

F. LATTA.  
Fire-Extinguishers.

No. 142,637.

Patented September 9, 1873.

Fig. 1.

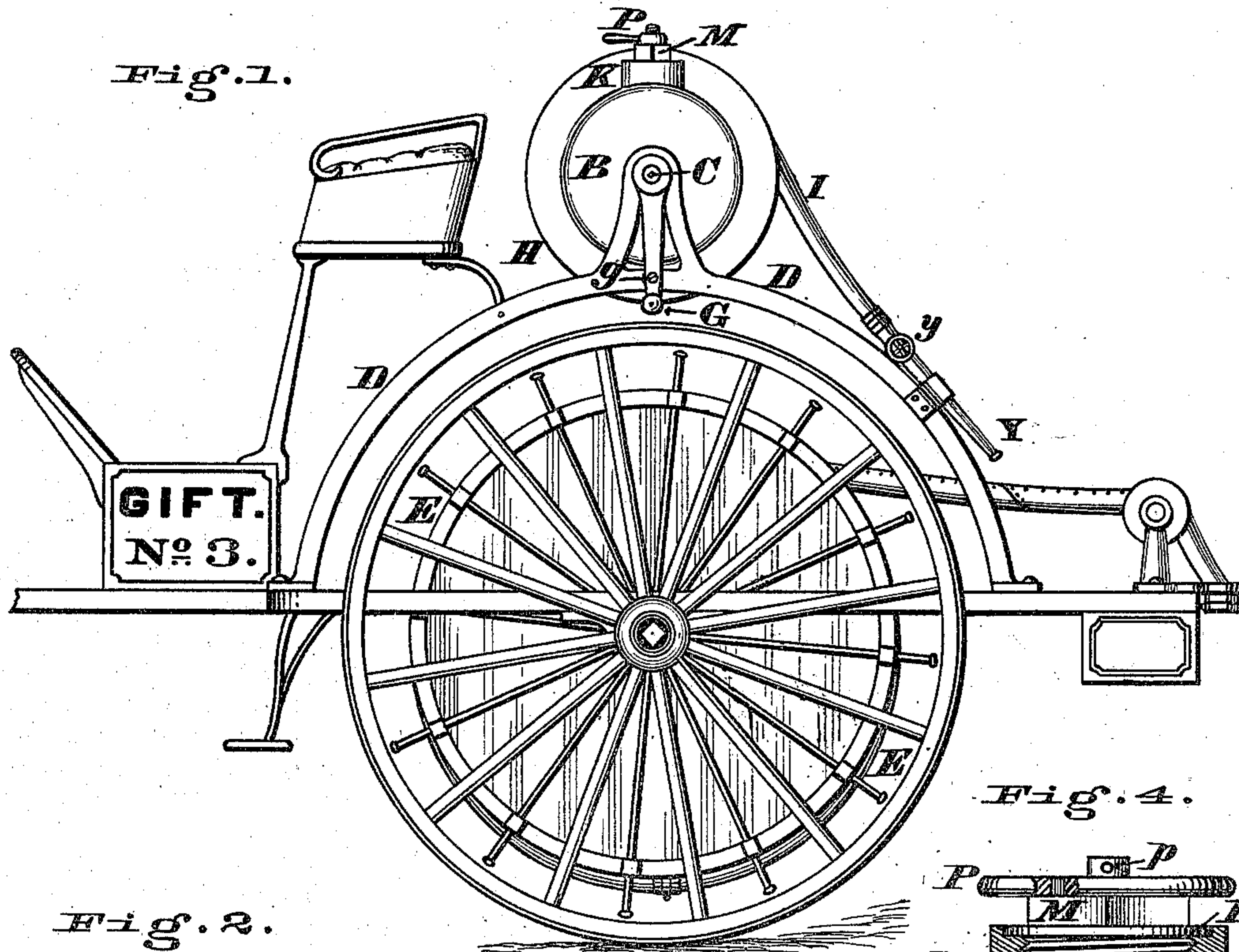


Fig. 2.

