2 Sheets—Sheet 1.

J. W. STANTON.

Fire Extinguisher.

No. 202,068. Patented April 2, 1878.

Fig. 1.

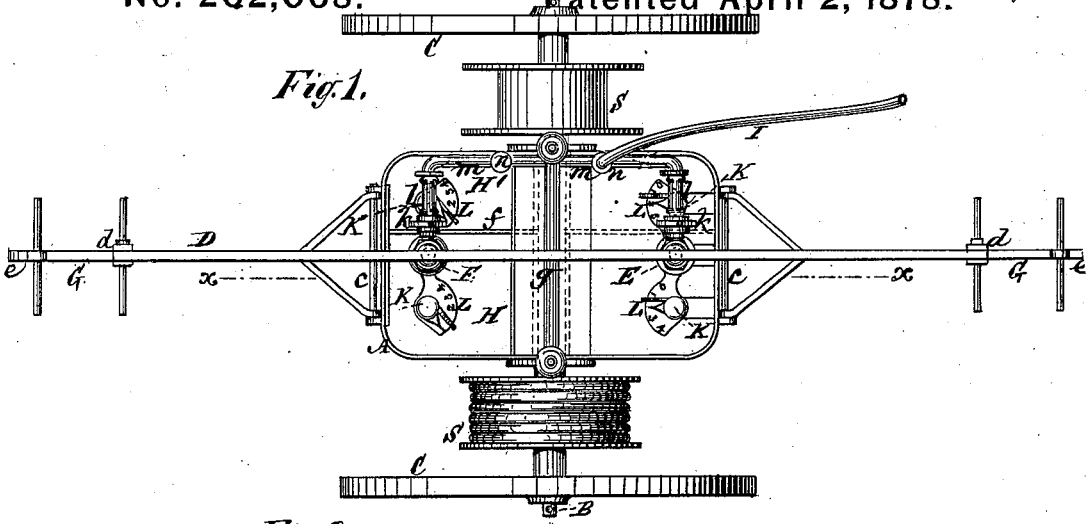


Fig. 2.

