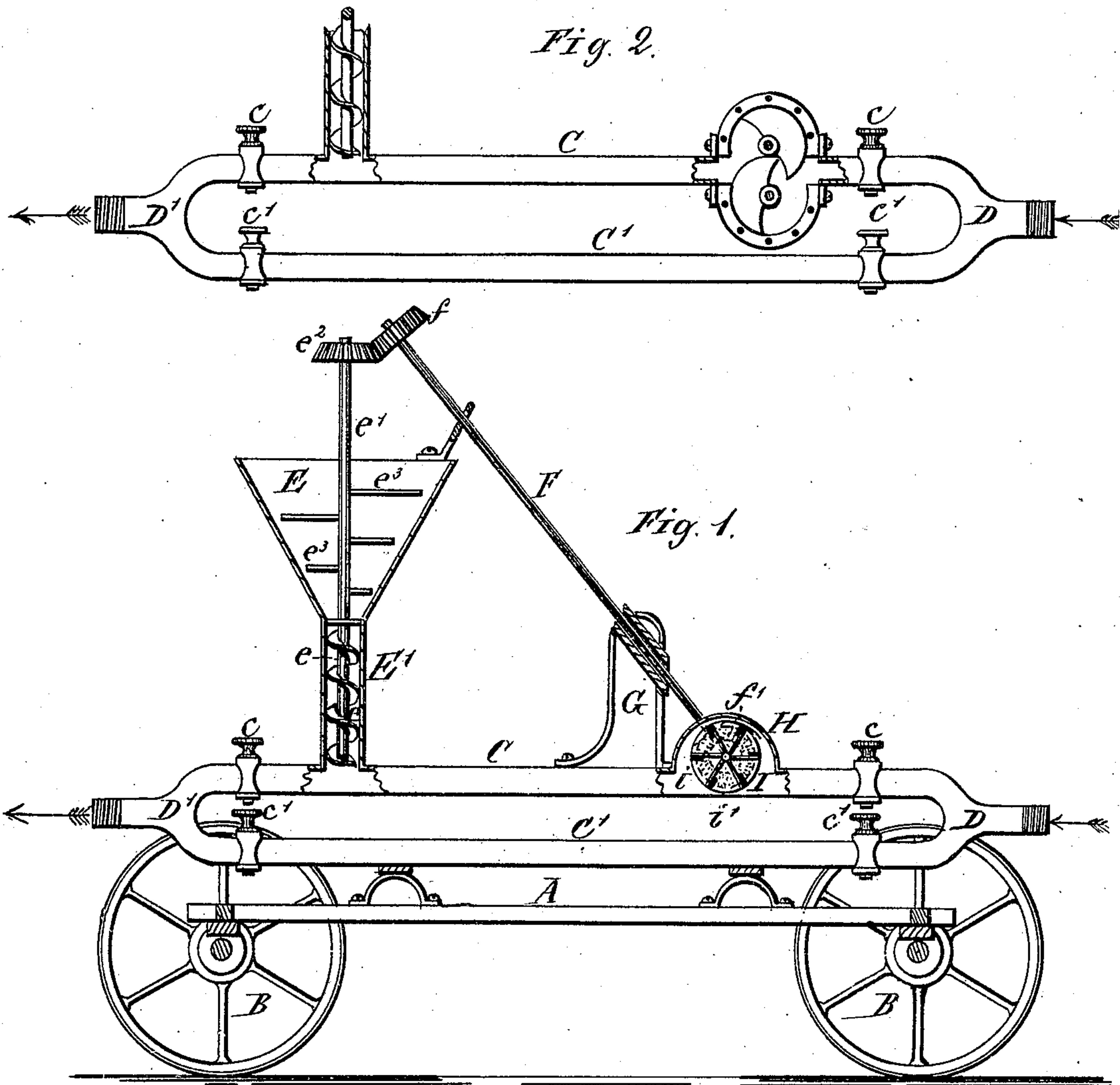


S. S. NEWTON.
FIRE-EXTINGUISHER.

No. 171,628.

Patented Dec. 28, 1875.



