

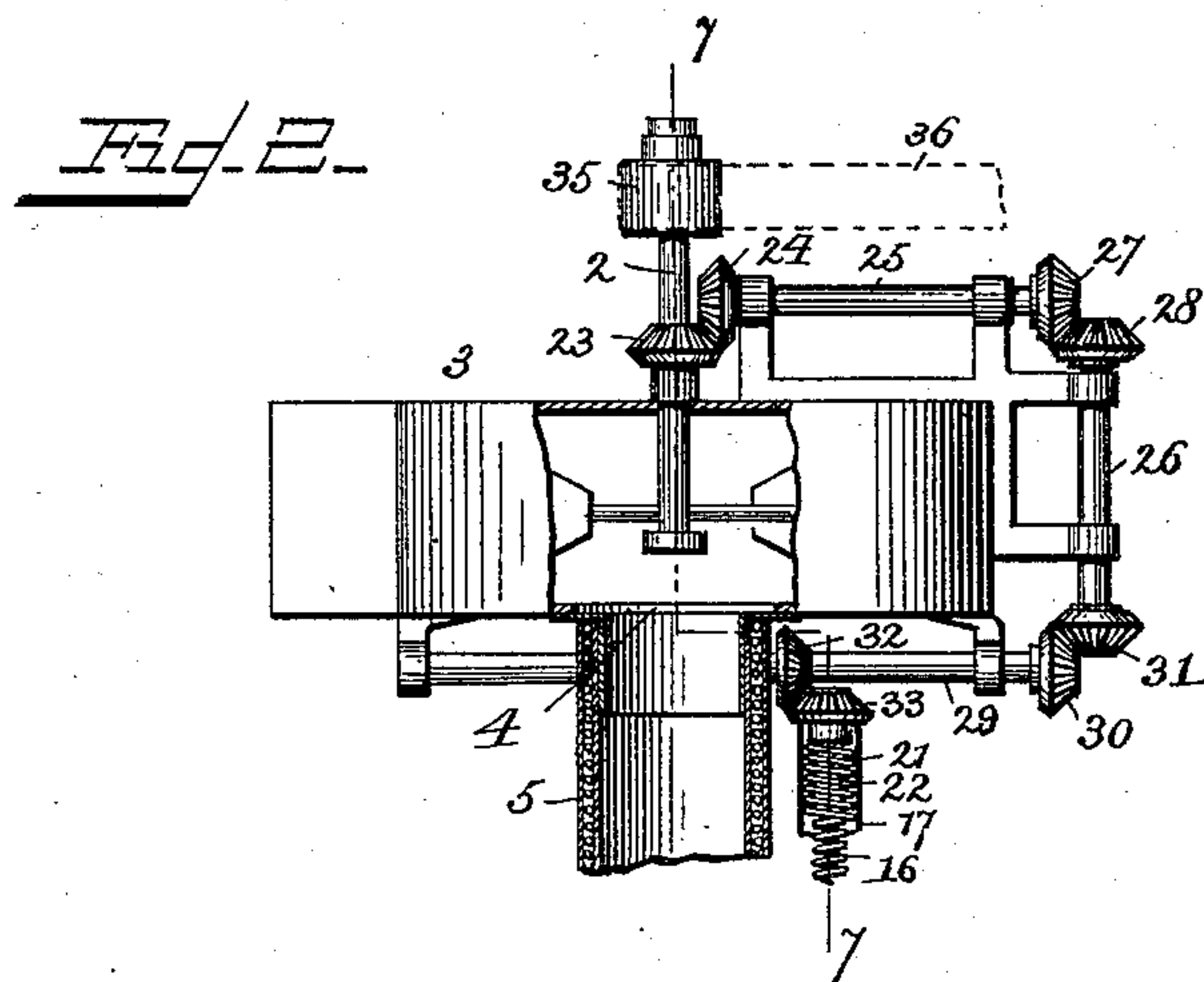