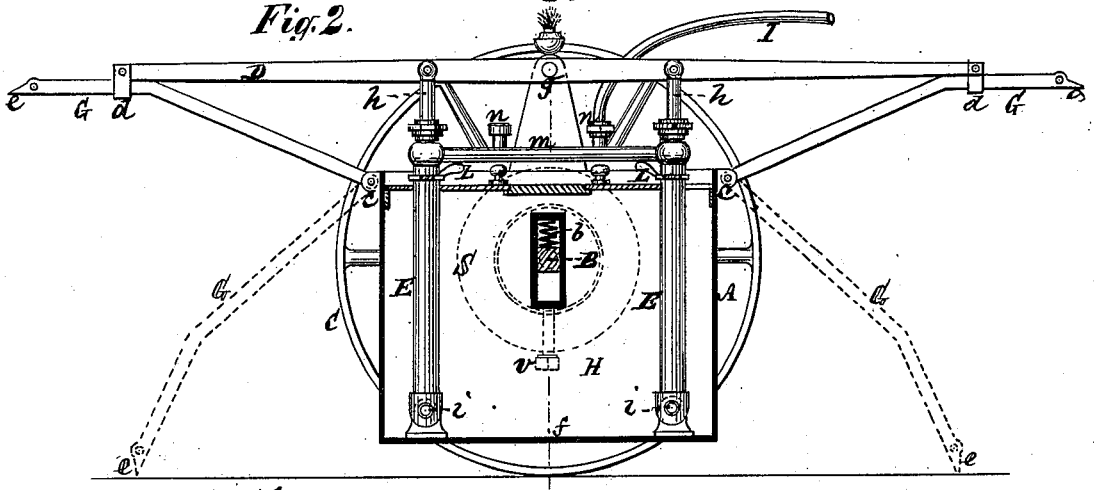


Fig. 4

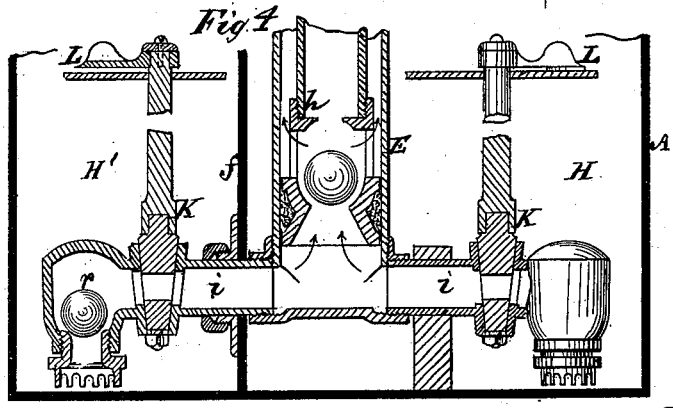
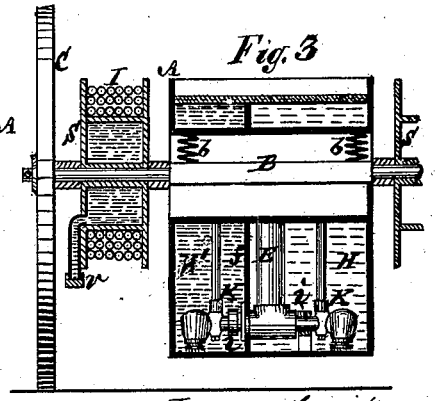


Fig. 3



Witnesses:

Henry Eichling.

Fred. Haynes

Inventor

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by his Attorneys

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2 Sheets—Sheet 2.

J. W. STANTON.
Fire Extinguisher.

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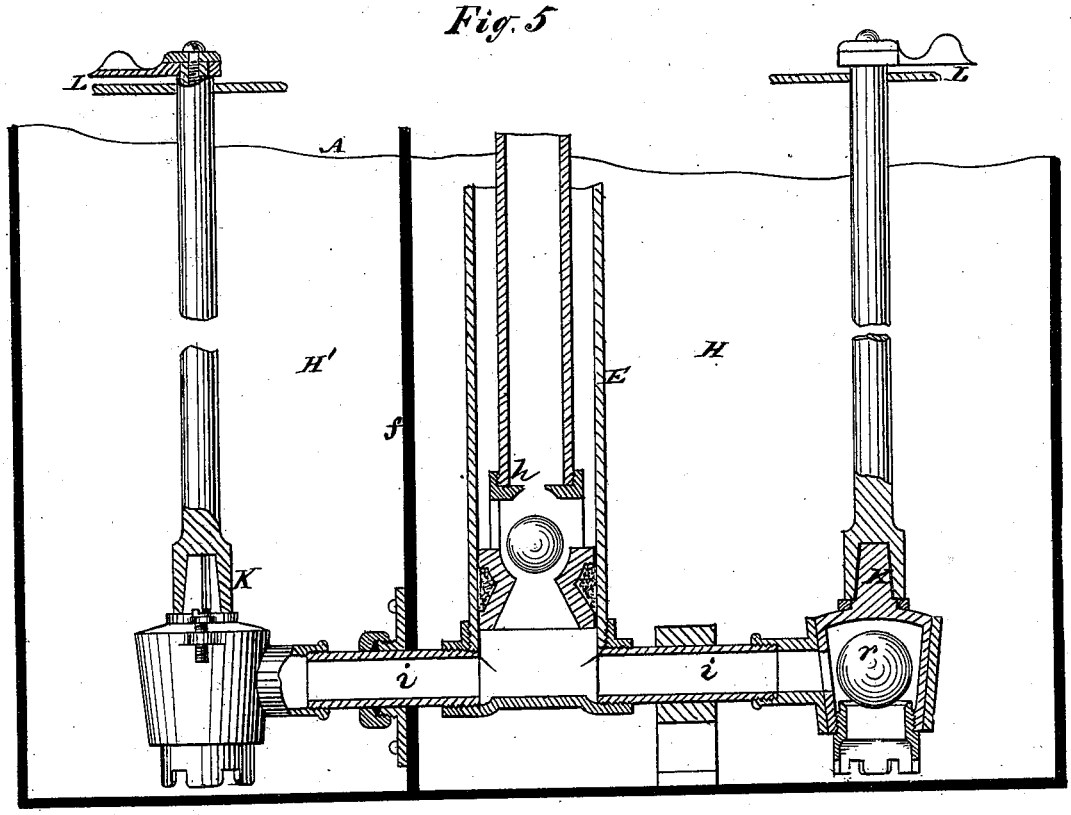
Fig. 5



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

JOHN W. STANTON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **202,068**, dated April 2, 1878; application filed February 1, 1878.

