

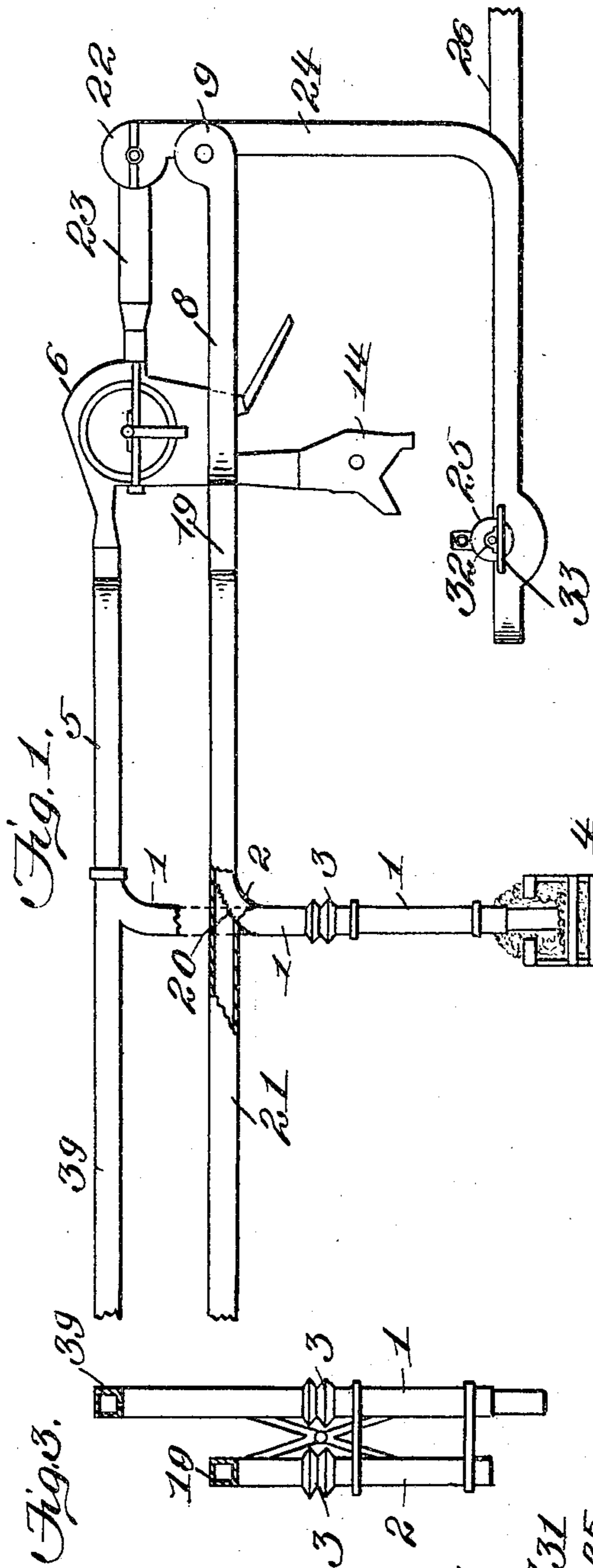
No. 807,881.

PATENTED DEC. 19, 1905.

A. F. TIDWELL.  
COTTON HANDLING APPARATUS.

APPLICATION FILED JUNE 8, 1905.

2 SHEETS—SHEET 1.



Witnesses:  
G. D. Kesler  
James L. Morris, Jr.

Fig. 4.

