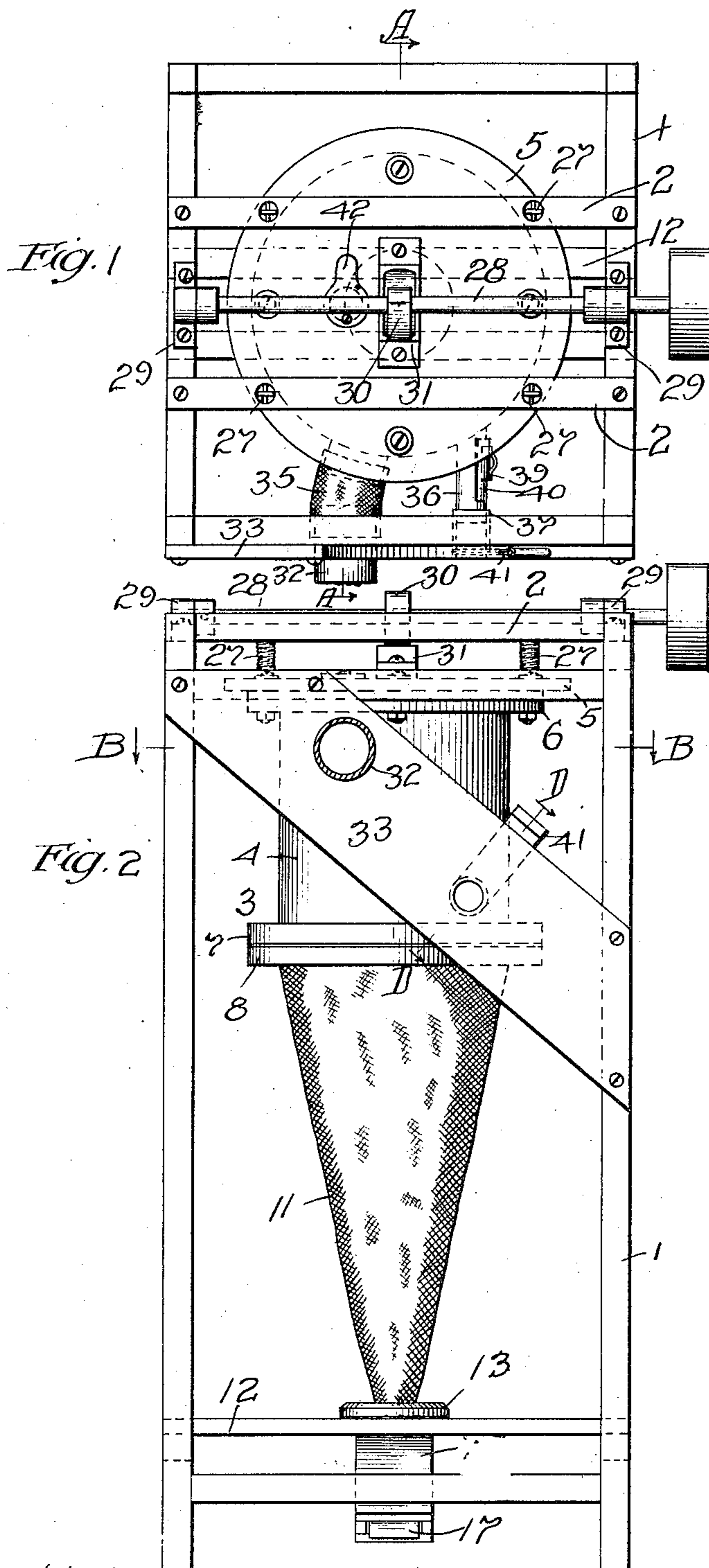


G. SZESNY.
DUST COLLECTOR.
APPLICATION FILED MAY 3, 1909.

935,066.

Patented Sept. 28, 1909.

3 SHEETS—SHEET 1.



Witnesses
R. A. White.
H. R. L. White.

Inventor
Gottlieb Szesny.
By Robert Klotz, Atty.

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3 SHEETS—SHEET 2.

