

(No Model.)

C. O. WILLIAMS.
VENTILATING SYSTEM.

No. 560,054.

Patented May 12, 1896.

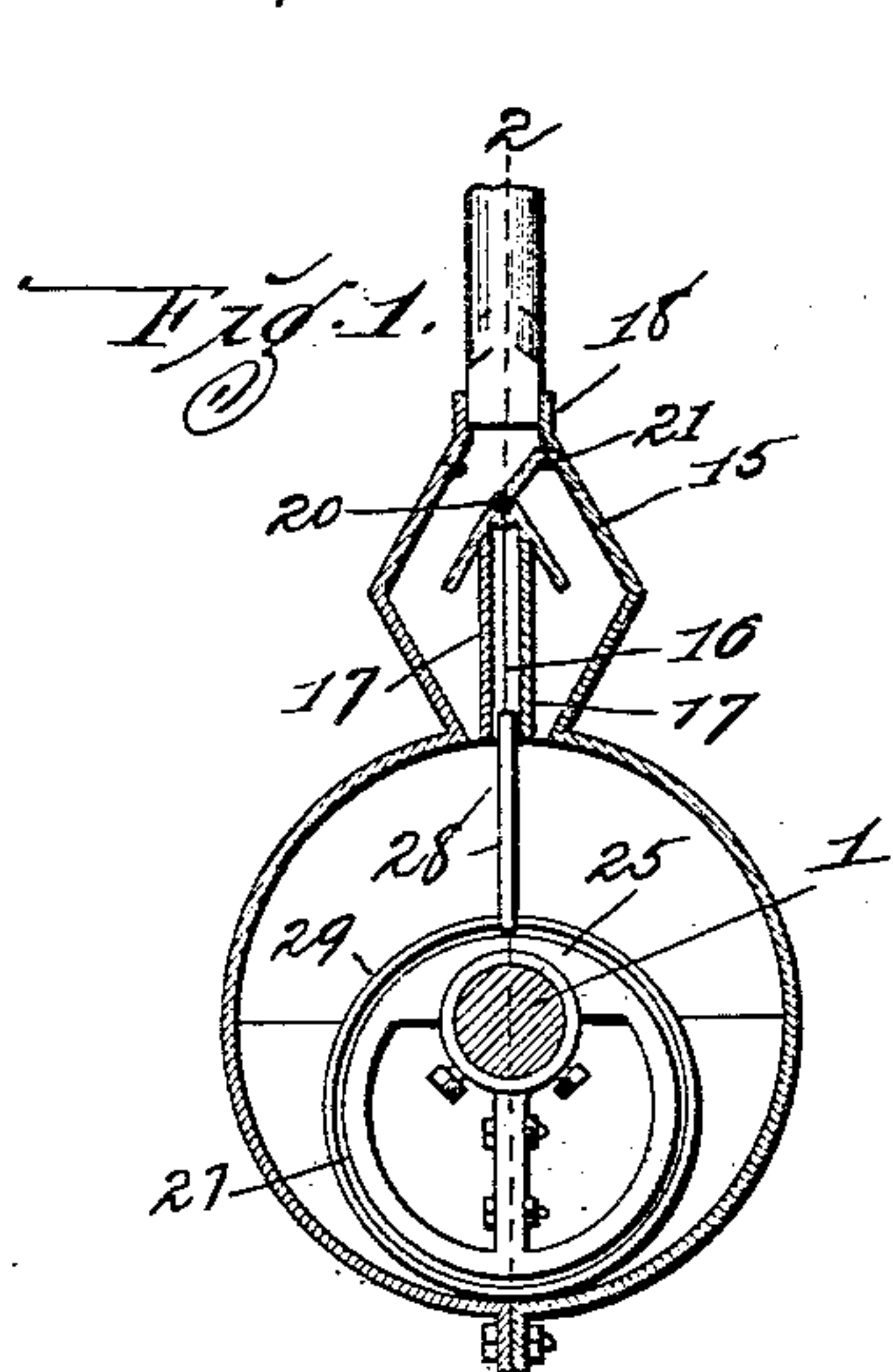


Fig. 1.

