No. 855,035. PATENTED MAY 28, 1907.

F. W. ALLAN.

GAS ABSORBER.

APPLICATION FILED MAR. 2, 1907.

3 SHEETS—SHEET 1.

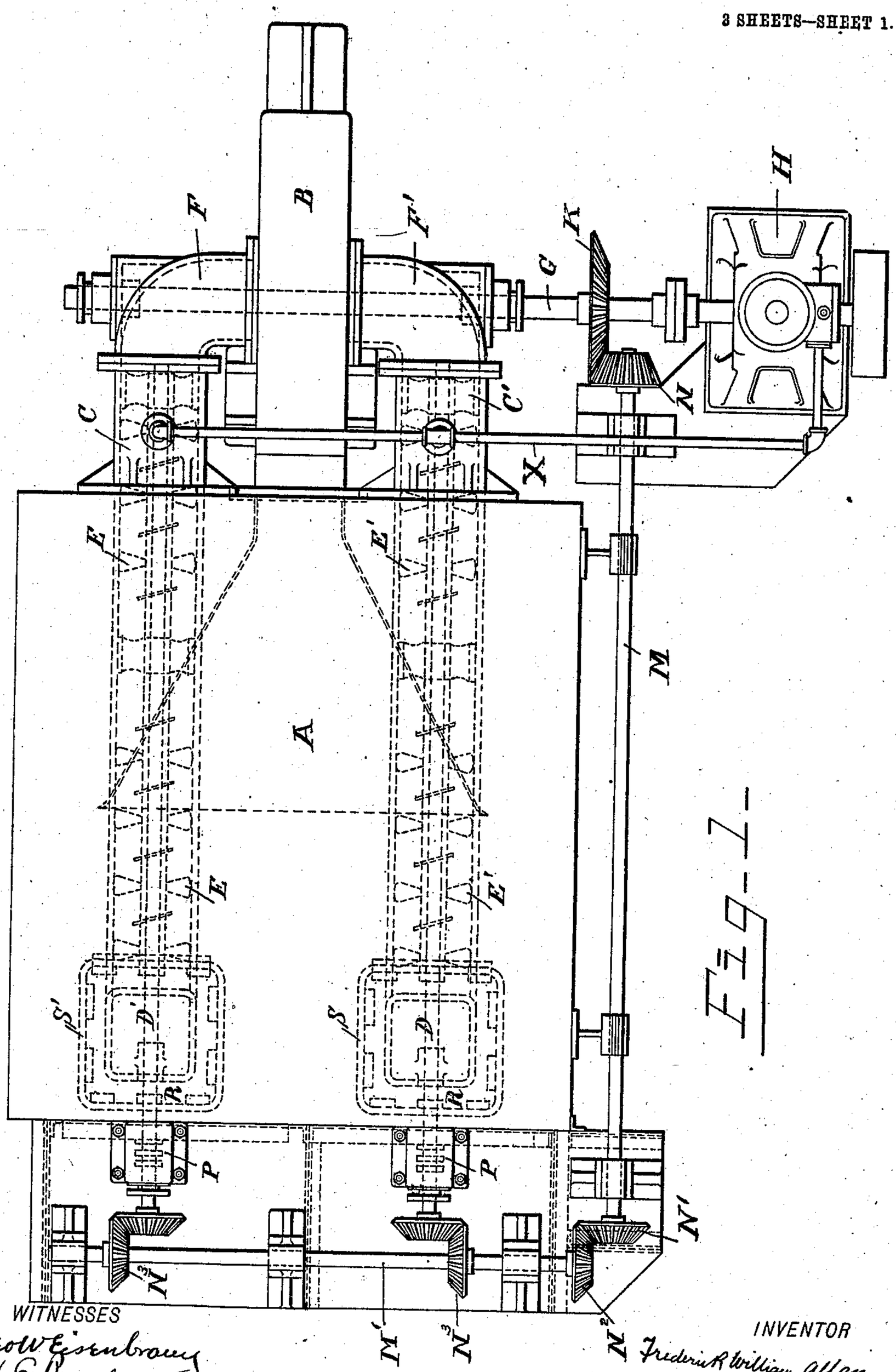

Fig. 1.