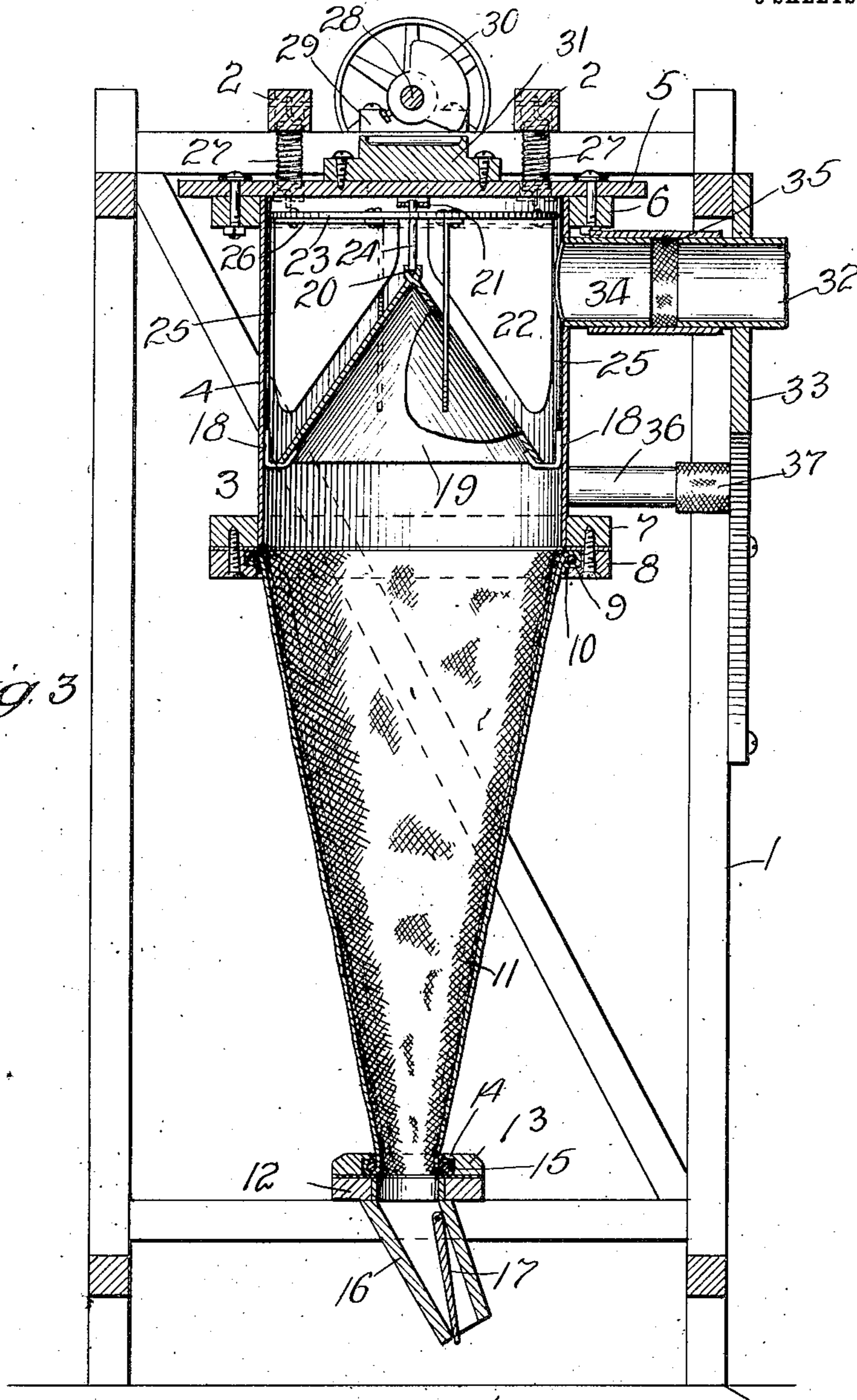
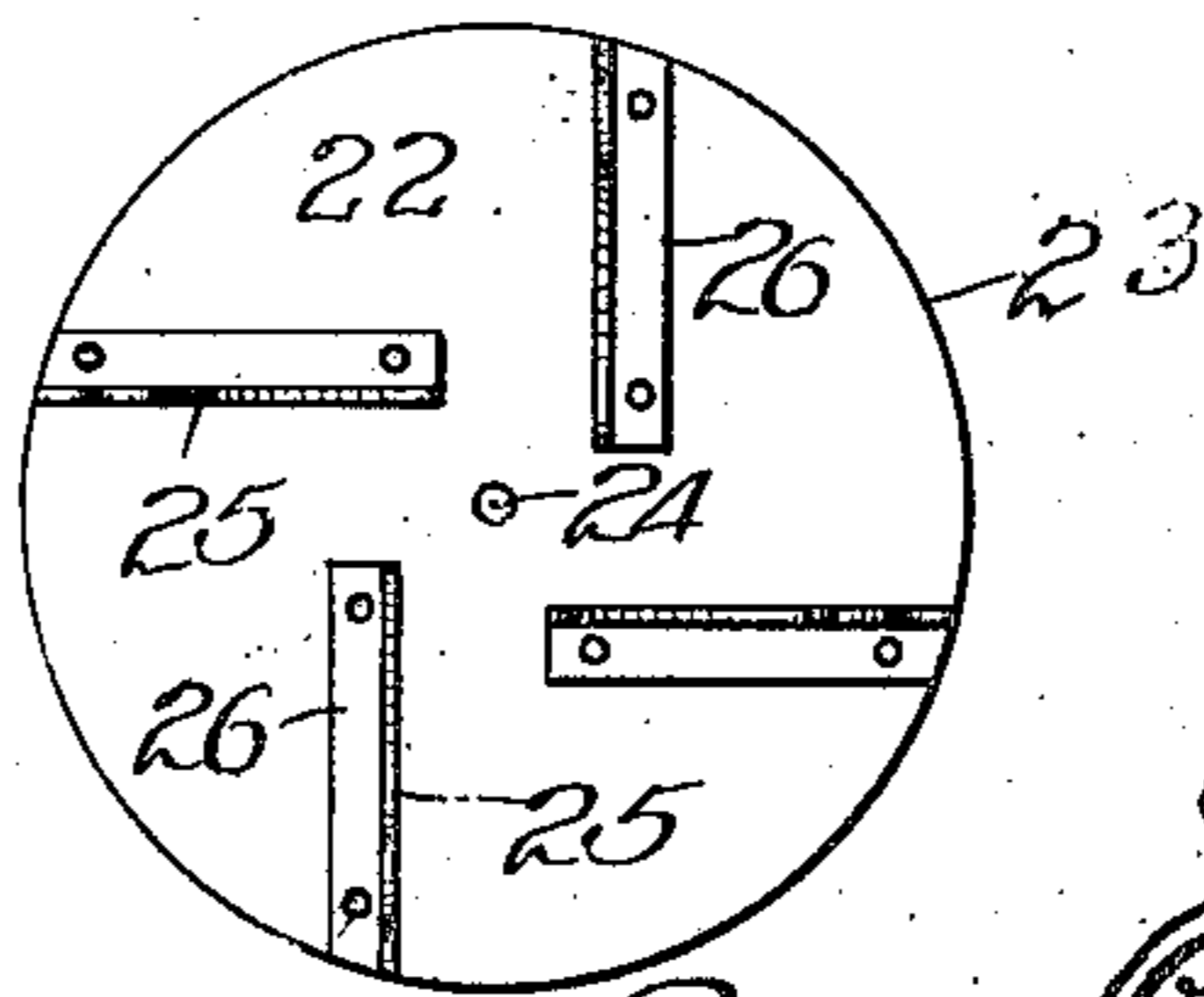