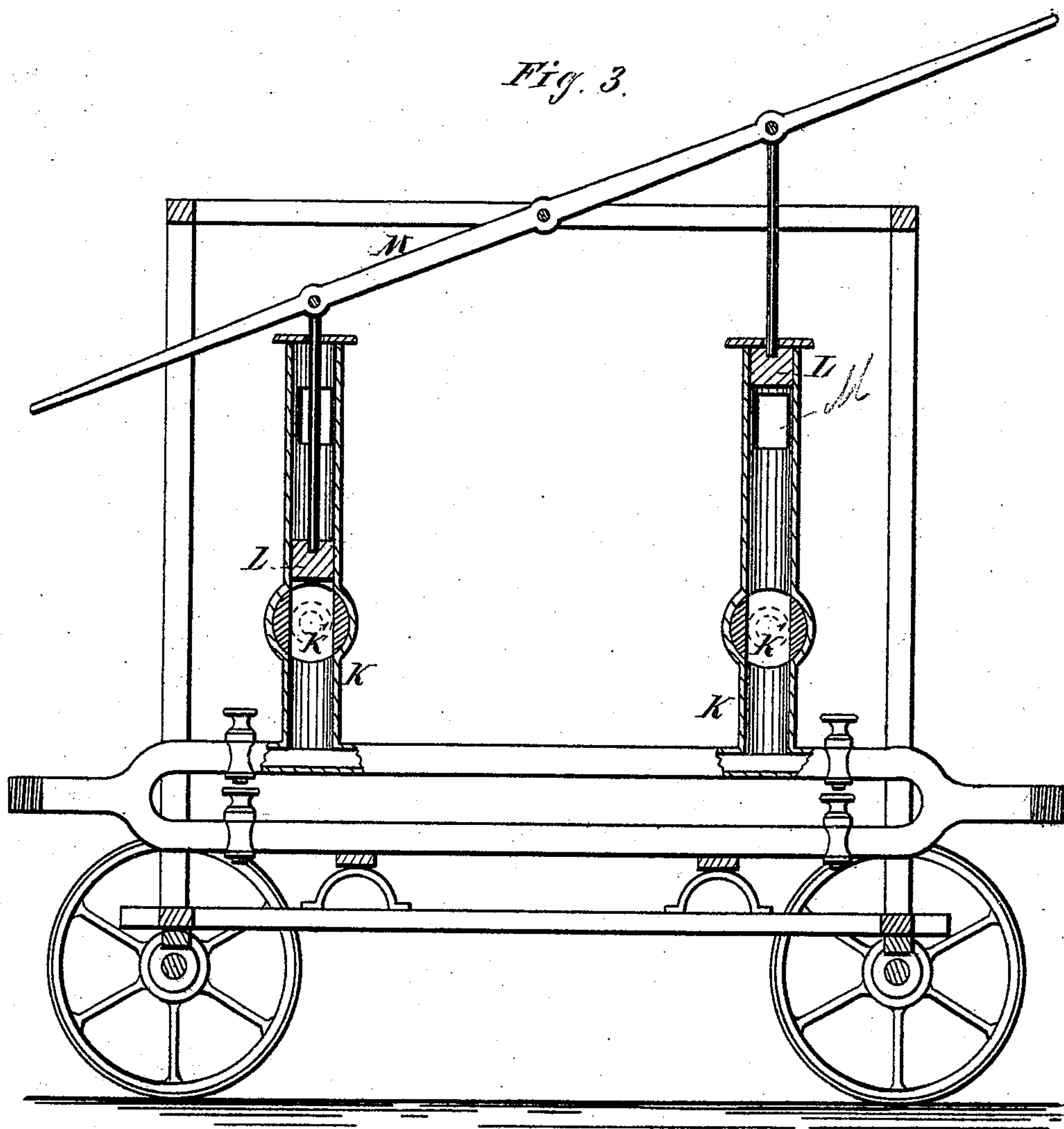
Witnesses
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Chas Jacobson

Inventor
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UNITED STATES PATENT OFFICE

STEPHEN S. NEWTON, OF BINGHAMTON, NEW YORK.

IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **171,628**, dated December 28, 1875; application filed September 6, 1875.