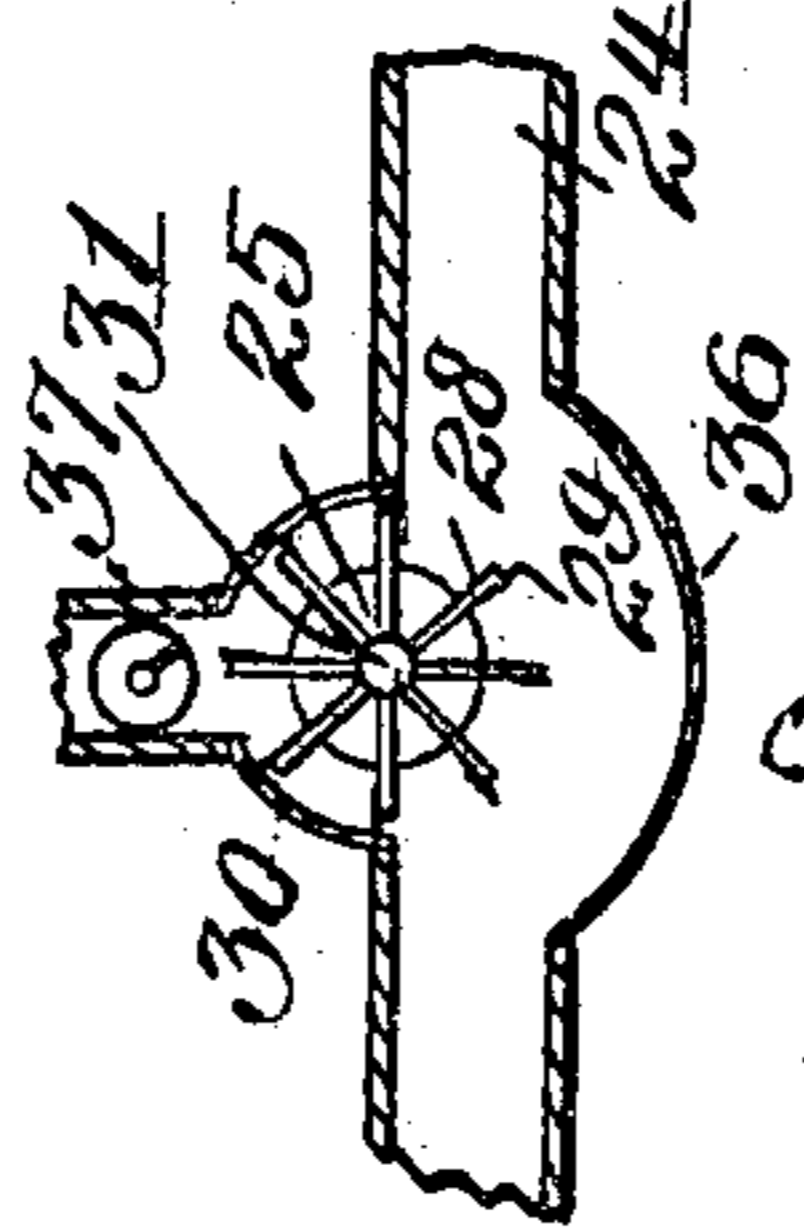
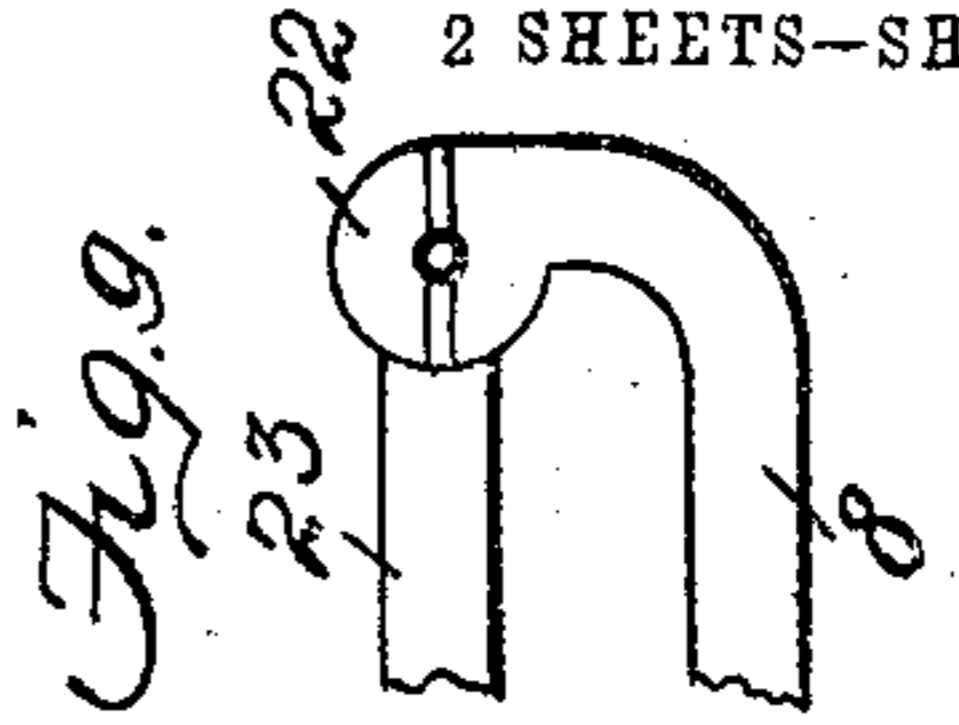
