No. 689,756. Patented Dec. 24, 1901.

C. SEBELLE.

ACETYLENE GAS GENERATOR.

(Application filed June 27, 1901.)

(No Model.)

Fig. 1.

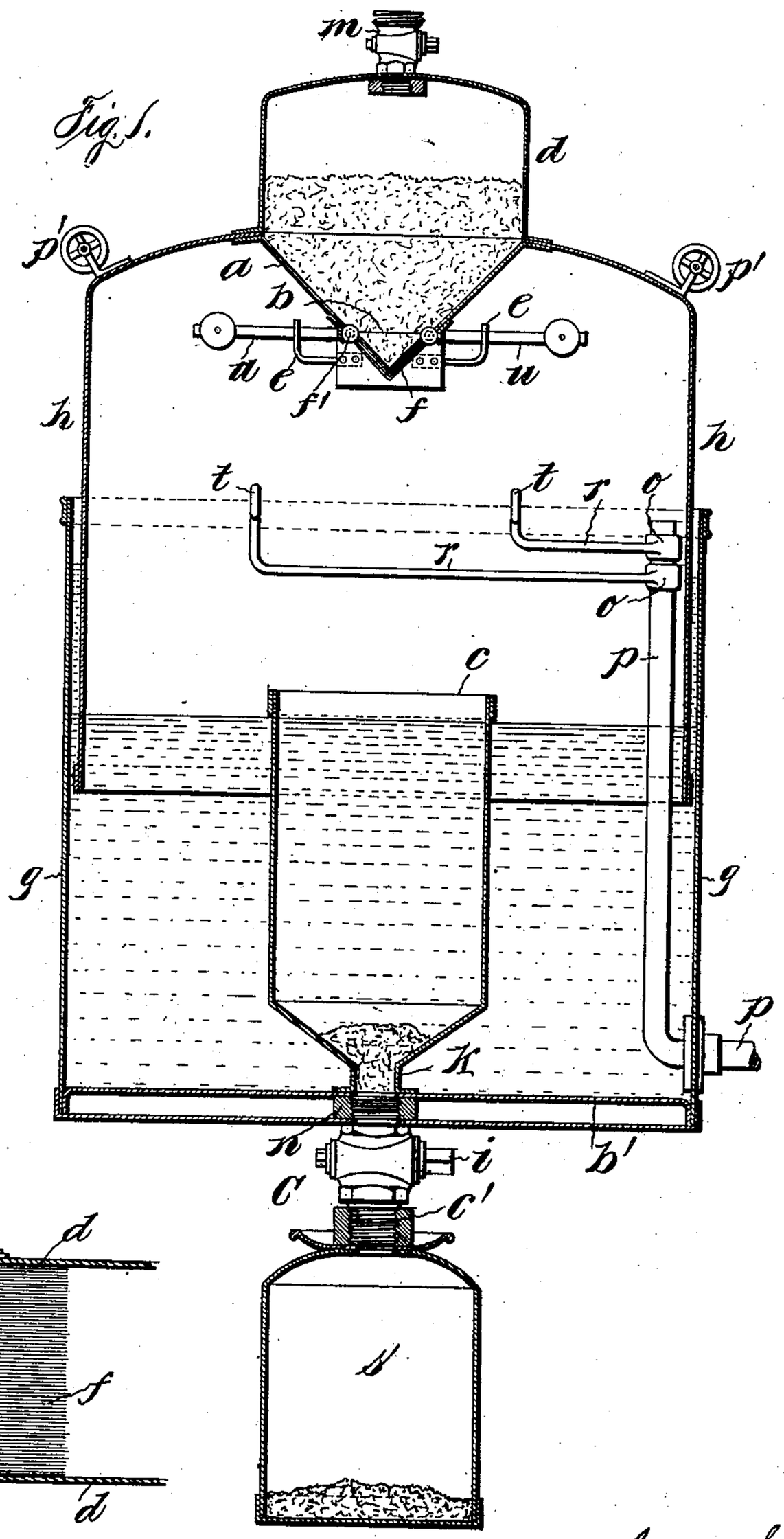
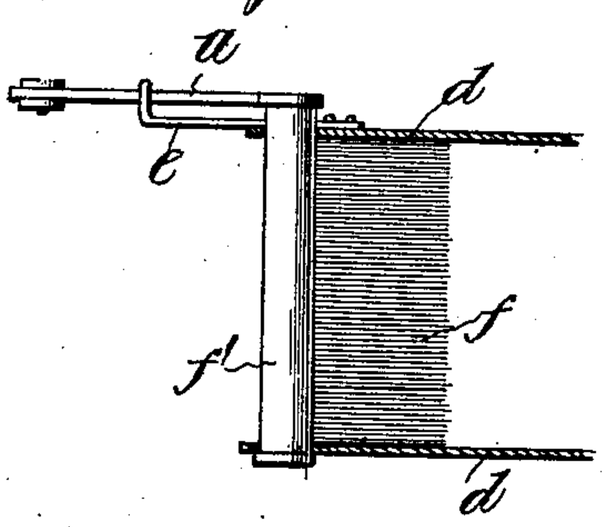


