

No. 764,048.

PATENTED JULY 5, 1904.

N. GOODYEAR.
ACETYLENE GAS GENERATOR.

APPLICATION FILED SEPT. 21, 1903.

NO MODEL.

4 SHEETS—SHEET 1.

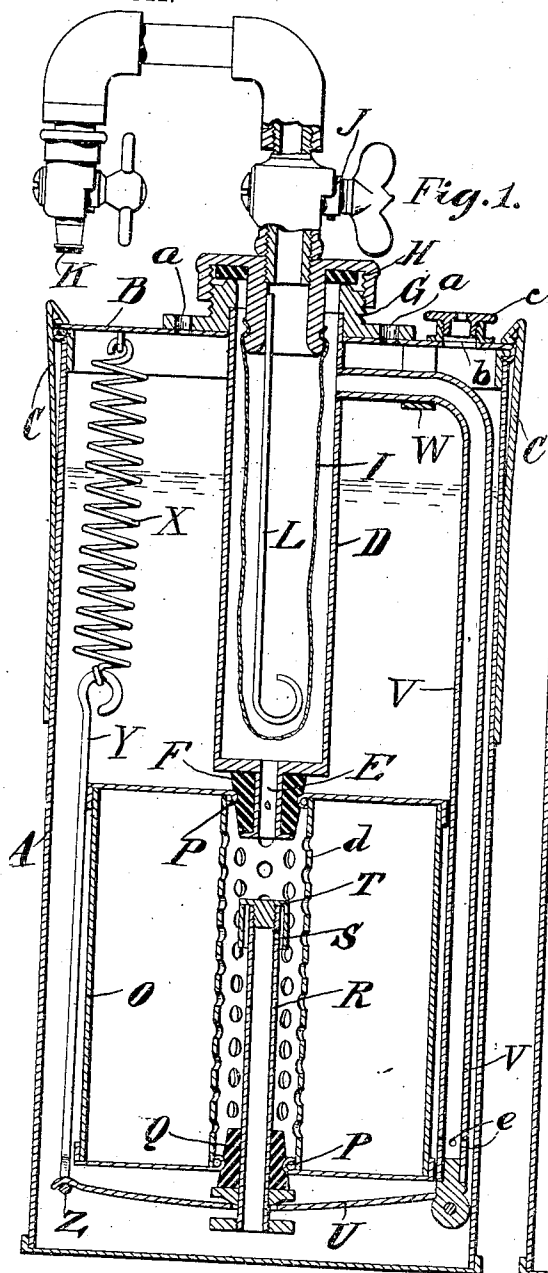


Fig. 1.

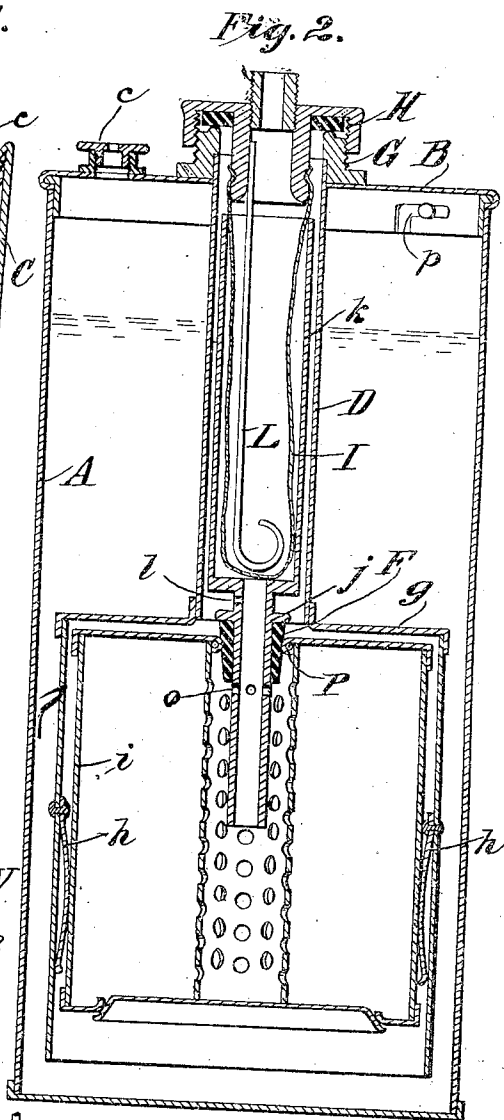


Fig. 2.

