No. 679,774. Patented Aug. 6, 1901.

E. M. McNAMARA & J. D. O'REILLY.

ACETYLENE GAS GENERATOR.

(No Model.) (Application filed Sept. 2, 1899.)

Fig. 1.

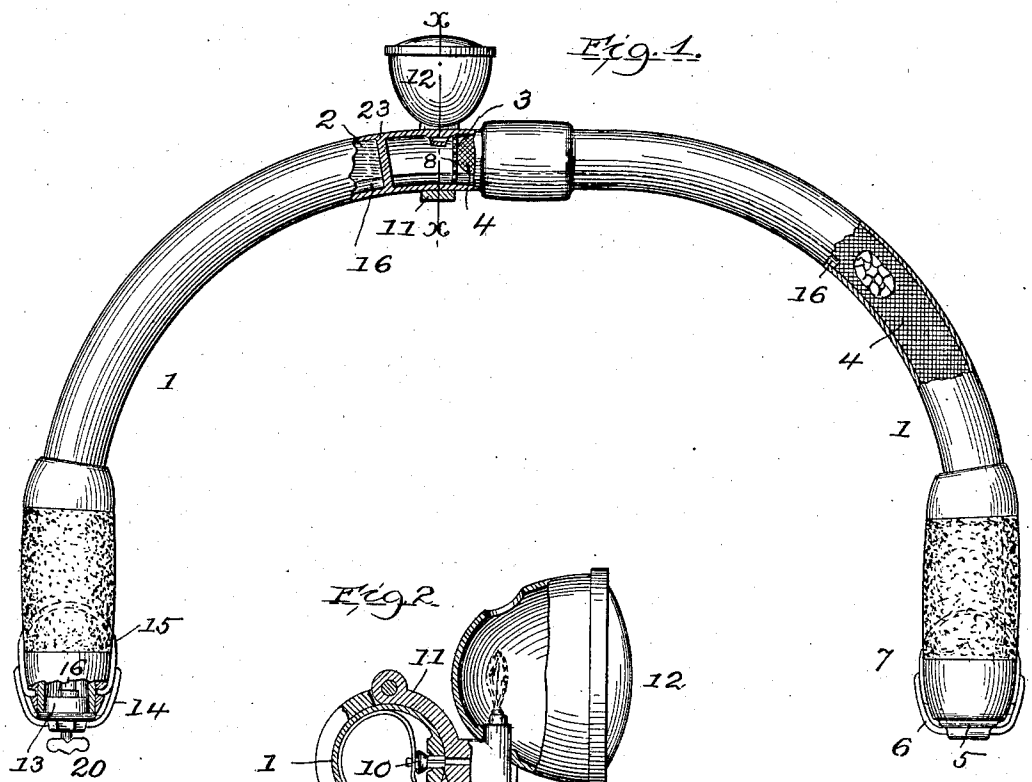


Fig. 2.

Fig. 3.

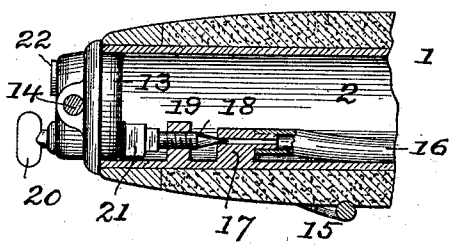


Fig. 5.

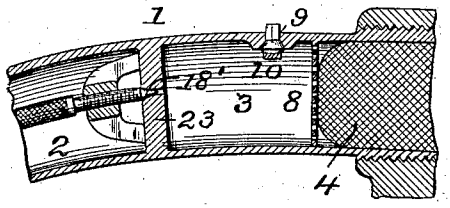
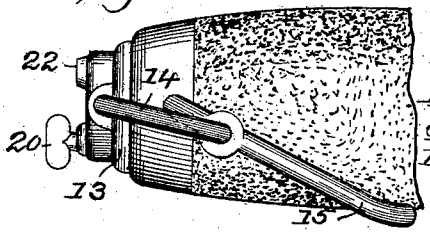


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD M. McNAMARA AND JAMES D. O'REILLY, OF CHICAGO, ILLINOIS.