Fig. 3

Fig. 4



Witnesses
R. A. White.
H. R. L. White

Inventor
Gottlieb Szesny
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3 SHEETS—SHEET 3.

Fig 5

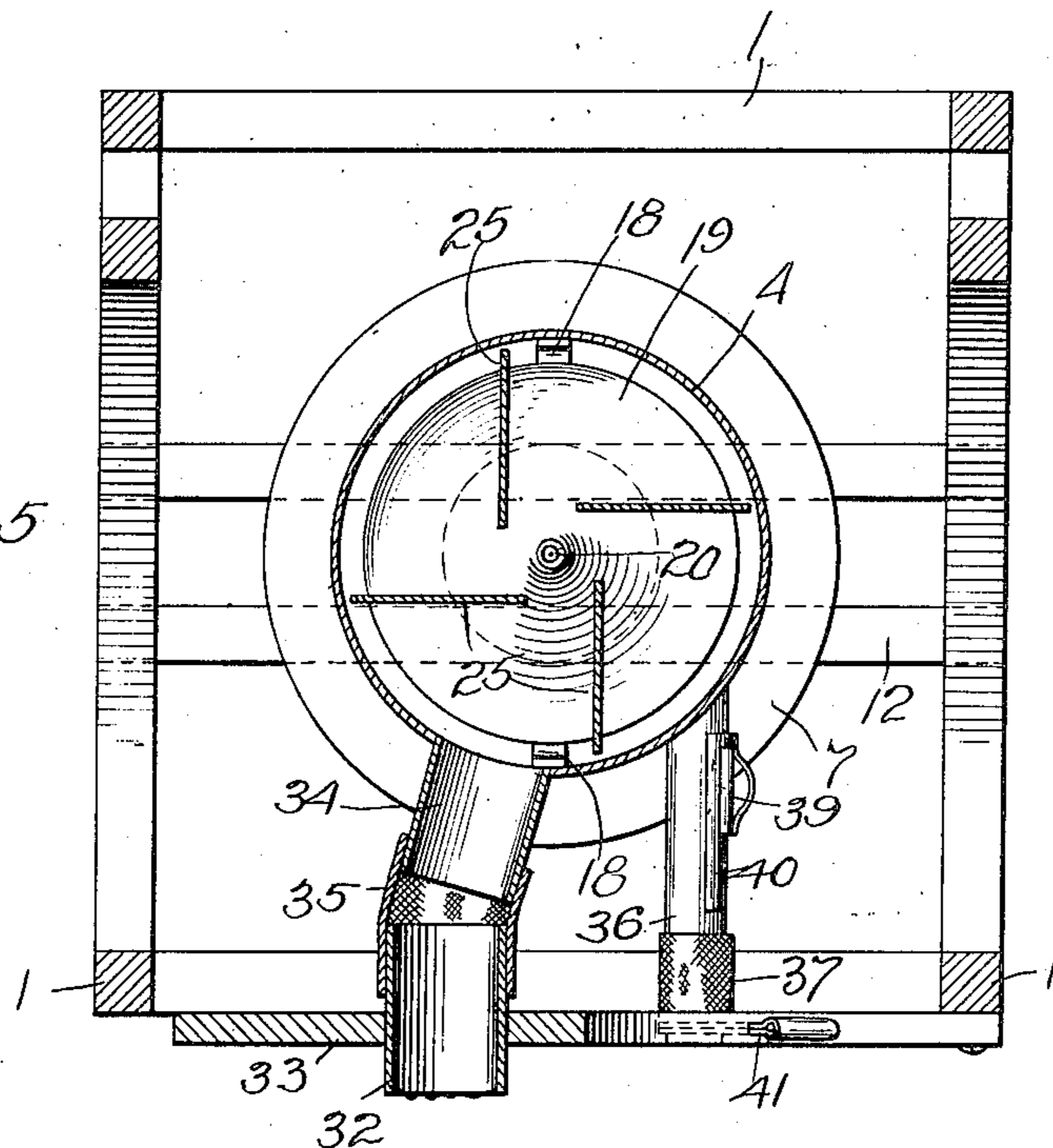


Fig 7

