

F. H. LIPPINCOTT.
 MECHANISM FOR THE GENERATION AND STORAGE OF ACETYLENE.
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1,056,560.

Patented Mar. 18, 1913.

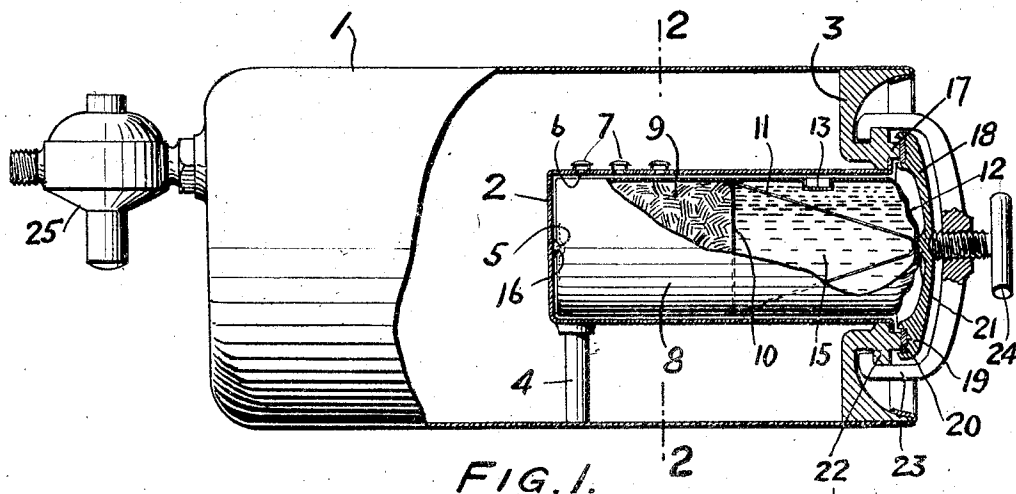


FIG. 1.

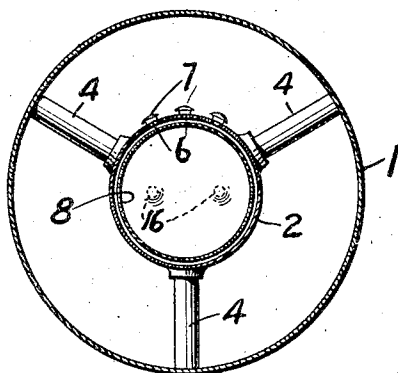


FIG. 2.

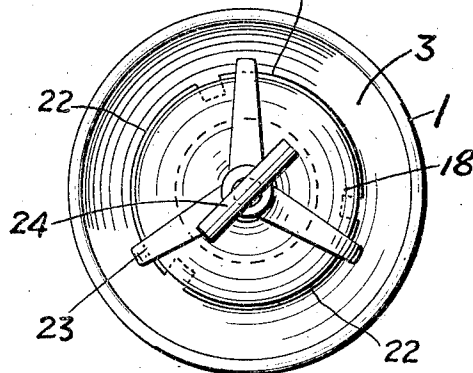


FIG. 3.

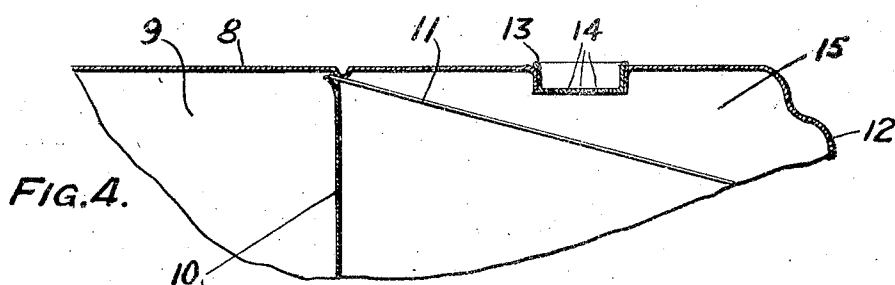


FIG. 4.

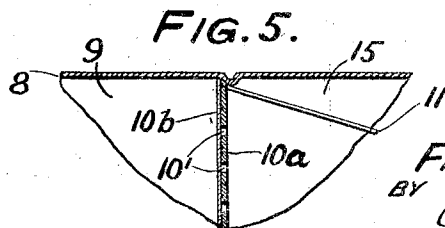


FIG. 5.

WITNESSES:

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MECHANISM FOR THE GENERATION AND STORAGE OF ACETYLENE.

1,056,560.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FISHER HAZARD LIPPINCOTT, a citizen of the United States, residing in the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented Improved Mechanism for the Generation and Storage of Acetylene, of which the following is a specification.

My invention is designed primarily to provide improved mechanism comprising a storage tank in combination with a generator adapted to contain a sealed charge of calcium carbide which can readily be slipped into place, held in position, put in operation and replaced.

The nature of my invention is fully disclosed in the following description and the accompanying drawings in illustration thereof.

