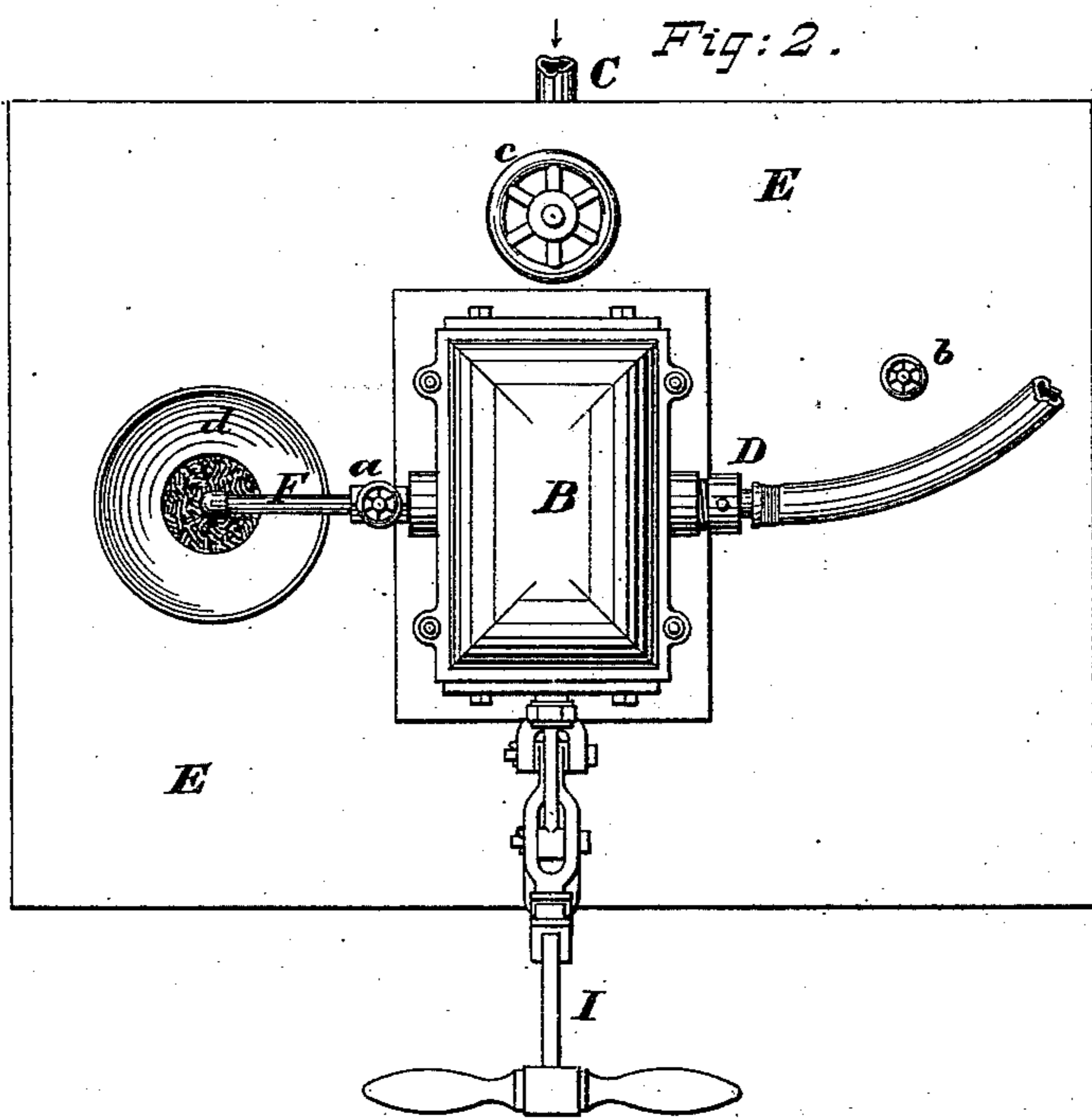