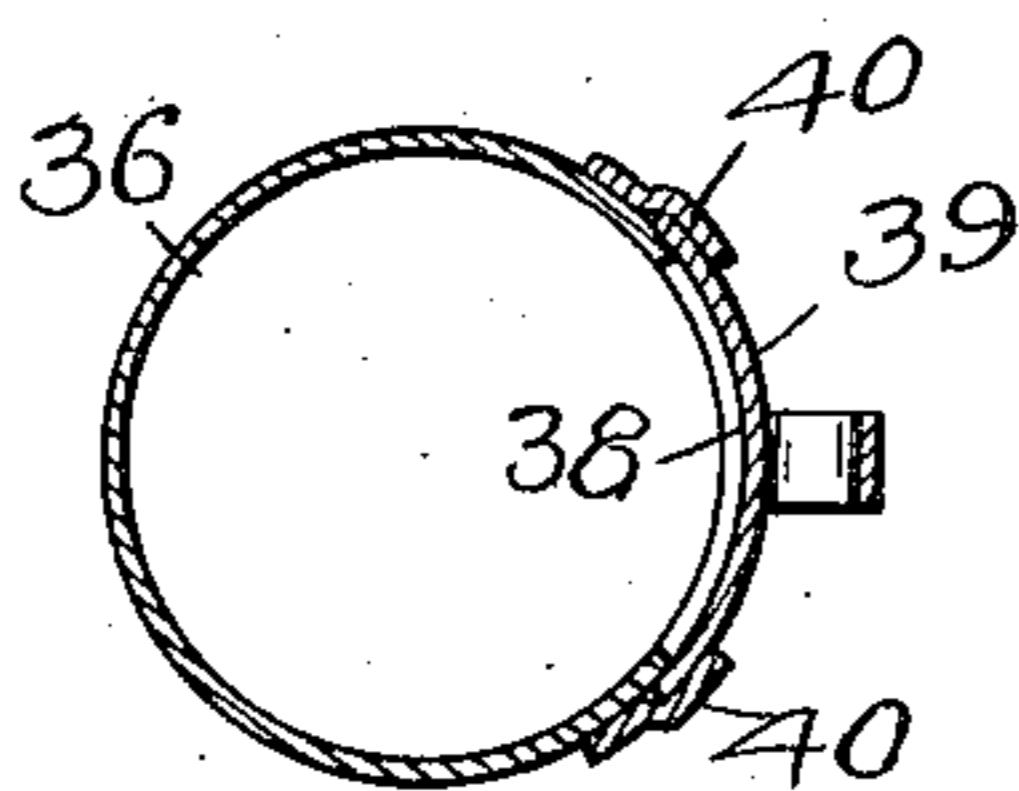


Fig. 6

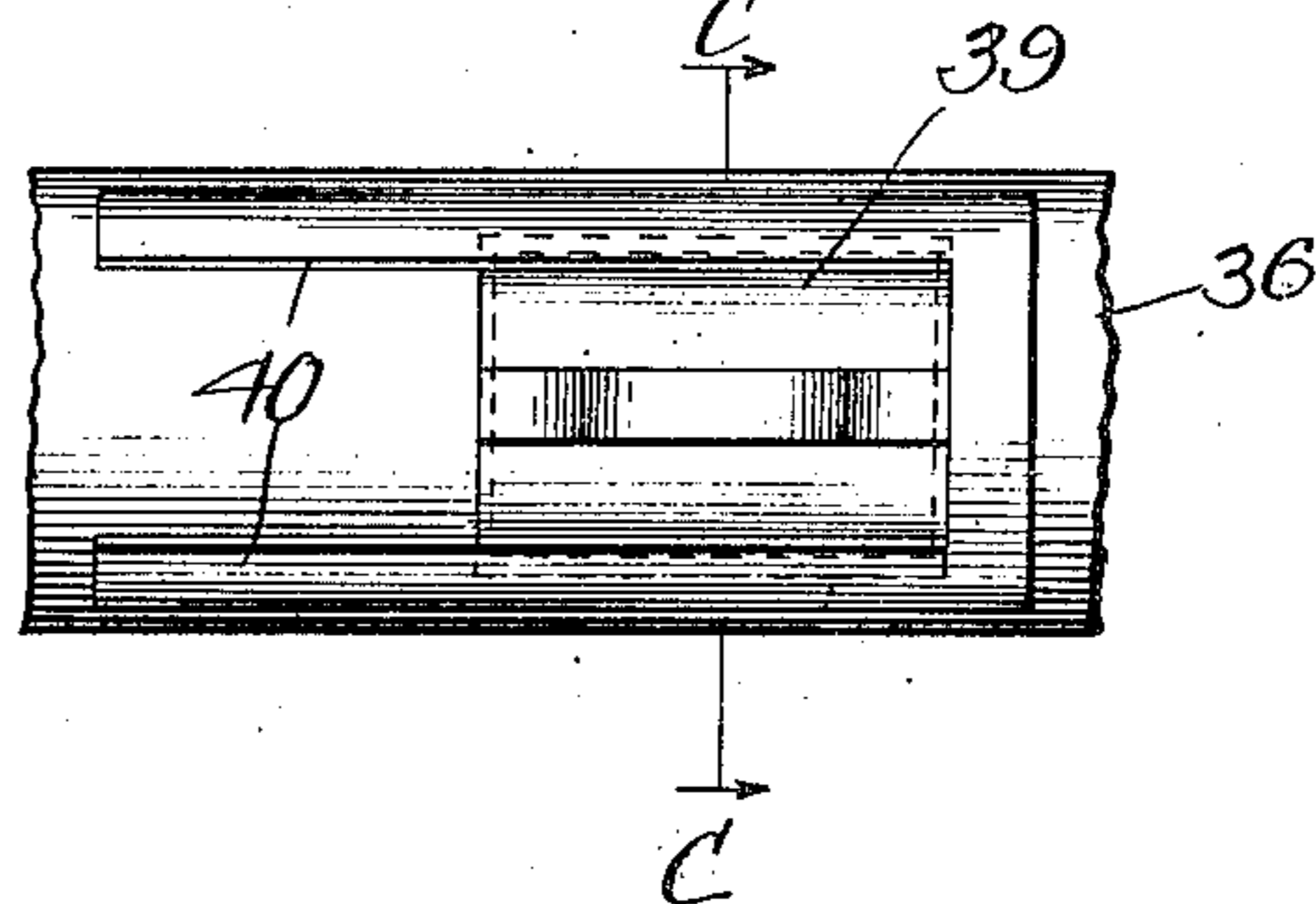
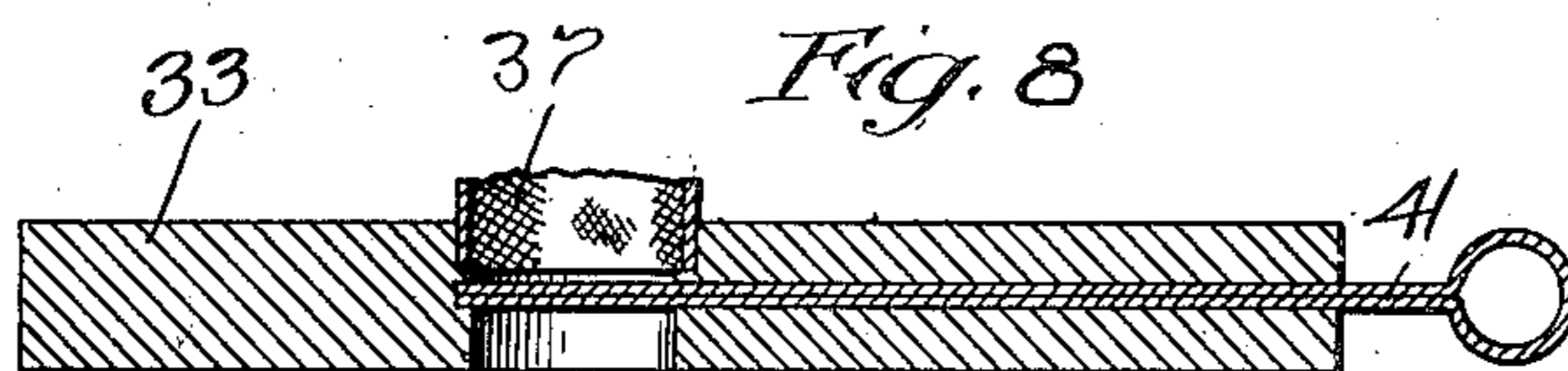