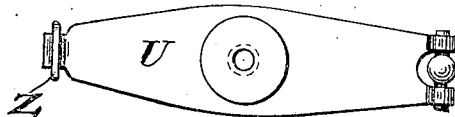


Fig. 11



Fig. 12.

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4 SHEETS—SHEET 2.

Fig. 3.

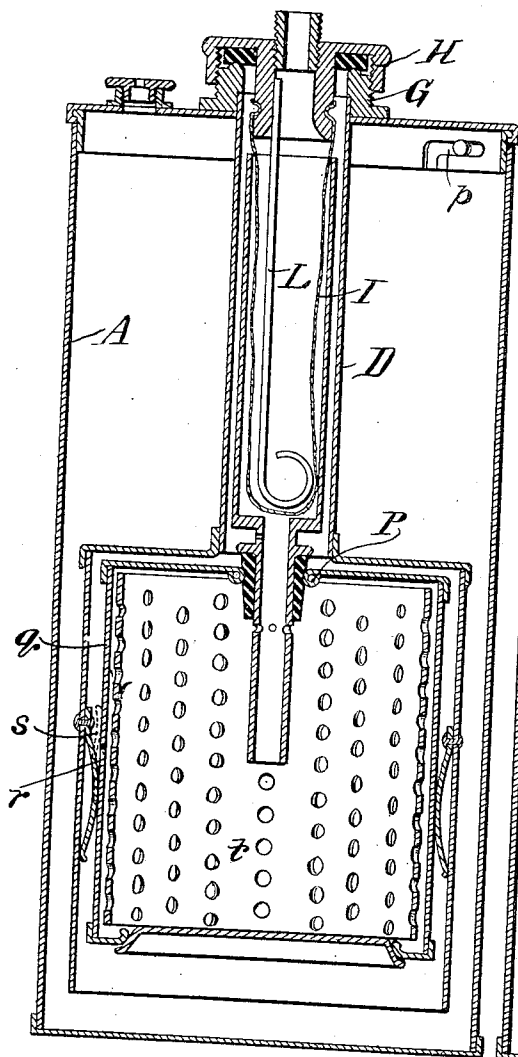
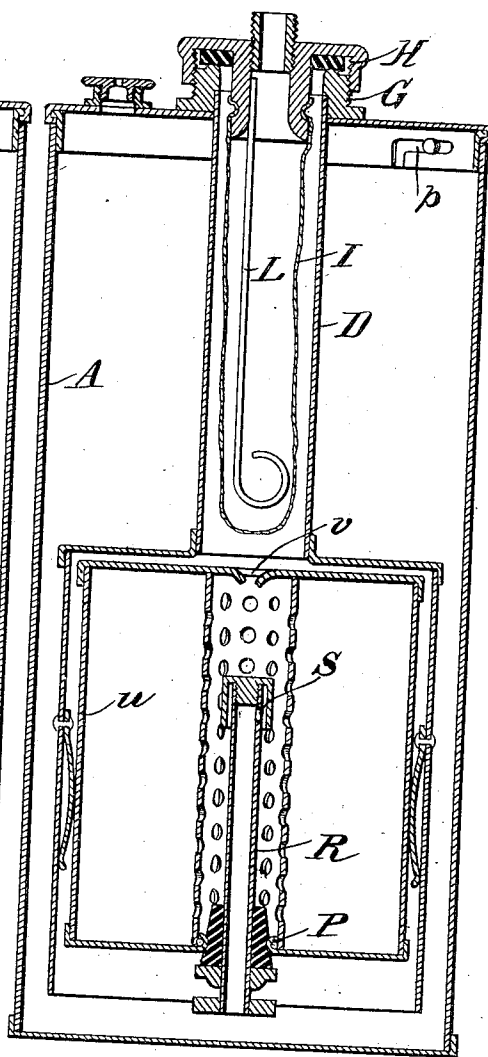


Fig. 4.