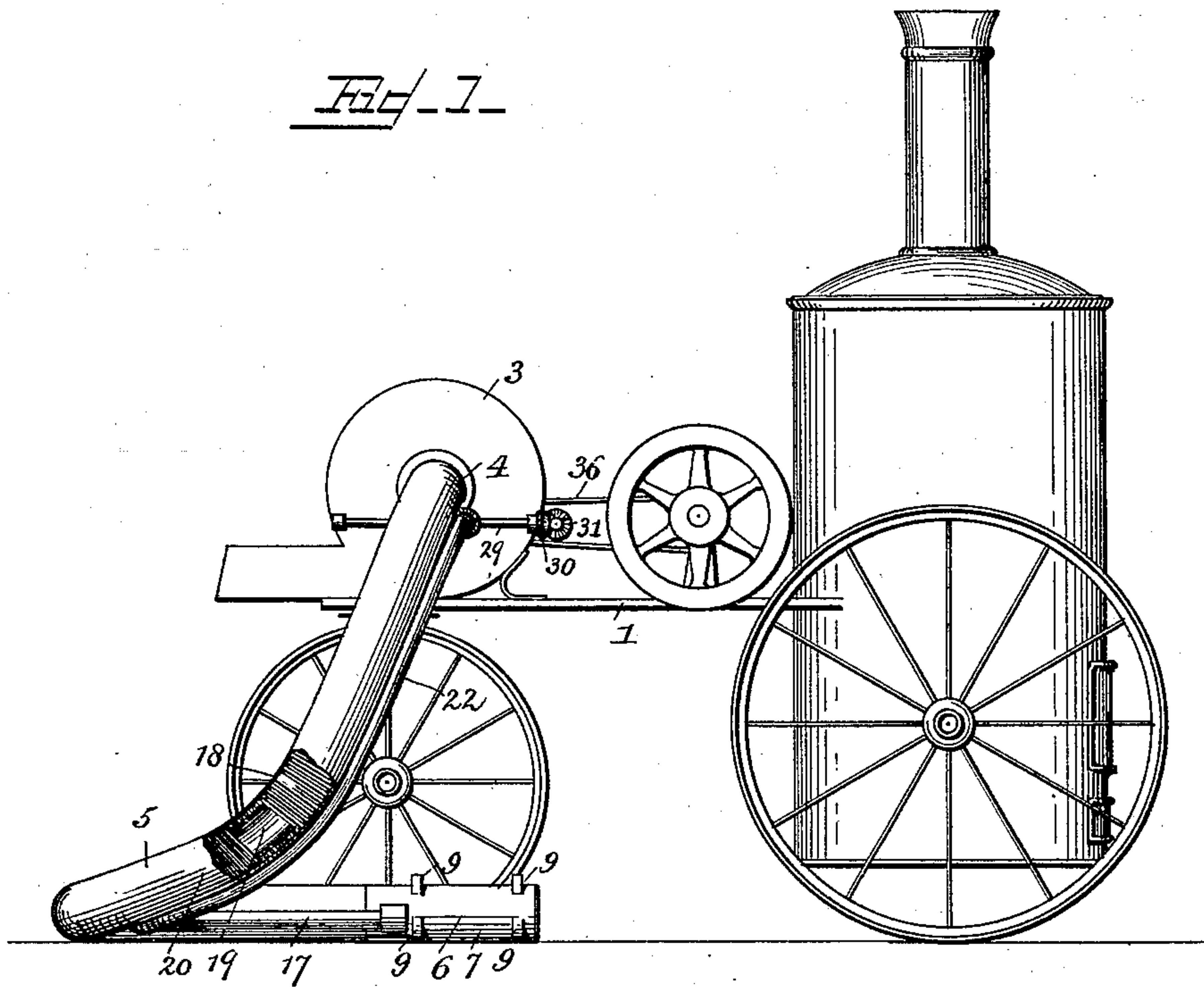
(No Model.)

