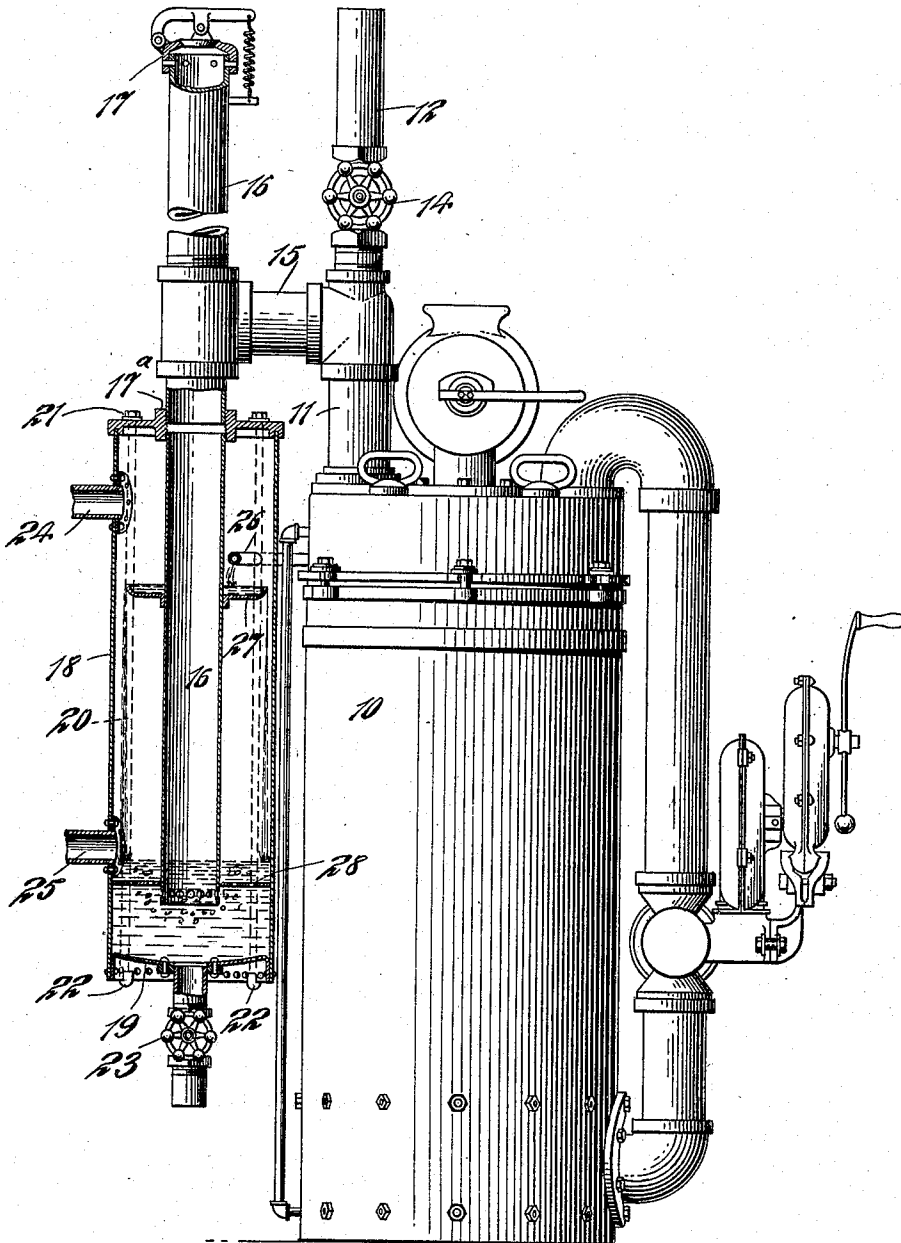


G. GRAY.  
GAS SCRUBBER.

APPLICATION FILED JAN. 28, 1909.

933,430.

Patented Sept. 7, 1909.



WITNESSES:  
*Julius H. [Signature]*  
*W. B. Biggs*

*George Gray* INVENTOR  
BY  
*Wm. B. Owens* ATTORNEY

# UNITED STATES PATENT OFFICE.

GEORGE GRAY, OF MIANUS, CONNECTICUT, ASSIGNOR TO MIANUS MOTOR WORKS, OF MIANUS, CONNECTICUT, A CORPORATION OF CONNECTICUT.

