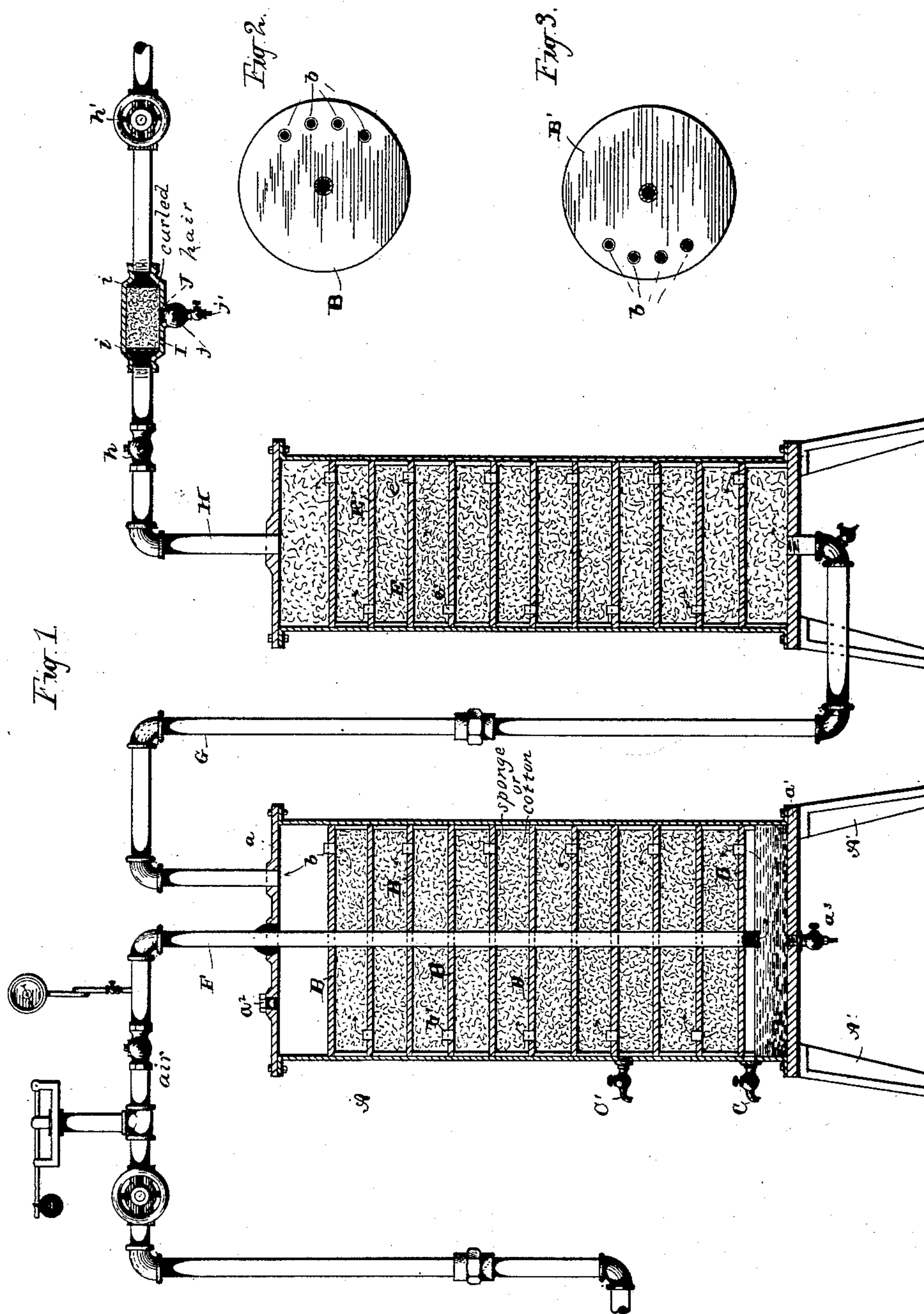


(No Model.)

C. F. ANDRUS.  
CARBURETOR.

No. 327,981.

Patented Oct. 13, 1885.



WITNESSES  
W. S. Amstutz.  
Edw. Kimman.

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Attorney



# UNITED STATES PATENT OFFICE.

CARLOS F. ANDRUS, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO  
CHARLES M. FULKERSON, OF SAME PLACE.

## CARBURETOR.

SPECIFICATION forming part of Letters Patent No. 327,981, dated October 13, 1885.

Application filed April 16, 1885. Serial No. 162,419. (No model.)

