

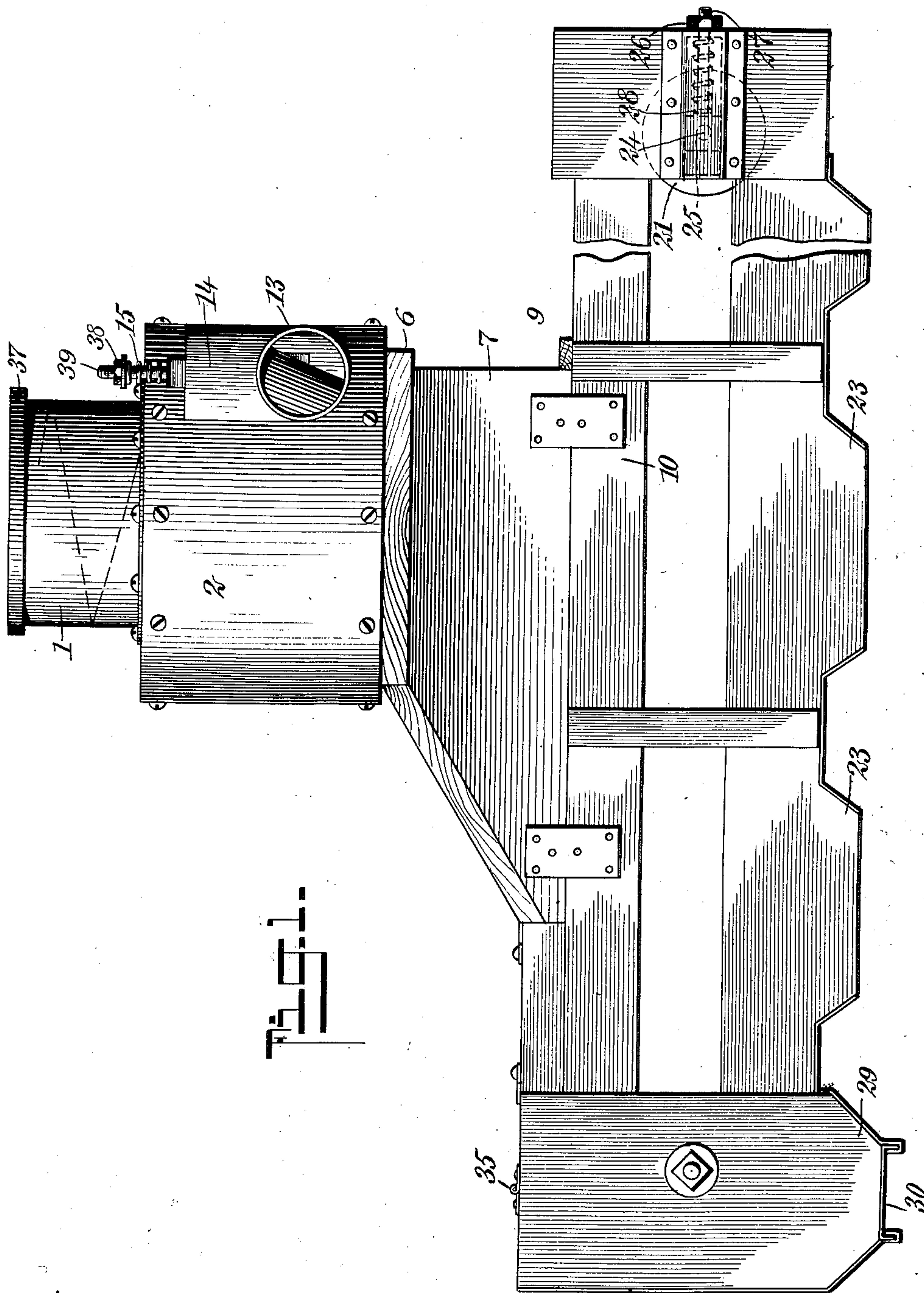
No. 879,771.

PATENTED FEB. 18, 1908.

R. L. HOLLINGSWORTH.
PNEUMATIC GIN FEEDER.

APPLICATION FILED APR. 15, 1907.