To all whom it may concern:

Be it known that I, STEPHEN S. NEWTON, of Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Fire-Extinguishers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention consists in introducing the bicarbonate of soda, the silicate of soda, or some other similar or suitable substance, in a finely-pulverized condition or as a concentrated solution, into a stream of water which is being discharged upon the fire from a forcing-engine, a hydrant, or other power; the object being to facilitate the delivery, through an ejecting-nozzle, of a continuous stream charged with the soda or other agent in a state of solution, without the interruption occasioned by the refilling or recharging of the receivers or reservoirs in common use.

To this end my invention consists in combining with the discharging-nozzle or hose an apparatus whereby the soda or other agent employed can be forced into the stream of water, in a substantially dry and powdered or pulverized condition, while said stream of water is passing through the hose, pipe, or other conduit leading to the delivery-nozzle.

Having thus set forth the nature and scope of my invention, I will proceed to describe an apparatus which I have adopted for carrying it into operation.

Figure 1 is a vertical transverse section of a machine embodying my invention. Fig. 2 shows a modification of the device employed for forcing the soda into the conduit-pipe. Fig. 3 shows a further modification of the apparatus, adapting it to be operated by hand.

A A represent a frame-work, mounted upon wheels B B. C C' are two parallel lines of pipe or tubing, connected at one end to a receiving-pipe, D, and at the other end to a discharging-pipe, D'. c c' are stop-cocks, arranged in pipes C C', whereby the water from pipe D can be compelled to pass through pipe

C or pipe C', at the will of the operator. E is a reservoir, connected with pipe C by means of a short cylinder, E'. e is a screw or auger, preferably double-threaded, attached to a shaft, e¹, and working in cylinder E', shaft e¹ being mounted in suitable bearings to maintain it in a proper position relative to the cylinder E', pipe C, and a gear-wheel, e², on the upper end of the shaft. e³ are radial arms projecting from shaft e¹, to assist in feeding the material to the screw e. F is a shaft, carrying a cog-wheel, f, which meshes with gear-wheel e², and also a second gear-wheel, f'. Shaft F may be supported in a bracket-bearing, G, secured to the frame-work; or one end may be journaled in a lug on the reservoir E, and the other end in the shell of a chamber, H, which is cast in one piece with or attached to pipe C. I is a winged or "flutter" wheel, mounted on a shaft, i, within the chamber H. i' is a gear-wheel meshing with wheel f'. (Shown in dotted lines in Fig. 1.)

As the water passes through pipe C it revolves flutter-wheel I, and drives the screw e by means of the connecting gearing and shafts, as will be readily seen without further description, and will force the soda into the running stream of water, where it will be readily dissolved.

The relative sizes and speeds of the different parts of the mechanism may be adjusted to deliver the soda in such proportion to the quantity of water passing through pipe C as shall be desired; and it is apparent that, when a suitable proportion and speed of parts have been established, any increase or diminution in the rate of flow of the water through pipe C will produce a corresponding change in amount of soda delivered through cylinder E'.

In Fig. 2 I have shown another construction embracing my invention. Under the arrangement there illustrated I propose to pass the water through a water-engine, consisting of two gearing-wheels, similar to those used in various rotary engines, which apply the positive pressure of the water, and insure that the motion of the screw shall correspond with greater accuracy to the speed of the water through pipe C.

In Fig. 3, K K are cylinders, having cocks k, opening into pipe C, and plunger L, oper-

ated by lever M. When the plungers are raised soda may be introduced into the cylinder through openings *m*, and, by a downward movement of the plunger, forced into the water; and a similar valve or stop-cock may be used in pipe E', of such size as will readily permit the passage of the soda.

I do not wish to be limited to the employment of any special mechanism for introducing the soda into pipe C, nor of any particular construction of wheel or engine by which power is obtained from the water which is driven through the hose or discharging pipe or nozzle, as many devices may be substituted for those which I have shown without departing from the spirit of my invention.

What I claim is—

In a fire-extinguisher, the combination, with the pipe through which a stream of water passes, of an apparatus adapted to inject into the flowing water bicarbonate of soda, or other similar material, in a substantially dry, powdered condition, and adapted to be dissolved and diffused] throughout the water and discharged upon the fire, substantially in the manner and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

STEPHEN S. NEWTON.

Witnesses:

N. D. MAFFETT,

WILLIAM TREBBY, Jr.