In the drawings, Figure 1 is a side elevation, part sectional, of mechanism embodying my invention; Fig. 2 is a sectional view taken on the line 2-2 of Fig. 1; Fig. 3 is an end elevation of the same; Fig. 4 is a sectional view of part of the detached generator; and Fig. 5 is a sectional view of part of the detached generator illustrating a modified form of diaphragm.

The mechanism, as illustrated in the drawings, comprises the tank 1 containing the generator casing 2 which has its outer end supported by and fixed to the tank head 3 and its inner end supported by the struts 4 which bear against the interior of the tank. The casing has in the inner end thereof the bosses 5 for engaging the generator to hold it in place and in the top thereof the apertures 6 for the passage of the gas escaping from the generator, the apertures being protected by the caps 7 for preventing the stoppage thereof by the absorbent material in the tank.

The generator comprises a tube or shell 8, of light metal such as tin, having in its inner end 9 a charge of calcium carbide which is sealed by a light diaphragm 10, suitably a solid disk of light metal such as tin, as illustrated in Figs. 1 and 2. But this diaphragm may be modified as shown in Fig. 5 in which the shell 8 has its chamber 9 sealed by a disk 10^a containing the apertures 10^b and the covering 10^c attached to the disk for closing such apertures, such covering being made of paper or other material adapted to be collapsed or dissolved by water

in the compartment 15. Struts or rods 11, suitably formed by bending a wire, are placed in the compartment 15 so that their inner ends bear against the periphery of the diaphragm and their outer ends against the center of the circularly corrugated or fluted tube head 12. The tube is provided with a cap 13 which can be detached to permit water to be poured into the compartment 15, the cap containing the perforations 14 through which gas can escape from such compartment. The tube is also provided with the sockets 16 in the inner end thereof which register with the bosses 5, whereby the generator is positioned.

The tank head 3 has a rim 17 to which is fitted a cap 18 containing a circular channel 19 which is provided with packing 20 for engaging the rim and sealing the tank, the cap having the inwardly extending central projection 21 adapted to bear against the center of the tube head 12. The head 3 is also provided with the flanges 22 which are engaged by a crab 23 having a screw 24 movable through its crown into engagement with the crown of the cap 18, the screw acting to force the cap inwardly to compress the packing 20 against the rim 17 and to move the head 12 and struts 11 so as to perforate the diaphragm.

The tank has in the end thereof opposite the head 3 the reducing valve 25 for drawing off the gas and contains, in the space surrounding the casing 2, a suitable absorbent for holding the gas, which absorbent may be the known liquids for this purpose, a known porous solid or both.

It will be understood that by detaching the crab 23 and cap 18, an exhausted tube 8 can be withdrawn from the casing 2 and another containing a charge inserted, water having first been introduced, by removing the cap 13, into the chamber 15. The tube having been properly placed in its casing, the cap 18 is placed in position on the rim 17, the crab 23 is placed in position in engagement with the flanges 22, and the screw 24 is run in so that the projection 21 on the cap forces inwardly the crown of the fluted head 12 and the struts or rods 11, which latter are thereby caused to perforate or bend the diaphragm 10 or 10^a. In the form using a diaphragm having covered apertures, the action of the water upon the covering establishes communication between the compart-

ments through such apertures, and the struts 11 may be omitted. Water is admitted from the chamber 15 to the chamber 9, and the acetylene formed by the contact of the water with the calcium carbide contained in the chamber 9 escapes to the chamber 15 and thence through the perforations 14 and 6 (which are connected by free space between the case 2 and tube 8) to the interior of the tank 1, whence it is withdrawn as required by means of the valve 25.

Having described my invention, I claim:

1. The mechanism for generating and storing gas which comprises a storage tank, a casing in said tank and a generator in and supported by said casing, said generator containing a diaphragm forming compartments therein for containing calcium carbide and water respectively, and said casing and generator having means wherethrough gas escapes from said generator through said casing to said tank.

2. The mechanism for generating and storing gas which comprises a storage tank in combination with a generator containing a diaphragm forming compartments therein, means disposed in one of said compartments between the head of said generator and said diaphragm, and means connected with said tank for forcing said means first named against said diaphragm and thereby effect-

ing communication between said compartments.

3. The mechanism for generating and storing acetylene which comprises a storage tank, in combination with a generator and a casing for supporting said generator in said tank; said generator comprising a shell and a diaphragm dividing said shell into compartments for containing calcium carbide and water respectively, said shell having therein a cap containing perforations communicating with said water compartment.

4. The mechanism for generating and storing gas which comprises a storage tank, an apertured casing supported within said tank, a tube disposed in said casing, said tube having a corrugated head, a diaphragm forming compartments in said tube, a rod disposed between said head and diaphragm for effecting communication between said compartments through said diaphragm, a cap for said tank whereby said tube is inclosed, and means for pressing said cap against said head.

In witness whereof I have hereunto set my name this 10th day of February, 1912, in the presence of the subscribing witnesses.

FISHER H. LIPPINCOTT.

Witnesses:

JOS. G. DENNY, Jr.,
CHARLES N. BUTLER.