Fig. 8



Witnesses
R. A. White
H. R. L. White

Inventor
Gottlieb Szesny
By Robert Klotz, Atty

UNITED STATES PATENT OFFICE.

GOTTLIEB SZESNY, OF CHICAGO, ILLINOIS.

DUST-COLLECTOR.

935,066.

Specification of Letters Patent.

Patented Sept. 28, 1909.

Application filed May 3, 1909. Serial No. 493,697.

To all whom it may concern:

Be it known that I, GOTTLIEB SZESNY, a subject of the Emperor of Germany, and residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Dust-Collectors, of which the following is a complete specification.

The main objects of this invention are to provide an improved construction of dust collector adapted to collect dust from machines and prevent it from escaping into the surrounding atmosphere; to provide a device adapted to gather the dust and deposit it in a gate controlled spout from which it may be withdrawn into any desired receptacle; to provide a device in which the dust is automatically shaken down in the collector stocking.

A specific construction embodying this invention is illustrated in the accompanying drawings, in which,

Figure 1 is a top plan view of a device embodying this invention. Fig. 2 is a side elevation of the same. Fig. 3 is a section taken on line A—A of Fig. 1. Fig. 4 is a bottom plan view of the fan. Fig. 5 is a section taken on line B—B of Fig. 2. Fig. 6 is an enlarged fragmentary side elevation of the air return pipe and the outlet gate therefor. Fig. 7 is a section taken on line C—C of Fig. 6. Fig. 8 is an enlarged section of the outlet pipe and the controlling valve therefor, taken on line D—D of Fig. 2.