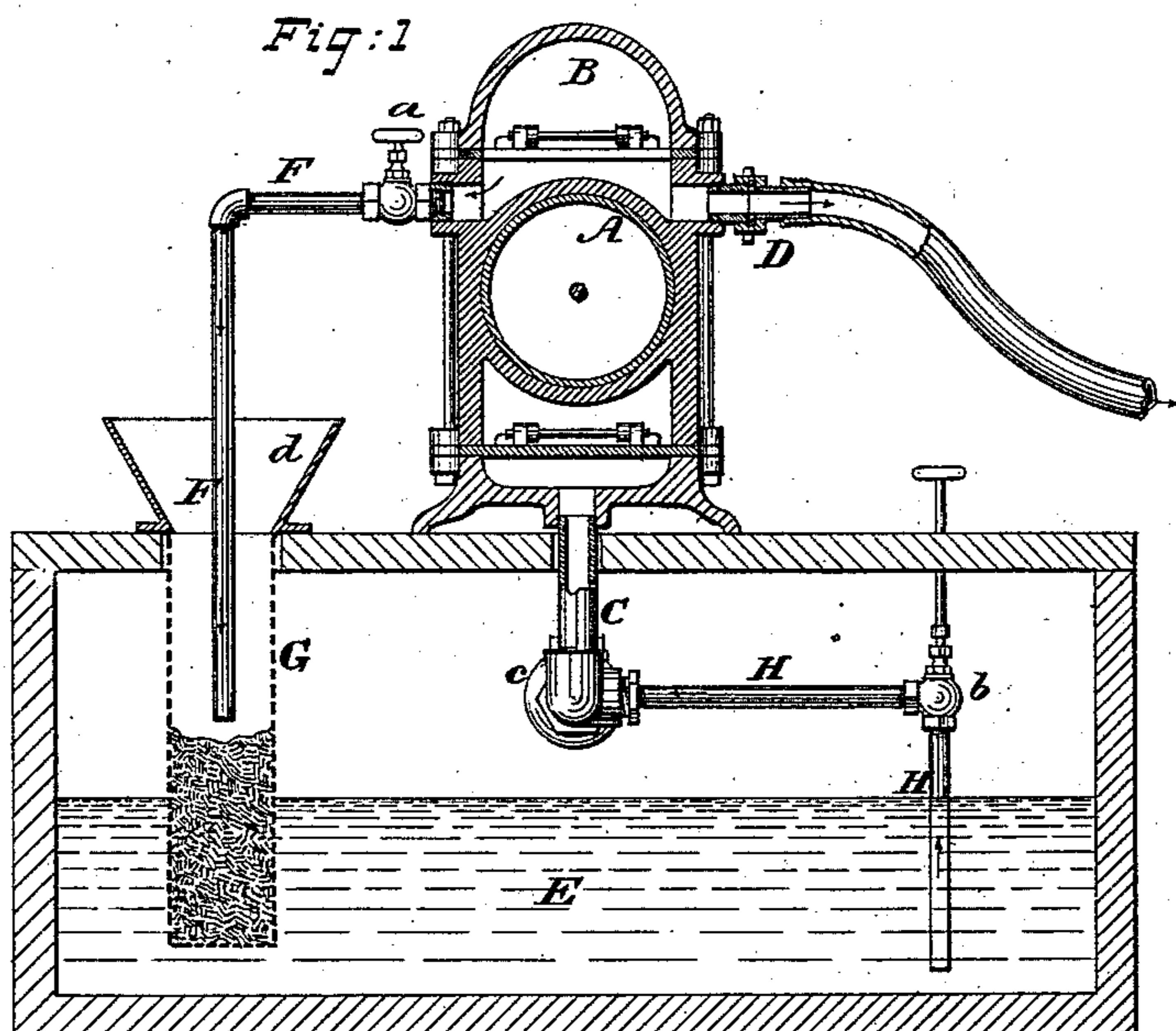