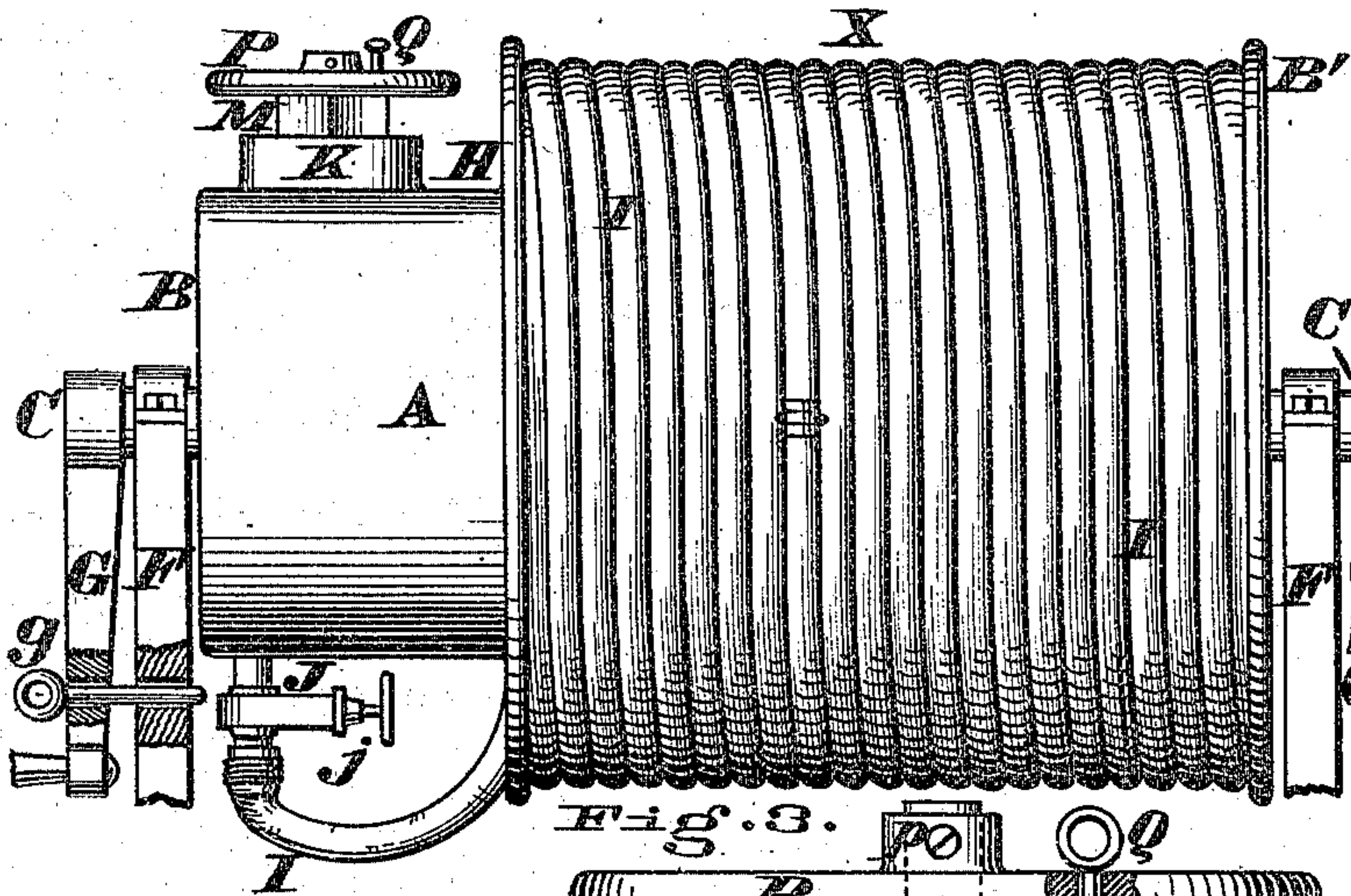


Fig. 4.