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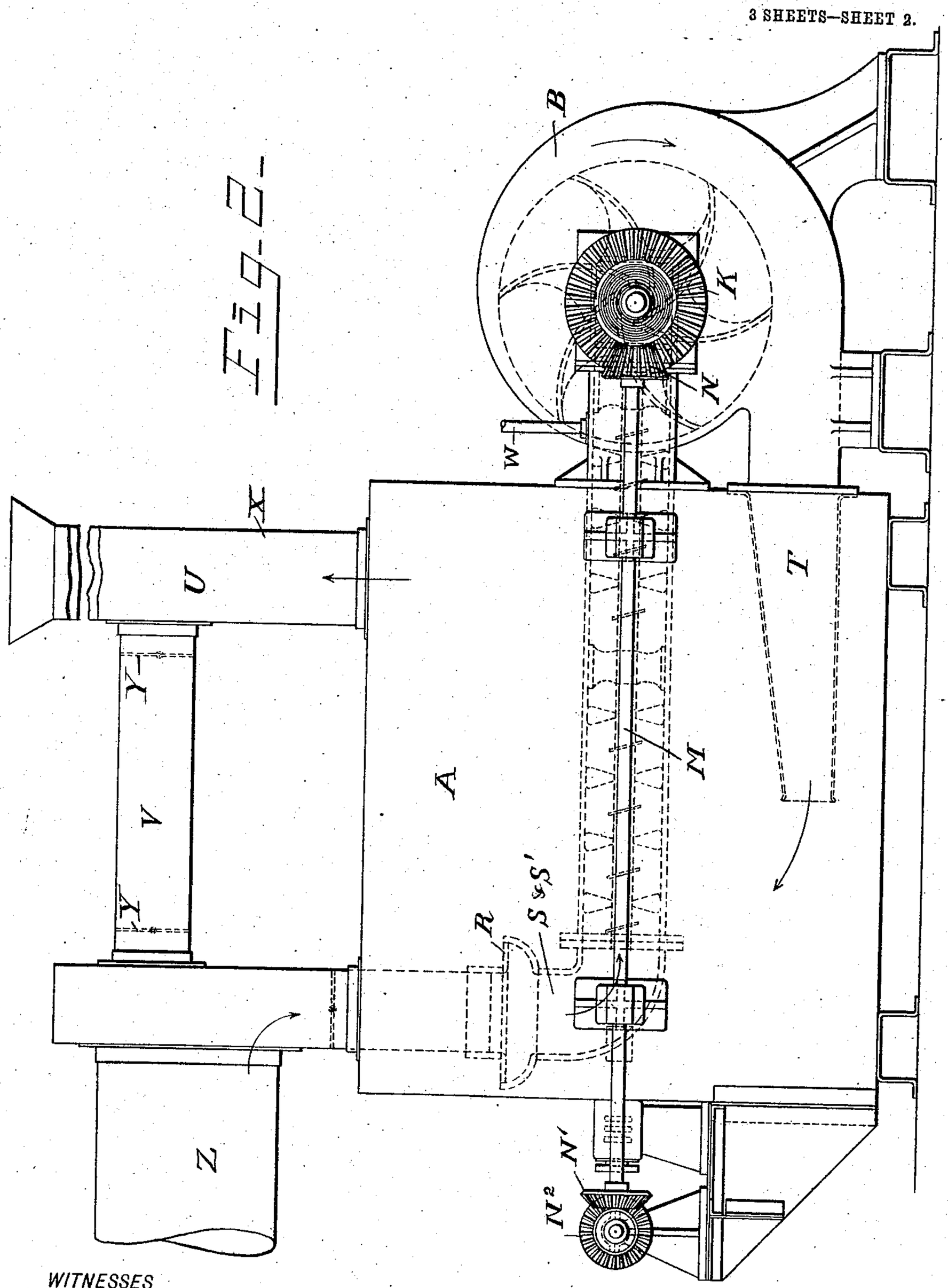
3 SHEETS—SHEET 2.

Fig. 2.