To all whom it may concern:

Be it known that I, JOHN W. STANTON, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fire-Extinguishers, of which the following is a description, reference being had to the accompanying drawing, forming part of this specification.

This invention more particularly relates to street fire engines or extinguishers.

The invention consists in a fire extinguisher or engine fitted with one or more discharge-pumps, separate receptacles or chambers for containing different fire-extinguishing liquids—as, for instance, water in one chamber and a chemical solution in another—separate inlets to said chambers from the same pump or pumps, a discharge pipe or outlet from the pump common to the several liquids, and means for separately controlling or regulating the supply of said liquids to the pump, whereby either fire-extinguishing liquid may be used separately, or the different liquids in varying proportions be discharged together.

The invention likewise consists in a combination, with either pump, of the extinguisher having duplicate inlets, separate chambers containing different liquids with which said inlets separately connect, and adjustable cocks for controlling and regulating the supply of the liquids from said chambers, of an indicator for determining the relative discharges from the liquid-chambers.

The invention furthermore consists in a novel and advantageous arrangement of one or more hose-drums on a street fire engine or extinguisher, and in a special construction of said drums, whereby they are made to form reservoirs for a fire-extinguishing liquid to be used by said engine.

Likewise the invention consists in a combination, with the pump brake and tank of a street fire-engine, of opposite end draft bars or poles hinged to the tank, and serving also as braces to support or steady the engine when at work, and, by means of catches or fastenings, to lock the brakes when the engine is not at work.

In the accompanying drawing, Figure 1 represents a plan of a street fire engine or extinguisher constructed in accordance with the invention; Fig. 2, a longitudinal vertical section of the same on the line *x x;* and Fig. 3 is a vertical section thereof, in part, taken longitudinally through the axle of the running-wheels of the machine. Fig. 4 is a transverse vertical section, upon a larger scale, through one of the pumps; and Fig. 5, a similar view, upon a still larger scale, showing a different construction of the valves by which the liquid or liquids are supplied to the pump.

Referring, in the first instance, or more particularly to the first four figures of the drawing, A is the tank or vessel which contains the extinguishing liquid or liquids, and which is supported by means of one or more springs, *b*, on the axle B of the vehicle, that is provided with duplicate running-wheels C C.

D is the brake by which the pumps E E of the engine are worked.

G G are the opposite end draft bars or poles, to afford increased convenience for drawing the engine or vehicle from place to place. These draft bars or poles have their inner ends pivoted, as at *c*, to the tank or vessel A, and when raised are made to engage, by catches *d*, with the brake D, so as to lock the latter; but when said draft bars or poles are let down, they may be utilized as braces to hold the tank or vessel A in an upright position, or to restrain it from swinging on the axle B as a center of motion when working the pumps; and to this end said draft bars or poles are or may be provided with spurs *e*, which bite into or take a firm hold on the ground.

The tank A is formed with an upright partition, *f*, which divides it into two chambers, H H′, one of which, preferably the largest, H, serves to contain water, while the other tank, H′, contains a chemical solution, which, when mixed in moderate quantities by the action of the pumps with water drawn from the chamber H, or which, when used separately, if desired, forms a liquid fire-extinguishing agent that is much more efficient than simple water. This chemical solution might be any of the well-known ones, or any other capable of mixing with water. Said tank may, if desired, be divided into more than two chambers for supplying different liquids to the pumps.

The pumps E, on opposite sides of the working center *g* of the brake, have their plungers *h* directly connected to the brake, and the barrels of the pumps are constructed with trunnions *i i* at their lower ends, to provide for the pumps accommodating themselves to

the curvilinear motion of the brake. These trunnions, which are hollow, also constitute suction-pipes or inlets, by which the liquids are supplied to the pumps. The delivery-openings or discharge-outlets *k k* of the pumps are connected by flexible tubes or hose *l l* with one or more main delivery-pipes, *m*, which may be fitted with any number of nozzles, *n*, for the attachment of one or more distributing-hose, I. The flexible tube or hose connections *l* provide for the oscillations of the pumps when working the engine.

