

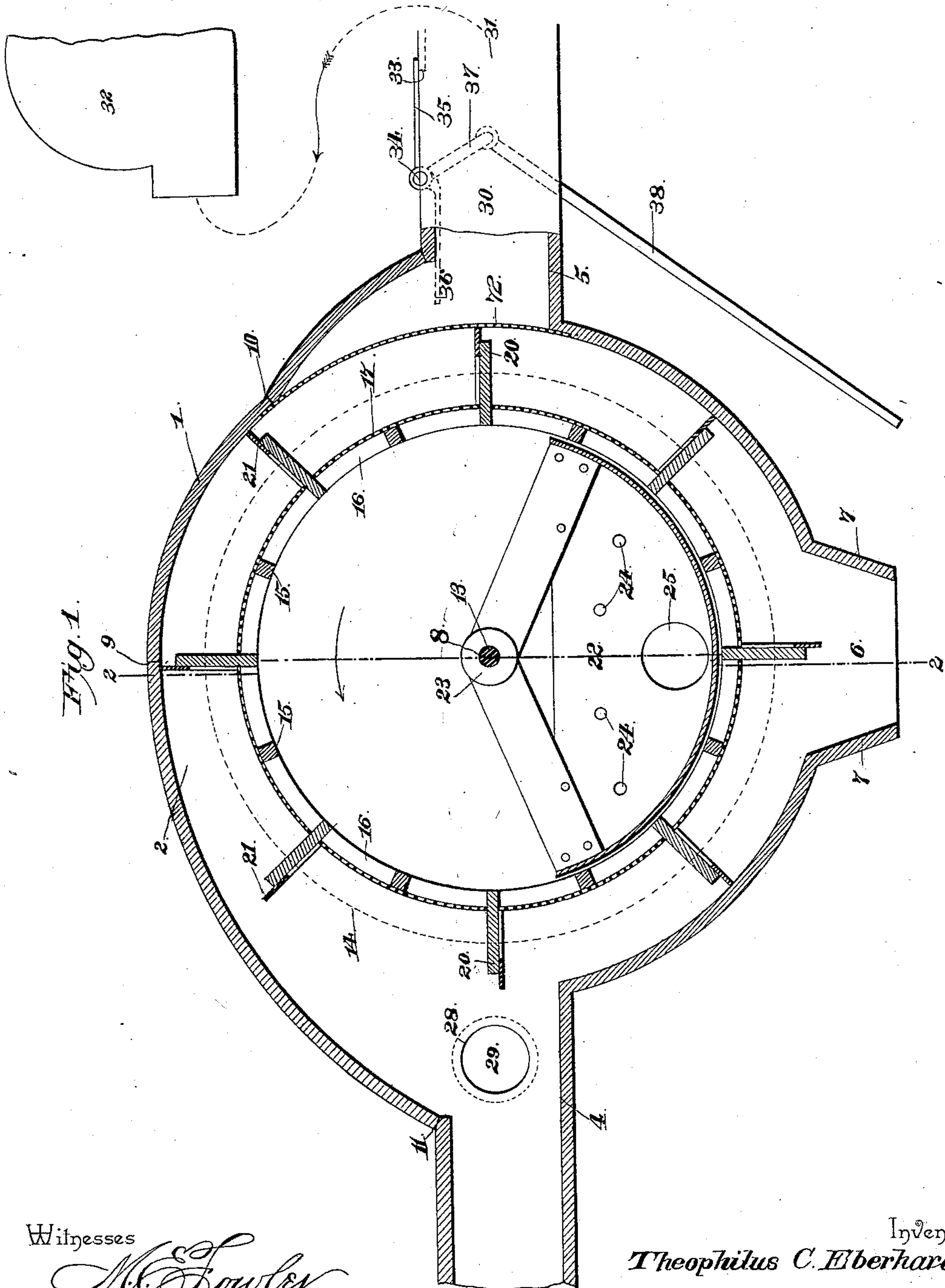
(No Model.)

2 Sheets—Sheet 1.

T. C. EBERHARDT.
DEVICE FOR HANDLING AND CLEANING SEED COTTON BY
ATMOSPHERIC SUCTION.

No. 452,552.

Patented May 19, 1891.