Fig. 2.



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ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 689,756, dated December 24, 1901.

Application filed June 27, 1901. Serial No. 66,270. (No model.)

To all whom it may concern:

Be it known that I, CARL SEBELLE, a subject of the Emperor of Austria-Hungary, residing at Vienna, in the Province of Lower Austria, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Acetylene-Gas Generators; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention has relation to acetylene-gas generators, and more particularly to that type in which the carbid-holder is located above the generator and wherein means are provided for automatically feeding the carbid to such generator. In the type of generators referred to the feed of the carbid is regulated automatically by the pressure of gas through the medium of a valve, generally a flap-valve or converging flap-valves made of a rigid material, and these present a disadvantage which may have serious results in that when a piece of carbid larger than the bulk of pieces in the hopper is caught between the flap-valve and its seat or between the meeting edges of the converging flap-valves and held thereby the feed of carbid to the generator is not entirely cut off, as the smaller pieces of carbid can still pass through the practically or partially open feed-port.

One of the objects of my invention lies in the provision of means whereby the difficulty or disadvantage referred to is obviated, and this I attain by constructing the converging flap-valves of elastic or resilient fingers—as, for instance, comparatively thin steel wires or other equally elastic or resilient material—secured to suitable heads so pivoted to the opposite edges of the feed-ports that the free ends of said fingers can be brought into contact with or cross one another to a greater or less extent, and thus form a cut-off of such a character as to efficiently cut off the feed of carbid to the generator when a larger piece of the material is held between them.

Another difficulty encountered in acetylene-gas generators as generally constructed lies in the removal from the generator of the solid products resulting from the reaction of the water on the carbid, and the further object of my invention lies in the provision of means whereby this may be readily and conveniently done without necessitating access to or removal of the generator from the gas chamber or collector, and this I attain by removably connecting a receiver for said solid products to the generator and locating said receiver externally of said generator and providing a suitable cut-off between the two, also externally of the generator.

That my invention may be fully understood I will describe the same in detail, reference being had to the accompanying drawings, in which—

Figure 1 shows an acetylene-gas generator embodying the subject-matter of my invention by a vertical sectional view; and Fig. 2 a top plan view, on an enlarged scale, of one of the elements of the cut-off device, showing the resilient fingers formed like a brush secured to the head f'.

In said drawings, g and h indicate a gas-holder, the part g being the gas-holder tank, said gas-holder tank containing, as usual, a sealing liquid, as water, the bell h being provided with pulleys p' for the cords or chains, (not shown,) to which are attached the weights that determine the pressure within the holder in a well-known manner. To the roof of the bell h is secured a feed-hopper d, having a lower part a projecting into the bell, of the form of a truncated hollow cone in cross-section, or, in other words, the lower part of the hopper d has converging side walls, leaving an opening b, to the proximate edges of which are pivoted the elements of my improved cut-off, each of said elements being composed of a sufficient number of elastic or resilient fingers f—as steel wires, for instance—secured to heads f' and constituting flat brushes, the elasticity or resiliency of the fingers being in

a measure determined by the capacity of the gas-holder, the consumption of gas, and the size of the pieces of carbid fed to the generator. For small apparatuses, where the carbid supplied to the generator is rather finely comminuted, the steel wires may of course be correspondingly thin and elastic or resilient.

