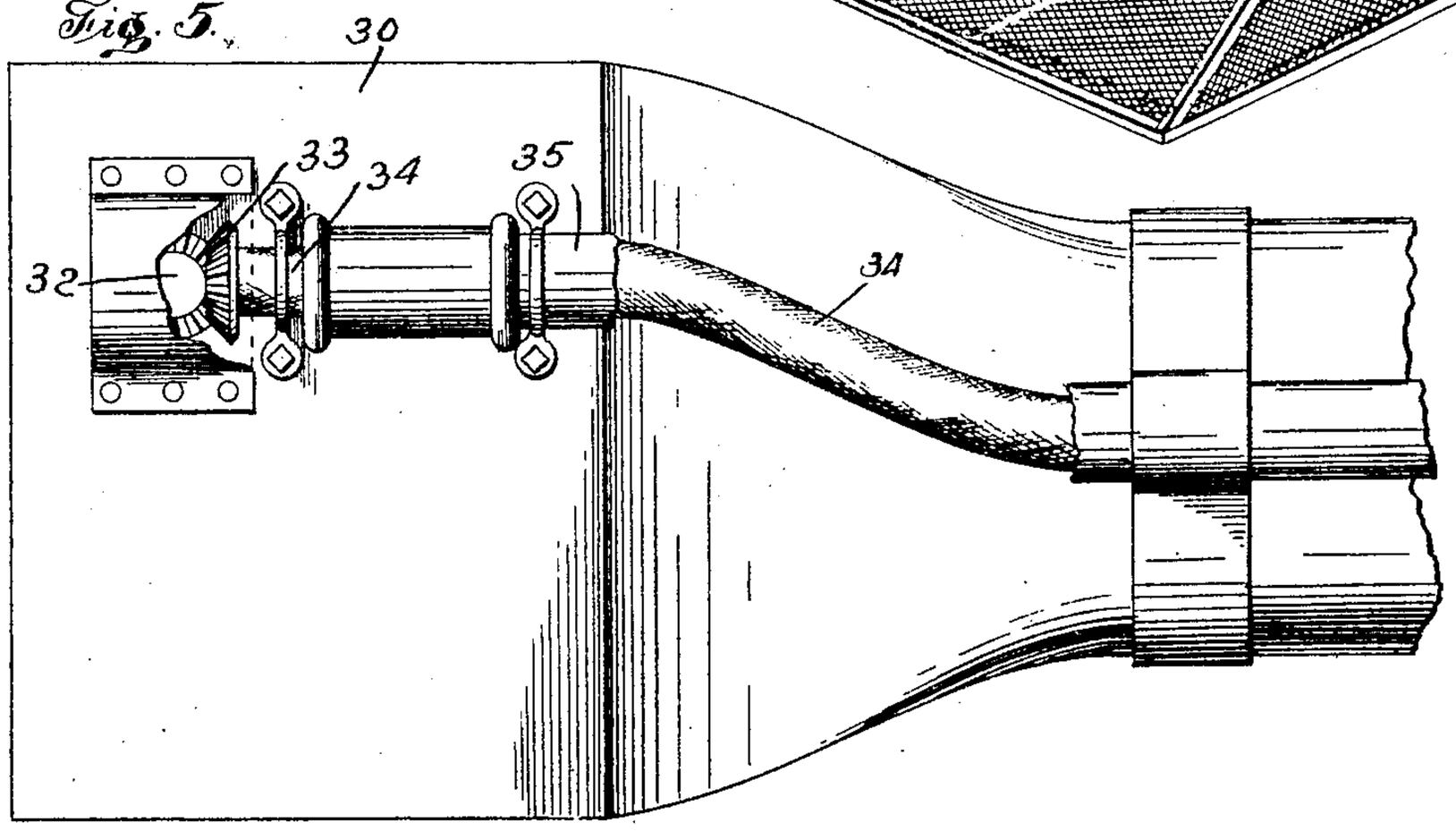


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM B. EDRINGTON, OF MEMPHIS, TENNESSEE.

COTTON-PICKING MACHINE.

No. 803,572. Specification of Letters Patent. Patented Nov. 7, 1905.

Application filed April 11, 1905. Serial No. 255,021.

To all whom it may concern:

Be it known that I, WILLIAM B. EDRINGTON, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Cotton-Picking Machines, of which the following is a specification.

This invention relates to cotton-picking machines; and it has for its object to provide a machine of this type by which a maximum amount of cotton may be picked in a minimum period of time.