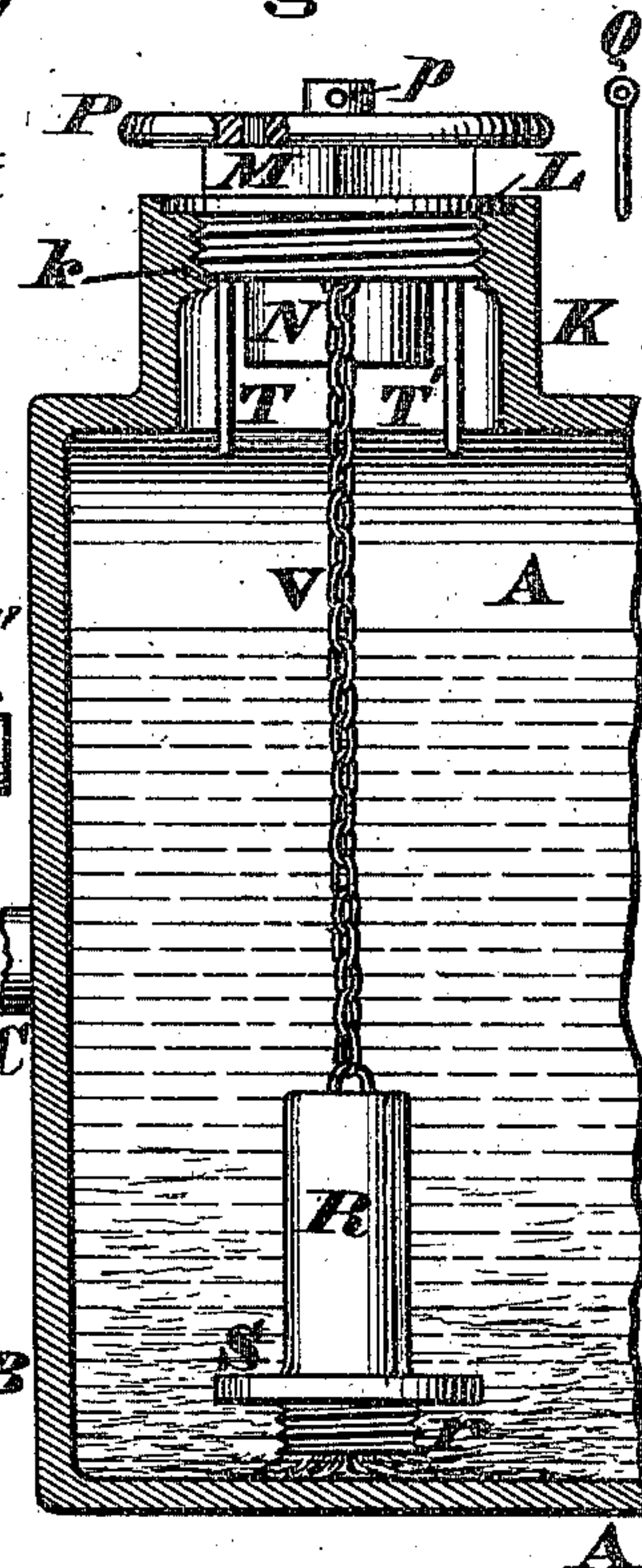


Fig. 3.