E. C. LEFFERTS.  
Apparatus for Extinguishing Fires.

No. 213,116

Patented Mar. 11, 1879.



ATTEST;

*Alfred Day*  
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INVENTOR;

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*Burke, Fraser & Cornett*

# UNITED STATES PATENT OFFICE.

EBENEZER C. LEFFERTS, OF HUNTINGTON, NEW YORK.

## IMPROVEMENT IN APPARATUS FOR EXTINGUISHING FIRES.

Specification forming part of Letters Patent No. **213,116**, dated March 11, 1879; application filed January 21, 1879.

*To all whom it may concern:*

Be it known that I, EBENEZER C. LEFFERTS, of Huntington, in the county of Suffolk and State of New York, have invented certain Improvements in Apparatus for Extinguishing Fires, of which the following is a specification:

My invention relates to the employment of that class of extinguishing materials and compounds which are dissolved in the water to be thrown upon the burning combustibles. When the water is evaporated by reason of the heat, the compound that was dissolved therein remains behind as a coat upon the combustibles, and renders them fire-proof, or substantially so.

The invention also relates to an apparatus, connected with the pump or water-forcing mechanism, whereby the fireproofing compound or substance employed may be dissolved in and mixed with the water used in the proper proportion to best effect the object sought.

In the drawings, which serve to illustrate my apparatus, Figure 1 is a vertical transverse mid-section, and Fig. 2 is a plan of the same.

Let A represent the cylinder, and B the air-chamber, of an ordinary double-acting force-pump. C is the suction, and D is the discharge pipe or nozzle. All of these parts are common to pumps, and form no part alone of my present invention.

E is a tank or reservoir for the fireproofing solution, shown as arranged underneath the pump, so as to form a base or support for the same. It may, however, be arranged elsewhere.

F is a discharge pipe or tube, leading from the air or discharge chamber of the pump down into a gauze or foraminous bag or receptacle, G, which depends from the roof or cover of the tank E down into the same.

Into the receptacle G is placed or fed, as needed, the substance or compound to be dissolved in the water; and a portion of the water, say one-fourth, discharged at each stroke of the pump, being forced down through the pipe F into the tank E, must, perforce, pass through the meshes or interstices of the receptacle G, dissolving and carrying with it the fireproofing compound or substance. The pipe F has a valve or cock, *a*, to regulate the amount of water delivered.

H is a suction pipe or tube, which opens at its receiving end into the tank E, near its bottom, and discharges either into the main suction-pipe C or into the suction-chamber of the pump. This pipe takes up a portion of the solution from the tank E at each stroke of the pump, and allows it to mix with the main body of the water brought in by the suction-pipe. This pipe H is also provided with a regulating valve or cock, *b*.

By properly adjusting the valves *a* and *b* the percentage of water passed through the tank E may be regulated, and by this means the strength of the solution thrown upon the fire is also regulated.

The main suction-pipe C may also be provided with a valve, *c*, to regulate the amount of water taken into the pump.

To facilitate the charging of the receptacle G while the pump or engine is in operation, a hopper or funnel, *d*, may be provided, as shown.

I have shown my apparatus as applied to a simple hand-pump, to be operated by a handle or lever, I; but it is obvious that it may be applied, without material alteration, to any form of pump or fire-engine now in use.

The tank E need not be arranged underneath the pump, nor indeed in close proximity thereto, except as a matter of convenience.

As a modification of the apparatus above described, I may employ two tanks, E, two sets of pipes, F H, and two foraminous receptacles, G, all connected with one pump or set of pumps. This construction enables me to dissolve one portion of the compound, if a compound be employed, in one tank, and another portion in the other, the two being mixed while in solution.

I am aware that in fire-extinguishing apparatus, where two or more chemical substances are employed to produce carbonic acid or other gases of a similar character, separate vessels have been employed to contain and keep separate said chemicals until their union is desired, and that regulated currents of water have been employed to produce such union; and I am also aware that steam has been employed in such apparatuses to dissolve the chemicals, and that funnels and hoppers have been used to supply additional chemicals

while the apparatus is in operation. But in my apparatus no gas is evolved by the mixture of the chemicals, or at least no appreciable amount, and they may be mixed in one vessel without detriment. The only object I have in sometimes employing two vessels is to enable me to regulate the strength of the solution with more certainty, or to vary it while the apparatus is in operation, if so desired.

I claim—

1. In an apparatus for throwing an extinguishing and fireproofing solution upon fires, a force-pump provided with the usual suction and discharge pipes or nozzles, and, in addition thereto, a supplementary suction-pipe arranged to take up the fireproofing solution from a suitable tank or vessel containing the same, so that it may mix in the pump with the water drawn into the same, substantially as set forth.

2. In an apparatus for throwing an extinguishing and fireproofing solution upon burning combustibles, a force-pump provided with the usual suction and discharge pipes or noz-

zles, and, in addition thereto, supplementary discharge and suction pipes arranged to supply water to and draw the fireproofing solution from a tank, E, substantially as shown and specified.

3. In a fire-extinguishing apparatus, the combination, with a suitable force pump or pumps, of a suitable solution tank or tanks, E, a foraminous receptacle or receptacles, G, and the supplementary suction and discharge pipes H F, arranged to operate substantially as shown and described.

4. The tank E, provided with a foraminous receptacle, G, arranged to open outside of said tank, and with suitable charging and discharging pipes F H, arranged substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EBENEZER C. LEFFERTS.

Witnesses:

EMILROUS JARVIS,  
ALONZO CONKLIN.