To the head f' of each of the elements of the cut-off device is secured a lateral weighted arm u, which holds the elements normally in a position with the free ends of the fingers f in contact or crossed to a greater or less extent, so as to cut off the feed of carbid from the hopper d, as shown in the drawings. These arms are guided in suitable bracket-arms e, which limit the downward movement, but admit of the free upward movement of said arms to move the cut-off elements reciprocally and open a passage into the generator for the carbid.

The generator c is arranged in the gas-holder in line with the feed-port b of the hopper and is secured to the bottom b' of the gas-holder tank, said generator having a tubular extension through said bottom b', which extension has a stop-cock i and has removably secured thereto a vessel or receiver s for the solid products resulting from the decomposition of the carbid. In practice and for convenience of construction I provide the generator c at its lower end with a tubular neck k, in register with an internally-screw-threaded passage in a block or nut n, secured to the under side of said bottom b'. Into this nut is screwed a coupling C, provided with a stop-cock i and having a screw-threaded branch c', to which is screwed said vessel or receiver s for the reception of the products of the decomposition of the carbid, which products can thus be discharged from the generator whenever necessary by opening the stop-cock i.

For the purpose of automatically and reciprocally moving the brushes f, so as to open a passage for the carbid from the hopper to the generator c, which of course contains water, I provide within the gas-holder suitable abutments $t\,t$ in the path of the weighted arms u of the cut-off device, so that when the pressure in the gas-holder lowers to such an extent as to cause the bell h to drop sufficiently to bring said arms u into contact with the abutments said arms will be turned upward to move the fingers f away from each other and allow the carbid to drop from the hopper d into the generator c. When the pressure in the holder again increases to cause the bell h to rise again, the arms u move out of contact with the abutments t, thereby moving the fingers f toward each other, so as to cut off the feed of the carbid. It is evident that if a piece of carbid larger than those constituting the bulk of the carbid in the hopper were caught between the ends of some of the fingers as they close up they would yield and in a measure bend around such pieces, while the ends of all the other fingers would meet or cross one another, thus effectually cutting off the feed, notwithstanding the obstruction in the feed-passage, which would otherwise leave said passage open.

As a convenient means for supporting the abutments $t\,t$ in the path of the weighted arms u at the proper distance above the level of the sealing liquid and above the generator c, which projects above said level, I have shown said abutments as secured to the gas-outtake pipe p, said abutments consisting of rods r, secured to sleeves o, connected to said pipe p, said rods having their outer ends bent up vertically and terminating in an abutment in the path of the arms u. To prevent escape of gas through the feed-hopper, the latter is provided with a charging-passage controlled by a stop-cock m.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The combination with an acetylene-generator, a gas-chamber containing the same, and a carbid-feed hopper above said generator; of a feed-controlling device comprising two converging and reciprocally-movable elements each composed of a head and a multiplicity of elastic or resilient fingers, for the purposes set forth.

2. The combination with an acetylene-gas generator, a gas-chamber containing the same and a carbid-feed hopper above said generator; of a feed-controlling device comprising two converging and reciprocally-movable elements each composed of a head and a multiplicity of resilient fingers, said heads pivoted to opposite edges of the hopper and so weighted as to hold the free ends of said fingers normally in contact to close the discharge-port of the hopper, and means controlled by a given reduction of the pressure in the gas-chamber to move the heads and therethrough the said fingers to open said discharge-port, for the purpose set forth.

3. The combination with a gas-holder comprising a vessel, an inverted bell and a sealing liquid therefor, a generating vessel contained in the holder and a carbid-feed hopper on the bell, the lower part of said hopper having converging walls, and arranged to discharge into said generator; of a feed-controlling device comprising two converging flat brushes f, pivoted to the proximate lower edges of said converging walls, weighted arms u, secured to the brush-heads and holding the brushes in contact to close the discharge-port of the hopper, and fixed abutments within the gas-holder in the path of the aforesaid weighted arms, for the purpose set forth.

4. The combination with a gas-holder comprising a vessel, an inverted bell and a sealing liquid therefor, a carbid-feed hopper on said bell the lower part of which hopper has converging walls, a gas-generator contained in the holder under said hopper and a gas-outtake pipe; of brushes pivoted to the proxi-

mate edges of the aforesaid converging walls, weighted arms secured to the brush-heads to hold the brushes normally in contact to close the discharge-port of the hopper, and abutments carried by the gas-outtake pipe in the path of the aforesaid arms, substantially as and for the purpose set forth.

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

CARL SEBELLE.

Witnesses:

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