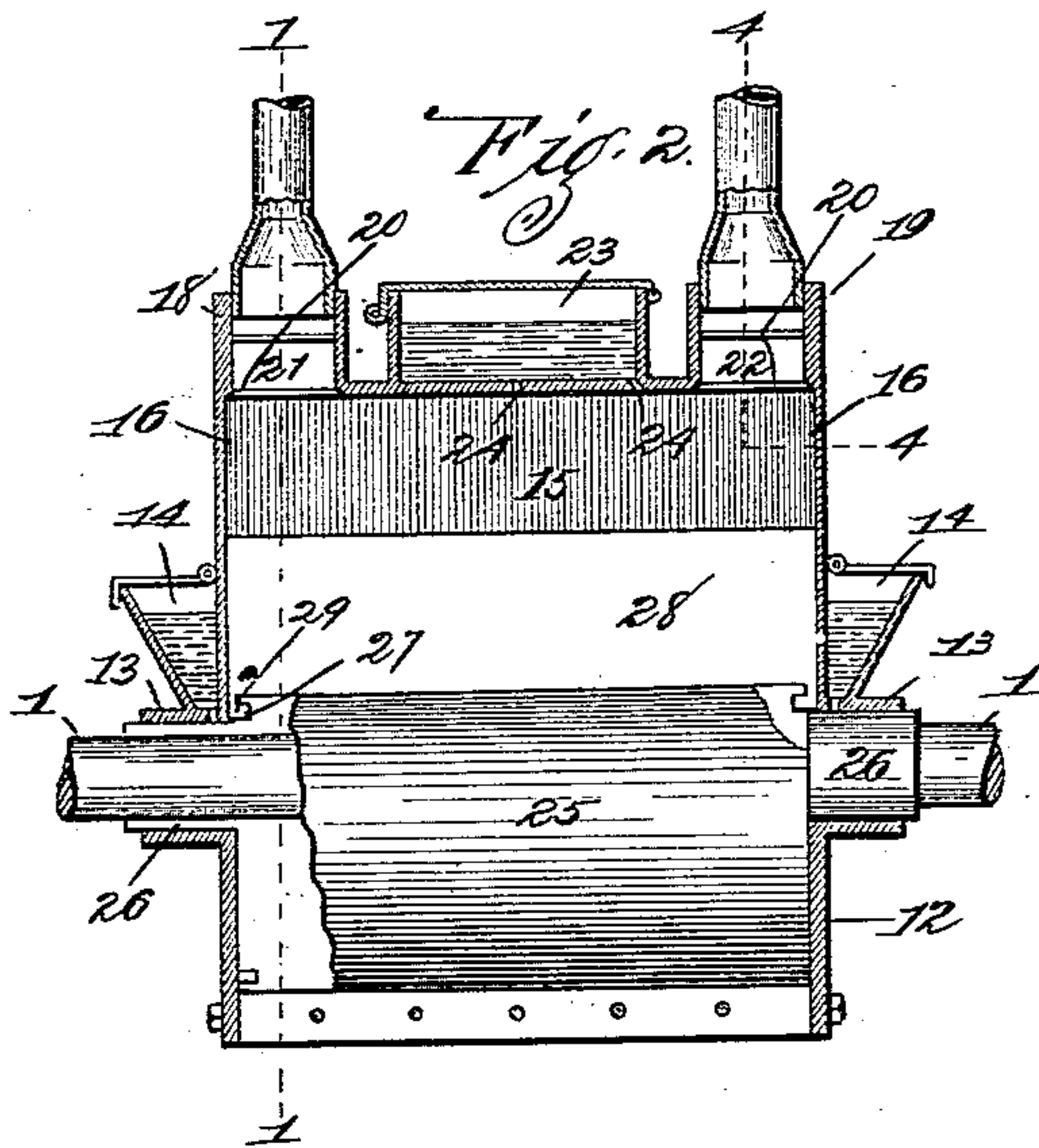


Fig. 2.