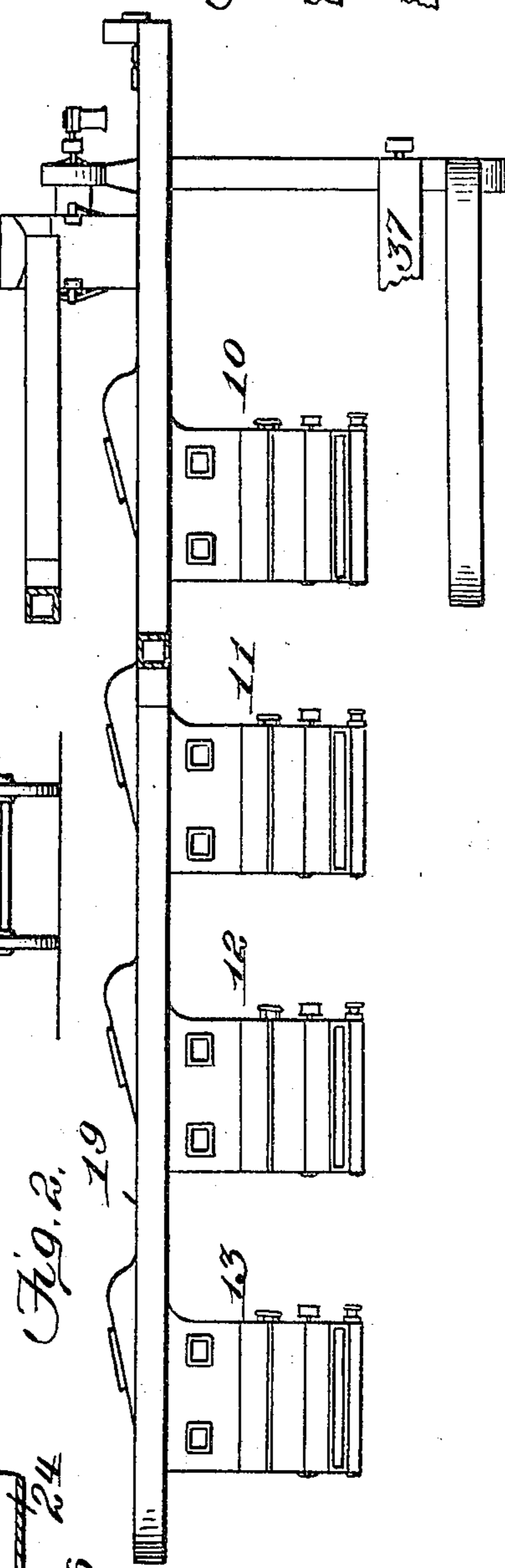