3 Sheets—Sheet 1.

C. C. NEIGHBOURS.  
COTTON PICKER.

No. 572,611.

Patented Dec. 8, 1896.



Witnesses

Chas. H. Orange  
J. E. Hays

By his Attorneys,

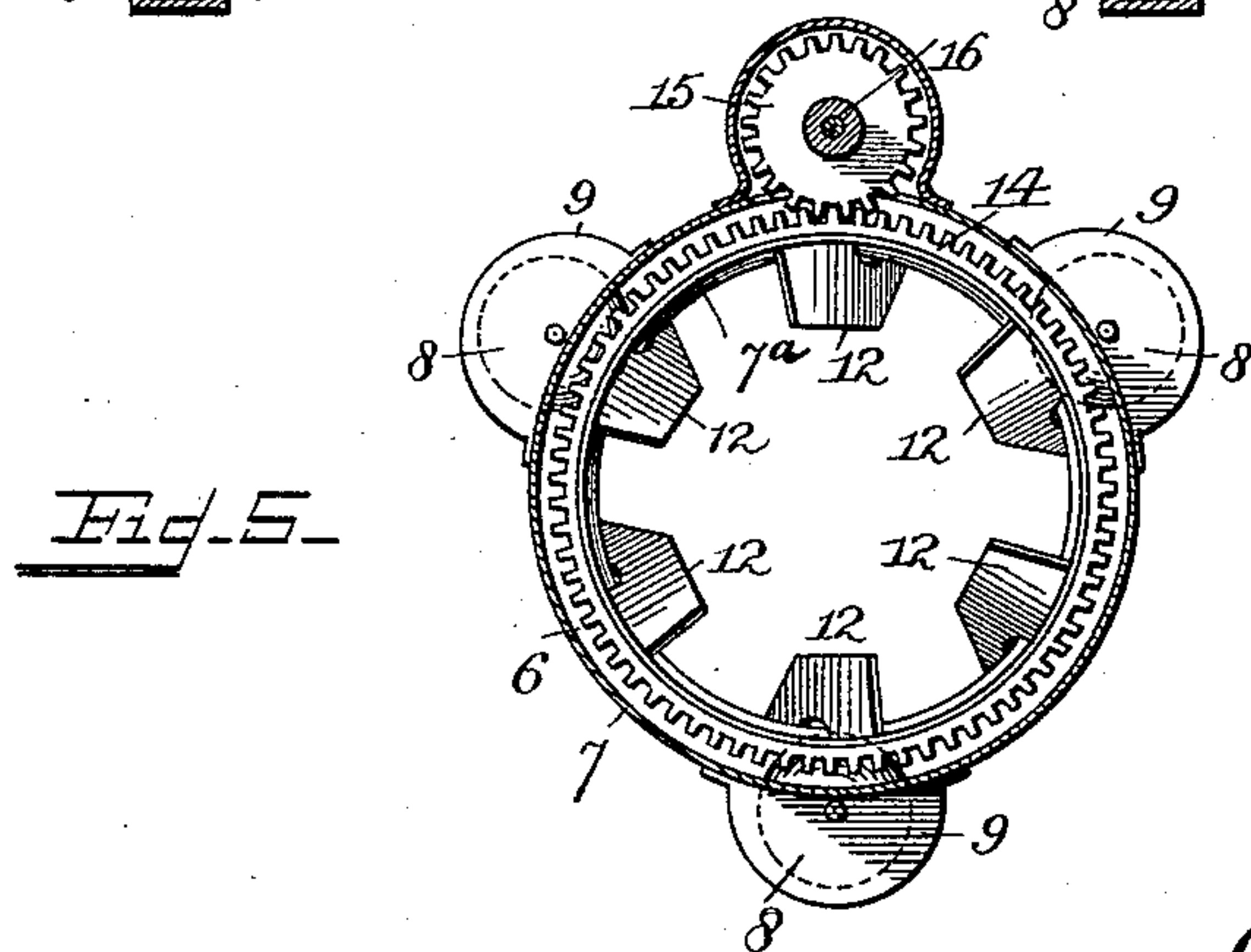
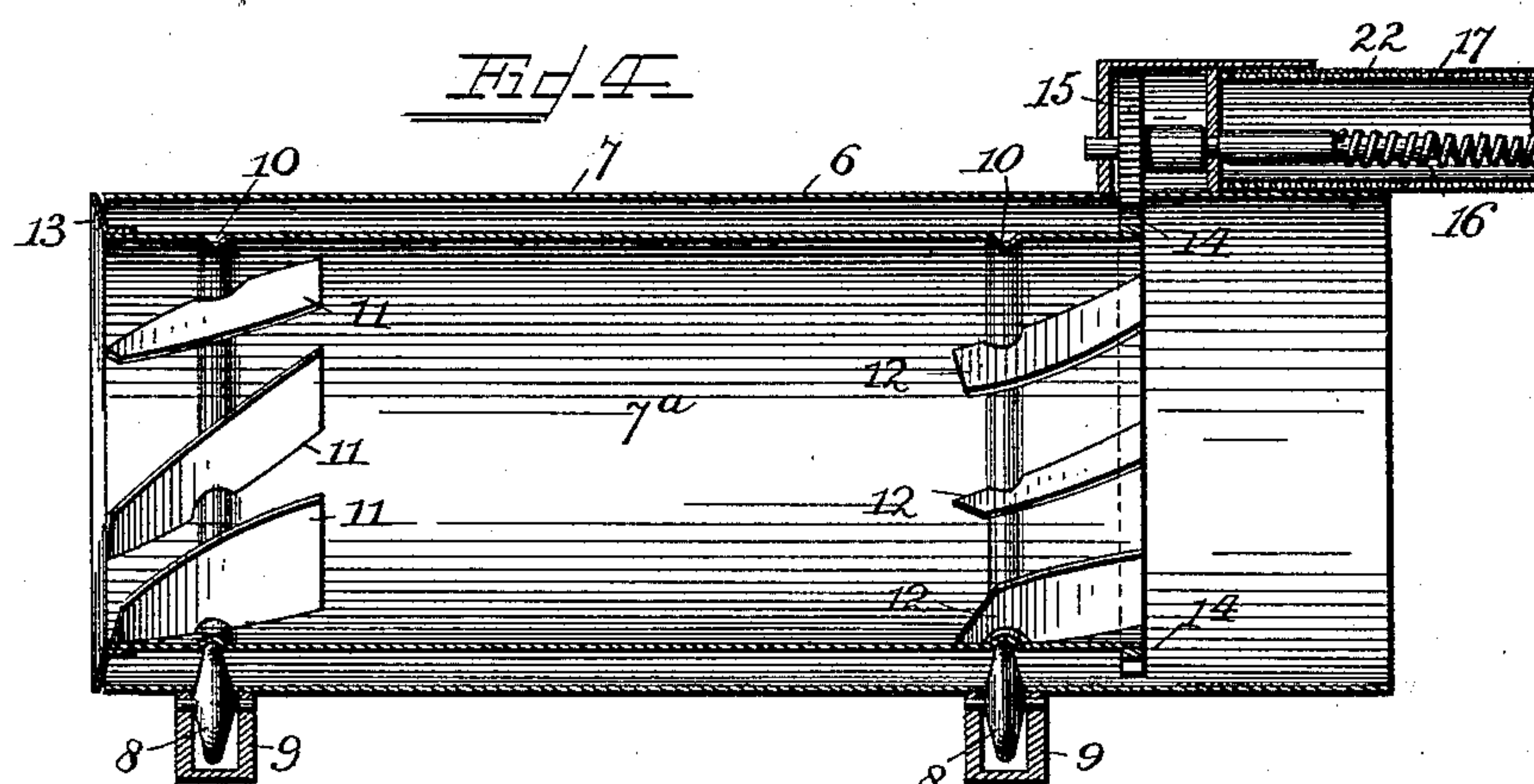
Ca. Snow & Co.

