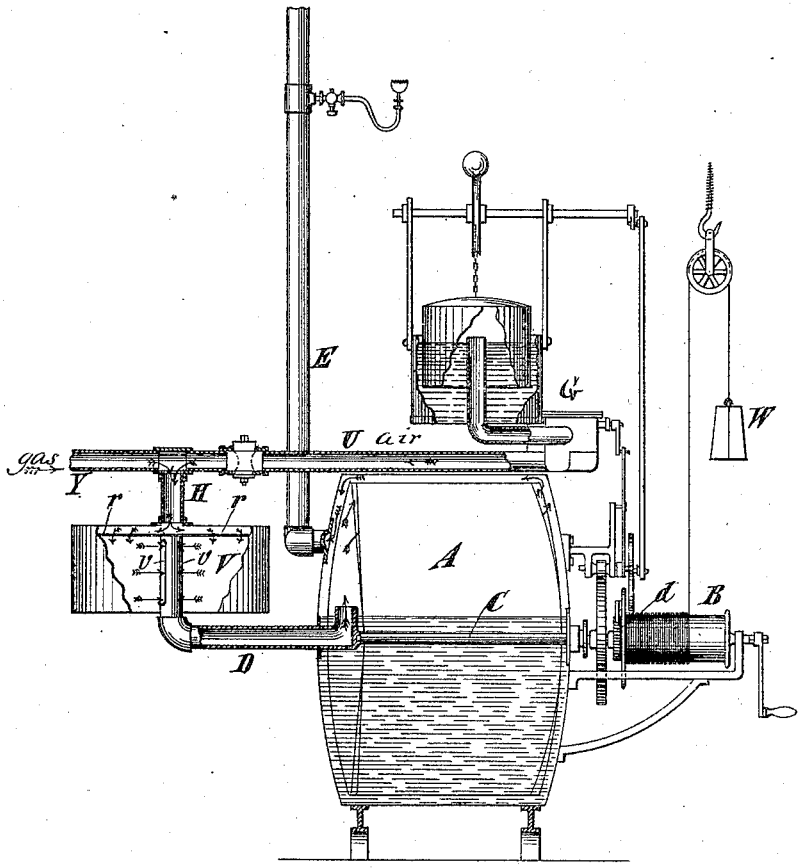
(No Model.)

J. P. WILSON.

APPARATUS FOR MIXING GAS AND AIR.

No. 306,305. Patented Oct. 7, 1884.



Witnesses
James R. Bowen.
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Inventor
James P. Wilson,
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UNITED STATES PATENT OFFICE.

JAMES P. WILSON, OF NEWARK, NEW JERSEY.

APPARATUS FOR MIXING GAS AND AIR.

SPECIFICATION forming part of Letters Patent No. 306,305, dated October 7, 1884.

Application filed December 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES P. WILSON, of Newark, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Apparatus for Mixing Gas and Air, of which the following is a specification.

I will describe my improvement in detail, and then point it out in the claims.

The accompanying drawing is a sectional elevation of an apparatus in which my improvement is embodied.

A designates a meter-wheel pump. Its wheel is rotated in the usual manner by means of a weight, W, attached to a rope wound upon a drum, B. The said drum B is connected to the axial shaft C of the meter-wheel by means of the usual pawl and ratchet-wheel, *d*, or its equivalent. The rotation of the meter-wheel when the meter is properly charged with water will cause air and gas to be drawn in through the pipe D and to pass out through the pipe E.

V is a mixing-chamber of any desired dimensions.

Y designates a pipe leading from a gas-generator or from an air-carburetor. I term this pipe the "gas-service" pipe.

U designates a pipe through which air is drawn by the meter-wheel pump.

G designates an apparatus for regulating the quantity of air which passes through this pipe U. It forms no part of my present invention; hence I will not describe it in detail.

H designates a pipe, which is connected to the pipes Y U, and leads to the mixing-chamber. The gas and air pass through the pipes Y U in opposite directions, and, meeting at the pipe H, pass together through the same to the mixing-chamber.

Just below the tight top of the chamber V is a perforated diaphragm, *r r*, over which the mixed air and gas spread and through the perforations of which they pass into the lower part of the chamber. The pipe D rises into the chamber V, preferably at the center. The top of the pipe D is entirely closed; but from the top to the lower end of that portion which is within the mixing-chamber narrow slots *v v* or holes are made equaling in the aggregate about the capacity of this pipe. Should it be possible that the air and gas entered the lower part of the chamber V without being thoroughly mixed, and consequently lay in strata mixed in the chamber V, the same would be drawn through the entire length of the slots *v v* in the outlet-pipe D, as represented by the arrows, and would become thoroughly commingled and homogeneous.

I do not wish to be confined to the particular kind of pump here shown, or to the use of an air-regulator. I intend, however, to use my present invention in connection with a pump which will draw or induce the air and gas.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a gas-machine, a mixing-chamber, means for conveying gas and air thereto, a pipe serving to convey the mixed gas and air therefrom and having the upper end closed, and slots or equivalent perforations in its sides, and a pump connected with the last-mentioned pipe, and serving to draw the mixed gas and air from said mixing-chamber, substantially as specified.

2. The combination of the pipes Y U, the chamber V, provided with the perforated diaphragm *r*, and the pipe D, provided with the slots *v*, substantially as specified.

JAMES P. WILSON.

Witnesses:

AUGUST W. ROSINGER,

CHAS. FINCH.