

No. 657,789.

Patented Sept. 11, 1900.

C. L. A. ROOSEVELT.  
VENTILATOR FOR RAILWAY CARS.

(Application filed May 7, 1900.)

(No Model.)

2 Sheets—Sheet 1

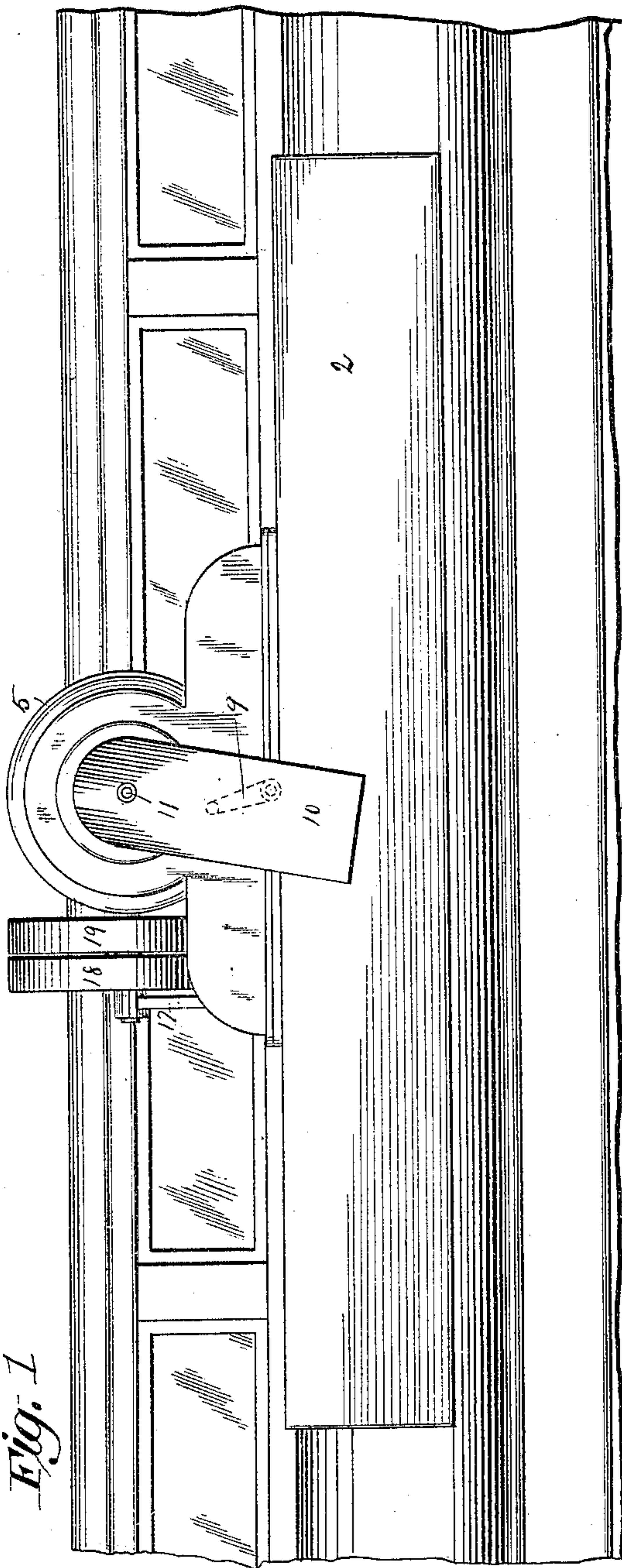


Fig. 1

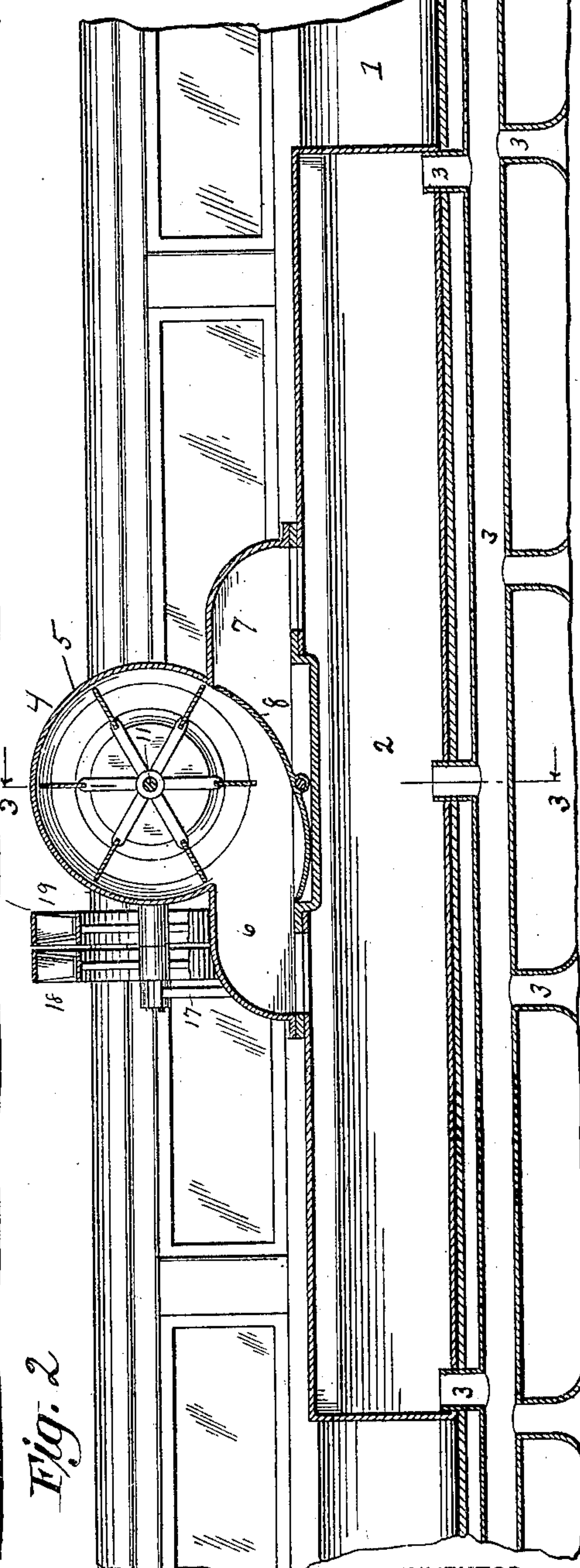


Fig. 2

WITNESSES:

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INVENTOR

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Fig. 3

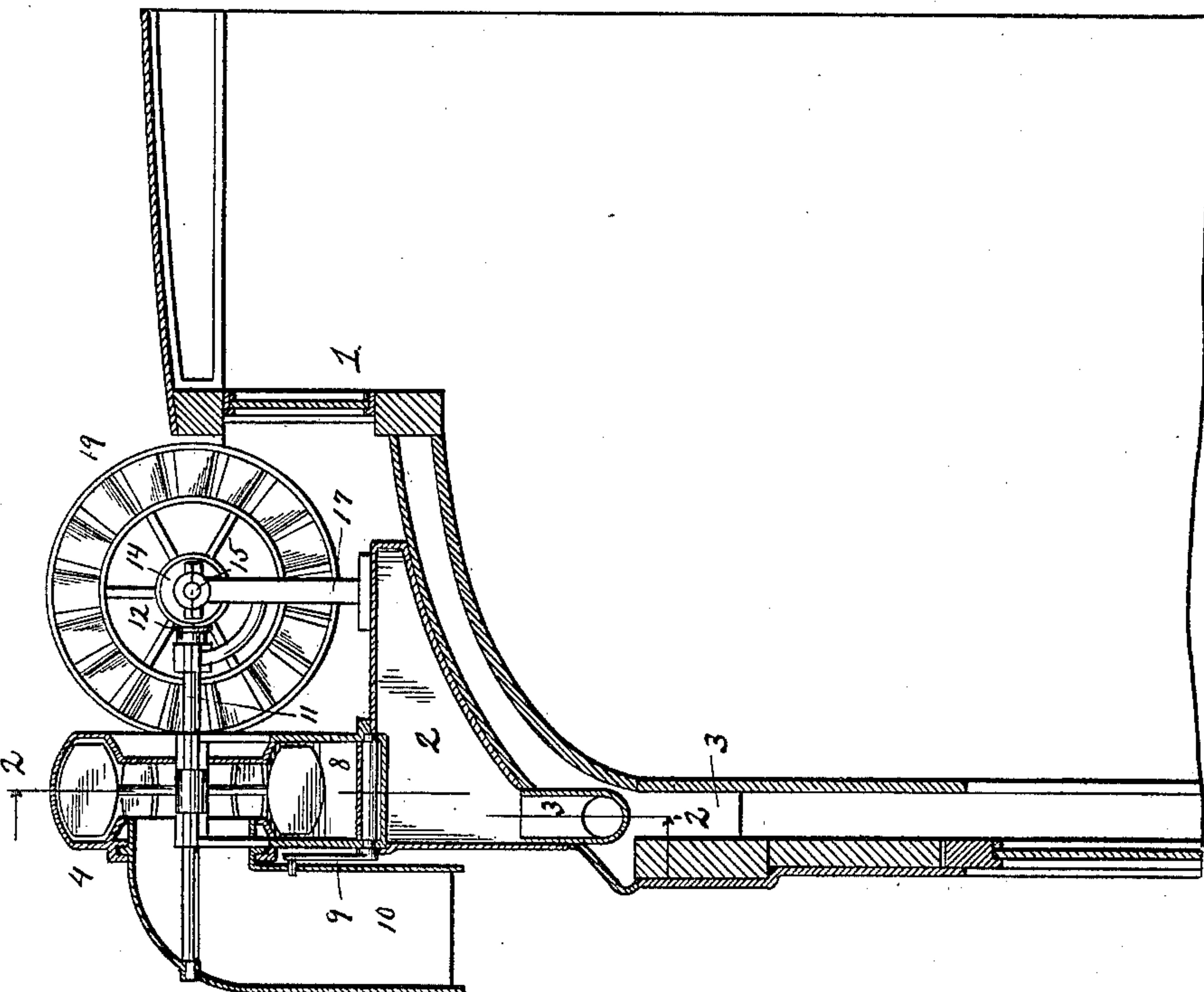
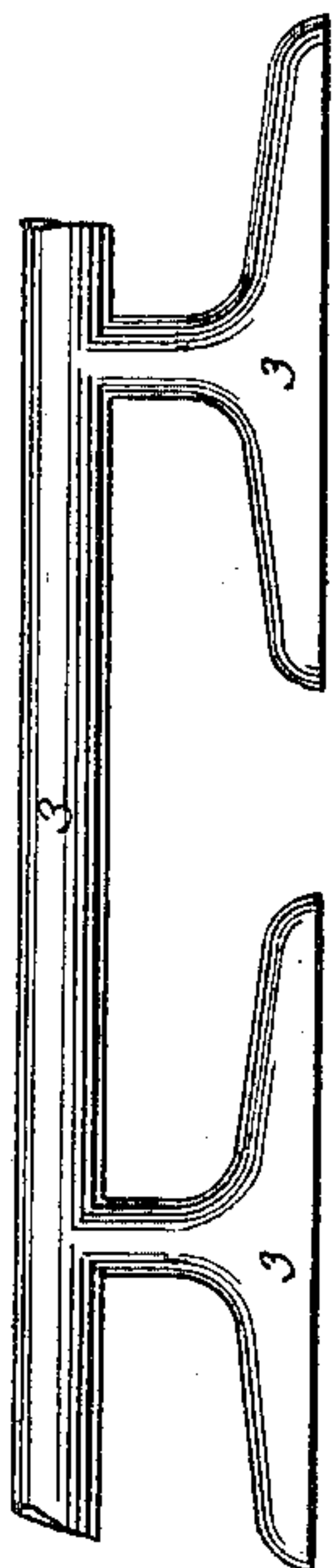