Inventor  
Charles C. Neighbors.

3 Sheets—Sheet 2.

No. 572,611.

Patented Dec. 8, 1896.



Witnesses

Chas. H. Curand  
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By *his* Attorneys,

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(No Model.)

3 Sheets—Sheet 3.

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Fig. 6.

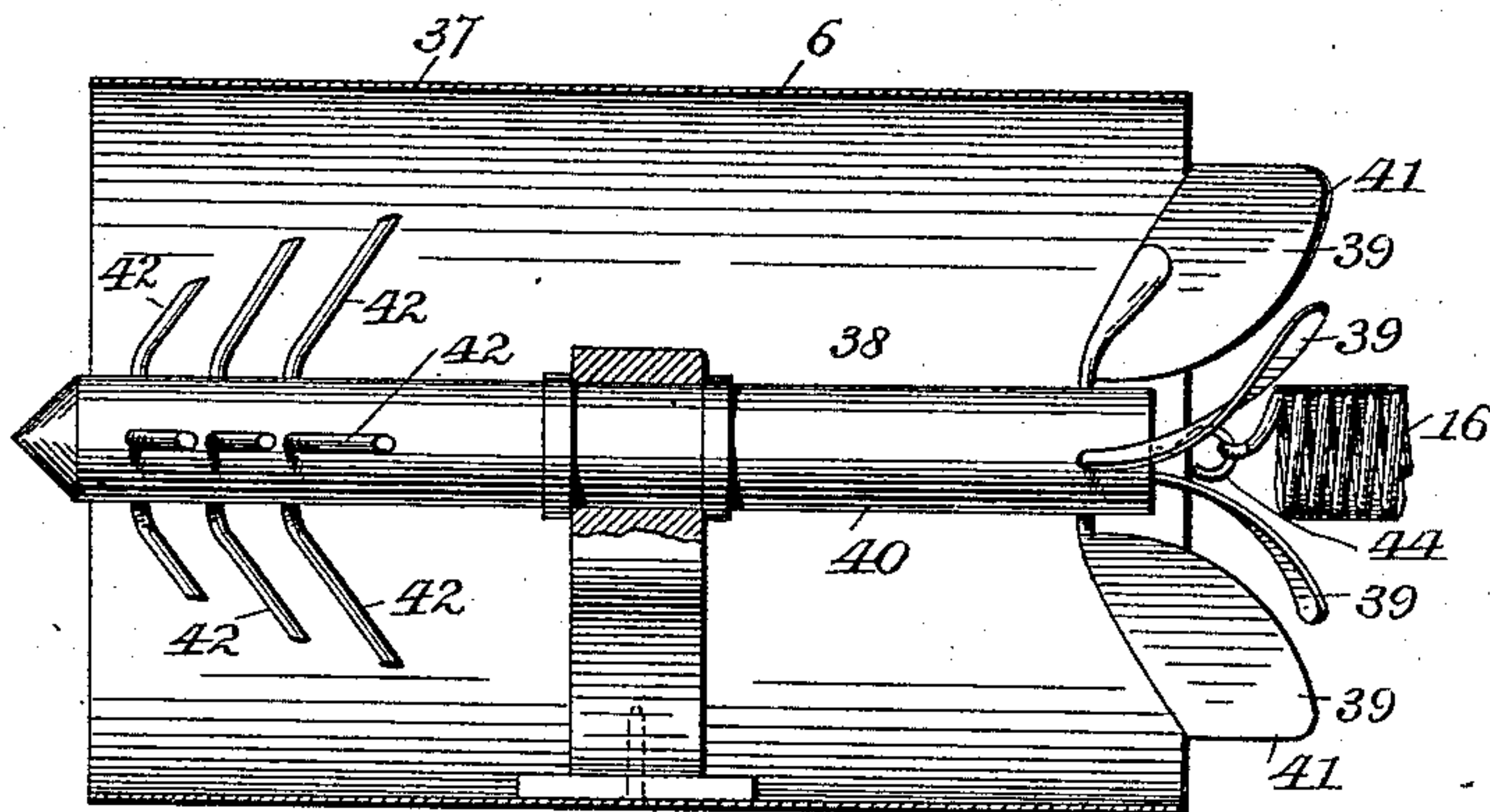
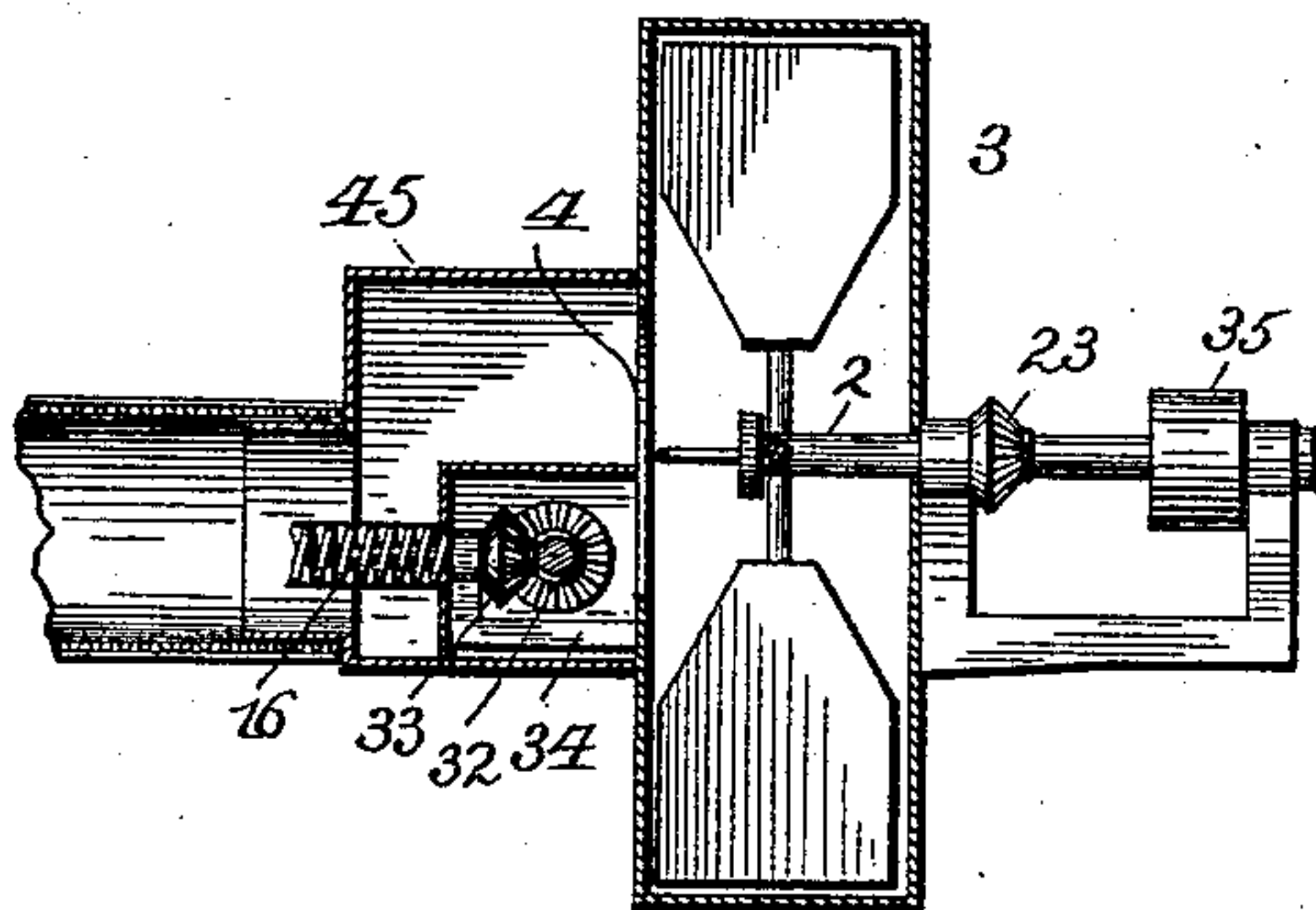