Witnesses

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By his Attorneys,

Inventor
Theophilus C. Eberhardt

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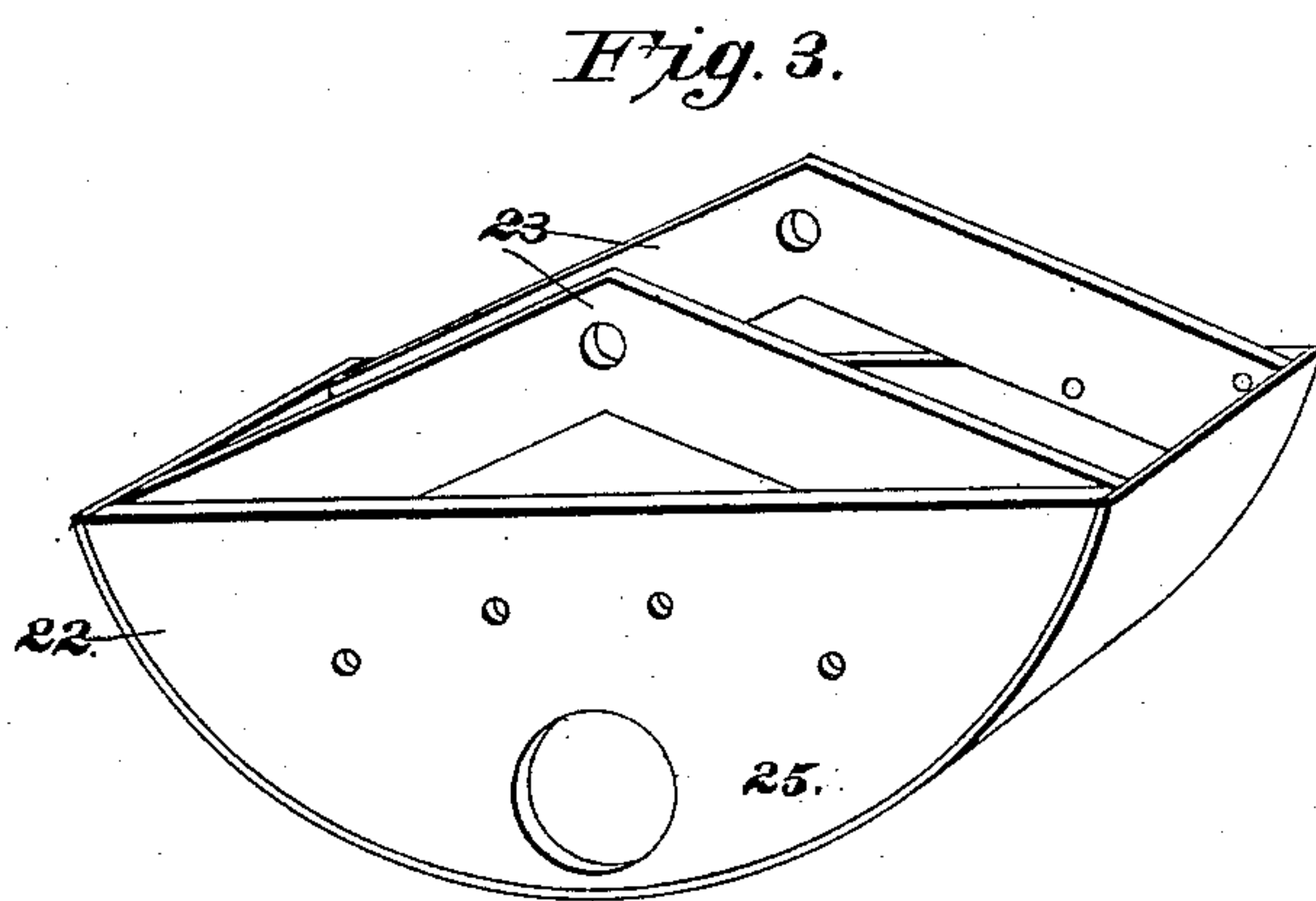
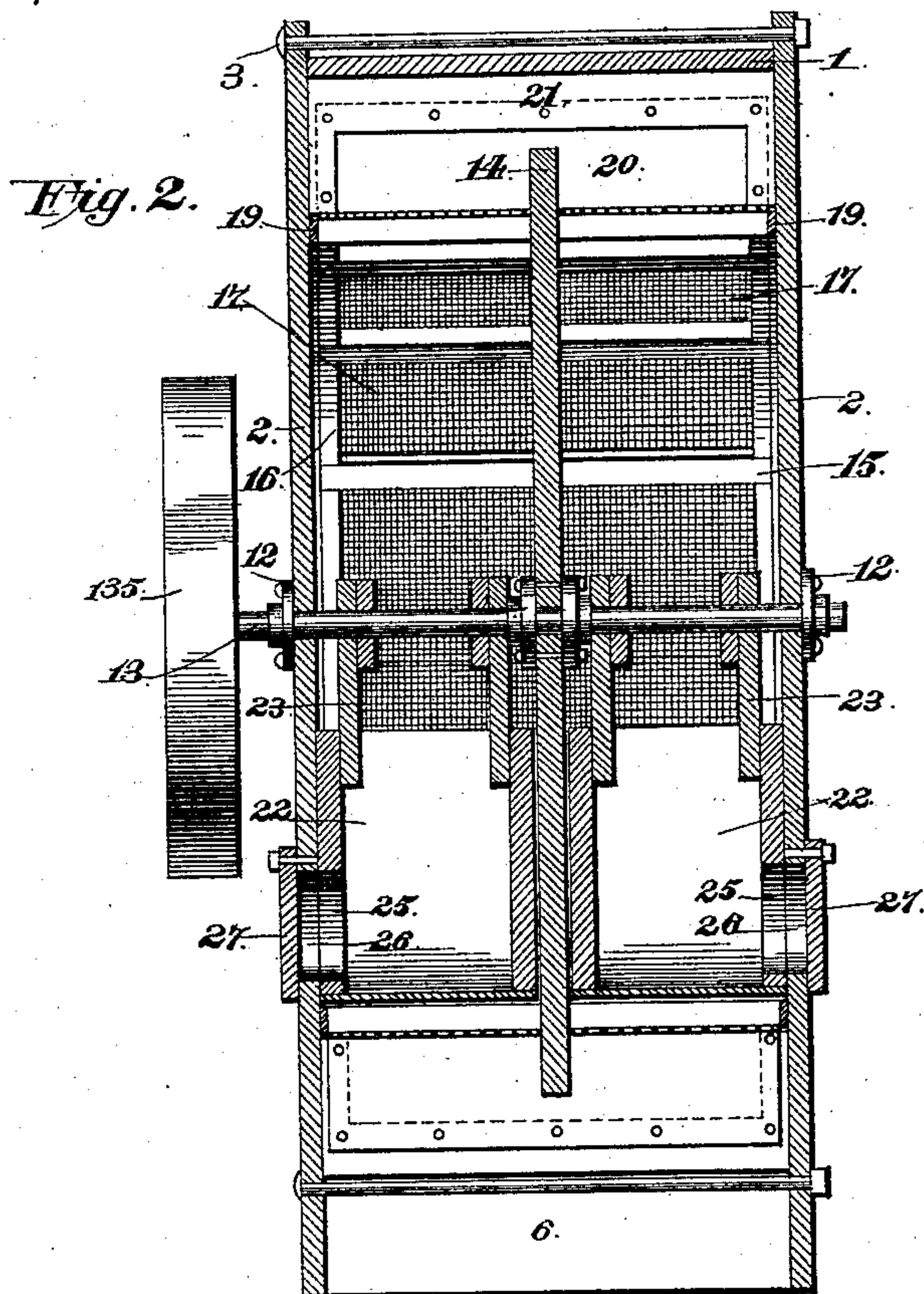
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UNITED STATES PATENT OFFICE.