Another object is to provide a machine which will not injure the fiber of the cotton.

Other and further objects will appear in the following description and will be more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of my invention. Fig. 2 is a top view with the receptacle removed. Fig. 3 is an end view. Fig. 4 is a sectional view of the picker. Fig. 5 is a side view of the picker. Fig. 6 is a detail view of one of the picker-disks. Fig. 7 is a detail view of the connection between the lateral shafts and the flexible shafts. Fig. 8 is a sectional view of another embodiment of my picker. Fig. 9 is a perspective view of the hinged bottom of the receptacle.

Referring more particularly to the drawings, 1 indicates a vehicle-platform supported by wheels 2 on cranked axles 3, which are adapted to straddle a row of cotton, the wheels traveling between the rows. The vehicle is preferably drawn by horses for the reason that they provide the best means for securing a slow intermittent advance.

Supported by standards 4 in an elevated position upon the platform is a perforated cotton-receptacle 5, having the bottom 6 hinged at 7 on one side, so that the receptacle may be emptied, the bottom when lowered forming a chute to direct the material into a receptacle or vehicle located on the side of the cotton-picking machine. Guards 8 at each end of the bottom serve to prevent the cotton falling out from the ends when the bottom is lowered.

Supported upon the front of the platform 1 is a gas or other motor 9, which has a band-wheel 10, connected to a shaft 11, which is supported on bearings 13 near the rear of the platform, the shaft 11 being provided with a small pulley 14 and a belt 15, forming the connection between the band-wheel 10 and the pulley 14. The shaft 11 has mounted thereon a second pulley 16, which is larger than the pulley 14 and is connected by a belt 17 with a smaller pulley 18 on a counter-shaft 19 near the front of the platform. This counter-shaft 19 has a large pulley 20 mounted thereon, which is connected by a belt 21 with a fan-shaft 22, located near the rear of the platform. The fan-shaft has mounted thereon a pair of fans 23, each of which is connected by a conduit 24 with the receptacle 5 and has connected to it a horizontal conduit 25, extending laterally from the platform, so as to extend across any number of rows of cotton, the latter conduits being supported by frames 25[a].

Extending from the lateral conduits in pairs are flexible conduits 26, the pairs being spaced apart approximately the distance between two rows of cotton, but disposed relative to the wheels, so that they will be located between two rows. The flexible conduits are open at their lower ends and have mounted thereon the cotton-picking device.

In one embodiment of my invention the cotton-picking device comprises a pair of rollers, each formed of a plurality of yielding disks 27, of rubber or the like, spaced apart by small washers 28 on a shaft 29, the disks and washers being clamped together by any suitable means. The shafts 29 of each roller are journaled in a casing 30, secured to the flexible conduit, so that the rubber disks on opposite rollers rotate in contact with one another. Between the disks is open, so that the suction within the flexible tube may act upon the cotton-boll. The rollers are geared together by pinions 31, so as to rotate or move in the direction of the suction, one of the shafts 29 being provided with a bevel-gear 32 on the outside of the casing 30. With this bevel-gear 32 meshes a bevel-gear 33 on the end of a flexible shaft 34, inclosed within a flexible casing 35 on the outside of a flexible conduit 26. The flexible shafts 34 are rotated from a pair of shafts 36, which extend laterally from the vehicle. The shafts 36 are supported on the frames 25[a], beneath the lateral conduits 25, and receive rotation from shaft 11 by means of belts 37, the pulleys 38 on the shafts 36 being smaller than the pulleys 39 on shaft 11 to increase the speed of shafts 36.

The connection between shafts 36 and the flexible shafts 34 is preferably formed by a number of large friction-wheels 40, with each of which engage two small friction-wheels 41,

supported on frames 25ª. These small friction-wheels 41 are each provided with a bevel-gear 42, which meshes with a bevel-gear 43 on the end of a flexible shaft. The bevel-gears 32 and 33 and connection between the flexible shafts and the lateral shafts are inclosed by casings.

In another embodiment of my invention the picking device comprises a casing 44, secured to the flexible shaft and having mounted therein on one side an endless belt 45, which travels in the direction of the suction on a pair of rollers 46 and has thereon teeth 46ª, curved so that when traveling in the direction of the suction they have their points disposed in the same direction. The forward portion of the belt is disposed so that it may pick the cotton from the boll. One of the rollers 46 has its shaft connected on the outside of the casing 44 with the flexible shaft 34 by gears 32 and 33, as in the other embodiment.