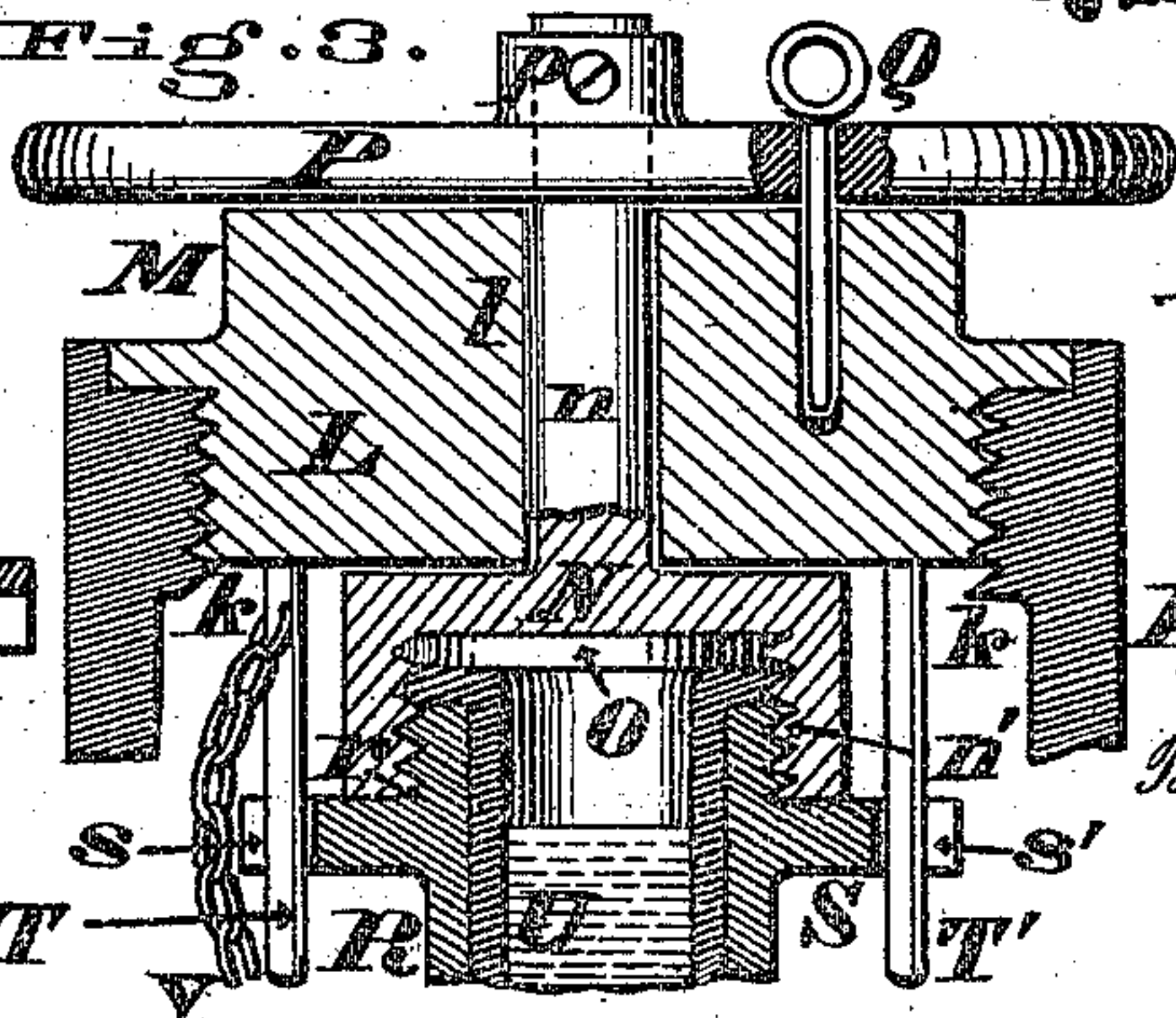