The pumps E E themselves are or may be of the usual or any suitable construction; but they have combined with them means whereby they may be made to draw from the chambers H H′, which separately contain the chemical solution and the water, either or both of said fire-extinguishing agents in any desired proportions or quantities. Thus, the hollow trunnions or suction-branches *i i* of each pump, one of which enters the water-chamber H, and the other the chemical-solution chamber H′, are each provided not only with an ordinary automatic or freely-working inlet-valve, but also with an adjustable valve or cock, by which communication cannot only be shut off or opened, as required, between the pump and either chamber H H′, but the supply of the liquids from said chambers can be increased or diminished to vary the relative proportions of the different liquids simultaneously drawn from said chambers by the pump and mixed by or within the latter.

In practice, it is preferred, in order to economize space, and for other reasons, to combine in the one device both the freely-working inlet-valve *r*, controlling either suction-pipe or hollow trunnion *i*, and the cock or valve K, by which communication may be shut off or opened between the pump and either chamber H H′, or by which the supply of liquids from said chambers in varying relative proportions may be regulated. This construction, which it is my intention to make the subject of a separate application for Letters Patent, is clearly illustrated in Fig. 5 of the drawing, and in which either cock K has the inlet-valve *r* arranged within it, and the cock is constructed with an inlet-opening in its bottom, which the valve *r* controls.

In Figs. 1, 2, 3, and 4 of the drawing the inlet-valves *r* and regulating-cocks K are illustrated as disconnected from each other, for the purpose of more clearly exhibiting or explaining their separate actions.

By the use of the cocks K the chemical solution in the chamber H′ may either be used exclusively when the fire is fierce, or to insure its extinction when first discovered; or the water in the chamber H, being the cheaper and more readily replenished agent, may be used alone when the conditions of the fire to be extinguished are such as to render water sufficient; or, again, under other circumstances, both the water and chemical solution drawn from the chambers H H′ may be worked by the same pump or pumps and be discharged together, and the relative supplies of such different agents be adjusted to suit the varying conditions of the fire.

To accurately adjust the different proportions of water and chemical solution to be discharged together, either cock or valve K is provided with an indicator or index and graduated scale, L, whereby the relative discharges from either chamber H H′ may be determined.

Arranged on or around the axle B, between the sides of the tank A and the wheels C C, are drums S S, which are fitted to freely turn on the axle, and which serve to carry or have wound upon them distributing-hose I for use as required. These hose-drums, or either of them, are formed hollow, and constitute reservoirs for an extra supply of chemical solution to the chamber H′, or for separate use, if desired, said drum or drums being constructed with a lateral nozzle, *v*, for the attachment of a replenishing or discharging hose to the drum.

I claim—

1. A fire extinguisher or engine fitted with one or more discharge-pumps, separate receptacles or chambers for containing different fire-extinguishing liquids, and connected with said pump or pumps by separate inlets, a discharge pipe or outlet from the pump or pumps for said liquids, either separately or when mixed, and means for separately controlling or regulating the supply of either liquid to the pump or pumps, the whole combined substantially as specified.

2. The combination, with either pump E, having duplicate inlets *i i*, of the chambers H H′, with which said inlets separately connect, the adjustable cocks K, for controlling and regulating the supply of liquids to the pump from either of said chambers, and the indicator L, for determining the relative discharges from the chambers, substantially as specified.

3. The combination, with the tank A and wheels C, of the hose-drums S, arranged to freely turn on the axle of said wheels between the latter and the tank, essentially as described.

4. The combination, with the axle B of the running-wheels of the vehicle, of the drum or drums S, arranged upon said axle, each of said drums having its interior constructed to form a reservoir for the supply of the fire-extinguishing liquid, and provided with a lateral discharge-nozzle, *v*, and having its exterior constructed to form a reel for the hose, substantially as shown and described.

5. The combination, with the pump-brake D and tank A, of the pivoted opposite end draft bars or poles G G, constructed to form braces for holding the engine when at work, and means for locking said brake by the bars or poles, substantially as specified.

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