No. 726,139. PATENTED APR. 21, 1903.

C. BUSCH.

ACETYLENE GAS GENERATING APPARATUS.

APPLICATION FILED JUNE 10, 1901.

NO MODEL.

FIG. 1.

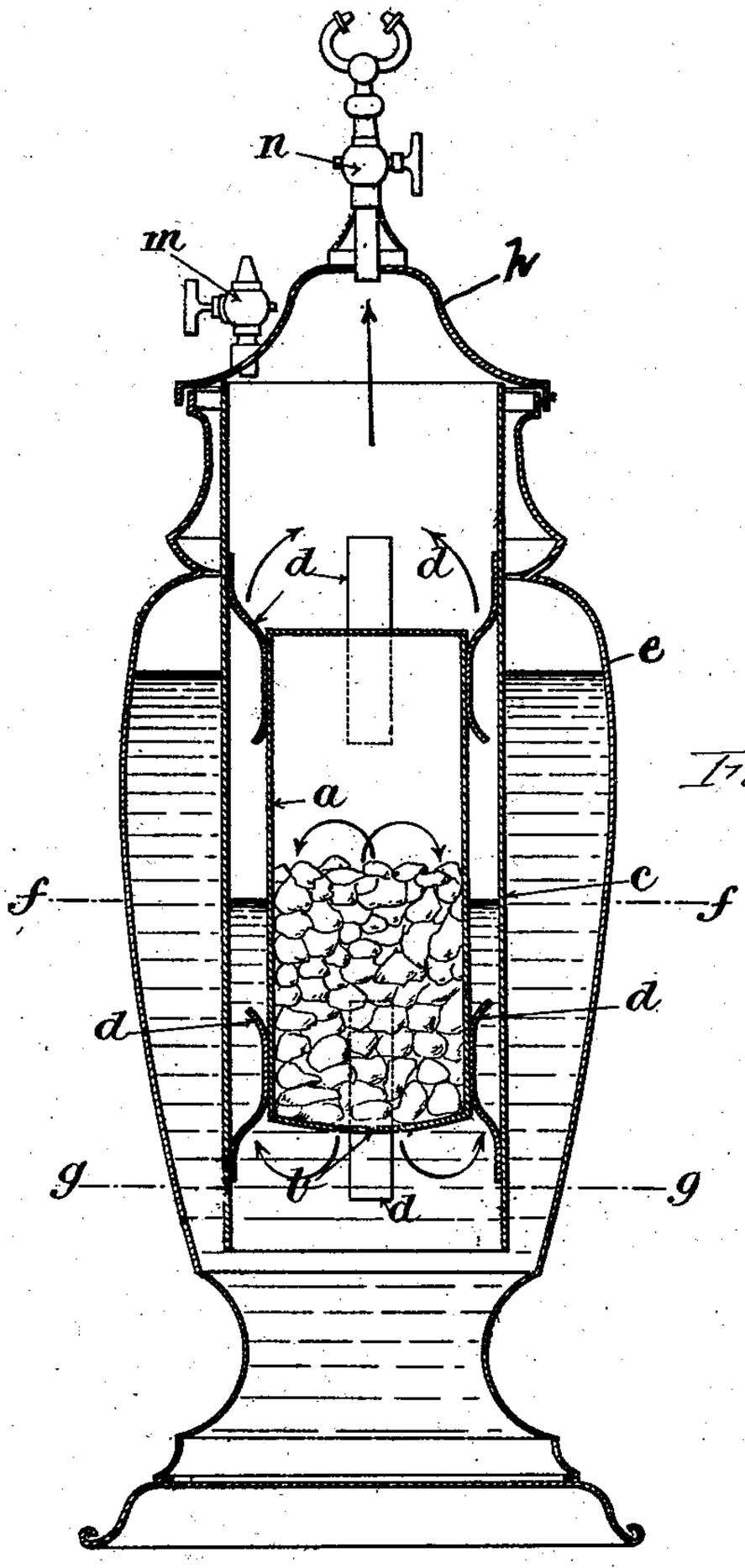

FIG. 2. Fig. 3.