3 SHEETS—SHEET 1.



WITNESSES

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H. G. Dieterich

F. L. Rimmer

INVENTOR

³⁴ Robert L. Hollingsworth.

BY

Munro

ATTORNEYS

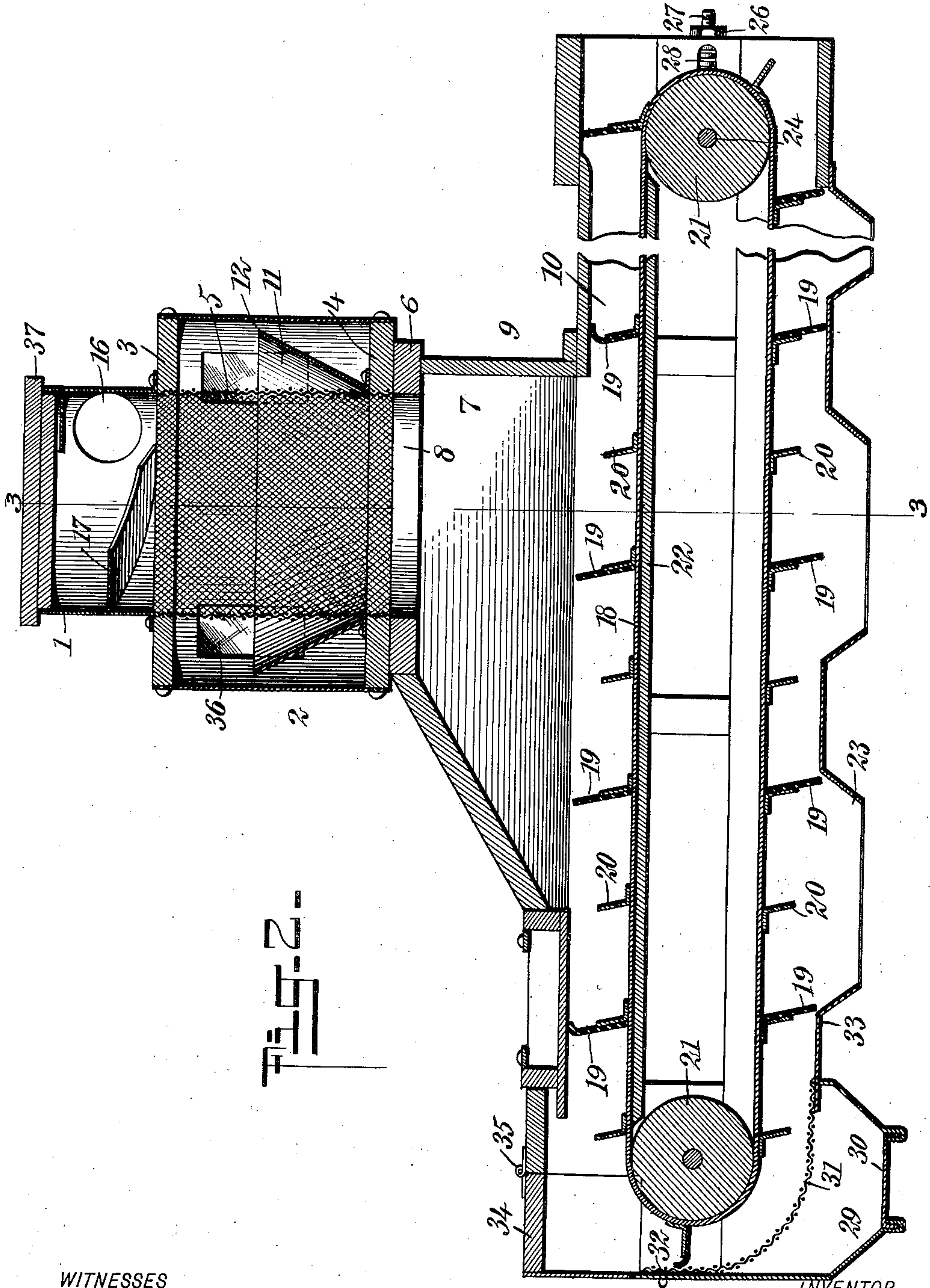
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3 SHEETS—SHEET 2.