THEOPHILUS CHARLES EBERHARDT, OF CUERO, TEXAS.

DEVICE FOR HANDLING AND CLEANING SEED-COTTON BY ATMOSPHERIC SUCTION.

SPECIFICATION forming part of Letters Patent No. 452,552, dated May 19, 1891.

Application filed April 24, 1890. Serial No. 349,393. (No model.)

To all whom it may concern:

Be it known that I, THEOPHILUS CHARLES EBERHARDT, a citizen of the United States, residing at Cuero, in the county of De Witt and State of Texas, have invented a new and useful Device for Handling and Cleaning Seed-Cotton by Atmospheric Suction, of which the following is a specification.

This invention relates to devices for handling and cleaning seed-cotton by atmospheric suction; and it has for its object to construct a device of this class which shall be simple in construction and efficient in operation, and by means of which the cotton may be conveyed and cleaned without passing through the exhaust-fans, thereby avoiding danger of the machine being choked while in operation.

The invention consists in the construction and arrangement of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a longitudinal sectional view of a machine embodying my improvements; Fig. 2, a transverse sectional view of the same, taken on the line 2 2 of Fig. 1. Fig. 3 is a perspective detail view of one of the shields located within the revolving screen.

Like numerals of reference indicate like parts in all the figures.

The casing of my improved machine consists of a shell or drum 1, made of any suitable material, preferably sheet metal, and secured between the heads or ends 2 2 by means of the transverse bolts or braces 3. The shell 1 is provided on opposite sides with the inlet 4 and the outlet 5, and the lower portion of the shell has the exit-opening 6 for the seed-cotton, at opposite sides of which opening inclined flanges 7 may be placed, as will be seen in Fig. 1 of the drawings. The lower portion of the shell—that is, the portion between the lower edges of the inlet and outlet and the exit-opening 6—is concentric with the central point 8. A portion of the upper side of the shell, extending between the points 9 and 10 from the top of the casing in the direction of the outlet, is likewise concentric. The upper front portion of the shell, between the points 9 and 11, is on the curve of a larger circle, and the portion of the shell between

the point 10 and the upper edge of the outlet is flared or deflected outwardly, as will be clearly seen in Fig. 1. The reason for this peculiar construction of the casing will be readily understood from the description of the construction and operation of the machine, which is to follow.

The heads or ends of the casing are provided with boxes or bearings 12 for a transverse shaft 13, which is provided at one end with a band-wheel 135 to receive motion from suitable operating machinery. Mounted securely upon said shafts centrally between the sides of the casing is a disk 14 of wood or other suitable material. In lieu of this disk, however, a series of radial spokes may be used when preferred. Said disk is provided with a circumferential series of transverse braces 15, arranged concentrically and at a distance from the periphery of the disk. The ends of these braces are connected by segments 16 of wood, and said braces and segments form a cylindrical frame upon which the screens 17, which are made of wire-cloth of suitable mesh, are secured on opposite sides of the disk 14. The transverse braces 15 extend nearly to the ends of the casing, and to the rings or hoops formed by the segments 16 are secured packing-strips 19, of rubber, leather, or other suitable material, which extend to and are in contact with the heads or ends 2, thus forming air-tight joints.

20 20 designate the series of wings or paddles which are secured in recesses in the outer edge of the disk 14. Said paddles extend nearly to the ends of the casing and to that portion of the shell which is concentric with the shaft, and are provided with strips 21 of packing material, such as rubber or leather, whereby tight joints will be formed with the ends and the concentric portion of the shafts of the casing.

It will be seen that the casing is divided by the disk 14 into two separate compartments. In each of said compartments is arranged a segmental box or shield 22, which is suspended by hangers 23 from the shaft and which extends very nearly to and is concentric with the revolving screen. The dimensions of these segmental shields are such that the upper ends or edges of said shields shall be on a

level with the lower edges of the inlet 4 and outlet 5 of the casing. The shields 22 are secured to the sides of the casing by means of bolts 24, so as to prevent said shields from revolving. The function of these shields is to prevent the suction which in operation is created in the casing from affecting the cotton-outlet 6. The outer side of each of the shields is provided with a hand-hole 25, which is in alignment with the corresponding hand-hole 26, formed in the sides of the casing. Swinging lids 27 cover the hand-holes 26. A similar hand-hole 28, covered by a lid 29, is formed in the side of the casing at the inlet of the latter.

The outlet of the casing has a spout 30, which is connected by a flue 31 with the exhaust-fan 32. The spout 30 has in its upper side an opening 33, at one side of which is journaled a rock-shaft 34, having a double valve or damper, one of the leaves of which 35 normally covers the opening 33, while the other leaf 36 extends horizontally into the flue. The rock-shaft 34 has an arm or crank 37, to which is connected a handle or operating-rod 38. It will be seen that by oscillating the rock-shaft the leaf 35 of the valve may be raised so as to uncover the opening 33, while at the same time the leaf 36 swings down into the spout 30, thus cutting off communication between the casing of the machine and the exhaust-fan. The latter will thus receive a continual supply of air, even when it is cut off from communication with the shell of the machine, through the opening 33, thereby preventing any of the parts of the machine or fan from being injured.