ACETYLENE-GAS GENERATOR.

SPECIFICATION forming part of Letters Patent No. 679,774, dated August 6, 1901.

Application filed September 2, 1899. Serial No. 729,366. (No model.)

To all whom it may concern:

Be it known that we, EDWARD M. McNAMARA and JAMES D. O'REILLY, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Acetylene Generators and Lamps for Bicycles; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The present invention relates to an acetylene-gas generator and burner for bicycles.

The object of the present improvement is to provide a simple, light, and efficient construction of the acetylene-gas generator in which the water and calcium carbid are contained within the cavity of the handle-bar and means are provided for the convenient regulation of the feed of the water to calcium-carbid chamber, as well as to conveniently regulate the flow of gas to the lamp-burner, as also to automatically cut off the outlet of gas when the lamp is detached, all as will hereinafter more fully appear. We attain such object by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a bicycle handle-bar, with parts broken away and in section, illustrating the general arrangement of the present invention; Fig. 2, an enlarged transverse sectional elevation at line $x\,x$, Fig. 1; Fig. 3, an enlarged detail section of one grip end of the handle-bar, illustrating one form of water-supply-controlling valve and the closure-cap for the end orifice of the handle-bar chamber; Fig. 4, a detail side elevation of the same; Fig. 5, a fragmentary section of a modified arrangement of the water-supply-controlling valve.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the bicycle handle-bar, of any usual form and construction, and which in the present invention will have its interior divided into two chambers 2 and 3, the one constituting a water receptacle or holder and the other a gas-generating chamber containing the charge of calcium carbid used in the production of the supply of acetylene gas, and which carbid in the present invention will be contained in turn in a porous bag 4 of an elongated nature, that is adapted to fill the elongated generating-chamber 3 of the present invention. Such provision affords a ready and very convenient means for introducing a fresh charge of carbid into the generating-chamber, as well as the ready and convenient removal of the spent charge of such carbid.

The outer end of the generating-chamber in the handle-bar is of an open formation and of the same or substantially the same diameter as that of other portions of such chamber, so that no obstruction will be offered to the introduction of the sack of carbid, and with a view to provide a simple and efficient closure for such entrance-orifice to the generating-chamber one part of the present invention involves a closing means consisting of a plug 5, adapted to accurately fit such entrance-orifice to the generating-chamber and having fixed pivotal connection with a wire or other bail 6, that is in turn pivoted to the lever-bail 7, in turn pivoted to the end portion of the handle-bar, as shown in Figs. 1, 3, and 4, so that with the one movement of said lever-bail 7 the closure-plug 5 will be firmly drawn against the end of the generating-chamber to effect a perfect closure of the entrance-orifice to such chamber, while with the other movement of said lever-bail 7 the closure-plug 5 will be forced away from said entrance-orifice of the generating-chamber to afford free and easy access to the same.

8 is a strainer near the inner end of the generating-chamber to exclude solid impurities from the innermost or gas-containing portion of said chamber.

9 is the gas-outlet orifice from the generating-chamber, which in the construction shown in Fig. 2 is provided with an inwardly-opening check-valve 10, the stem of which projects outside the wall of the handle-bar, so that in the attachment of the bracket 11 of the acetylene-gas lamp 12 in place the said check-valve 10 will be fixed inwardly in an automatic manner, as indicated in Fig. 2, to permit the egress of the gas from the generating-chamber into the burner-passage of the lamp.

The water-chamber 2 of the handle-bar

will have an open outer end closed by a plug 13, as illustrated in Figs. 1, 3, and 4, and said plug will have bail connection 14 and lever-bail connection 15, similar to that above described in connection with the closure-plug 6 of the gas-generating chamber 3.

