

(No Model.)

W. H. WINN.

CARBURETOR CYLINDER FOR AIR GAS MACHINES.

No. 251,329.

Patented Dec. 20, 1881.

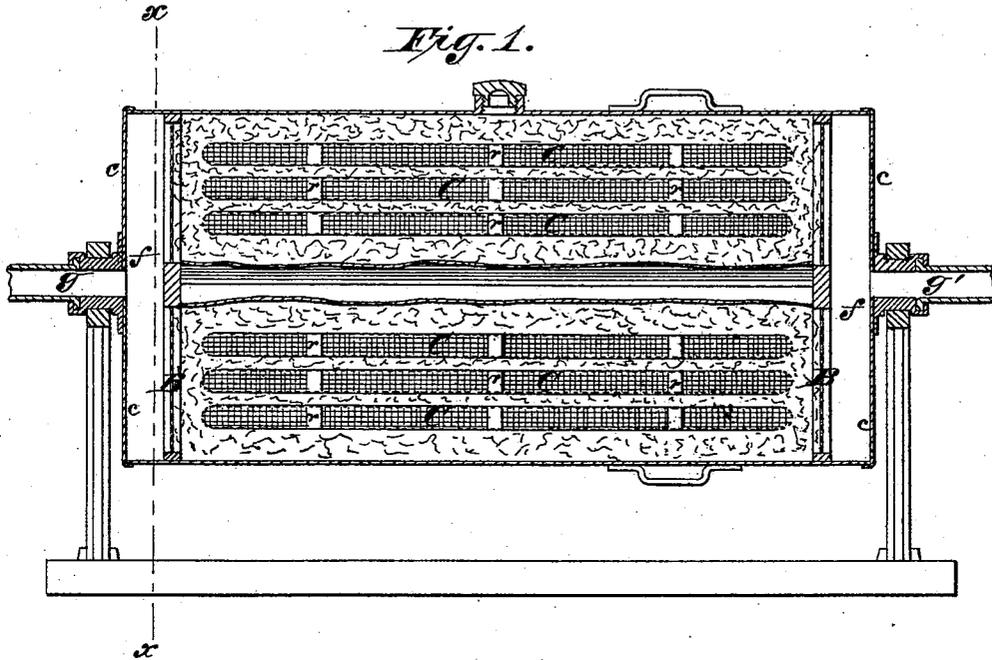
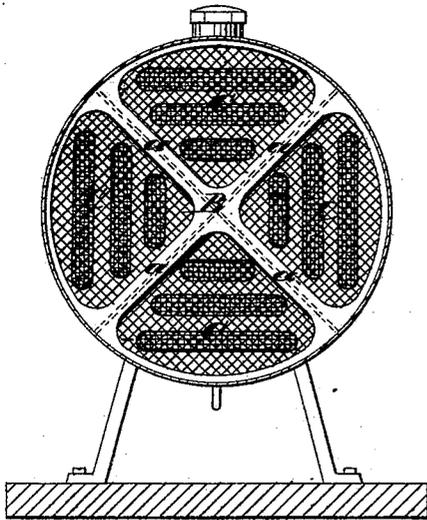
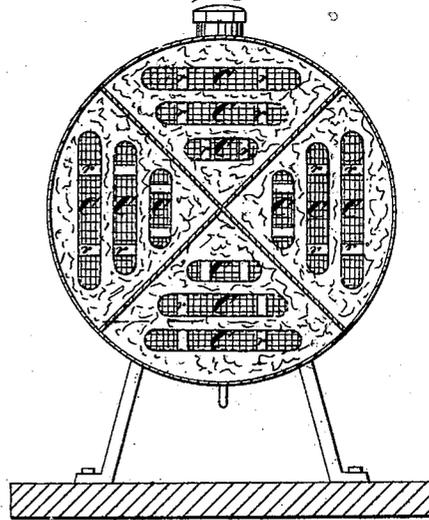


Fig. 2.



Witnesses.
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Fig. 3.



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UNITED STATES PATENT OFFICE.

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OF SAME PLACE.

CARBURETOR-CYLINDER FOR AIR-GAS MACHINES.

SPECIFICATION forming part of Letters Patent No. 251,329, dated December 20, 1881.

Application filed September 23, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIS H. WINN, of the city, county, and State of New York, have invented certain Improvements in Carbureting-Cylinders for Air-Gas Machines, of which the following is a specification.

This invention relates to that class of apparatus commonly called "gas and air carburetors," and in which atmospheric air or like tenuous fluid is passed through or in contact with volatile liquid hydrocarbons in order that the air or the like may be charged with the hydrocarbon vapor, and be thereby converted into an "illuminating-gas," so called.

My said invention relates to the construction of the carbureting-cylinders of such apparatus; and its object is to provide against the packing together of the filling of the cylinders, which in many cases tends to destroy the efficacy of the operation of the apparatus.