The operation of my invention is as follows: The inlet of the shell or casing is connected by means of a suitable conveyer with the bin, house, or other place where the seed-cotton is stored, or with a wagon containing the seed-cotton. Motion is then imparted to the fan at a high rate of speed to create sufficient suction to draw the seed-cotton through the tubular conveyer and through the inlet 4 into the casing. At the same time the shaft carrying the screens is caused to revolve slowly in the direction of the arrow. The wings or paddles 20 should be placed sufficiently close together to cause at least one of said paddles to be at all times between the inlet 4 and the cotton-outlet 6 and between the outlet 5 and the cotton-outlet and in contact with the concentric portions of the casing at these points and likewise in contact with the concentric portion between the points 9 and 10 of the casing. The cotton-outlet will thus, partly on account of arrangement of said paddles and partly on account of the presence of the shields 22, be unaffected by the draft in an upward direction, which would otherwise be caused in the said cotton-outlet and which would interfere with or prevent the escape of the cotton. By the suction through the casing the cotton is brought into contact with the cylindrical screens between

the paddles 20, and sand, dust, and other impurities will be drawn through the said screens and casing and out through the outlet 5. The cotton will be carried by the paddles to the outlet 6, through which it will drop by gravity.

It may be found desirable to arrange a curved screen 72 between the point 10 of the casing and the lower edge of the outlet 5 concentrically with the shaft for the purpose of preventing any cotton which may be carried around past the exit-opening 6 by the flanges 20 from escaping through the outlet 5 to the exhaust-fan.

I would have it understood that I reserve the right to any changes and modifications in the construction of the machine which may be resorted to without departing from the spirit of my invention.

Having described my invention, what I claim is—

1. The combination of a casing having an inlet adapted to be connected with the source of supply of cotton and provided with a cotton-outlet at its bottom, a revolving cylindrical screen arranged within said casing, means for creating suction through the casing and the revolving screen, and the flanges or paddles extending radially from and across the periphery of said revolving screen and adapted to bear against the inner wall of the casing, substantially as and for the purpose set forth.

2. The combination of the casing constructed substantially as described, the revolving shaft, the rotary screen mounted upon the latter, and the flanges or paddles having packing-strips secured thereto, substantially as set forth.

3. The combination of the casing provided with the inlet and outlet and having a cotton-outlet in the bottom thereof, the revolving screen mounted in said casing and having the flanges or paddles provided with packing-strips, and the segmental shields suspended by hangers from the shaft and secured to the ends of the casing, substantially as set forth.

4. The combination of the casing having the inlet and outlet and provided with the cotton-outlet in the bottom thereof, the revolving screen mounted in said casing and having the flanges or paddles provided with packing-strips, the segmental shields suspended by hangers from the shaft and secured to the ends of the casing, and means for creating suction through the outlet in the side of the casing, substantially as set forth.

5. The combination of the casing, the revolving screen, the segmental shields suspended by hangers from the shaft of the screen and having hand-holes aligning with hand-holes in the sides of the casing, and swinging lids for said hand-holes, substantially as set forth.

6. The combination of the casing having the inlet adapted to be connected with the source of cotton-supply, the outlet-spout having an opening in its upper side and the cotton-outlet extending downward from the bottom of

said casing, the revolving screen having flanges or paddles provided with packing-strips, the segmental shields arranged within the screen above the cotton-outlet in the bottom of the casing, an air-exhausting mechanism connected with the outlet-spout, and a rock-shaft mounted in the latter at one side of the opening therein and having a double valve or damper, whereby when the opening in the upper side of the spout is uncovered communication shall be simultaneously cut off between the casing and the exhaust mechanism, substantially as set forth.

7. The combination, with the casing, of the transverse shaft, the disk or spokes mounted upon the latter and having transverse braces, the segments attached to said braces, and the screen mounted upon the frame thus constructed, substantially as set forth.

8. The combination of the casing having the inlet and outlet and a cotton-outlet in the bottom thereof, the revolving screen having the flanges or paddles, the segmental shields suspended by hangers on the shaft of the screen and secured to the ends of the casing, the segmental shield arranged at the outlet in the side of the casing concentrically with the revolving screen, and means for creating suction through the said outlet, substantially as and for the purpose set forth.

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

THEOPHILUS CHARLES EBERHARDT.

Witnesses:

V. W. HARETT,
H. F. HARDT.