WITNESSES

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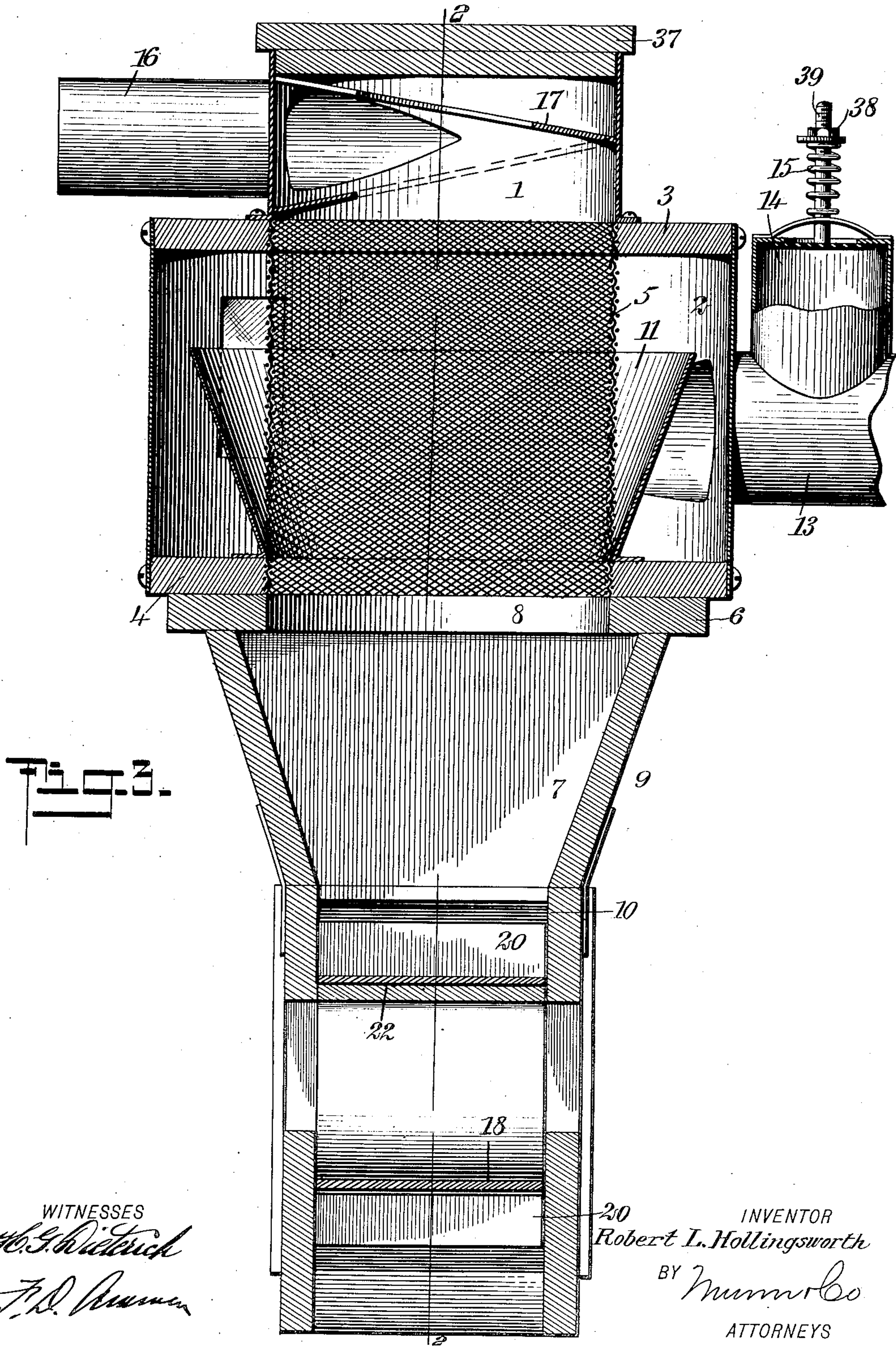


Fig. 3.