Fig. 2.



Inventor  
Albert F. Tidwell  
By James L. Morris, Jr.  
attor.

A. F. TIDWELL.  
COTTON HANDLING APPARATUS.  
APPLICATION FILED JUNE 8, 1905.

2 SHEETS—SHEET 2.

Fig. 5.

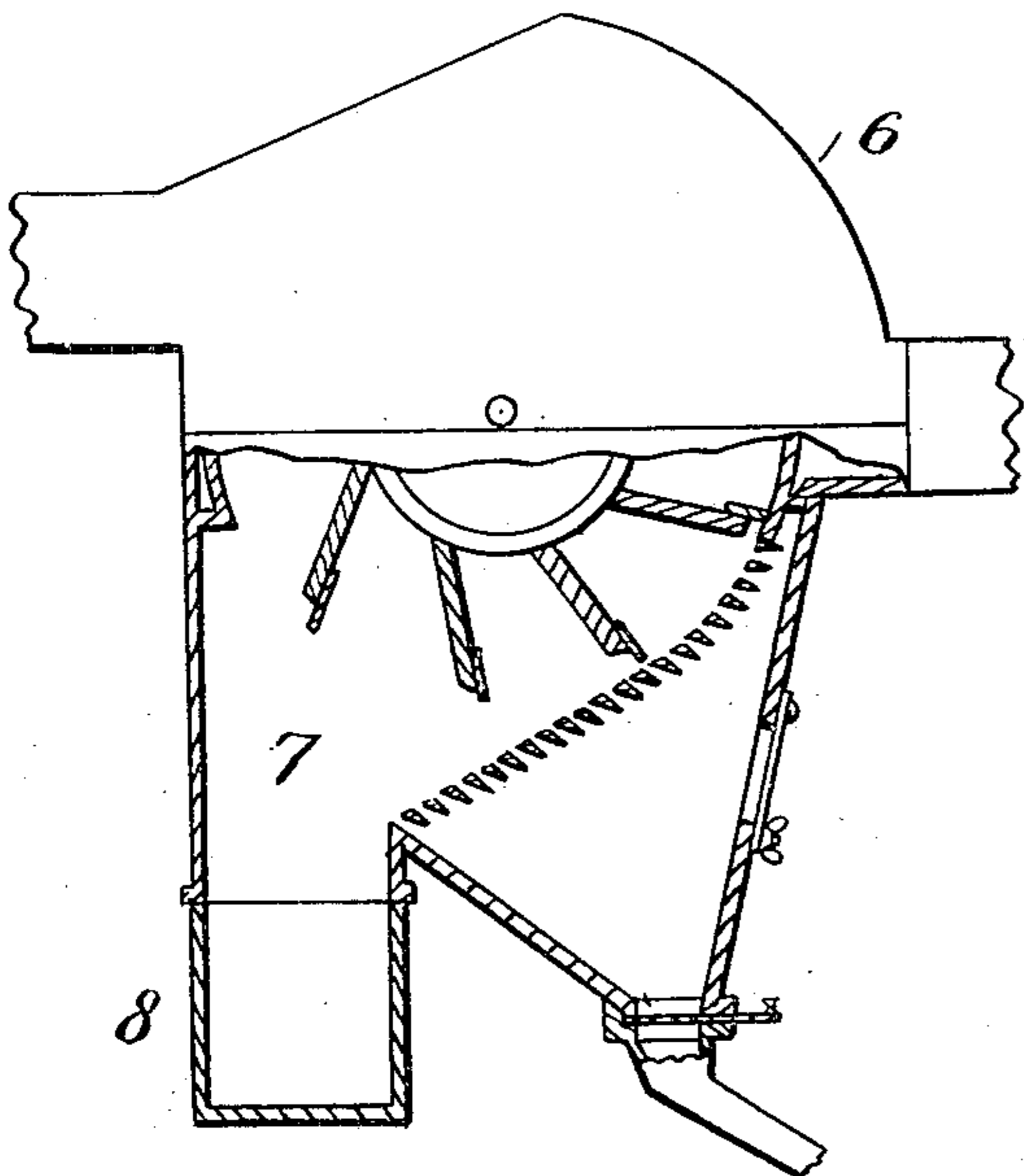


Fig. 6.

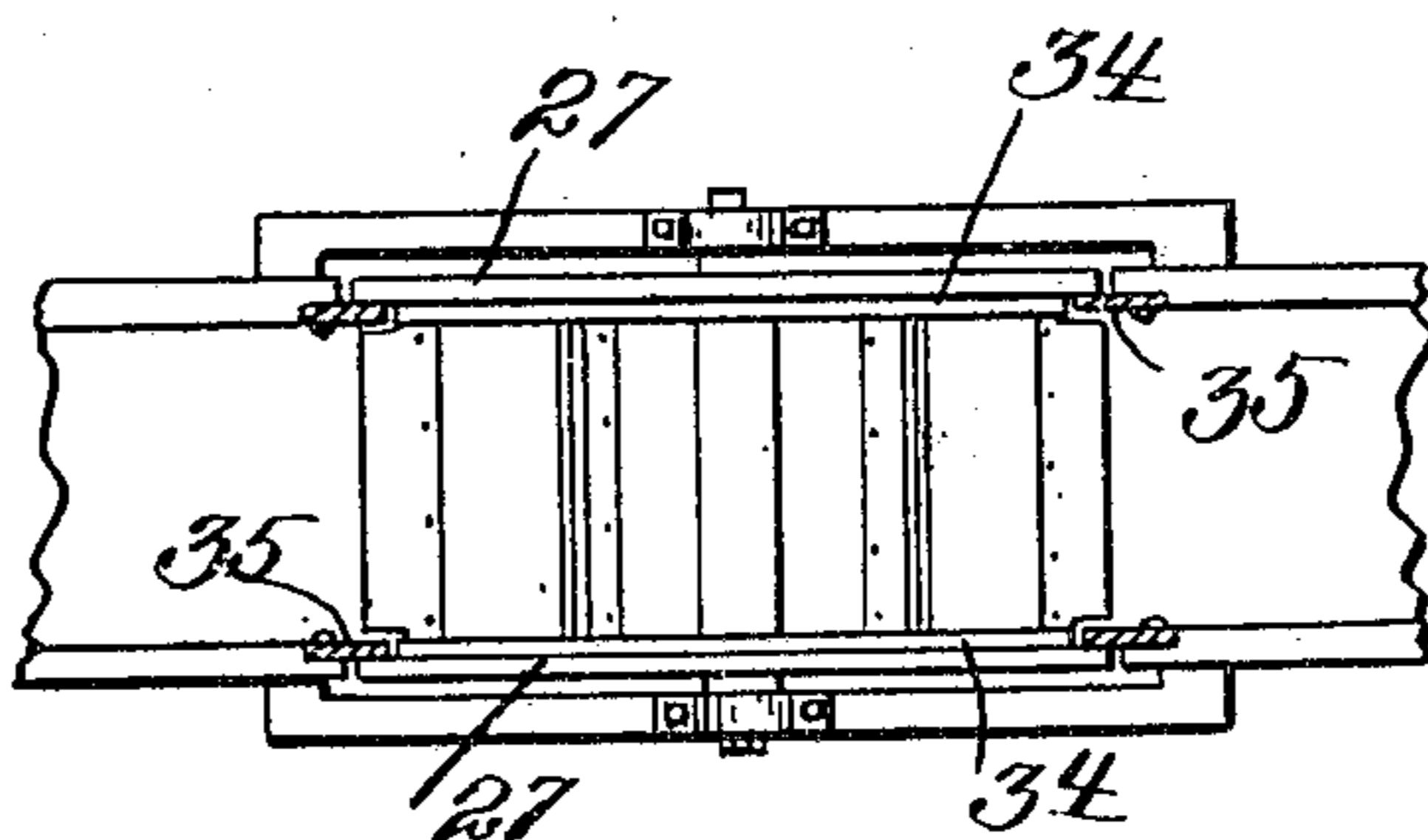


Fig. 7.