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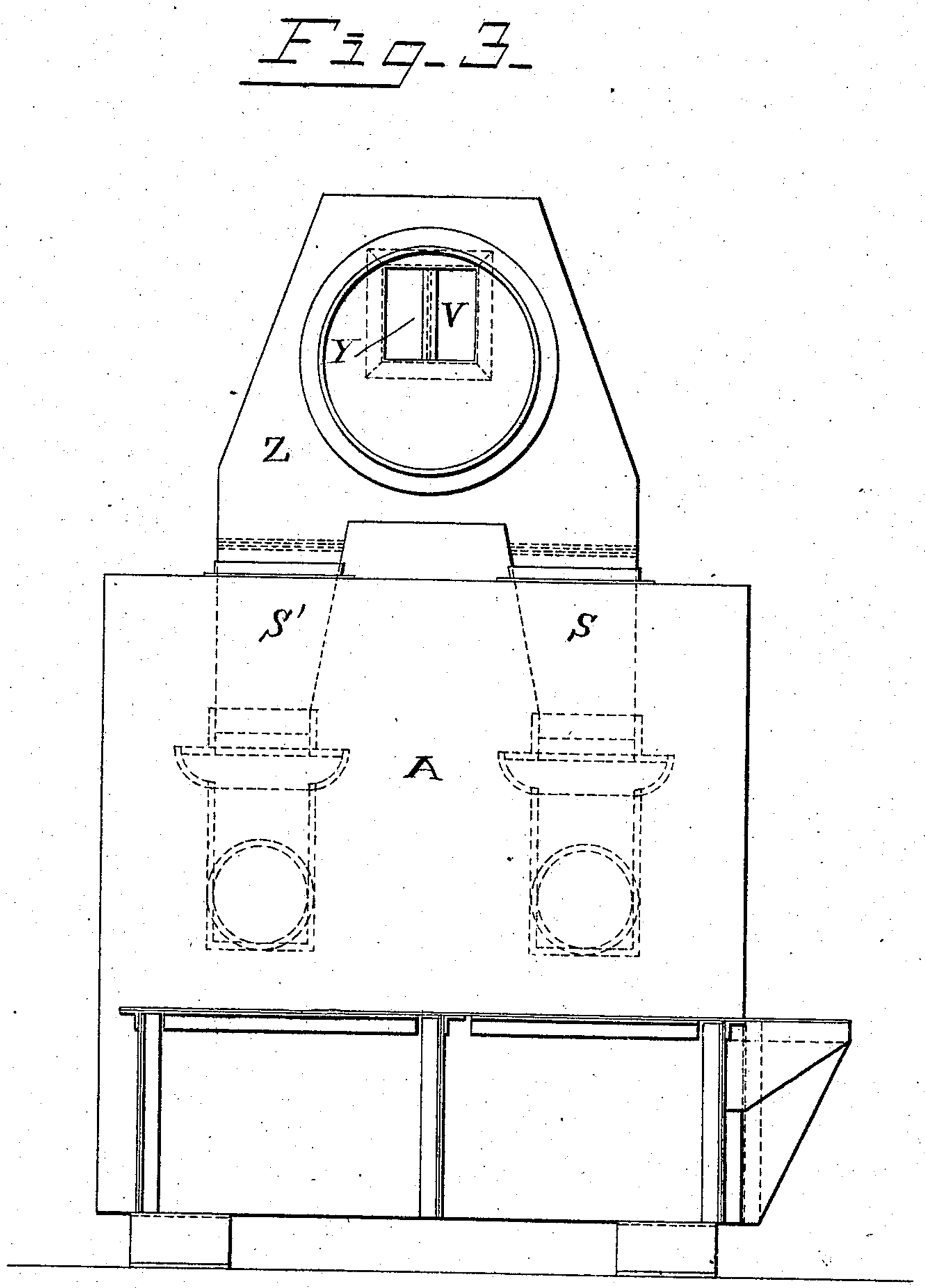
3 SHEETS—SHEET 3.

Fig. 3.



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FREDERICK W. ALLAN, OF BUFFALO, NEW YORK.

GAS-ABSORBER.

No. 855,035. Specification of Letters Patent. Patented May 28, 1907.

Application filed March 2, 1907. Serial No. 360,123.