In the construction shown in said drawings, the frame 1 which affords a support for the collecting mechanism, may be of any desired construction and material, and may be supported upon the floor or hung from any convenient support, dependent upon where the device is to be installed. Extending across the top of said frame, at either side of the center thereof, are two parallel cross beams 2—2 which are rigidly secured to said frame. The dust receiver 3 is supported from said cross beams by means permitting it to be vibrated. Said receiver comprises a cylinder 4 of sheet metal or other preferred construction, and has an upper head 5, having an annular flange 6 on its under side to which the upper end of the cylinder is attached, though said cylinder may be attached to said head in any other preferred manner. The bottom of said cylinder

is open and is provided with an annular flange or rim 7 on its outer side. Rigidly but removably secured to the under side of said flange 7 is the annular clamping ring 8 which is provided in its inner side with a groove 9 in which is seated the retaining ring 10. Rigidly secured at its upper end to said ring is the collector stocking 11 which, as shown, is constructed of canvas or other flexible material and is in the shape of an inverted cone. Supported near the bottom of said frame are two cross beams 12, and rigidly but removably secured thereon is the clamping ring 13, having a groove 14 in its inner face in which is seated the lower retaining ring 15 of said stocking. Supported on said cross beams 12 and extending downwardly and laterally from the bottom of the stocking is the discharge spout 16, which is provided with a gate 17 therein. Said gate is pivoted at its upper end near the top of the spout and adjacent the upper inclined wall thereof, and its lower end normally lies against the bottom inclined wall of the spout and adjacent the mouth of the spout. On the inner side of said cylinder, at a distance from the bottom thereof, are brackets 18 on which is supported the deflecting cone 19 of sheet metal or other preferred construction. The diameter of said cone at its base is smaller than the internal diameter of the cylinder and affords an opening between the same and the cylinder through which the dust may pass. At the apex of said cone is a bearing 20, and a bearing 21 is supported in the head 5 in alignment with the bearing 20. Journaled in said bearings is the rotary fan 22, which comprises a disk or plate 23, immediately beneath said head, a central axle 24 rigidly secured in said disk and journaled in the bearings, and a plurality of blades 25 on the under side of the disk. Each of the blades comprises an approximately triangular plate of metal which extends down into the space between the cone 19 and the cylinder and is provided at its upper end with a flange 26 which is riveted to said disk. Said blades are each arranged on the disk at right angles to the next adjacent thereto and in lines coinciding with sectors equidistant from the axis of the disk.

For the purpose of vibrating the collector stocking the screen is suspended from the cross beams 2 by means of coiled springs 27

which are engaged to said beams and the head 5, and act normally to support the receiver at the upper limit of its movement, with the stocking drawn comparatively taut.

5 A shaft 28 is journaled in bearings 29 on the frame and is provided with a segment shaped cam 30 thereon adapted during part of its revolution to revolve against a contact block 31 on said head. The shape of said
10 cam is such that when it contacts with said block it suddenly throws the receiver downwardly and when it leaves the block it permits the receiver to suddenly return to normal position, thereby shaking or vibrating
15 the stocking.

An inlet pipe 32 leads from the machine from which the dust is to be taken and its end adjacent the collector is supported in the frame member 33, adjacent to the pipe
20 section 34 carried on and opening into the upper portion of the receiver opposite the fan. A flexible sleeve 35 connects said pipe 32 and section 34 and permits movement of the section relative to the pipe. Opening
25 from said receiver at a point beneath the cone 19 is an air outlet or return pipe section 36 which is connected in said member 33 by means of a flexible sleeve 37. The return pipe section 36 is provided with an opening
30 38 in one side thereof which is controlled by a gate 39, slidably mounted in guides 40 on said section. A return pipe, not shown, may be connected with said sleeve 37 and lead back to the source of air supply, and by
35 opening the gate 39 to a greater or less degree any desired quantity of air may be permitted to escape. A slide valve 41 comprising a strip of metal bent back upon itself is carried in a slot or aperture in the member
40 33 and is adapted to control the opening in the outer end of the section 36. The tendency of the parts of said valve to spread apart causes it to bind in its seat and support itself in adjusted position.