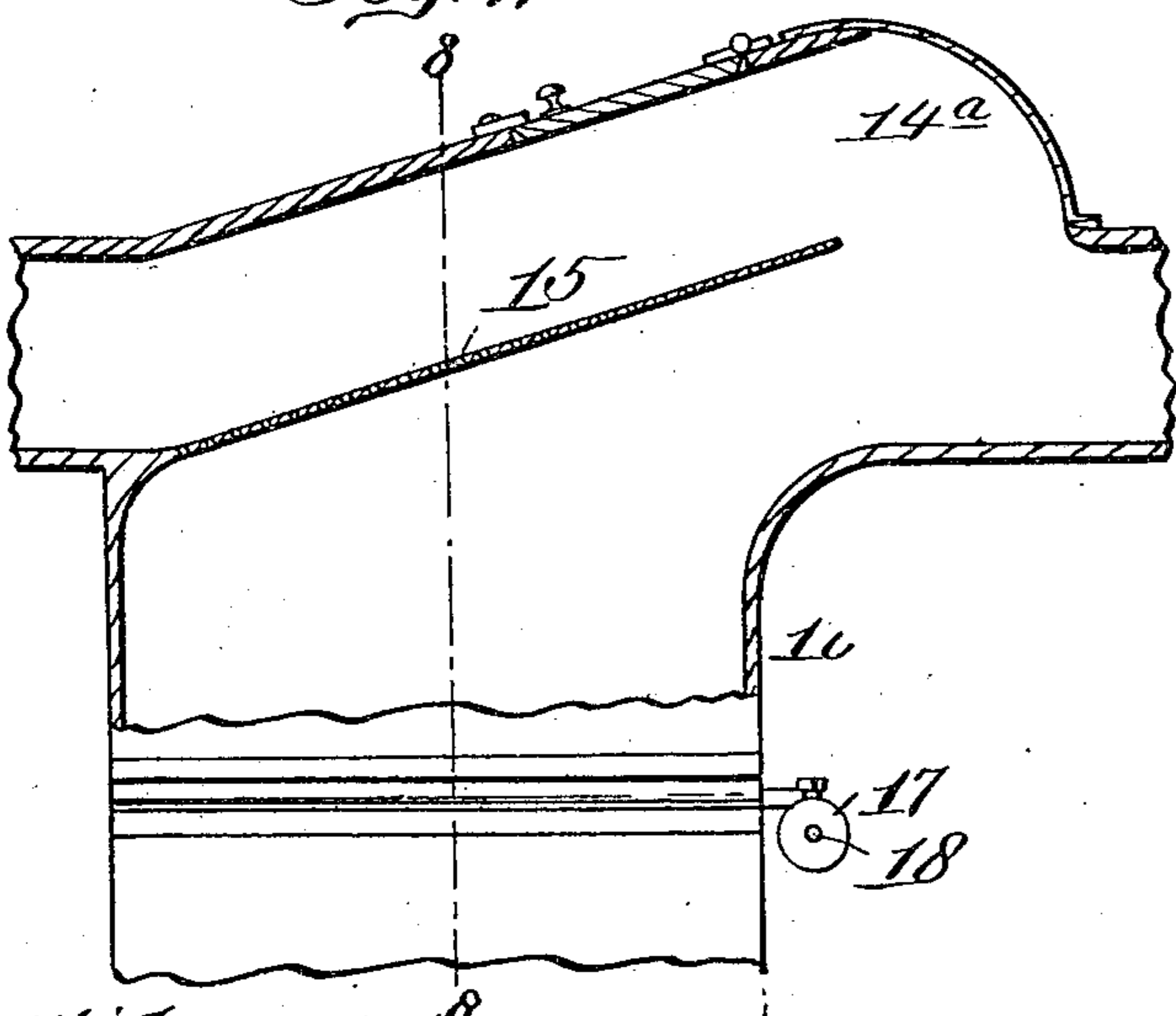
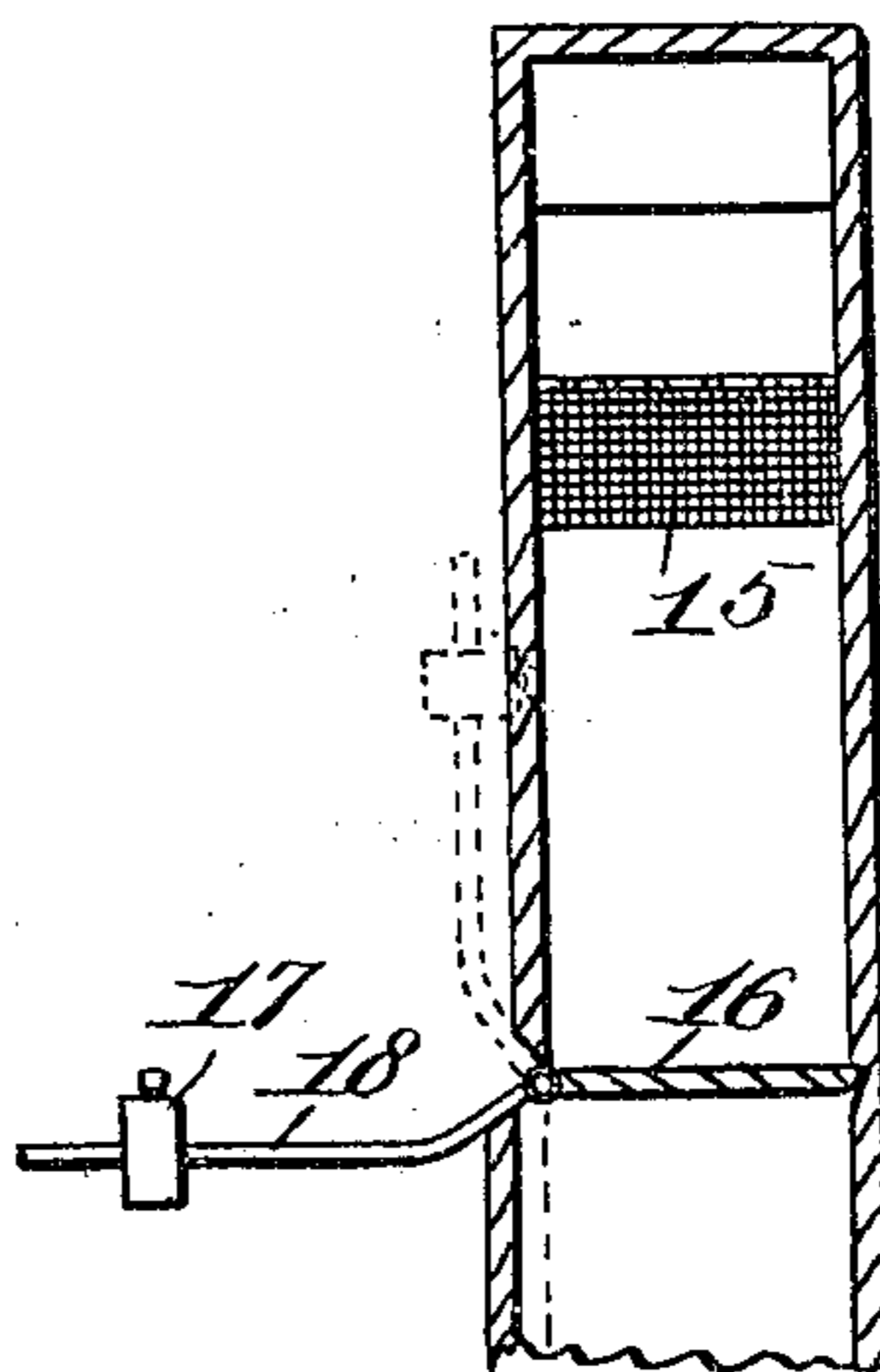