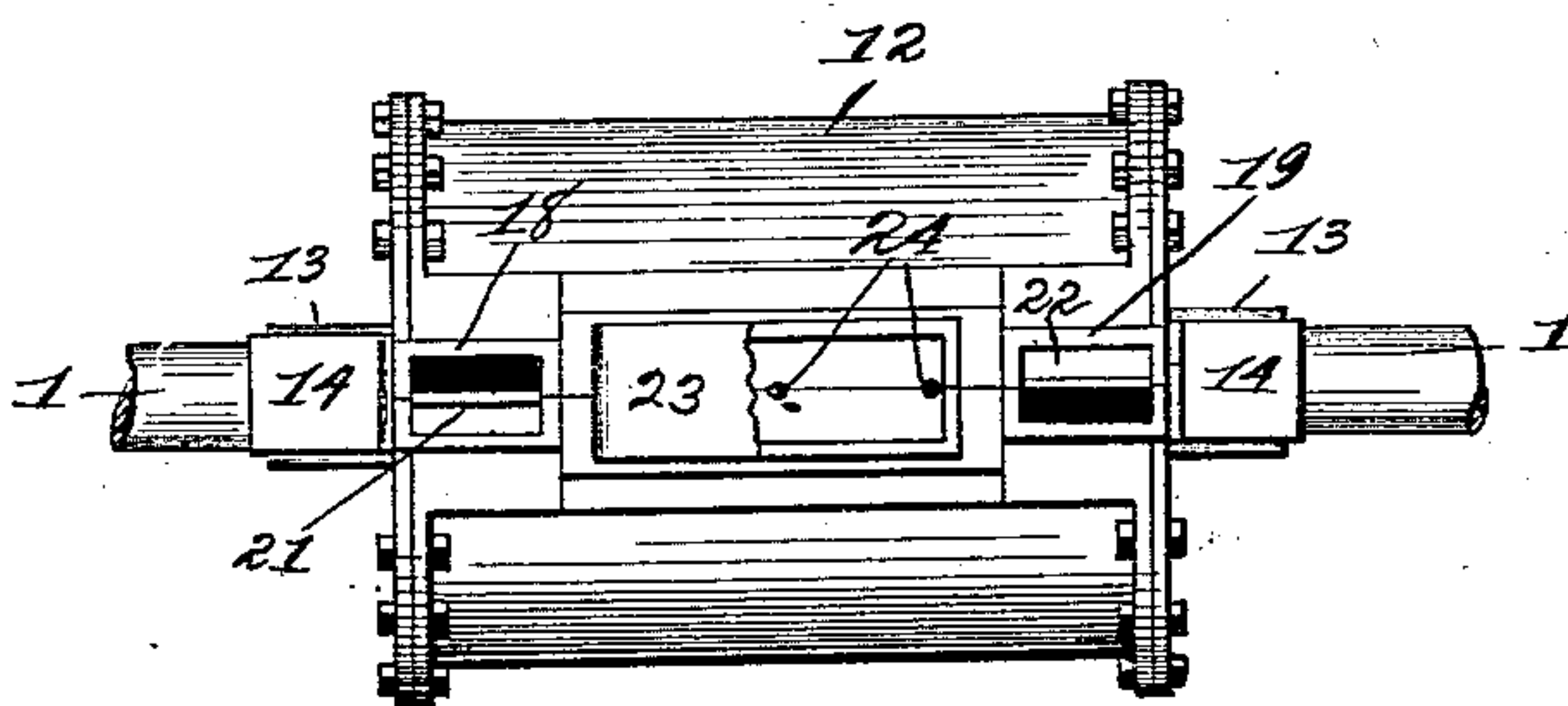
