

No. 744,645.

PATENTED NOV. 17, 1903.

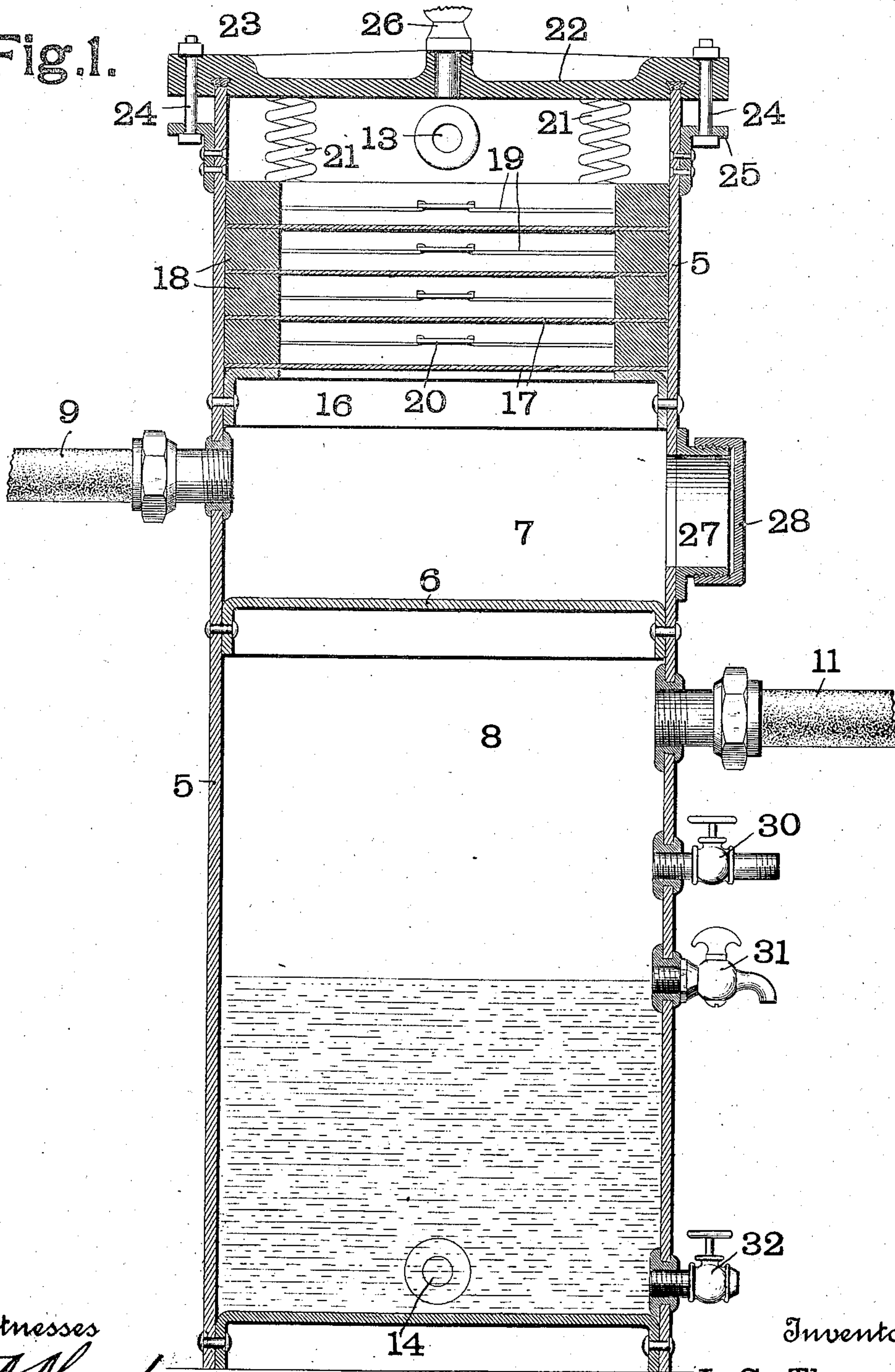
J. S. THURMAN.
DUST COLLECTOR.