Fig. 8.



Witnesses:

E. S. Kesler  
James L. Norris, Jr.

Inventor

Albert F. Tidwell  
By James L. Norris, Jr.  
attor

# UNITED STATES PATENT OFFICE.

ALBERT F. TIDWELL, OF CELINA, TEXAS.

## COTTON-HANDLING APPARATUS.

No. 807,881.

Specification of Letters Patent.

Patented Dec. 19, 1905.

Application filed June 8, 1905. Serial No. 264,337.

*To all whom it may concern:*

Be it known that I, ALBERT F. TIDWELL, a citizen of the United States, residing at Celina, in the county of Collin and State of Texas, have invented new and useful Improvements in Cotton-Handling Apparatus, of which the following is a specification.

This invention relates to certain new and useful improvements in cotton-handling apparatus, which apparatus involves means for elevating, separating, distributing, and feeding cotton and disposing of the seed from the cotton.

The main object of the invention resides in the construction and arrangement of parts whereby I provide for a continuous circuit of the cotton from the place of elevation through the various parts of the apparatus and back to the point of elevation, this arrangement providing for readily disposing of the overflow when the compartments leading to the gin-feeders have been filled.

Further objects of the invention relate to the novel construction of the seed-dropping mechanism and to details of construction involved in the various parts composing the apparatus, all as hereinafter described, and particularly pointed out in the claims following the specification.

In order that the invention may be clearly understood, I have illustrated the same in the accompanying drawings, in which—

Figure 1 is a view in end elevation of apparatus constructed and arranged according to my invention. Fig. 2 is a view in front elevation of a portion of the apparatus shown by Fig. 1. Fig. 3 is a detail view showing the lower end portions of the suction and overflow pipes. Fig. 4 is a sectional view, on an enlarged scale, showing the seed-dropping mechanism. Fig. 5 is a view, partly in section and partly in elevation, of the separator. Fig. 6 is a top plan view of the seed-dropper, the upper part of the inclosing casing being removed. Fig. 7 is a view in sectional elevation of one of the compartments leading to a gin-feeder; Fig. 8, a section on the line 8 8 of Fig. 7; and Fig. 9 is a view in elevation of part of the device, illustrating a modification.