45 In the head 5 is a vent aperture controlled by a pivoted cover 42. The purpose of the aperture is to permit the entrance of cold air into the receiver if the air therein is overheated as it comes from the machine.

50 The operation of the construction shown is as follows: The inlet pipe 32 is connected with the machine from which the dust is to be gathered and the dust is forced from the machine through said pipe into the receiver
55 by means of an air blast supplied by any suitable blower. As the dust and wind enter the receiver the fan 22 is caused to rotate and its whirling motion acts to throw the dust toward the wall of the receiver. The
60 dust then falls downwardly beneath the cone into the stocking 11. The shaft 28 is rotated by means of the belt pulley 43, and as the cam 30 strikes and leaves the contact block 31 the receiver is vibrated and imparts its
65 vibratory motion to the stocking, causing the

dust to be shaken down to the bottom of the stocking and into the spout. The swinging gate 17 is heavy enough to hold a considerable quantity of dust in the spout and when a sufficient quantity has been collected the
70 gate is automatically raised by the weight of the dust and permits the dust to escape into any suitable receptacle.

By means of the valve 41 a greater or less amount of the air may be returned to the
75 machine from the receiver. The amount will depend upon the fineness of the dust being collected. Where the dust is very fine a portion of it will be drawn back through the return pipe, but when coarse it will all be
80 separated out and the gate 39 may then be opened to permit the air to escape into the room.

While but one specific embodiment of this invention is herein shown it will be under-
85 stood that many details of the construction shown may be varied or omitted without departing from the spirit of this invention.

I claim:

1. A dust collector comprising a receiver, 90 a removable cone therein, a rotary element adapted to travel exteriorly around said cone, a stocking beneath said receiver, and means for imparting a vibratory motion to said stocking. 95

2. A dust collector comprising a receiver, a central cone therein, a rotary element adapted to travel exteriorly around said cone, a collector stocking beneath said receiver, and means for vibrating said stock- 100 ing. 105

3. A dust collector, comprising a receiver, a cone supported therein, a rotary element journaled on said cone and adapted to travel exteriorly around the same, a flexible stock- 105 ing beneath said receiver, and means for vibrating said stocking. 110

4. A dust collector, comprising a receiver, a cone supported therein, a rotary element journaled on said cone and adapted to travel exteriorly around the same, a flexible stock- 110 ing beneath said receiver, means for vibrating said stocking, an inclined spout at the bottom of said stocking and a pivoted gate in said spout. 115

5. A dust collector, comprising a receiver, a stationary cone supported in said receiver, a rotary element journaled on said cone and adapted to travel exteriorly around the same, a flexible stocking removably engaged 120 to the bottom of said receiver, means for vibrating said stocking, a spout at the bottom of said receiver and a gate in said spout adapted to be opened by the pressure of dust above the same. 125

6. A dust collector comprising a receiver, a cone supported therein out of contact with the walls of the receiver, a fan rotatively supported above said cone and having its blades extending into the space between said 130

cone and the walls of the receiver, a conically shaped stocking removably secured to the lower end of said receiver, and a pivotally supported gate at the lower end of said stocking.

7. A dust collector comprising a frame, a receiver, means resiliently supporting said receiver on said frame, means adapted to vibrate said receiver, a collector stocking on said receiver, an automatically operating gate at the lower end of said stocking, and rotary means in said receiver adapted to deposit the dust in said stocking.

8. A dust collector, comprising a frame, a cylinder, springs supporting said cylinder from said frame, a shaft journaled on the frame, a cam block thereon adapted to vibrate said cylinder, a cone supported in said cylinder, a fan journaled on the cone and the end of the cylinder, a stocking engaged at one end to the bottom of the cylinder and at the other end to said frame, a spout at the

bottom of said stocking, and a pivoted gate in said spout.

9. A dust collector, comprising a support, a cylinder, springs suspending said cylinder from said support, a shaft journaled on said support, a cam block thereon adapted to vibrate said cylinder, a cone in said cylinder and spaced a distance from the walls thereof, a rotative fan above said cone, an inlet pipe opening into said cylinder opposite said fan, an air return pipe opening from the cylinder from beneath the cone, a gate in said return pipe adapted to control the passage of the air therethrough, and a stocking removably supported on said cylinder.

In testimony whereof I have hereunto subscribed my name in the presence of two witnesses.

GOTTLIEB SZESNY.

Witnesses:

W. W. WITHEMBURY,
B. KROH.