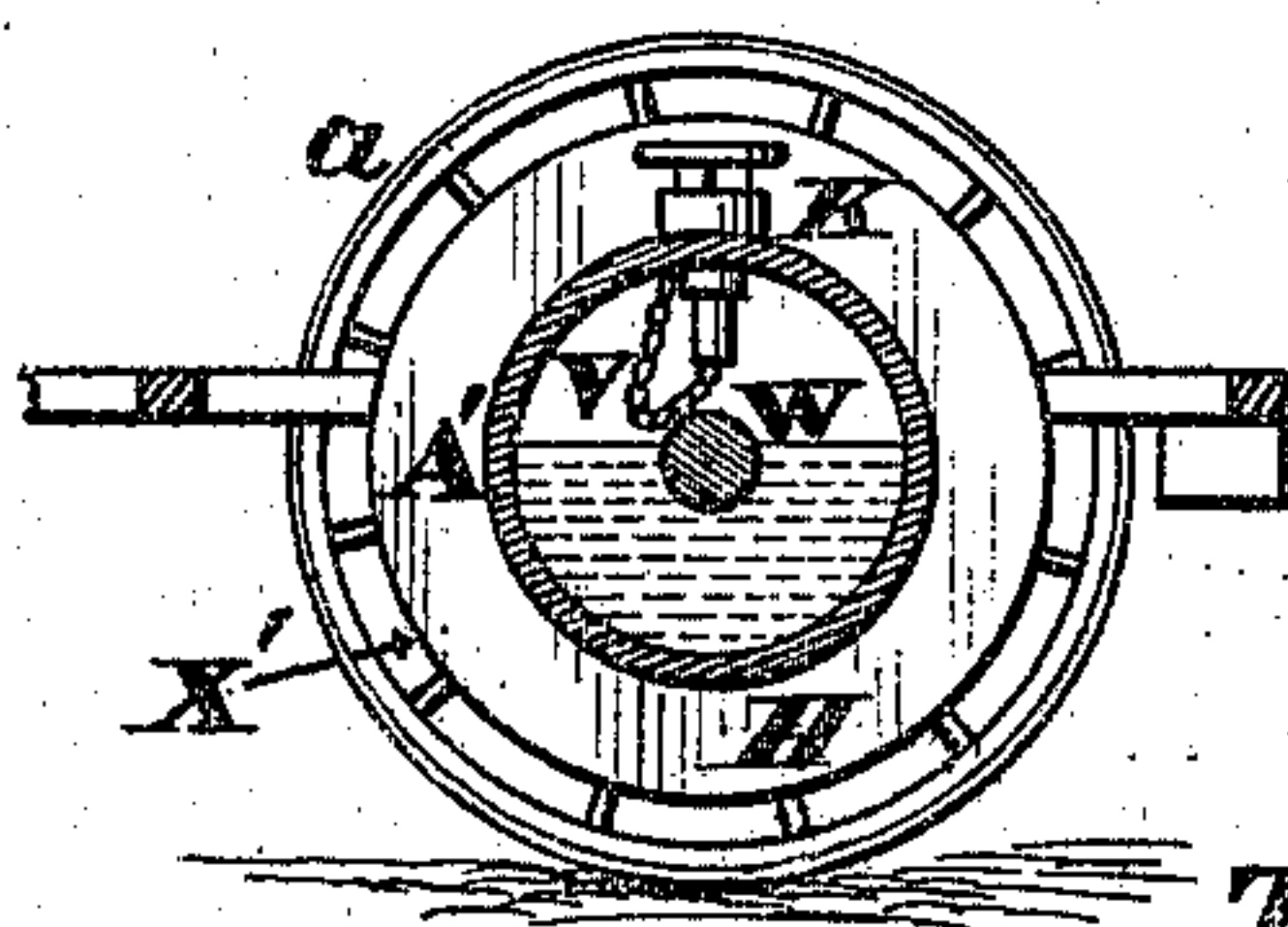