Referring now to the drawings, 1 indicates a suction-pipe, and 2 an overflow-pipe, which pipes are preferably connected together and are provided at a suitable point in their length with flexible joints 3 to enable them to be moved to different parts of a wagon 4, containing the cotton to be elevated. The

suction-pipe 1 is connected to a main conveyor or conduit 5, which leads to a separator 6. This separator may be of any preferred construction; but preferably I employ the construction embodied in an application for patent filed by me April 4, 1905, Serial No. 253,886, except that I omit the lower part or chute described in said application. In lieu of this chute the lower part or chamber 7 of the separator into which the cotton falls after being cleaned communicates with a conduit 8, leading from a fan 9, which forces air through said conduit, thereby creating suction in the chamber 7, causing the cotton to fall into and be conveyed along the conduit 8. Said conduit 8 leads to and forms the cotton-inlet into the first of a series of compartments 10, 11, 12, and 13 for receiving the cotton, each of said compartments being connected at its lower end to the upper end of a gin-feeder 14, of any preferred construction and each of which compartments communicates with the compartment next to it in the same manner that the first compartment communicates with the conduit 8. In other words, the construction may be described as that of a series of compartments interposed in the length of the conduit 8, there being direct communication in a straight line through all of said compartments for the passage of air. Each of said compartments where it communicates with the conduit 8 on the side facing the separator 6 is provided with an enlarged throat 14<sup>a</sup>, and an inclined screen 15 projects from the opposite side of the compartment into this throat about midway the height thereof, so that a passage for the air and cotton is afforded both below and above the screen, as shown.

Each of the compartments 10 to 13 is provided, toward its lower end, with a drop-valve 16, controlled by an adjustable weight 17, mounted on an arm 18, fixedly secured to said valve. The valve 16 normally closes the outlet from the compartments 10 to 13, the weight being adjusted to hold said valve closed against the pressure of the air and also to cause said valve to withstand a certain weight of cotton. As soon as each of said compartments fills with cotton the valve 16 will drop and allow the cotton to fall into the feeder 14, and the valve may then remain open during all the time the cotton is being elevated, as it is only necessary that the valve should be closed when first starting the operation. Said valve, however, may be

arranged to automatically close after dropping the weight of cotton, if desired—that is to say, the weight may cause the valve to close after the cotton drops instead of the valve being held open after first dropping the contents of the compartment.

In operation as the air forces the cotton from the separator 6 through the conduit 8 the air will pass through the screen 15 of the first compartment and so on through all of the compartments, while the cotton will strike on the under side of the screen 15 and drop into the compartment 10. As soon as said compartment fills the cotton will prevent the passage of air through the screen 15, and hence the cotton will follow the course of the air over the screen 15 and pass into the next compartment 11, which will be filled in the same way, and so on with the compartments 12 and 13. It is necessary, however, to provide for taking care of the overflow of cotton after the compartment 13 has been filled, and to this end I provide a conduit 19, leading from the last compartment 13, which is given suitable return-bends to bring it over the place from which the cotton is to be elevated—say the wagon 4, where said pipe 19 is connected to the overflow-pipe 2. At the point where the overflow-pipe 2 connects with the return-pipe 19 I interpose a screen 20 in the pipe 19, beyond which screen I continue the pipe 19 in the form of an exhaust-pipe 21, leading to the outer air. As the overflow of cotton passes through the conduit 19 it strikes the screen 20 and falls into the overflow-pipe 2, back into the wagon, while the air passes through the screen 20 and through the exhaust-pipe 21 to the outer air.

22 indicates a fan for creating the suction which elevates the cotton from the wagon 4, the casing of said fan communicating with the casing of the separator 6 by means of an air-shaft 23. The air-shaft 23 is located, of course, on the suction side of the casing of the fan 22. On the forcing side of said casing I connect a conduit 24, in the horizontal length of which I interpose a seed-dropper 25, the conduit 24 being continued beyond the seed-dropper 25 in the form of a seed-pipe 26, leading to the seed-house. As shown by Figs. 4 and 6, the seed-dropper comprises a pair of disks 27, connected by wings 28, each of which has secured to and projecting from its outer end a flexible strip 29, that is adapted to impinge against the inner wall of the housing 30, partly inclosing said fan to form an air-tight connection. The disks 27 are mounted on a shaft 31, rotatably mounted in suitable bearings 32, provided in supports 33, secured on opposite sides of the casing and inclosing the seed-dropper. As shown by Fig. 6, the disks 27 rotate in apertures formed in the opposite sides of the casing 30, so as to be in the same

planes as the walls of said casing, and in order to make the air-tight connection the disks 27 are each provided with a peripheral recess 34, opening inward, and flexible strips 35 are secured to the edges of the openings provided in the casing 30, which strips project into the recesses 34, and thus close the opening between the edges of the disks and the edges of the openings in which said disks rotate. The seed-dropper, as shown, projects into the conduit 24, and said conduit is provided with a circular enlargement 36 to provide a passage beneath the seed-dropper.