My invention consists in a carbureting-cylinder constructed with three or more longitudinal compartments for receiving the cotton-waste or other filling, and having in each of said compartments one or more foraminated sacks or shells embedded in or surrounded by the cotton-waste or other filling, so as to provide a facile means of escape for the air or tenuous fluid after the same has been carbureted by passing through the filling saturated or charged with the carbureting-liquid.

The invention also comprises a novel combination of parts, which, by their joint action, insure the rapid absorption of the hydrocarbon by the air or other tenuous fluid passed through the apparatus, the relative looseness or porosity of the cotton-waste necessary to the continued efficient operation of the latter in transmitting the hydrocarbon to the air, and the discharge of the "carbureted air," so termed, with a rapidity and facility proportioned to the rapidity and facility of its production.

Figure 1 is a central longitudinal sectional view of a carbureting-cylinder constructed according to my said invention; and Fig. 2 is a vertical transverse sectional view, taken in the line *xx* of Fig. 1; and Fig. 3 is also a transverse sectional view of Fig. 1.

The cylinder is, as its name indicates, of cylindrical form, and has its shell formed of sheet

metal or other suitable material. Its ends are constituted by spiders B, which may be of cast metal. The arms *a* of the spider at one end of the cylinder are coincident in position with those at the other end of the cylinder, so that longitudinal partitions may be run from the one spider to the other, thereby dividing the cylinder into a corresponding number of longitudinal compartments. The number of compartments in the cylinder may be three or more. The ends of the cylinder, moreover, have stretched across them a coarse wire-cloth, the meshes of which should be of such size as to permit the ready passage of air therethrough and at the same time retain within the cylinder the cotton-waste or other filling.

C are "shells" or "sacks," as they may be termed, formed of wire-cloth or other suitable foraminated material, which are placed lengthwise in the compartments, and which, in their cross-section, have the flattened form more clearly represented in Figs. 2 and 3. These shells or sacks C are placed (one or more) in each of the compartments of the cylinder, and are surrounded by the packing of said compartment, as indicated by the aforesaid Fig. 2.

Upon each end of the cylinder is a closed head, *c*, between which and the adjacent spider, B, is a space or chamber, *f*. The air or tenuous fluid to be carbureted is introduced through a suitable pipe and stuffing-box at the center or axis of one of these heads—as, for example, *g*. In like manner the gas or carbureted air or fluid escapes from the opposite end through a similar pipe fitted to the opposite closed head, *c*, by a suitable stuffing-box. The filling is primarily placed within the compartments of the cylinder in any usual or suitable manner, and the carbureted liquid, which may be of any of the usual or suitable kinds, may be supplied in due quantity in proportion to the cylinder in any of the ordinary ways. In the operation of the invention the air passing into the chamber *f* at one end of the cylinder passes directly into the latter through the filling charged with the carbureting material, and thence, when fully carbureted, into the passages afforded by the shells or sacks C, and thence outward, to and through the opposite chamber, *f*, to the outlet-pipe *g'*. In this operation the foraminated sacks

afford a ready means for the escape of the carbureted fluid, and at the same time tend to prevent the packing or wedging of the filling into a too compact mass. When this wedging, however, occurs to some slight extent, as may frequently be the case, the cylinder is turned so that the parts of the filling subjected to compression are brought uppermost and thereby loosened, the compression being transferred to another portion of the filling. Inasmuch as the cylinder is divided into compartments, as just explained, and inasmuch as one portion of the filling in each compartment must be somewhat loosened while the other portion in said compartment is somewhat compressed, it follows that, taking the entire contents of the cylinder, there will be practically a uniformity in the average density of the filling, and consequently in the surface of the filling charged with the carbureting material exposed to the air or fluid to be carbureted.

It is to be understood that the carbureting-cylinder is placed upon axial supports in any appropriate manner.

It is also to be observed that in order to maintain the shells or sacks C in their flattened position they may be provided internally with

blocks *r*, which serve as internal braces, and to which the flattened sides of the said shells or sacks are securely attached by broad-headed nails or other means.

It is also to be observed that the air or tenuous fluid is to be forced into the cylinder by a pump, as done with air-carburetors hitherto in use.

What I claim as my invention is—

1. A carbureting cylinder for air-gas machines constructed with three or more longitudinal compartments and provided with one or more foraminated shells or sacks, C, embedded in or surrounded by the cotton-waste or fibrous filling in each compartment, substantially as and for the purpose herein set forth.

2. The combination of the foraminated shells or sacks C with the cylinder constructed with the closed heads *c*, foraminated ends B, and three or more longitudinal compartments, the shells or sacks C being embedded in the fibrous filling of the compartments, all substantially as and for the purpose herein set forth.

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Witnesses:

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