Fig. 5.



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# UNITED STATES PATENT OFFICE.

FINLEY LATTA, OF CINCINNATI, OHIO.

## IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. 142,637, dated September 9, 1873; application filed January 6, 1873.

*To all whom it may concern:*

Be it known that I, FINLEY LATTA, of Cincinnati, Hamilton county, Ohio, have invented certain Improvements in Fire-Extinguishers, of which the following is a specification:

This invention relates to that class of portable apparatus in which a fire-extinguishing gas is generated by the combination of a suitable acid solution with an alkaline one; and the first part of my improvements consists in a novel and effectual arrangement of devices for discharging the contents of the acid-receptacle into the alkaline chamber, which result is accomplished in the following manner: The acid-receptacle is coupled to the upper and inner side or end of the generator by being screwed into a nut which is capable of being rotated, when desired, by means of an external handle, crank, or hand-wheel. The open or elevated end of this receptacle is provided with a marginal flange, or else with lugs or ears, having suitable apertures or recesses in them, through which pass pins that project downwardly from the cap, to which the aforesaid nut is applied. The object of these pins is to prevent the rotation of the receptacle when the external crank is turned, so as to uncouple or disengage said receptacle from its retaining-nut. Attached to the lower portion of the acid-receptacle is one end of a chain, whose other end is secured to the inner face of the cap or some other fixed object, said chain being of such a length as to insure the complete inversion of the receptacle when detached from its retaining-nut by the proper rotation of the external handle. This complete inversion of the aforesaid receptacle causes its acid contents to be precipitated to the bottom of the alkaline solution, and to mingle therewith in the most thorough manner, thereby generating the gas instantly, and permitting the extinguisher to be used at the very beginning of a conflagration, when its services will be the most effective.

The second part of my improvements consist in arranging the cylinder or tank of the generator as a drum or spool upon which the leading hose that proceeds from the extinguisher is reeled or wound. For this purpose the ends or heads of the generator have gudgeons attached to them, whereby said

generator may be journaled in a suitable supporting frame or carriage. For public use, in large towns and cities, it is preferred that this frame should be attached to a hose-cart in such a manner as to locate the extinguisher above the reel of the carriage, thereby dispensing with an extra vehicle, team, and driver for conveying the apparatus to the fire. When thus arranged the generator should have flanges applied to it, so as to prevent the leading hose of the extinguisher becoming displaced or getting entangled with the operating-handle and other external parts of the apparatus.

Figure 1 is a side elevation of an ordinary two-wheeled hose carriage or cart, with my extinguisher applied thereto. Fig. 2 is a side elevation of the extinguisher and part of a supporting-frame. Fig. 3 is an axial section of the devices that are employed for discharging the contents of the acid-receptacle, said receptacle being shown in its normal or coupled condition. Fig. 4 is an elevation of the same devices on a reduced scale, the acid-receptacle being shown disengaged and inverted, and discharging its contents into the alkaline solution. Fig. 5 is a diagram showing a modification of my invention.

The tank or generator of the extinguisher consists of a customary cylinder, A, having secured to it two heads, B B', of which the one, B', projects some distance beyond the sides of the generator for a purpose which will be hereinafter described. Firmly attached to these heads are gudgeons, C C', which allow the extinguisher to be journaled in any suitable frame, D. As represented in Fig. 1, this frame is applied to an ordinary two-wheeled hose-carriage in such a manner as to bring the extinguisher directly above the reel E. By this arrangement the extinguisher is entirely out of the way, and enables the fireman to have ready access to the hose, &c., and at the same time when thus located it adds but little to the weight of the carriage. The frame F, shown in Fig. 2, may be of any suitable shape, and is designed to support the extinguisher when placed in a factory, steamboat, or wherever it is intended to be a fixture. The journal C has a crank, G, secured to it, and, in order to prevent said crank being tampered



with, there is passed through it a locking-pin or screw, *g*, which engages with the supporting-frame. Instead of this pin a padlock and staple or other retaining device may be employed. Attached to the cylinder A is an annular flange, H, of the same diameter as the head B', and that portion of the generator comprised between said flange and head constitutes the "reel" X, upon which the hose I, proceeding from the extinguisher, is wound. This hose is coupled to a discharge-pipe J, having a suitable gate or valve, *j*. The tank or cylinder of the extinguisher is furnished with a neck, K, having an interior screw-threaded portion, *k*, for the engagement of the screw-threaded cap L, which latter has an external non-circular head, M. This cap is traversed axially by a bore, *l*, for the reception of a stem, *m*, that is attached to and projects upwardly from the nut N, which latter has an interior screw-thread, *n'*, and a leaden gasket, O. United to the upper end of this stem *n* by a pin or screw, *p*, is an external handle, crank, or hand-wheel, P. A removable pin, Q, prevents accidental rotation of the wheel P whenever said pin Q is applied in the manner shown in Figs. 2 and 3. R is the acid-receptacle, having a screw-threaded neck, *r*, and a flange or rim, S, the latter being provided with apertures or recesses *s s'*. Adapted to engage with these apertures or recesses are pins or lugs T T', which are secured to the inner side of the cap L. U is the leaden or other non-corrosive lining of the acid-receptacle. V is a chain or other flexible connection, one end of which is secured to the acid-receptacle, at or near its bottom, while the other end of said chain is attached to the cap L, or either of the pins T or T', or some other fixed object within the generator. This chain should be of such a length as to allow of the mouth of the acid-receptacle R to just clear the bottom of the generator when said receptacle is inverted, as shown in Fig. 4.