Fig. 7.



Inventor

Charles C. Neighbours.

Witnesses

Chas. H. Curand  
*[Signature]*

By his Attorneys,

*Ca Snow & Co.*



# UNITED STATES PATENT OFFICE.

CHARLES C. NEIGHBOURS, OF FORT SMITH, ARKANSAS, ASSIGNOR OF ONE-HALF TO J. WARREN REED, OF SAME PLACE.

## COTTON-PICKER.

SPECIFICATION forming part of Letters Patent No. 572,611, dated December 8, 1896.

Application filed August 28, 1895. Serial No. 560,775. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES C. NEIGHBOURS, a citizen of the United States, residing at Fort Smith, in the county of Sebastian and State of Arkansas, have invented a new and useful Cotton-Picker, of which the following is a specification.

My invention relates to cotton-picking apparatus, and has for its object to provide a simple and improved device for picking cotton from the boll and conveying it to a suitable receptacle arranged upon a truck, the apparatus being so constructed as to reduce to a minimum the weight of the nozzle which is held by the operator, the means for operating the movable parts of the nozzle being arranged contiguous to the suction-fan and hence supported by the truck, and, furthermore, to reduce to a minimum the resistance offered to the cotton in passing through the nozzle and the flexible conductor by which the nozzle is connected with the suction-fan.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side view of an apparatus constructed in accordance with my invention, the flexible conductor being shown partly broken away. Fig. 2 is a plan view, partly in section, of the suction-fan and means for communicating motion to the flexible shaft. Fig. 3 is a detail longitudinal section of the nozzle, showing the inner or rotary member in elevation. Fig. 4 is a similar view of the nozzle, showing the rotary member in section. Fig. 5 is a transverse sectional view of the nozzle on the line 5 5 of Fig. 3 to show the means for communicating motion from the flexible shaft to the rotary member. Fig. 6 is a longitudinal section of a slightly-modified form of nozzle in which centrifugal instead of centripetal force is exerted upon the cotton in its passage there-through. Fig. 7 is a plan view, partly in section, of the suction-fan and means for communicating motion to the flexible shaft as

used in connection with the modified form of nozzle.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a truck upon which, may be mounted a motor of any suitable construction for imparting rotary motion to the shaft 2 of a suction-fan 3, said fan being also carried by the truck. The suction-fan is provided with the usual side inlet 4, with which communicates the flexible conductor 5, terminating at its free end in a nozzle 6.

In the construction illustrated in Figs. 1, 3, 4, and 5 the nozzle comprises an outer cylindrical casing 7 and an inner rotary member 7<sup>a</sup>, also of cylindrical construction, which is supported by antifriction-rollers 8, mounted in opposite extensions 9 of the casing. Said antifriction-rollers extend slightly beyond the inner surface of the casing and fit in annular guide-grooves 10, formed in the rotary member. The rotary member is provided with detaching or separating wings 11 and 12, located, respectively, at the front and rear ends of said part, said wings being spiral in construction and being designed to act upon the cotton substantially in the manner of an auger in its passage therethrough, said movement of the cotton through the nozzle being assisted, however, by the influx of air produced by the suction-fan at the other end of the conductor. The front end of the rotary member is flanged, as shown at 13, to overlap the front end of the casing and prevent cotton from passing between the same.

Motion is communicated to the rotary member of the nozzle by means of a gear 14, arranged at the rear end of said member, and a pinion 15, meshing with said gear and receiving motion from the flexible shaft 16, arranged in a flexible tube 17, which extends parallel with the flexible conductor. The flexible conductor is constructed mainly of coiled wire, as shown at 18, and is provided with an inner lining 19 and an outer sheath or covering 20, of sheet rubber or similar



material, impervious to air and adapted to form a smooth surface. The flexible tube in which the shaft is located is also constructed of coiled wire, as shown at 21, and is provided with a flexible covering 22, of rubber or its equivalent, whereby the flexible shaft is protected from accumulations of cotton.

The flexible shaft receives motion by means of suitable interposed gearing from the suction-fan, and in the construction illustrated said gearing consists of a bevel-pinion 23, arranged upon the extended spindle of the suction-fan, meshing with a suitable pinion 24 upon a counter-shaft 25, a second counter-shaft 26, connected by pinions 27 and 28 with the first-named counter-shaft, and a driven shaft 29, provided with a gear 30, meshing with a similar gear 31 on the second counter-shaft, and also provided with a bevel-gear 32, meshing with a pinion 33 on the end of the flexible shaft, the contiguous end of the flexible shaft being mounted in a bearing formed in a bracket 34, attached to the side of the suction-fan casing. The extended spindle of the suction-fan is provided with a belt-pulley 35, by which the fan may receive motion through a belt 36 from the motor.