The operation of my invention is as follows: The vehicle is caused to straddle a row of cotton, and the lateral conduits 25 then extend across a number of rows, depending upon the length of the conduits. Between each row covered by the conduits two farm-hands walk, clearing off opposite sides of adjacent rows. The vehicle is advanced slowly, preferably by horses. Motion is transmitted from the motor 9 to fan-shaft 22 at an increased speed due to the relative sizes of the various pulleys in this connection, and the fans 23 being rotated cause a blast in conduits 24 and a suction in all of the flexible conduits 26 and the lateral conduits 25. At the same time increased speed is transmitted from the motor 9 to the lateral shafts 36, which through their connection with the flexible shafts 34 transmit to said flexible shafts, and consequently to the pickers, a still further increased speed.

In that embodiment of the picker shown in detail, Figs. 4 to 6, the yielding disks pinch the cotton from the boll, and owing to the speed at which the disks are rotated the cotton is thrown with great force into the flexible conduit. At the same time the suction in the flexible tube will cause the boll to be drawn to the mouth of the tube, where the cotton is picked by the yielding disks and carried through the various conduits to the receptacle 5.

In the embodiment shown in Fig. 8 the cotton is drawn to the end of the flexible tube by the suction, is caught by the teeth nearest the mouth of the flexible conduit and carried into the conduit, being then withdrawn by the suction from the teeth, which are so disposed to permit this to be easily accomplished.

After the receptacle 5 has been filled the machine is drawn to the place where its contents are to be deposited. The bottom 6 being lowered cotton within the receptacle falls out, the bottom acting as a chute.

I am aware that the construction herein described and shown may within the scope of the appended claims be changed in various ways without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim is—

1. In a cotton-picking machine, a flexible conduit, means for creating a suction in said conduit, a cotton-picker carried by the end of the flexible conduit and embodying a pair of rollers having parts turning inwardly in contact with one another and spaced apart between said parts, and a flexible shaft for transmitting motion to said cotton-picker.

2. In a cotton-picking machine, the combination with the conduit, of a pair of rollers directing the cotton into the conduit and having parts turning inwardly in contact with one another and spaced apart between said parts.

3. In a cotton-picking machine, the combination with the conduit, of a pair of rollers directing the cotton into the conduit and each having a plurality of yielding disks, each disk turning in contact with a disk on the other roller.

4. In a cotton-picking machine, the combination with a flexible conduit and a flexible shaft, of a pair of rollers driven by the flexible shaft and carried by the conduit, each roller having yielding parts extending completely around it and turning continuously in contact with like parts on the other.

5. In a cotton-picking machine, the combination with a flexible conduit and a flexible shaft, of a pair of rollers driven by the flexible shaft and carried by the conduit, each roller having yielding disks turning inwardly in contact with like yielding disks on the other, and washers or collars spacing the disks apart.

6. The combination with the vehicle, of an open-mesh receptacle supported in an elevated position thereon and having a discharge-opening at its bottom, a pair of lateral conduits extending from the vehicle near its rear end, lateral shafts also extending from the vehicle, flexible conduits arranged in pairs spaced from one another and communicating with the lateral conduits, flexible shafts arranged in pairs and connected with the lateral shafts, means for driving the lateral shafts, a fan for each lateral conduit causing a suction therein, and connections between each fan and the receptacle.

7. In a cotton-picker, a pair of rollers having parts extending completely around them and turning continuously in contact with one another and spaced apart between said parts and means for creating a suction on one side of said rollers.

8. In a cotton-picker, a pair of rollers having yielding portions extending completely around them and turning continuously in contact with one another and means for creating a suction on one side of said rollers.

9. In a cotton-picker, a pair of rollers having yielding portions extending completely around them and turning continuously in contact with one another and spaced apart between said yielding portions and means for creating a suction on one side of said rollers.

10. In a cotton-picker, a pair of rubber disks turning in contact with one another and means for creating a suction on one side of said disks.

11. In a cotton-picker, two sets of yielding disks turning in contact with one another, the disks of each set being spaced apart.

12. In a cotton-picker, a casing, a pair of shafts journaled in said casing and geared together, yielding disks mounted on said shafts and turning in contact with one another, and washers spacing apart the disks on the same shaft.

The foregoing specification signed at Memphis, Tennessee, this 7th day of April, 1905.

WILLIAM B. EDRINGTON.

In presence of—
W. B. GALBREATH,
W. E. HOLMES.