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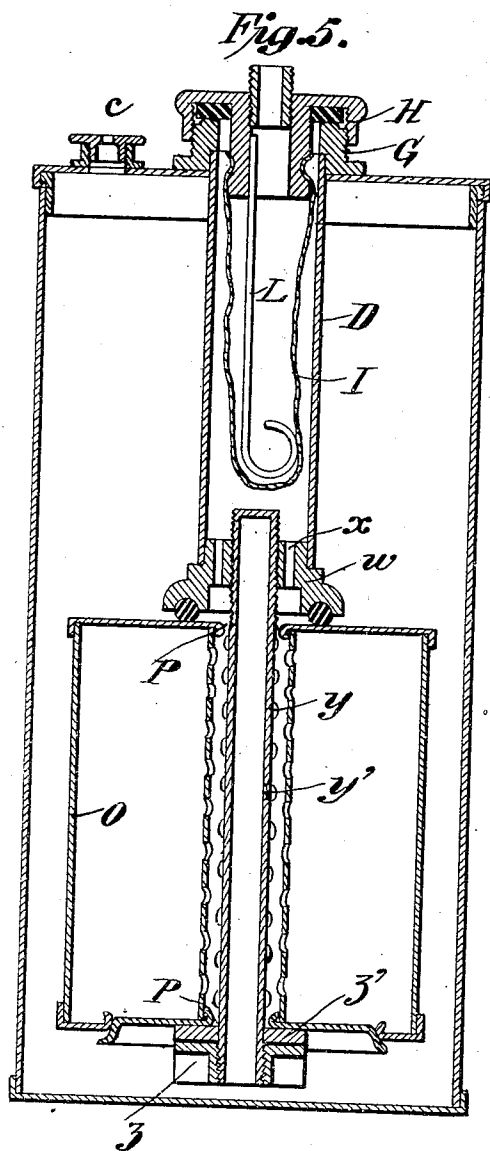
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

f Fig. 6.

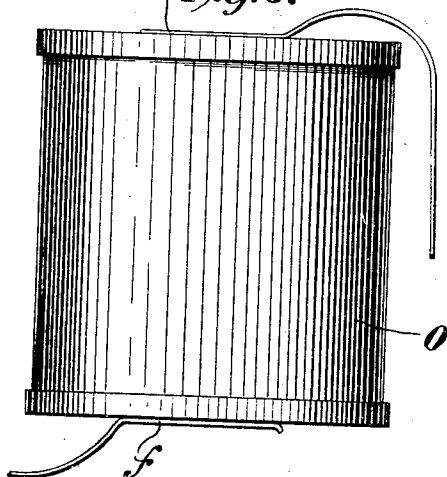


Fig. 7.

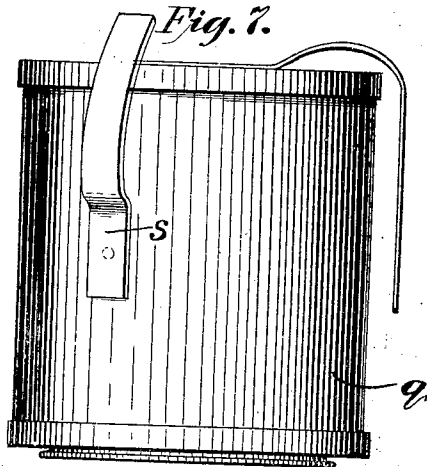


Fig. 8.