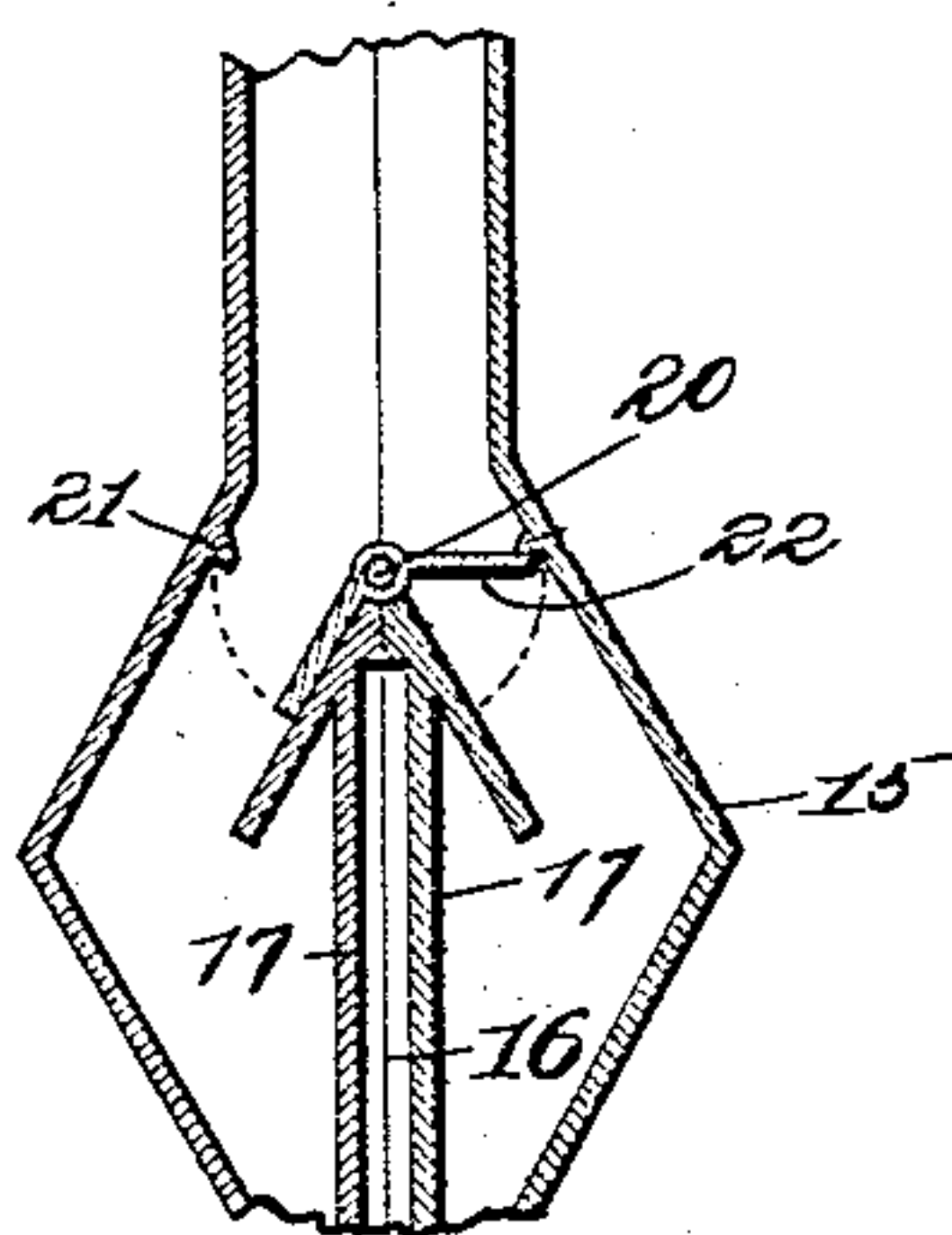