37 indicates a trough for receiving seed from the gins, and in this trough is a seed-auger, which conveys seed to the seed-dropper 25.

In operation the seed-dropper will be rotated by the current of air forced through the conduit 24 by the fan 22. Seed being conveyed by the auger to the seed-dropper will be discharged into the path of the air beneath the dropper and be blown by said air through the seed-pipe 26 to the seed-house.

39 indicates a suction-pipe forming a continuation of the conveyer-pipe 5, which may lead to the place of storage of cotton if the cotton is to be drawn from such source of supply instead of from a wagon.

By dispensing with the conduit 24 for blowing seed through the seed-pipe 26 it is obvious that I can also dispense with the fan 9 and by connecting the conduit 8 to the fan-casing on the fan 22 make a single fan serve for carrying out the operation of my apparatus. Such a construction is indicated in Fig. 9.

The operation of the apparatus has been embodied in the above description, and it is only necessary to emphasize the fact that with my apparatus the cotton is continuously elevated, cleaned, and distributed, the overflow returned to the place from which it was elevated, and the seeds delivered to the seed-house.

My improved seed-dropper permits me to employ the same fan which creates the suction for elevating the cotton to blow the seed to the seed-house, as the air-tight construction of the dropper insures the discharge of the seed into the path of the air without impairing the force of the air-current.

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

1. Cotton-handling apparatus comprising a cotton-passage having an inlet and an outlet approximately at a common place, pneumatic means for causing cotton to traverse the passage from the inlet, a cotton-receiver, and means for diverting cotton from the passage to the receiver.

2. Cotton-handling apparatus comprising a cotton-receiver, and means for continuously and pneumatically passing cotton to

and through said receiver and returning the overflow therefrom to a source of cotton-supply.

3. Cotton-handling apparatus comprising separating and distributing devices, and means for continuously and pneumatically passing cotton to and through said devices and returning the overflow therefrom to a source of cotton-supply.

10 4. Cotton-handling apparatus comprising a cotton-passage beginning and ending at the source of cotton-supply, a cotton-receiver interposed in said passage, and pneumatic means for causing a continuous movement of  
15 cotton through said passage.

5. Cotton-handling apparatus affording a continuous circuit for the passage of cotton, said circuit beginning and ending at the source of cotton-supply, cotton separating  
20 and distributing devices interposed in said circuit, and pneumatic means for causing a continuous movement of cotton through said circuit.

6. Cotton-handling apparatus comprising  
25 suction and overflow pipes forming parts of a continuous cotton-passage, an exhaust-pipe communicating with said overflow-pipe, a screen interposed between said exhaust and overflow pipes, a cotton-receiver interposed  
30 in said passage, and pneumatic means for causing the cotton to traverse said passage.

7. Cotton-handling apparatus comprising suction and overflow pipes forming parts of a continuous passage, an exhaust-pipe con-  
35 nected to said overflow-pipe, a screen interposed between said exhaust and overflow pipes, cotton-distributing means interposed in said passage, pneumatic means for causing the cotton to traverse said passage, and  
40 means for diverting cotton from the passage into said distributing devices.

8. Cotton-handling apparatus comprising a cotton-passage having an inlet and an out-

let approximately at a common place, pneumatic means for causing the cotton to trav- 45  
erse the passage from the inlet, cotton-distributing devices interposed in said passage, and means for diverting cotton from said pas-  
sage to said distributing devices.

9. In an apparatus of the class described, 50  
a seed-pipe, means for maintaining a blast of air therein, a rotary seed - dropper in air-tight connection with said pipe, and project-  
ing into the line of air-draft therein, whereby to be rotated from said air-draft, and means 55  
for delivering seed to said dropper.

10. In cotton-handling apparatus, a seed-pipe provided with a casing, a seed-dropper comprising disks rotatably mounted in said casing and projecting into said pipe and pro- 60  
vided with wings or paddles, flexible strips mounted on the ends of said wings for engaging the wall of said casing, means for deliver-  
ing the seed to said dropper, and means for maintaining a current of air in said pipe. 65

11. In cotton-handling apparatus, a seed-pipe affording a casing, a seed-dropper interposed in said pipe and comprising disks mounted to rotate in apertures in the said walls of said casing, flexible strips secured 70  
about the edges of said apertures and overlapping the edges of said disks on the inner side of the casing, wings connecting said disks and projecting into said pipe and adapted to rotate in air-tight connection with the 75  
upper part of said casing, means for delivering seed through the upper part of said casing to said dropper, and means for forcing a current of air through said pipe.

In testimony whereof I have hereunto set 80  
my hand in presence of two subscribing witnesses.

ALBERT F. TIDWELL.

Witnesses:

T. A. VAUGHAN,  
H. L. WEEMS.