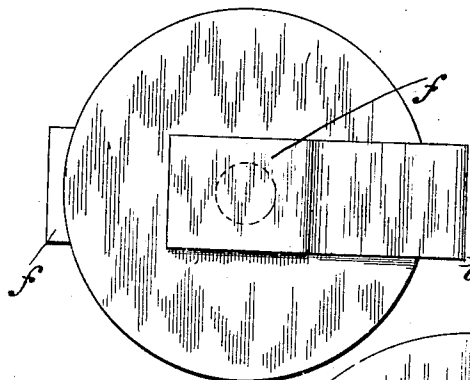


Fig. 9.

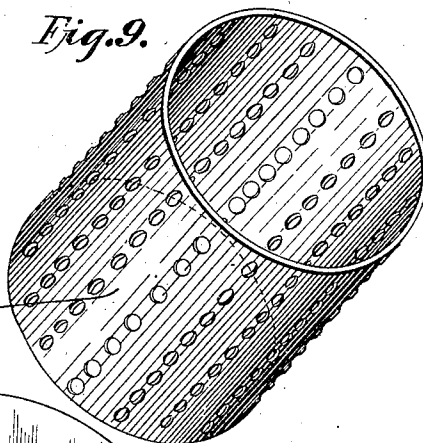
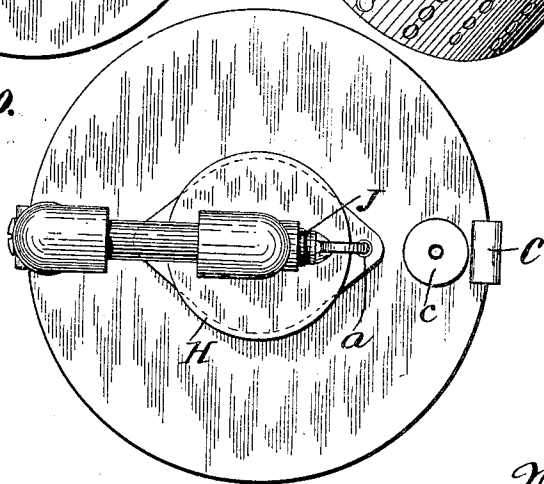


Fig. 10.



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UNITED STATES PATENT OFFICE.

NELSON GOODYEAR, OF NEW YORK, N. Y., ASSIGNOR TO THE J. B. COLT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 764,048, dated July 5, 1904.

Application filed September 21, 1903. Serial No. 174,021. (No model.)

To all whom it may concern:

Be it known that I, NELSON GOODYEAR, a citizen of the United States, and a resident of New York city, New York, have invented certain new and useful Improvements in Acetylene-Generators, of which the following is a specification accompanied by drawings.

This invention relates to acetylene-generators, but more particularly to portable generators.

The objects of the invention are to improve upon the construction of portable acetylene-generators, simplify their parts, and increase their efficiency of operation.

Another object of the invention is to enable a charge of carbid to be readily supplied to the generator and the residue removed therefrom when used up.

Further objects of the invention will hereinafter appear; and to these ends the invention consists of a generator embodying the features of construction, combinations of elements, and arrangement of parts having the general mode of operation substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a sectional elevation of a generator embodying the invention. Figs. 2, 3, 4, and 5 are sectional elevations of different forms of the generator, all embodying the invention. Fig. 6 is a side elevation of a carbid-canister such as used in the generator shown in Figs. 1 and 5. Fig. 7 is a side elevation of a carbid-canister such as used in the generators shown in Figs. 2, 3, and 4. Fig. 8 is a plan view of one of the carbid-canisters. Fig. 9 is a perspective view of the grating shown in Fig. 3. Fig. 10 is a plan view of the generator. Fig. 11 is a bottom plan view of the device for holding the canister in position illustrated in Fig. 1. Fig. 12 is a detail view of the hook used with the device shown in Fig. 11.