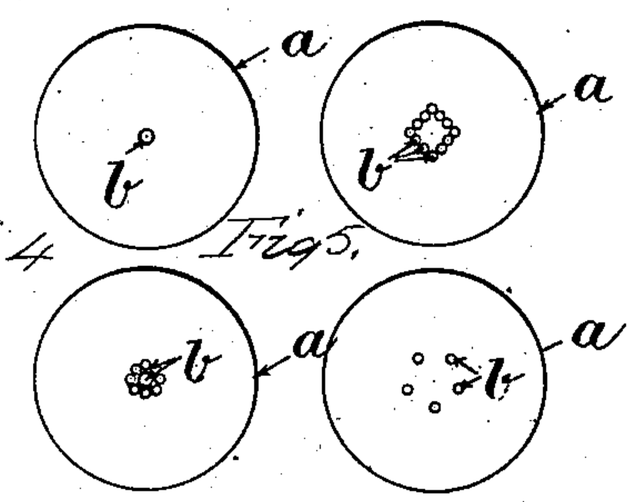

Fig. 4 Fig. 5.

Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES BUSCH, OF PARIS, FRANCE.

ACETYLENE-GAS-GENERATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 726,139, dated April 21, 1903.

Application filed June 10, 1901. Serial No. 63,965. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BUSCH, technologist, a citizen of the Republic of France, residing at 8 Rue Thimonnier, Paris, in the Republic of France, have invented certain new and useful Improvements in Apparatus for Generating Acetylene Gas, of which the following is a specification.

My invention relates to improvements in acetylene-gas-generating apparatus and in carbid-cartridges therefor; and it consists in the construction of devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a sectional view of an acetylene-gas-generating lamp embodying my improvements. Figs. 2, 3, 4, and 5 are detail bottom plan views of various modifications of the carbid-cartridge.

The font or outer vessel *e*, adapted to contain water, is open at its upper end. In this vessel is placed a bell *c*, the cover *h* of which also forms a closure for the upper end of the vessel *e* and is detachable therefrom, so that the bell may be readily removed from said vessel. A gas-conduit leads upwardly from the said cover, is provided with one or more suitable burner-tips, (two being shown in the present instance,) and is further provided with a cock *n*. The cover *h* also has an air-vent cock *m*. Within the bell, the lower end of which is submerged in the body of water in the vessel *e*, are carbid-cartridge-supporting spring-arms *d*, preferably of the form shown.

The carbid-cartridge *a* is of cylindrical form, contains a suitable quantity of carbid, is hermetically closed, as by soldering or otherwise when charged, and is provided in the bottom only with minute openings *b*, which in practice are about as fine as hairs. Prior to the insertion of the cartridge in the bell these openings also are closed, as by a paper or other label pasted on the bottom of the cartridge A, the paste used being soluble in water. It will be observed by reference to Fig. 1 of the drawings that when the bell is in place in the vessel *e* the lower portion of the carbid-cartridge is submerged, thereby causing the label to become loosened and to drop off and permitting the water to enter the cartridge through the minute openings *b* and attack the carbid, the level of the water in the bell being indicated at *f f*.

The gas produced in the cartridge *a*, not finding an issue upwardly, is obliged to pass downwardly through the carbid and to make its exit through the same openings *b* through which the water entered. At the same time the gas drives back the water which has entered the cartridge. The gas is quite cold, because the cartridge is at all times either partially or entirely submerged. The gas is never given off tumultuously, because the quantity of water coming in contact with the carbid is extremely small and the water is immediately thereafter emptied from the cartridge by the pressure of the gas.

After issuing from the apertures *b* the gas is forced upwardly through the water in the lower portion of the bell. It is thus purified, first by circulating through the carbid, then by making its exit through the apertures *b*, which clean it mechanically, and, lastly, by passing through the water.

The apertures *b* can never become obstructed during the operation of the lamp, because it has been found that owing to the minute size of the openings and the variations of the alternate gas and water pressures solid particles cannot adhere in said openings.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, I claim—

1. A carbid-cartridge hermetically closed and provided in the bottom only with minute openings for the entrance of water and the escape of gas.

2. In combination with acetylene-gas-generating apparatus including a water vessel and a bell, a carbid-cartridge in the bell, adapted to be submerged, hermetically closed, and provided in the bottom only with minute openings for the entrance of water and the escape of gas.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES BUSCH.

Witnesses:
EUGÉNE WATTIER,
EDWARD P. MACLEAN.