*To all whom it may concern:*

Be it known that I, CARLOS F. ANDRUS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and  
5 useful Improvements in Carburetors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

10 My invention relates to improvements in apparatus for manufacturing gas from the lighter products of hydrocarbon oil, usually gasoline, the object being to enlarge and improve the carbureting, commingling, and drying capacity of the apparatus, to the end that  
15 a drier and better quality of gas is made than with the apparatus heretofore in use.

With this object in view, my invention consists in certain features of construction, and in  
20 the combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation in section of my improved gas-generating apparatus. Figs. 2 and 3 are plan  
25 views of disks that form a part of the internal mechanism.

A represents an upright hollow cylinder, resting upon legs A', or other suitable support, and closed at the top and bottom, respectively, by the heads *a* and *a'*, detachably  
30 secured thereto, the former being provided with an opening closed by the plug *a*<sup>2</sup>, and the latter with a discharge-pipe and cock, *a*<sup>3</sup>.

B and B' are disks, arranged usually an equal  
35 distance apart along the cylinder, and form shelves, and may be supported in any suitable manner—for instance, by blocks set between them. The disks are hermetically sealed to the cylinder, usually by cementing. These  
40 disks have a series of openings arranged on one side and near the periphery of the disks, and in these openings are secured short tubes *b* and *b'* that are about flush with the bottom of the respective disks, and extend a short distance  
45 above the same. The disks B are arranged so that these tubes are on the same side of the container, while the disks B' have the tubes on the opposite side. Discharging-cocks C and C' are arranged on the sides of  
50 the cylinder, as shown.

D is a similar, but usually a smaller con-

tainer, and has disks E and E', provided, respectively, with tubes *e* and *e'*, arranged in the same manner as those already described in the container A.

F is a pipe leading from an air-pump, (not shown,) and passes down through the center of the container A to near the bottom of the latter, and forms tight joints where it passes through the head and disks. This pipe is provided with a safety-valve, pressure-gage, stop  
60 and check valves, in the usual manner.

G is a pipe leading out of the top of the container A, and discharging into the bottom of the container D, as shown.

H is a discharging-pipe leading out of the top of the container D to conduct the gas to wherever it is wanted. This pipe usually has a check-valve, *h*, and a stop-valve, *h'*. In this pipe is located the percolator I, that is provided with internal wire-gauze heads, *i*, and  
70 between these heads is packed preferably with curled hair.

The percolator may have a discharge-pipe, J, leading to a catch-pot, *j*, provided with discharging-cock, *j'*, by means of which the percolator may be kept free from condensed liquid.

The chambers between the disks B and B', and between the disks E and E' are packed with sponge, cotton, or other suitable material,  
80 and the chambers between the head *a'* and the lower disk, B, is partially filled, preferably with gasoline, so as to cover the end of the pipe F. Air is introduced under pressure through the pipe F.

The action of the air first atomizes the gasoline to a considerable extent, and rapidly evaporates the latter, and the air and gasoline vapor and atomized gasoline pass up through the tubes *b* of the lower disk, B, and must find  
85 their way through the packing in this chamber to the other side before it can pass the next disk, and so on through the container. The product is next passed into the bottom of the container D, and passes up through the packing in the chamber therein in the same manner. The gasoline in its long tortuous passage through the disks and intervening packing is vaporized and thoroughly commingled with the air, forming a so-called "fixed" gas, that is in a dry condition, and of a superior quality. As a safeguard against any  
90

moisture remaining in the gas, the percolator is added, but usually the gas will be found in good condition before it reaches the percolator.

What I claim is—

- 5 1. In a gas-generating apparatus, the combination, with the container A, shelves B and B', openings *b* and *b'*, and pipe F, arranged substantially as indicated, of the container D, shelves E and E', with openings *e* and *e'*, pipes  
o G and H, and percolator I, arranged in the latter pipe, the parts constructed and arranged substantially as set forth.
- 15 2. In a gas-generating apparatus, the combination, with the container A, shelves B and B', with fibrous or porous packing arranged

between the shelves, and openings *b* and *b'*, and pipe F, arranged substantially as indicated, of the container D, shelves E and E', with fibrous or porous packing arranged between the shelves, and openings *e* and *e'*, and 20 pipes G and H, substantially as and for the purposes described.

In testimony whereof I sign this specification, in the presence of two witnesses, this 8th day of April, 1885.

CARLOS F. ANDRUS.

Witnesses:

N. S. AMSTUTZ,  
FREDK. KINSMAN.