A. E. HUGHES.

CHEMICAL FIRE-EXTINGUISHER.

No. 191,803. Patented June 12, 1877.

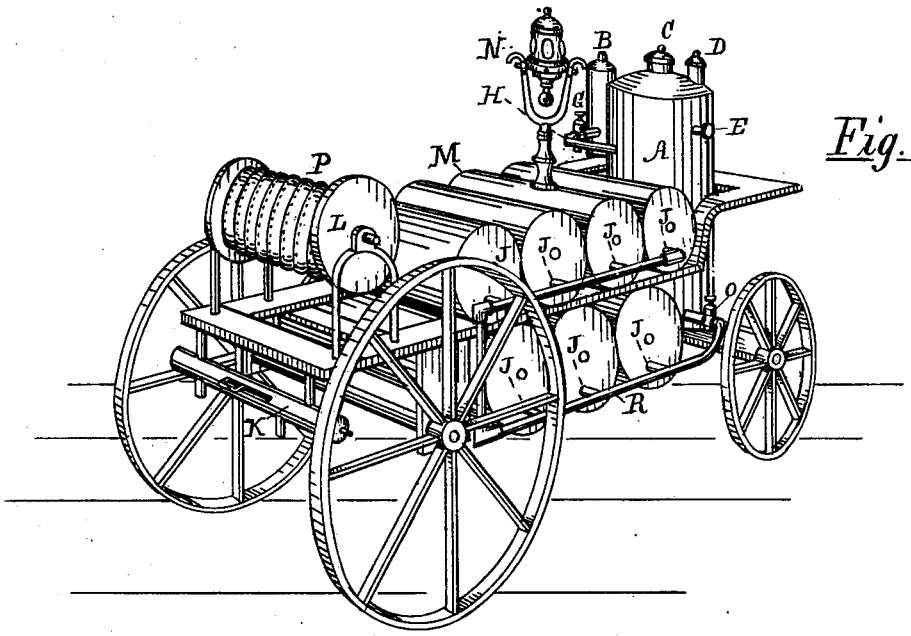


Fig. 1.

Fig. 2.

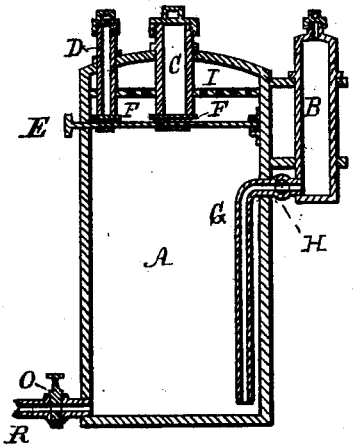
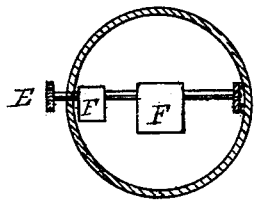


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

ALEXANDER E. HUGHES, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO NORTH AMERICAN FIRE-ANNIHILATOR COMPANY, OF SAME PLACE.

IMPROVEMENT IN CHEMICAL FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **191,803**, dated June 12, 1877; application filed December 4, 1876.

To all whom it may concern:

Be it known that I, ALEXANDER E. HUGHES, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Chemical Engines for Extinguishing Fires, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a chemical engine for extinguishing fires having my invention applied thereto. Fig. 2 is a transverse section of the gas-generator; and Fig. 3 is a sectional plan view of the generator, showing the valves for checking the water and soda supply.

Chemical engines for extinguishing fires heretofore have not succeeded in taking the place of the steam fire-engines, for the reason that in their construction no provision has ever been made for keeping up a continuous supply of the annihilating fluid or gas for an indefinite time. The object of my invention is to overcome this defect, and at the same time construct a chemical fire-engine in such a manner that it may be charged with the proper quantities of the chemicals to generate the gas or vapor for extinguishing fire at any time or place, and thereby insure a constant pressure and a continuous supply of the annihilating gas or vapor as long as it may be required. This I accomplish by constructing my engine in the following manner: A is a capacious cylindrical tank mounted upon the front part of a carriage built for the purpose, in a suitable position. Through the top or head of the said tank a cylinder, C, of suitable diameter, is inserted, having a lid or covering, which can be removed at pleasure for the purpose of supplying the generator with the proper quantity of soda when required. This cylinder is open at the lower end, and passes through a perforated partition, I, near the top of the generator. At one side of the head of the generator, and on a line with the cylinder C, there is inserted a tube, D, for supplying the water to the generator when required. This tube extends down and through the said perforated partition I, and, like the cylinder C, has a covering or lid, which can be removed when desired. The lower ends of the cylinder C and tube D are kept closed while the gas is being generated by the pressure of the valves F F, which are securely fastened on a rod, one end of which is secured in a bearing on the inside of the said generator, the other end passing through the opposite side, where it is operated by turning the wheel or button E. On one side of the generating-tank there is permanently attached an acid-holder, B, having a suitable opening in the top for the purpose of supplying the acid when required. At the lower part of said holder B, on a line with the bottom, there is attached a small pipe, G, which extends into the generating-tank, and passes down nearly to the bottom of the same, for the purpose of introducing the acid required when the gas is to be generated. Said pipe has a stop-cock, H, by which the attendant can regulate the supply. At the lower side of the generating-tank a pipe, R, having a stop-cock, O, to regulate the flow of gas or vapor, is attached, which communicates with the storing-tanks M on the frame of the carriage through their branch pipes J J J J J J J. Each of the said branch pipes is intended to have a stop-cock, so that any one of the storing-tanks may be shut off, if desired. On the other end of each of the said storing-tanks there is a discharging-pipe controlled by a stop-cock. On the end of these pipes a screw-thread is cut for the purpose of attaching the hose for conveying the gas or vapor to the fire. An ornamental lantern, N, is supported in suitable bearings on one of the storing-tanks. At the rear end of the carriage-frame a cylinder, L, for carrying the hose P, is supported in bearings in the usual manner, and directly under the cylinder L, and secured to the under side of the carriage-frame, there is a small force-pump, K, for forcing the water into the generating-tank when required.

I do not confine myself to any particular construction of the carriage, or to the arrange ment of the storage-tanks or the generating-

tank on the same; they may be placed to suit the style of the carriage or the number of storing-tanks required.

This engine may be constructed so as to be placed in factories, or on board of ships, in a stationary position, and used for fire-extinguishing purposes.

I claim as my invention—

In a carbonic acid-gas generator for fire-extinguishers, the combination of the acid-reservoir B, the soda-receptacle C, water-tube D with the rock-shaft and valves F F, for the practically continuous generation of carbonic-acid gas for filling the holders M, substantially as and for the purposes set forth.

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Witnesses:
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