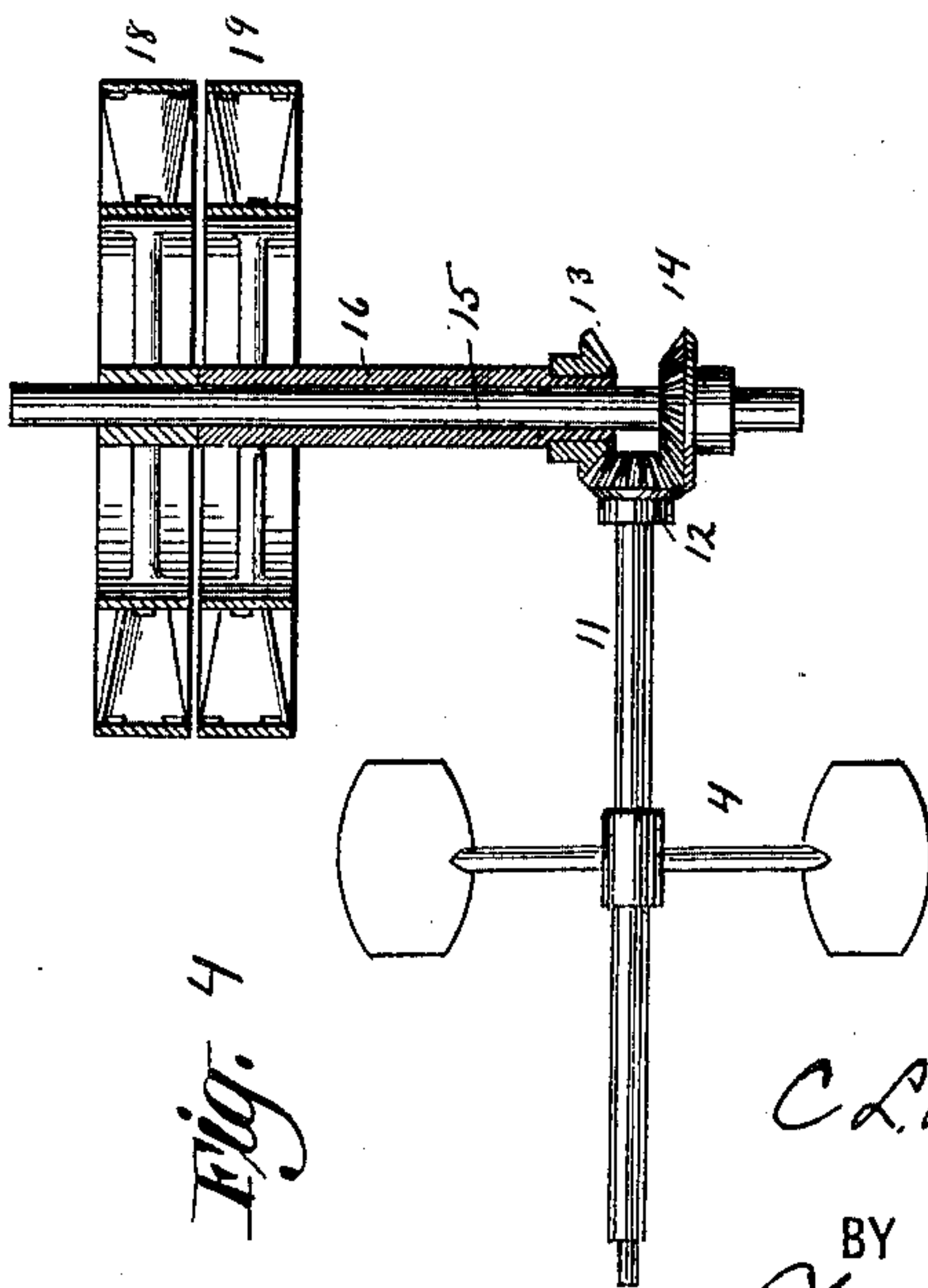
Fig. 5



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Fig. 4



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# UNITED STATES PATENT OFFICE.

CORNELIUS LOUIS ANDRÉ ROOSEVELT, OF NEW YORK, N. Y.

## VENTILATOR FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 657,789, dated September 11, 1900.

Application filed May 7, 1900. Serial No. 15,670. (No model.)

*To all whom it may concern:*

Be it known that I, CORNELIUS LOUIS ANDRÉ ROOSEVELT, a citizen of the United States, residing at No. 31 East Sixtieth street, in the borough of Manhattan, city, county, and State of New York, have invented a new and useful Improvement in Ventilators for Railway-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to ventilating apparatus for railway-cars, and has for its object to provide simple, efficient, and economical means for forcing fresh air into and distributing it throughout the car by the motion of the car itself in either direction.