## GAS-SCRUBBER.

933,430.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed January 28, 1909. Serial No. 474,861.

*To all whom it may concern:*

Be it known that I, GEORGE GRAY, of Mianus, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Gas-Scrubbers, of which the following is a full, clear, and exact description.

The object of my invention is to provide a gas washer or scrubber by which the gas may be cooled and thoroughly cleansed of ash, bituminous or tarry matter and all other impurities drawn with the gas from the interior of the producer, without, however, involving complicated or delicate parts. Such a scrubber may be used in both marine and stationary installations, but its simplicity and compactness makes it especially adapted to the former.

My invention involves other features of importance and all will be fully set forth hereinafter and particularly pointed out in the claims.

Reference is now had to the accompanying drawing which represents a vertical section of the scrubber in operative arrangement with the producer and its appurtenances.

10, indicates the body of the producer, which is here shown as of the up draft suction type. From the top of the producer body a gas outlet pipe 11 passes and continues to form a stack 12. This pipe is fitted with a valve 14 and below the valve is a branch 15 which opens into the vertical gas pipe 16. For convenience of construction this pipe 16 is made up of a number of sections and at its top it is fitted with safety valve device 17 to relieve excessive pressure as in the case of an explosion. Below the branch 15 the pipe 16 passes downward through the cast head 17<sup>a</sup> of the scrubber body 18 to a point near the bottom thereof. The body of the scrubber, excepting its top head 17<sup>a</sup> is formed preferably of sheet metal, the bottom head 19 being riveted to the side and the top head 17<sup>a</sup> held by tie rods 20 extending along the outside of the chamber and having nuts 21 at their upper ends and hooks 22 at their lower ends engaging with the lower end of the body 18. By this construction the top head 17<sup>a</sup> may be removed at will to reach the interior of the scrubber.

23 indicates a clean out pipe and valve in the lower head 19 of the scrubber.

From the upper part of the body of the scrubber a gas outlet pipe 24 passes to the

engine or other point of use of the gas and from the lower portion passes a water overflow pipe 25. Water is supplied to the upper part of the scrubber by a pipe 26 passing from the evaporator in the top of the producer. This water falls into a pan 27 which surrounds the pipe 16 and is of a diameter somewhat less than that of the body 18 of the scrubber. From such pan the water overflows in a sheet into the bottom portion of the body of the scrubber where it lies at the level of the overflowed pipe 25. The pipe 16 terminates slightly above the bottom head 19 and is open as shown. I prefer to perforate the pipe immediately above its lower end and above the perforations is arranged a foraminate baffle 28.

Upon the operation of the apparatus the valve 14 is opened and the draft passes through the stack 12 until the action of the producer becomes normal. The valve 14 is then closed and the draft through the producer is induced by the suction of the engine. The gas is drawn down the pipe 16 by this suction and forced to pass through the body of water in the bottom of the producer and through the perforate baffle 28. As the gas rises from the surface of the water it encounters the sheet of water falling from the pan 27 and is further washed thereby. In this manner the gas is subjected to a thorough scrubbing action and passes to the engine clean and free from soot, tar, ashes and all other impurities to which producer gas is usually subject. Upon opening the valve 23 the sludge may be removed from the scrubber and, owing to the sheet of water falling from the pan 27, the scrubber may be cleaned without interrupting the operation of the engine or the action of the scrubber.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is—

1. The combination with a gas producer of a stack therefrom, a valve therein, a branch from the stack below the valve, a vertical gas pipe with which the branch communicates, a pressure safety device in the upper part of the pipe, a scrubber body into which the pipe projects, the pipe discharging into the scrubber body at the lower end of the scrubber, means at the lower end of the scrubber body for cleaning the same, a water overflowed means in the scrubber body above the lower end of the gas pipe, a gas outlet means

in the upper part of the scrubber body, a water supply means in the upper part of the scrubber body and a spreader pan in the body below the water supply and intermediate the  
5 gas outlet and overflow means.

2. The combination with a gas producer of a stack therefrom, a valve therein, a branch from the stack below the valve, a vertical gas pipe with which the branch communicates, a pressure safety device in the upper  
10 part of the pipe above the branch, a scrubber body below the branch into which body the

gas pipe projects and discharges at its lower end and means for supplying water and discharging the gas to and from the scrubber  
15 body.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE GRAY.

Witnesses:

LEROY EDDY,  
A. ROONEY.