APPLICATION FILED JUNE 25, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

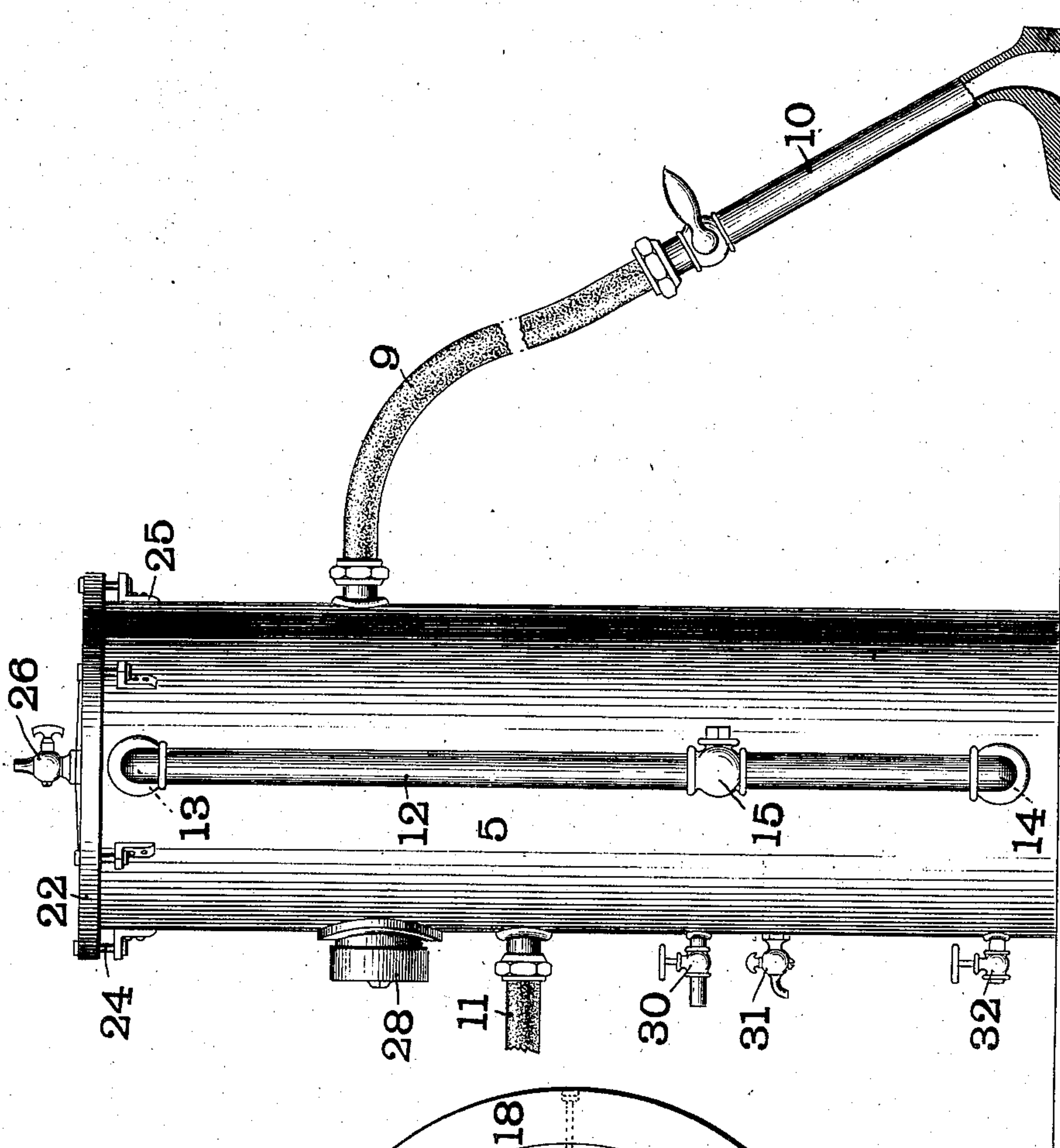
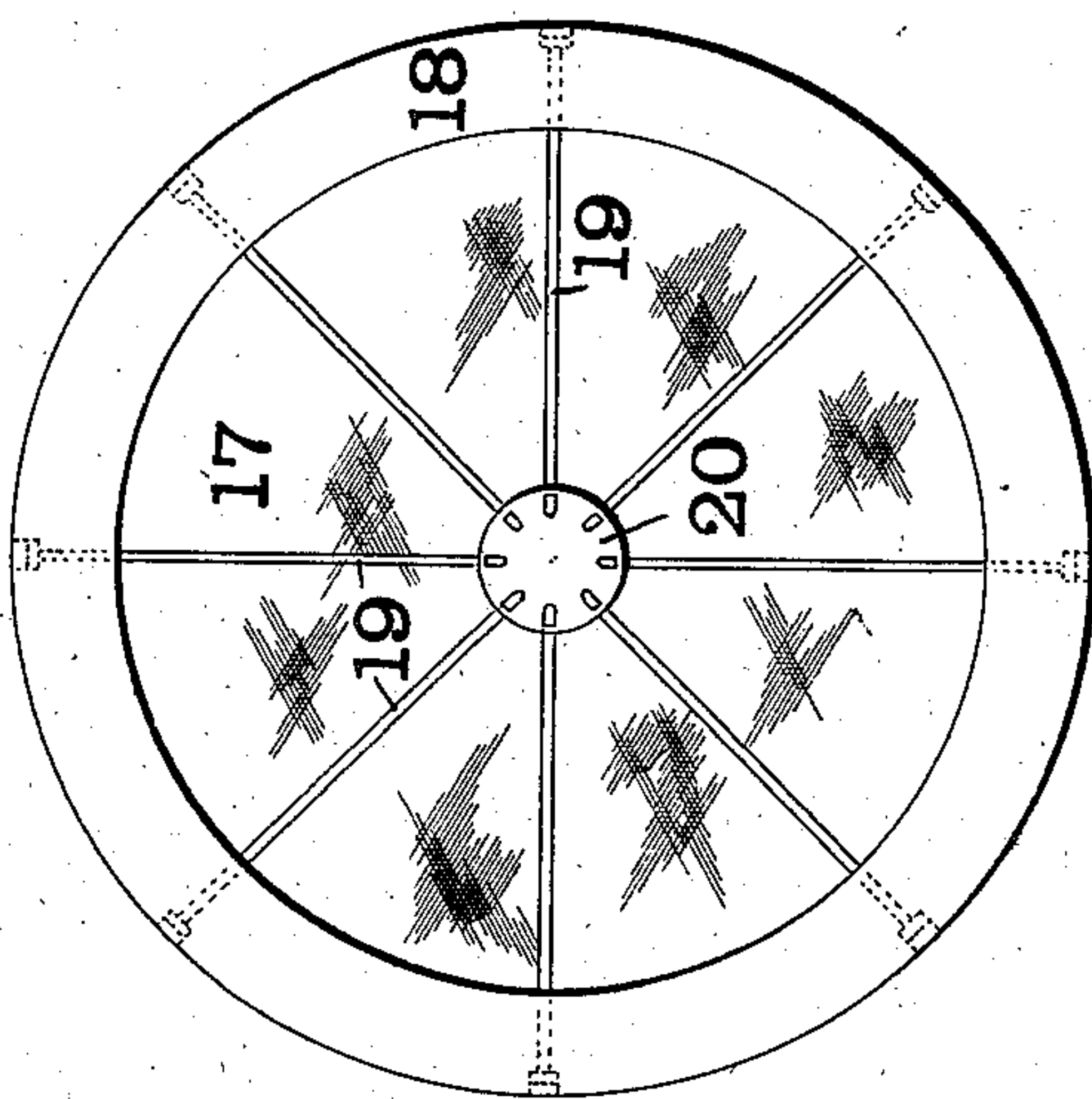