16 is a conducting-pipe extending from the lowermost portion of the water-chamber 2 to the middle or other suitable portion of the generating-chamber. Figs. 1 and 3 are intended to represent a handle-bar of the drop type, in which the outer and free ends are the lowest portions thereof, and consequently the conducting-pipe 16 will extend to one of such ends and in the construction shown in Figs. 1 and 3 will connect with a lug 17, forming the seat of the needle-valve 18, that is carried by another lug 19 and is provided with a flattened or non-circular head, as shown.

20 is an operating-key journaled in the closure-plug 13 and having an inner slotted head 21, that when the closure-plug 13 is in a closed condition will engage the non-circular head of the needle-valve 18 to form an operating connection between the two and afford means for operating said valve in a ready and convenient manner, and thus enable the water-feed from the water-supply chamber 2 to the generating-chamber 3 to be regulated and adjusted to meet any particular requirement met with in the ordinary use of the present invention.

22 is a valved nipple in the closure-plug 13, adapted for attachment of an air-pump in introducing the requisite amount of compressed air into the water-chamber 2 to feed the water therefrom into the generating-chamber against the usual and normal pressure of gas within such generating-chamber.

In cases where the handle-bar of the bicycle is of a raised formation the portion of the water-chamber 2 next adjacent to the dividing-partition 23 will be the lowest point of such water-chamber, and consequently the water-supply controlling-valve 18′ will in that case be arranged directly in such partition and will be provided with a suitable operative connection, extending to the exterior of the handle-bar, by which the valve can be manipulated and adjusted.

In some cases either the handle-bar stem or the fork-stem may be used as one or a part of one of its chambers before described as occupying the tubular cavity of the handle-bar.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a device of the character specified, the combination with a hollow bicycle handle-bar provided with partitions dividing it into separated water and carbid containing chambers with a gas-receiving chamber located between the water and carbid chambers into which the gas is discharged, the water-chamber having an open end, a closure-plug for the open end of the water-chamber, means provided with a projecting handle for regulating the flow of water from the water-chamber to the carbid-chamber, and an acetylene-lamp and its burner carried by the gas-receiving chamber between the water and carbid containing chambers.

2. The combination with an acetylene-lamp and its burner, of a hollow bicycle handle-bar and its immediate attachments, provided with partitions forming separated water and carbid containing chambers, and a gas-chamber between them, a gas-outlet in the wall of said chamber to which the lamp is adapted to be connected, the water-chamber having an open end, a connection from the carbid-chamber to the lamp-burner, a closure-plug for the open end of the water-chamber, a filling of carbid inclosed within an elongated sack, and adapted for ready insertion and removal from the carbid-chamber, and means for regulating the flow of water from the water-supply chambers to the carbid-containing chamber, substantially as set forth.

3. In an acetylene-gas generator for bicycles as herein described, the combination with the gas-outlet orifice of an inwardly-opening check-valve having an outwardly-projecting stem that is adapted to be forced inward to open the valve, when the lamp is attached in place, substantially as set forth.

4. In an acetylene-gas generator for bicycles, the combination of a hollow handle-bar, partitions dividing said handle-bar into separated water and carbid chambers, a gas-chamber in communication with the carbid-chamber, a gas-outlet in the wall of said gas-chamber, a check-valve normally closing the gas-outlet, and means to unseat the valve when the lamp is put in place.

5. In an acetylene-gas generator for bicycles the combination of a hollow handle-bar, partitions dividing said handle-bar into separated water, carbid, and gas chambers, the latter being located between the water and carbid chambers, a filling of carbid inclosed within an elongated sack for ready insertion and removal with relation to the carbid-chamber, means for connecting the water and carbid chambers to permit a flow of water from the former to the latter, the partition between the carbid and gas chambers being provided with perforations to permit the ready flow of gas into the gas-chamber and yet prevent solid material from passing thereinto, a lamp and a valved connection between the lamp and gas-chamber.

In testimony whereof witness our hands this 31st day of August, 1899.

EDWARD M. McNAMARA.
JAS. D. O'REILLY.

In presence of—
ROBERT BURNS,
JAMES LAVALLIN.