Referring to the drawings, A represents a casing having a cover B, which may be secured in any suitable manner, as by means of the spring-clamps C, to the casing, and attached to the cover is a downwardly-extending

tube D, having a nipple E at its lower end, as shown in Fig. 1, said nipple being surrounded with a washer F, in this instance shown conical and made of rubber. On the cover B and surrounding the upper projecting end of the tube D is an outwardly-screw-threaded projection G, with which the inwardly-screw-threaded cap H coöperates. The cap H serves the twofold object of supporting the filter I in the form of a bag of fabric and supporting the gas-cock J and nipple K for the attachment of a tube. Within the filter I is shown a rod L for maintaining the filter-bag distended.

The charge of carbid is adapted to be contained within the canister O. The canister O is provided with apertures P in its ends and one of which the conical plug or washer F is adapted to fit, the washer Q also being of rubber in this instance. The washer Q surrounds an upwardly-extending tube R, provided with an upper aperture S and a cap T at its upper end. The tube R and washer Q are carried by a hinge-arm U, hinged to the downwardly-depending hollow arm or tube V, which is connected, as shown, at its upper end to the downwardly-extending tube D and supported from the cover B by a suitable support W. A spring X, connected to the cover B, is arranged within the casing and is provided with a link Y, having a ring Z at its end adapted to engage the hooked end of the hinge-arm U when the parts are in position.

In order to secure the canister O within the casing and in operative relation with the parts of the apparatus, the cover B is first removed and with it the parts attached thereto. The plugs F and Q are then inserted within the apertures P in the canister and the hinge-arm U secured in position by means of the link Y. The cover B and depending parts, together with the canister, are then inserted within the casing A. The cover is provided, as shown, with the rivets a and the aperture b closed by the screw-threaded cap c, so that the water may be charged into the apparatus, and a vent is provided for the escape of gas in case of emergency. The cock J is closed and the casing is filled with water. The confined air

in the canister O and the tubes D and V prevents the water rising in the tubes R and V until the cock J is opened. When the cock J is opened, the water rises through the tube R and drips downwardly through the hole S and attacks the carbid at the bottom of the canister, and the gas generated passes through the holes in the screen Z up through the opening E and through the filter I to the outlet.

The lower portion of the tube V is provided with the apertures e, as shown. An excess of pressure will force the water downwardly in the tube V and permit the gas to escape from the apertures e, thus affording a safety-vent.

The canister O before used is provided with the removable seals f, soldered over the openings in its ends, which seals may be readily stripped from the canister when it is to be inserted in the generator. The canisters themselves, therefore, form ready means for supplying a charge to a generator, and they may be made in any size desired, according to the size of the generator used.

In the form of apparatus shown in Fig. 2 a downwardly-depending neck D is provided with an enlarged lower portion g, open at the bottom and having inwardly-extending springs h for gripping the canister i and holding it in position. In this instance the canister is provided with but one opening P in one end, the other end being closed. A tube j, having a washer F, is first inserted in the opening P and then the canister is thrust upwardly within the enlarged portion g, connected to the sleeve D. The tube j, as shown, is provided with an upward extension k, adapted to surround the filter. An upper water-aperture l and lower gas-apertures o are provided in the tube j. According to this construction the water within the casing A arises around the canister and drips through the opening l in the tube j. The gas generated may pass through the tube j and through the opening o and rising through the filter passes to the gas-outlet. In this instance the cover B is secured by means of a band or joint p to the casing A.

In Fig. 3 the canister q is provided with one opening P, as before, and in order to permit water to have access to the interior of the canister an aperture r is provided in the side thereof. This aperture r is sealed with a removable seal s. (Shown in dotted lines in Fig. 3 and shown in full lines in Fig. 7.) When the canister is to be used, this seal is removed and the water arising around the canister may drip through the aperture r upon the carbid. In Fig. 3 a larger screen t is used than in the other figures, although the smaller screen is to be preferred. The object of using the large screen is to prevent the carbid from clogging the drip-opening. Other forms of screens could be used for the purpose.