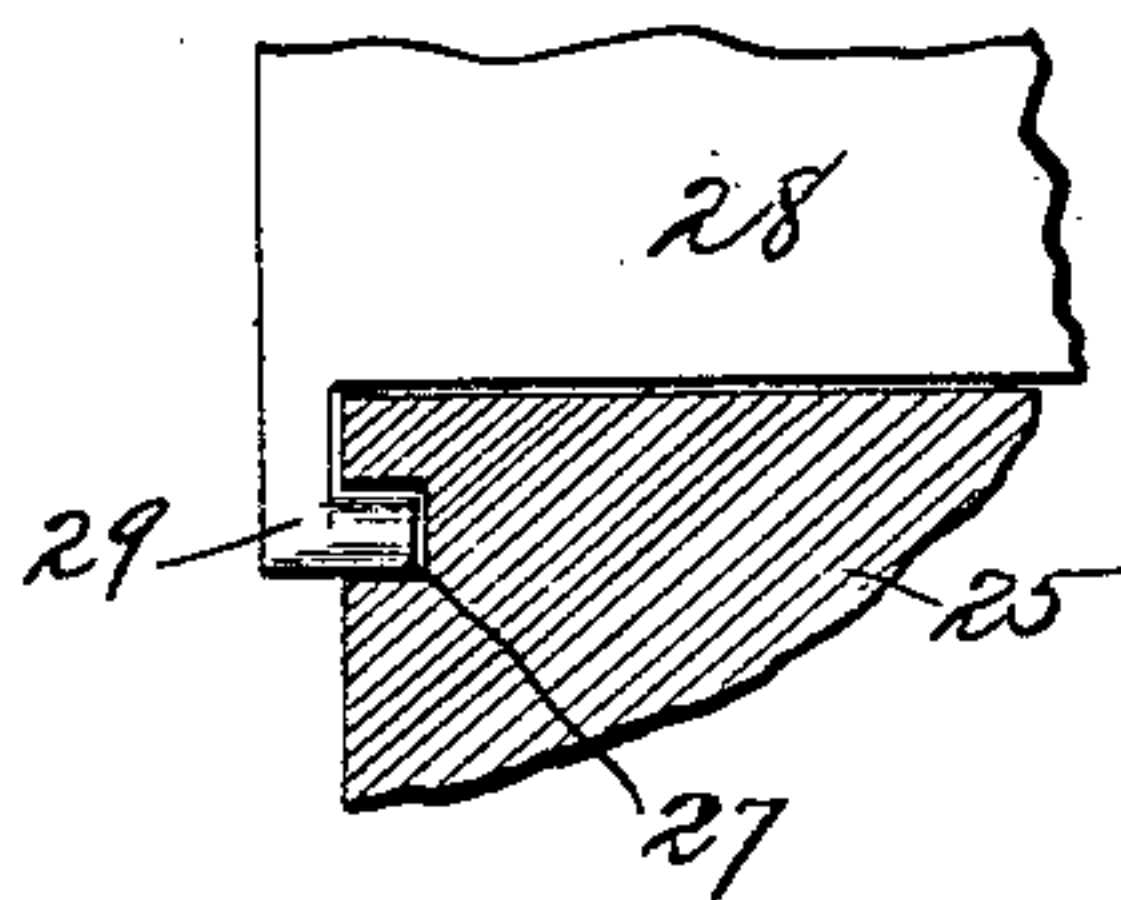