In the construction illustrated in Figs. 6 and 7 the nozzle comprises an outer member or casing 37, of cylindrical construction, connected with the flexible conductor and an inner rotary member 38, provided with wings 39; but instead of said rotary member, consisting of a cylinder and interior wings, as in the form illustrated in Figs. 1 to 5, it consists of a central shaft 40, provided with exterior or centrifugal wings 41, said wings being located at the rear end of the shaft or spindle. At the front end of the shaft or spindle, the extremity thereof being tapered or pointed, are located rearwardly-projecting pins 42, which are designed to engage and separate the cotton from the bolls and then release the same under the action of the suction-fan and allow it to pass rearwardly through the conductor. In this modified form of the apparatus instead of arranging the flexible shaft exteriorly I extend it through the flexible conductor, the front end thereof being connected to an eye 44 at the rear end of the rotary member of the nozzle and the rear end thereof being connected by gearing, substantially as above described, with the shaft or spindle of the suction-fan, a boxing 45 being arranged around the contiguous portions of the gearing to prevent contact of the cotton therewith.

From the above description it will be seen that the means for communicating motion to the rotary member of the nozzle are located mainly upon or contiguous to the suction-fan, whereby the nozzle is relieved of the weight thereof, and the means for transmitting motion throughout the length of the flexible conductor are such as to permit the free movement of the nozzle and avoid catching

the cotton in its passage through the conductor.

Various changes in the form, proportion, and the minor details of construction may be resorted without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a device of the class described, the combination with a suction-fan and means for operating the same, of a nozzle having a movable part adapted to engage and separate the cotton from the bolls, a flexible conductor connecting the nozzle with the suction-fan, a flexible shaft operatively connected with the movable member of the nozzle, and means for communicating motion to the shaft, substantially as specified.

2. In a device of the class described, the combination with a suction-fan and means for operating the same, of a nozzle having an exterior casing and an interior rotary winged member for separating the cotton from the bolls, a flexible conductor connecting the casing of the nozzle with the casing of the suction-fan, a flexible shaft operatively connected with the rotary member of the nozzle, means for communicating motion to the shaft, and a flexible tube inclosing the shaft and consisting of a coiled-wire body having a flexible sheath or covering, substantially as specified.

3. In a device of the class described, the combination with a suction-fan and means for operating the same, of a nozzle having an exterior cylindrical casing, and an interior cylindrical rotary member provided with interior spirally-disposed wings located at its front and rear ends, antifriction-rolls mounted upon the casing and projecting at their inner edges into guide-grooves formed in the exterior surface of the rotary member, a flexible conductor connecting the casing of the nozzle with the casing of the suction-fan, and means for communicating motion to the rotary member of the nozzle, substantially as specified.

4. In a device of the class described, the combination with a suction-fan and means for operating the same, of a nozzle having a rotary member, a flexible conductor connecting the nozzle-casing with the fan-casing, a flexible shaft operatively connected with the rotary member of the nozzle and terminating at one end contiguous to the fan-casing, and gearing interposed between the flexible shaft and the shaft or spindle of the fan, said gearing consisting of shafts and intermeshing pinions for conveying motion around the casing of the fan to that side contiguous to the point of attachment of the flexible conductor, substantially as specified.

5. In a device of the class described, the combination with a suction-fan and means for operating the same, of a nozzle having an exterior cylindrical casing and an interior



5 cylindrical rotary member provided with interior spirally-disposed wings located at its front and rear ends, a flexible conductor connecting the casing of the nozzle with the casing of the fan, and means including a flexible shaft for communicating motion to the rotary member of the nozzle, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 10 in the presence of two witnesses.

CHARLES C. NEIGHBOURS.

Witnesses:

W. H. BOWERS,  
JOHN KNOWLES.