To this end my invention consists, first, in the combination, with a blower adapted to force air into the car when revolved in either direction, of a pair of rotary fans having oppositely-inclined wings adapted to revolve in opposite directions and geared to the blower, so as both to revolve it in the same direction.

My invention consists also of novel means for automatically reversing the blower, so that it will force the air into the car when revolved in either direction.

In order that my invention may be fully understood, I shall first describe in detail the mode in which I carry the invention into practice and then point out its several features in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which like parts are designated by the same numbers in all the figures.

Figure 1 is a side elevation of the upper part of a railway-car provided with ventilating apparatus embodying my invention. Fig. 2 is a sectional side elevation of the same on the line 2 2, Fig. 3. Fig. 3 is a cross-sectional view of the same on the line 3 3, Fig. 2. Fig. 4 is an enlarged detail sectional view showing the blower and fan connecting gearing. Fig. 5 is a detail view of part of the air-distributing pipes.

In the drawings, 1 designates the ordinary trunked roof of a railway-car, on which is fixed an air-reservoir 3, which communicates by distributing-pipes 3 with the hollow wall

of the car over the windows, and thus through suitable openings with the interior of the car at various points along its length.

On the top of the air-reservoir 2 I fix an air-blower 4, having a cylindrical casing 5, from the bottom of which lead toward opposite ends of the car tangential outlet-pipes 6 and 7, respectively, opening downward into the air-reservoir 2.

Between the blower outlet-pipes 6 and 7 is pivoted a partition 8, which is adapted in one position (shown in Fig. 2) to close the outlet-pipe 7 and open the outlet-pipe 6, so that when the blower is revolved clockwise it will force a current of air through the outlet-pipe 6 into the car. When the partition 8 is swung into the opposite position, it will close the outlet-pipe 6 and open the outlet-pipe 7, so that the blower being revolved counter-clockwise it will drive a current of air through the outlet-pipe 7 into the car.

On the pivoting-spindle of the partition 8 is fixed an arm 9, which is pivotally connected to the air-inlet pipe 10 of the blower, which being exposed to the air is swung backward or forward like a vane, according to the direction in which the car is moving, and thus automatically operates the partition in accordance with the direction in which the blower is revolved, by the means hereinafter described.

On an extension of the blower-shaft 11 is fixed a bevel-gear 12, which engages bevel-gears 13 and 14, respectively, fixed on a shaft 15, and sleeve 16 thereon, mounted to turn in fixed bearings 17.

On the shaft 15 and sleeve 16 are fixed, abreast each other, air-fans 18 and 19, having oppositely-inclined wings, as shown, so that they are revolved in opposite directions, and thus by the gearing described both revolve the blower in the same direction, according to the direction in which the car is moving, by the action of the air traversed on the fan-wings. Further, the air striking on one set of wings reacts almost at right angles upon the reversely-inclined wings of the other fan, and thus greatly increases the power and efficiency of the fans. Thus when the car is moving in either direction the blower is rap-

idly revolved, so as to force air under pressure into the air-reservoir 2, and thus throughout the car.

5 Having thus set forth the nature of my invention and the mode in which I practice the same, I claim as new—

10 1. In car-ventilating apparatus, the combination, with a reversible blower to force air into the car when revolved in either direction, of a pair of rotary fans having oppositely-inclined wings and adapted to be revolved in opposite directions, and gearing by which both fans revolve the blower in the same direction.

15 2. In car-ventilating apparatus, the combination, with a single blower, having two separate outlets, and a fan for revolving the blower in opposite directions, of a movable partition to close either outlet and open the

other simultaneously, and an air-actuated 20 part acting as a vane to operate the movable partition.

3. In car-ventilating apparatus, the combination, with a single blower having two separate outlets, and a fan for revolving the 25 blower in opposite directions, of a movable partition to close either outlet and open the other simultaneously, a swinging blower inlet-pipe, actuated by the air as a vane, and an operating connection between the swing- 30 ing inlet-pipe and the partition.

In testimony whereof I have hereunto set my hand this 1st day of March, 1900.

CORNELIUS LOUIS ANDRÉ ROOSEVELT.

In presence of—

PHILIP WALCH,  
CLARENCE L. BURGER.