WITNESSES
H. G. Dietrich
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UNITED STATES PATENT OFFICE.

ROBERT LEE HOLLINGSWORTH, OF DECATUR, GEORGIA.

PNEUMATIC GIN-FEEDER.

No. 879,771.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed April 15, 1907. Serial No. 368,308.

To all whom it may concern:

Be it known that I, ROBERT LEE HOLLINGSWORTH, a citizen of the United States, and a resident of Decatur, in the county of Dekalb and State of Georgia, have invented a new and Improved Pneumatic Gin-Feeder, of which the following is a full, clear, and exact description.

This invention relates to cotton cleaners and vacuum boxes and belt distributors, such as are used for removing dirt and sand from the cotton before the cotton is passed to a ginning machine.

The object of the invention is to produce a machine of this class, having improved means for feeding cotton into the machine, and for removing the dirt or sand.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the machine, a portion of the body of which is broken away; Fig. 2 is a longitudinal section through the machine, taken on the line 2—2 of Fig. 3; and Fig. 3 is a vertical cross-section through the machine, taken on the line 3—3 of Fig. 2.

Referring more particularly to the parts, 1 represents a bonnet which is of cylindrical form, and seated upon the cylindrical air-chamber 2. The said air-chamber is provided with an upper head 3 having a central opening substantially of the same diameter as the bonnet 1, and has a lower head 4 having a similar opening. Through the heads 3 and 4 a guide sleeve 5 is arranged, the extremities of the said guide sleeve being received in the aforesaid openings. This guide is formed of gauze or wire mesh and constitutes a screen.

The air-chamber 2 is seated upon the cover 6 of a chute 7, said cover being provided with an opening 8, which aligns with the sleeve 5 as shown. The chute 7 constitutes the upper portion of a body 9, the lower portion of which body is formed into an elongated receiver 10. In the lower portion of the air-chamber 2 I provide a baffle 11 which has the form of a conical wall, having its larger dimension disposed upwardly, the lower extremity of the same being attached around

the side of the guide sleeve 5 where it passes through the lower head 4. The upper edge of this baffle is disposed near the side wall of the air-chamber, so that a restricted opening or space 12 is formed, through which the upper portion of the air-chamber communicates with the lower portion thereof. From the lower portion of the air-chamber 2, an exhaust pipe 13 leads, and this exhaust pipe is adapted to be attached to an exhaust fan by means of which the air within the air-chamber may be withdrawn. In the upper side of this exhaust pipe is a relief-valve 14, which opens inwardly if a sufficient vacuum is produced to overcome the pressure of the spring 15; in this way the development of too high a vacuum within the device is prevented. This exhaust pipe 13 preferably passes from the air-chamber, tangentially.

The bonnet 1 is provided with an inlet-pipe 16 which enters the same tangentially, as indicated. Within the bonnet there is provided an inwardly projecting helical guide 17, which guide is formed of an annular plate bent to the required form; this guide is arranged so that an incoming jet of air entering at the pipe 16 will be directed downwardly, as it follows the curvature of the wall of the bonnet.

Within the elongated body 10 there is provided a conveyer belt 18 which is provided with a plurality of wipers 19 of rubber or similar material, and between these wipers transverse cleats 20 are arranged as shown. At its extremities, this belt passes around rollers 21 which are adapted to be continuously driven in any suitable manner. The upper run of the belt lies upon the upper face of a shelf or guide-board 22 which extends longitudinally of the body 9 as shown. The lower side of the body is formed into a plurality of mouths 23 which project downwardly and are adapted to be placed over the hoppers or feed openings of the ginning machine. The wipers 19 are adapted to engage at their edges with the side walls and the upper wall of the body so that they operate to cut off communication from the chute 7 to the ends of the receiver 10. As illustrated in Fig. 2 the right-hand end of the receiver 10 is left open and at this point the roller over which the belt passes has its shaft 24 mounted in blocks 25, which blocks are adjustable by means of a nut 26 which is received on the threaded stem 27 which extends from the block as shown; and a spring 28 is disposed

around the stem and thrusts against the block, tending to force the block toward the left, as will be readily understood. The opposite end of the receiver 10 is formed into a sand box 29, the lower side whereof is normally closed by means of a removable slide or door 30. At a suitable point above this sand box, a screen 31 is provided, formed of wire gauze similar to the gauze of which the guide sleeve 5 is formed. The upper edge of this screen 31 is attached to the end wall 32 of the receiver and its lower edge is attached to the bottom 33 of the receiver as shown. The screen 31 is curved about the center of the adjacent roller 21 as an axis, so that as the wipers 19 pass the screen they are adapted to have their outer edges rub against the screen as indicated.