The modification of my invention, shown in diagram, Fig. 5, is intended for use in villages and small towns that are not provided with a regularly organized fire-department. In this form of apparatus the reel E of the hose-carriage is dispensed with entirely, and the cylinder A' has a shaft, W, fitted within it, upon whose exterior ends the ground-wheels *a* are journaled. The reel K' around the generator is formed in the same manner as shown in Fig. 2. Y is the nozzle of the extinguisher, having a stop-valve, *y*.

It is evident that my rotating generator may be applied to a hook-and-ladder truck, a fuel-tender, or any other apparatus connected with the fire-department.

In some cases it may be desirable to have the chain V long enough to allow the acid-receptacle to move from one end to the other of the generator.

My extinguisher is operated as follows: The coupling devices are first detached from the generator, and the receptacle R filled with a

suitable acid, and the cylinder A charged with the alkaline solution. After these vessels have been properly filled the pins T T' are inserted in the apertures *s s'*, and the neck *r* of the receptacle R applied to the screw-threaded portion *n'* of the nut N. The hand-wheel L is then turned toward the right, and, as the pins T T' prevent the rotation of the acid-receptacle, the result is that the neck thereof is gradually screwed up into the nut, and the mouth of said receptacle is securely seated against the leaden gasket O, thereby preventing spillage or evaporation of the acid. The pin Q is then inserted, as shown in Fig. 3. After this has been done a spanner or wrench is applied to the non-circular head M of the cap L, and said cap is screwed into the neck K of the generator. The pin *g* being then inserted through the crank G and into the frame D or F, the apparatus is ready for use.

As soon as the apparatus arrives at a fire the attendant has only to remove the pin Q, and rotate the hand-wheel L a few times toward the left, when the receptacle R is at once disengaged from its retaining-nut N, and instantly falls toward the bottom of the generator. Its descent, however, is arrested at the proper moment by the chain V, which causes a complete inversion of said receptacle, thereby discharging every drop of the acid into the alkaline solution, as shown in Fig. 4. The pin *g* is then withdrawn, and the leading hose I reeled off in the usual manner; and this unreeling of said hose causes a rapid rotation of the generator, and consequently a most thorough commingling of the acid and alkaline solution, and the result is an almost instantaneous generation of the gas. The gate *j* is then opened, so as to discharge the confined gas through the pipe J, leading hose I, and nozzle Y.

The reel around the generator and the coupling devices for the acid-receptacle may be applied to a small extinguisher capable of being carried on a man's back in the usual manner.

I claim as new and of my invention—

1. The acid-receptacle R, supported beneath the cap L by devices which enable it to be detached by manipulation from the outside end, having a chain or other flexible connection, V, applied at or near its bottom, so that when detached the said acid-receptacle will fall bodily nearly to the bottom of the tank, and will then be inverted.

2. A generating-tank hung upon journals, and constructed, substantially as herein described, with a projecting head, B, and flange H, or equivalent devices, to adapt said tank to serve as a reel, so that the act of unreeling the hose will agitate the contents of the tank, as explained.

In testimony of which invention I hereunto set my hand.

FINLEY LATTA.

Attest:

GEO. H. KNIGHT,  
JAMES H. LAYMAN.