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES O. WILLIAMS, OF ST. LOUIS, MISSOURI.

VENTILATING SYSTEM.

SPECIFICATION forming part of Letters Patent No. 560,054, dated May 12, 1896.

Application filed February 11, 1895. Serial No. 537,970. (No model.)

To all whom it may concern:

Be it known that I, CHARLES O. WILLIAMS, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Ventilating Systems, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to a ventilating system, and especially to that class of ventilators that are applied to railway-cars.

The object of my invention is to provide improved means for forcing the fresh-air supply through a filter before said fresh-air supply passes into the interior of the car.

My invention consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

In the drawings, Figure 1 is a vertical cross-sectional view on the line 1 1 of Fig. 2. Fig. 2 is a vertical longitudinal sectional view taken approximately on the indicated line 2 2 of Fig. 1. Fig. 3 is a top plan view of the pump. Fig. 4 is a vertical sectional view on the indicated line 4 4 of Fig. 2. Fig. 5 is a detail view showing the manner in which a vertically-moving partition is carried by the cylinder that is mounted upon the car-axle.

Mounted upon one of the car-axes 1 and held in position thereto by means of common braces bolted to the car-truck is a cylindrical casing 12, the same being formed in two mating halves to facilitate the mounting of said casing upon the axle. The ends of this casing are provided with bearings 13, said bearings being provided with oil-cups 14.

Formed integral with the top half of the casing 12 is a casing 15, that is provided with a vertical slot 16, the same extending the entire length of said casing and between integral walls 17 formed therein. At each end of the casing 15 and on the top thereof are formed rectangular boxes 18 and 19, in which are transversely located and pivoted upon pins 20 valves 21 and 22. The valve 21 is located within the box 18 and is pivoted directly above the partitions 17 and swings from one side of said box 18 to the other. The valve 22 is of inverted-V shape and is pivoted directly above the partitions 17 and in the box 19. The valve 22 may be properly termed the

“inlet-valve” and the valve 21 the “exhaust-valve.”

Formed integral with the casing 15 between the rectangular boxes 18 and 19 is an oil-receptacle 23, the same being provided with outlets 24, communicating with the interior of the slot 16.

Eccentrically mounted upon the car-axle on the interior of the cylinder 12 is a hollow cylinder 25, the same being constructed in mating halves to facilitate mounting the same upon the axle. The journals 26 on the ends of this cylinder 25 are mounted in journal-bearings 13, formed integral with the casing 12. The eccentrically-mounted cylinder 25 is of such a diameter as that a certain point on the periphery thereof will always contact with and engage against the inner surface of the cylinder 12. Formed in the ends of the cylinder 25 is a groove 27, the same being concentric with the diametric center of said cylinder. A plate 28 is adapted to slide in the vertical slot 16 and is provided on its lower corners with hooks 29, a portion of said hooks engaging in the grooves 27. The air-outlet pipe may be extended to whatever point beneath the car it is desired to discharge the fresh air into said car.

The operation is as follows: When a car to which my system is attached is moved, the wheels rotate in the usual manner, and the eccentrically-mounted cylinder 25 being rigidly fixed to one of the car-axes will be revolved. As said cylinder revolves within the casing the plate 28 will be moved vertically within the slot 16 between the partitions 17, and thus a partition will be formed in said casing to cut off the direct passage of air through said casing. As the cylinder 25 is revolved within the casing a suction will necessarily be created, and as the valve 22 in the box 19 is an inlet-valve fresh air will thus be drawn into the pump. The fresh air thus drawn into the cylindrical casing passes around said casing in front of the cylinder 25 and is forced through the box 18, in which is located the exhaust-valve 21, and through the pipe connecting with the interior of the car. Necessarily a continued rotation of the axle upon which the cylinder 25 is eccentrically mounted will result in a continued suction of

air through the inlet 2. Simultaneous with said suction and the movement of the axle there will be an exhaust through the pipe that leads to the interior of the car. By constructing the inlet-valve 22 double or with two wings and the exhaust-valve single or but with a single wing it is obvious how a supply of fresh air will be forced into the interior of a car no matter in which direction the cylinder 25 be rotated.

The foregoing description alludes to the pump as though supplying but a single car. It is obvious, however, that connections may be made to cars adjacent the one equipped with my system.

What I claim is—

1. In a ventilating system, a pump comprising a cylindrical casing arranged around the car-axle and carried by the car-trucks, a cylinder eccentrically mounted upon the car-axle and within the cylindrical casing, a vertically arranged and moving cut-off plate con-

nected to and moved by the eccentrically mounted cylinder, an auxiliary casing formed integral with the cylindrical casing in which are two passages, one of which leads to the chamber on one side of the cut-off plate, the other leading to the chamber on the other side of the cut-off plate, and suitable inlet and exhaust connections communicating with said passages.

2. In a ventilating system, a pump comprising a cylindrical casing, a cylinder operating eccentrically within said pump, said eccentrically-operating cylinder being provided with grooves in its ends, and a plate having integral hooks that engage in the grooves formed in the ends of the cylinders.

In testimony whereof I affix my signature in presence of two witnesses.

CHAS. O. WILLIAMS.

Witnesses:

EDWARD E. LONGAN,
JOHN C. HIGDON.