To all whom it may concern:

Be it known that I, FREDERICK WILLIAM ALLAN, a subject of the King of Great Britain, residing at Buffalo, in the county of Erie, State of New York, have invented new and useful Improvements in Gas-Absorbers, of which the following is a specification.

My invention is adapted to be used for absorbing gases, or solids and liquids carried by gases.

The particular advantages sought to be derived by this invention are greater simplicity, larger volume in proportion to the space occupied by the machine, and lastly a perfect absorption of the gases treated.

For greater clearness, reference is made to the accompanying drawings, in which the same letters stand for similar parts of the machine.

Figure I is a plan view; Fig. II is a side elevation; Fig. III is an end elevation.

A. is a rectangular vessel; B. is a centrifugal pump or fan; C. and C′. are suction pipes of any desired shape having shafts D. and D′. revolving inside said pipes securely attached to shafts D. and D′., are agitator blades, E. and E′ constructed as shown.

F and F′. are suction elbows attached to suction pipes C. and C′. and suction inlet of pump B.

G. is pump shaft which is shown connected to steam engine H., but which may be connected to any other means of motive power; securely keyed to shaft G. is gear wheel K. which transmits power to shaft M. through gear N. N′ transmits power to shaft M′. through gear N^2. Gears N^3 transmit power to shafts D. and D′. with drive agitators.

In order to secure shafts D. and D^1. from moving in a longitudinal direction, I arrange collar bearings on these shafts as shown.

On the suction pipes C. and C′ on the side remote from the fan are bends S. and S′. designed as shown with slots on flat side R. to allow liquid or gas to enter suction pipes, the inflow being regulated by a plate valve on top with handle leading through side of vessel so that the inflow may be regulated at will.

T. is the discharge or outlet from pump or fan arranged to discharge toward the suction pipes.

U. is an air-vent and V. a cross connection between entrance chamber Z. and vent pipe U.; these pipes are fitted with dampers or valves Y as shown; X is the exhaust from the steam engine which goes into suction pipes..

The absorber may be made as shown but it may also be made in a number of different ways such as only one suction or a number of suctions, one discharge or a number of discharge pipes, but the arrangement does not effect the working of the machine which may be described briefly as follows:

Agitator used as a fume arrester.—Z. is the uptake of the boiler. The vessel A. is filled with water to about six inches above R. The gases come along Z. and are drawn down pipes S. and S′. into pipes C. and C′ water flows in through suction pipes at R. and is mixed with gases as they are carried along C. and C′. They are taken into pump B. and discharged back in vessel A. The air rises through the water and rises up vent pipe.

Having thus described my invention, what I claim is:

1. In a gas absorber, the combination of a vessel capable of retaining liquids, a centrifugal pump connected with said vessel, one or more suction pipes in said vessel connected with said pump, revolving shafts in said pipe or pipes, blades set on said shafts and means for operating said pump and said shafts, substantially as described.

2. In a gas absorber, the combination of a vessel capable of retaining liquids, a centrifugal pump connected with said vessel, one or more suction pipes in said vessel connected with said pump, revolving shafts in said pipe or pipes, blades set on said shafts, means for operating said pump, means for operating said shafts, means for permitting the entrance of gases to said vessel, means for permitting water to enter said suction pipes and means for discharging said gases and water, substantially as described.

3. In a gas absorber, the combination of a vessel capable of retaining liquids, a centrifugal pump connected with said vessel, one or more suction pipes in said vessel connected with said pump, revolving shafts in said pipe or pipes, collar bearings on said shafts, blades set on said shafts and means for operating said pump and said shafts, substantially as described.

4. In a gas absorber, the combination of a vessel capable of retaining liquids, a centrifugal pump connected with said vessel,

one or more suction pipes in said vessel connected with said pump, revolving shafts in said pipe or pipes, blades set on said shafts, means for operating said pump, means for operating said shafts, means for permitting the entrance of gases to said vessel, means for permitting water to enter said suction pipes, means for discharging said gases, and means for freeing gases from said vessel when engine is not in motion, substantially as described.

In witness whereof I have hereunto set my hand this 19th day of February, 1907.

FREDERICK W. ALLAN.

In the presence of—

S. H. De Puy,

Robert Siemer.