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN S. THURMAN, OF ST. LOUIS, MISSOURI.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 744,645, dated November 17, 1903.

Application filed June 25, 1903. Serial No. 162,999. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. THURMAN, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented a certain new and useful Dust-Collector, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to dust-collectors, and more particularly to a dust-collector to be interposed between a suitable suction-pump and a pneumatic renovating-tool, such as is used for cleaning carpets, rugs, and the like.

My invention consists in part in the combination, with an air-chamber provided with a foraminous diaphragm, of a water-chamber, an inlet on one side of said diaphragm, a conduit connecting the other side of said diaphragm with said water-chamber below the water-line thereof, and an outlet for said water-chamber above the water-line thereof.

My invention also consists in certain other novel features and details of construction, all of which will be described in the following specification and pointed out in the claims affixed hereto.

In the accompanying drawings, which illustrate one form of dust-collector made in accordance with my invention, Figure 1 is a vertical central section. Fig. 2 is a top plan view of one of the foraminous diaphragms, together with the frame supporting the same; and Fig. 3 is a side elevation on a reduced scale, showing the renovating-tool connected with the collector.

Like marks of reference refer to similar parts in the several views of the drawings.

5 is the casing of the collector, which is preferably cylindrical in form and preferably made of sheet metal. The casing 5 is divided, by means of the partition 6, into an upper or air chamber 7 and a lower or water chamber 8. Leading from near the lower end of the air-chamber 7 is an inlet pipe or hose 9, to the end of which is attached a renovating-tool 10 of any suitable construction. Leading from near the top of the water-chamber 8 is a pipe 11, which is connected to a suitable suction-pump. The air-chamber 7 and

water-chamber 8 are connected by means of a pipe 12. The pipe 12 communicates with the chamber 7 through an outlet-opening 13 near the top of said chamber and with the water-chamber 8 through an inlet-opening 14 near the bottom of said chamber. Situated in the pipe 12 is a stop-cock 15. Secured in the air-chamber 7 above the inlet-pipe 9 is an annular support 16, upon which are carried a number of foraminous diaphragms. These diaphragms each consist of a circular piece of cloth 17, glued or otherwise secured to the lower face of an annular ring or frame 18. These rings or frames 18 are preferably formed of wood and are supplied with rods or wires 19, extending from said frame to a hub 20 at the center thereof. These wires 19 serve as reinforcements of the diaphragm proper, 17. The diaphragms are held firmly together by means of coil-springs 21, which rest upon the top frame 18 and are held down by means of a removable cover 22. This cover 22 is provided with a packing-ring 23, cooperating with the upper edge of the casing 5, so as to form an air-tight joint. The cover 22 is held in position by means of bolts 24 passing through the said cover and through lugs 25, carried on the casing 5. The cover 22 is also provided with a stop-cock 26 for the purpose hereinafter to be described. The chamber 7 is provided below the support 16 with an opening 27, covered by a screw-cap 28.

The water-chamber 8 is provided below the outlet-pipe 11 with a stop-cock 30, which is adapted to be secured to a pipe or hose for the purpose of filling the water-chamber 8 with water. Below the stop-cock 30 and determining the water-line of the water-tank is a petcock 31. At the lower end of the water-chamber is a drain-cock 32.

The operation of my collector is as follows: The inlet-pipe 9 being connected with the renovating-tool 10 and the outlet-pipe 11 with a suitable suction-pump, the renovating-tool 10 is passed over the carpet or other article to be cleaned and the dust and air from the same passes up from the tool and pipe 9 into the lower end of the air-chamber 7. The air then passes up through the various foraminous diaphragms 17, which extract from it all the coarser particles of dust. These dia-

phragms being held firmly together by means of the springs 21 the dust cannot pass around them. The air thus freed of all the coarser particles of dust passes through outlet-opening 13, pipe 12, and inlet-opening 14 into the lower end of the water-chamber 8. It thence passes up through the water in the water-chamber, which extracts from the air the remaining traces of dust. The air then passes out through the outlet-pipe 11 to the suction-pump. In order to partially clean the diaphragm 17, the cap 28 is removed and an air-blast is passed down through the stop-cock 26, which thus blows a large part of the dust out of the air-chamber through the opening 27. In order to thoroughly clean the diaphragm 17, however, the removable cap 22 is removed from the collector, so that the said diaphragm can be lifted out and cleaned in any suitable manner. In order to fill the water-chamber 8, the stop-cock 15 in the pipe 12 is closed and the stop-cock 30 after being connected with a suitable water-supply is opened. The petcock 31 provides means for ascertaining when the water has reached the desired level. In order to discharge the water after it has become charged with dust, the drain-cock 32 is opened, so as to allow the water to run out.

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

1. In a dust-collector, the combination with an air-chamber, of a foraminous diaphragm therein, an inlet at one side of said diaphragm, an outlet at the other side of said diaphragm, a water-chamber, a conduit connecting said air-chamber with said water-

chamber below the water-line thereof, and an outlet for said water-chamber above the water-line thereof.

2. In a dust-collector, the combination with an air-chamber, of a horizontal foraminous diaphragm therein, an inlet for said chamber below said diaphragm, an outlet for said chamber above said diaphragm, a water-chamber, a conduit connecting said air-chamber with said water-chamber below the water-line thereof, and an outlet for said water-chamber above the water-line thereof.

3. In a dust-collector, the combination with an air-chamber, of a plurality of removable foraminous diaphragms therein, an inlet at one side of said diaphragms, an outlet at the other side of said diaphragms, a water-chamber, a conduit connecting said air-chamber with said water-chamber below the water-line thereof, and an outlet for said water-chamber above the water-line thereof.

4. In a dust-collector, the combination with an air-chamber, of a foraminous diaphragm therein, a normally open inlet at one side of said diaphragm connected with a renovating-tool, a normally open outlet at the other side of said diaphragm, a normally closed inlet at the same side of said diaphragm as said open outlet, and a normally closed outlet at the same side of said diaphragm as said open inlet.

In testimony whereof I have hereunto set my hand and affixed my seal in the presence of the two subscribing witnesses.

JOHN S. THURMAN. [L. S.]

Witnesses:

JAMES H. BRYSON,
W. A. ALEXANDER.