In Fig. 4 a tube R is inserted upwardly

through the bottom of the canister, as in Fig. 1, and the water rising through this tube drips through the drip-aperture S. The other end of the canister u is not provided with an aperture normally; but when the charge is to be used a hole v is punched through the top of the canister to permit the escape of gas.

In Fig. 5 the downwardly-depending tube D is provided with the inwardly-screw-threaded end w, having the gas-apertures x therein. In order to secure the canister O in position, a tube y, provided with screw-threads at one end, is thrust through the openings P in the canister and the screw-threaded end of the tube y is engaged with the threads of the inwardly-screw-threaded end w. A thumb-piece z upon the tube y permits the tube to be manipulated, and a suitable washer z' is arranged between the thumb-piece z and the bottom of the canister. A drip-aperture y' is provided in the tube y. According to this construction the water rises through the tube y and drips through the opening y', the operation of the apparatus being as heretofore described.

Obviously some features of this invention may be used without others, and the invention may be embodied in widely varying forms.

Therefore, without limiting the invention to the construction shown and described nor enumerating equivalents, I claim and desire to secure by Letters Patent the following:

1. A carbid-canister for an acetylene-generator having openings in the top and bottom, a tube extending through one opening into the canister, with a drip-opening therein, a screen surrounding said tube, and means for sealing the joint between the tube and the canister to prevent the entrance of water and the escape of gas around the tube, for substantially the purposes set forth.

2. A carbid-canister for an acetylene-generator, having openings in the top and bottom, a tube extending through one opening into the canister with a drip-opening therein, a screen surrounding said tube, a plug surrounding the tube, and another plug in the other opening of the canister, with provision for the escape of gas through said last-named plug, for substantially the purposes set forth.

3. A carbid-canister for acetylene-generators having openings in the top and bottom, a tube extending through one opening into the canister, with a drip-opening therein, a screen surrounding said tube, means for sealing the joint between the tube and the canister, and a plug in the other opening of the canister, with provision for the escape of gas through the said last-named plug, for substantially the purposes set forth.

4. An acetylene-generator, having a carbid-canister with an opening in one end, with a tube extending thereinto, and means for sealing the joint between the tube and the canister, means for admitting water to said canister, and means for causing the water to rise

upwardly toward the inlet before admission to the canister, whereby the pressure of the gas is balanced against the water-pressure, for substantially the purposes set forth.

5 5. The combination with a water-containing casing, of a canister therein, apertures in the top and bottom of said canister, a tube having a drip-opening, said tube extending upwardly through the lower opening of the
10 canister, means for sealing the joint between the tube and the canister, and connection with the upper opening of the canister for conducting gas therefrom, for substantially the purposes set forth.

15 6. In an acetylene-generator, the combination with a water-containing casing, of a canister therein, apertures in the top and bottom of said canister, a tube provided with a drip-opening, said tube extending upwardly
20 through the lower opening of the canister, means for sealing the joint between the tube and the canister, connection with the upper opening for conducting gas from the canister,

and a screen interposed between the drip-opening and the carbid-canister, for substantially the purposes set forth. 25

7. In an acetylene-generator, the combination with a water-containing casing, of a removable canister therein having an opening, a tube extending thereinto affording provision 30 for the admission of water to the carbid, means affording provision for the escape of gas from the canister, a screen surrounding the tube within the canister, means for removably maintaining said canister in the casing, and means for causing water to rise upwardly to the inlet-opening before admission 35 to the canister, whereby the pressure of the gas is balanced against the water-pressure.

In testimony whereof I have signed this 40 specification in the presence of two subscribing witnesses.

NELSON GOODYEAR.

Witnesses:

E. VAN ZANDT,
A. L. O'BRIEN.