Just above the sand box, the upper side of the receiver is formed with a door 34 which is provided with hinges 35 so as to be opened at will; in this way access may be had to the screen 31.

In the side wall of the air-chamber 2, windows 36 are provided, having panes of glass or similar material, through which the interior of the air-chamber may be inspected. The bonnet 1 is closed at its upper end by a removable cap 37, which may be removed in order to gain access to the interior of the bonnet. The tension of the spring 15 may be adjusted as desired, by means of a nut 38 which is mounted upon the threaded stem 39 of the valve 14.

In operation it should be understood that the exhaust fan withdraws the air through the outlet 13 from the interior of the air-chamber 2; in this way a partial vacuum is produced, which develops an inward current of air through the inlet opening 16; this air as it enters is laden with raw cotton which is carried upon the air-current in a helical path or swirl, being given this direction by the guide plate 17. The cotton then falls through the guide sleeve 5 which constitutes a screen through which the current of air passes. The baffle 12 operates as an equalizer or diffuser, so as to prevent any tendency of the air to pass through the sleeve or screen 5 at one point. This air passing through the sleeve carries with it small particles of dirt or sand, and the cotton passes downward into the chute 7, falling upon the upper side of the conveyer belt 18; and this belt is driven so that it advances the cotton toward the sand box. As the cotton passes over the screen 31 the wipers operate to dislocate the sand therefrom, which sand passes through the screen into the sand box. As the cotton passes from the sand box it is delivered into the mouths 23 which lead into the ginning machine.

In practice, bonnets similar to the bonnet 1 may be provided of different sizes or construction, and the same will be made inter-

changeable so that any one of the bonnets may be used in connection with the same air-chamber and body.

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

1. In a cotton machine of the class described, a screen, means for developing an air current to carry cotton alongside the screen, a bonnet delivering to the screen, said bonnet being provided with a helical guide for imparting a swirling motion to the cotton, whereby the sand carried thereby may be thrown through the screen.

2. In a cotton machine, and in combination, an air chamber having a substantially cylindrical screen passing therethrough, an outlet pipe leading from the said chamber through which air may be exhausted, whereby to carry cotton alongside the screen, and a bonnet delivering to the screen, said bonnet being provided with a helical guide plate for imparting a swirling motion to the cotton, for the purpose set forth.

3. In a cotton machine of the class described, in combination, an air-chamber having a substantially cylindrical screen passing therethrough, an outer pipe leading from said air-chamber and adapted to withdraw air therefrom, means within said air chamber for equalizing the draft through said screen, and means for delivering a current of air through said air-chamber, within said screen.

4. In a cotton machine of the class described, in combination, an air-chamber having a substantially cylindrical screen disposed therethrough, an outlet pipe leading from said chamber, a baffle plate adapted to diffuse the draft of air through said screen, and a bonnet in connection with said chamber, having an outlet pipe to which a current of air may pass, inwardly, said bonnet having a guide for directing the incoming air current through said screen.

5. In a cotton cleaner, in combination, an air-chamber having a pair of heads, a substantially cylindrical screen attached in said heads and adapted to direct the incoming cotton through said air-chamber, an outlet pipe leading through the side wall of said air-chamber, a substantially conical baffle plate having the small end disposed near one end of said air-chamber and affording means for diffusing the air current drawn through said screen, and a bonnet above said air-chamber, and having means for directing an incoming air-current through said screen.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT LEE HOLLINGSWORTH.

Witnesses:

GEO. B. RUHS,
T. R. MILLER.