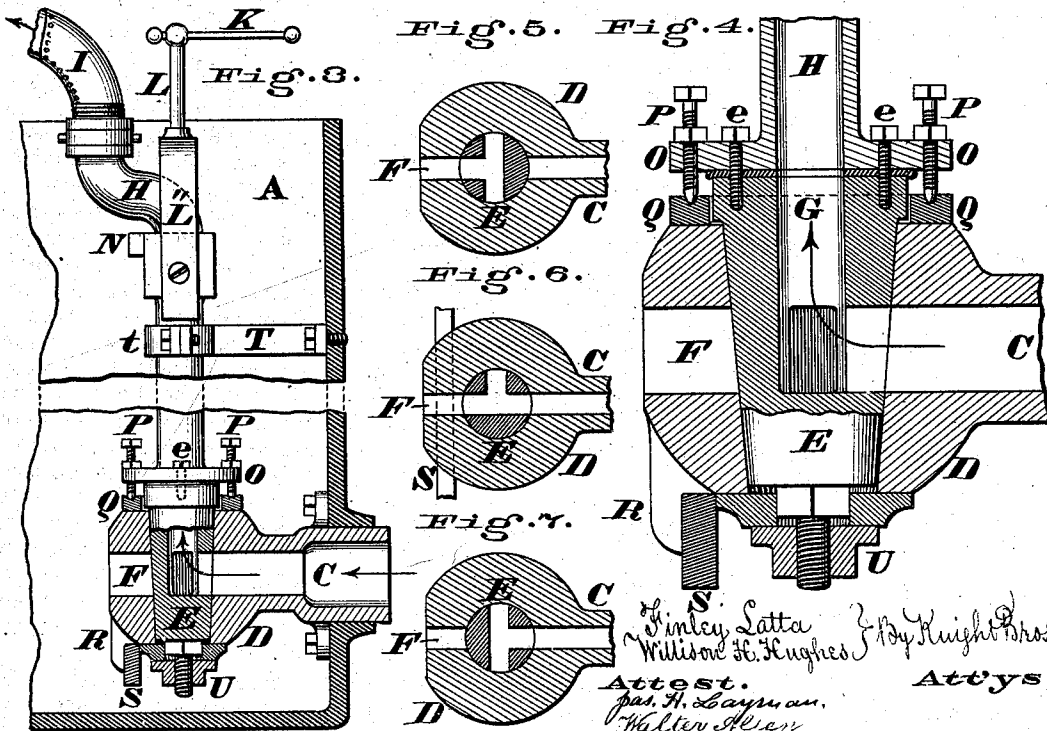
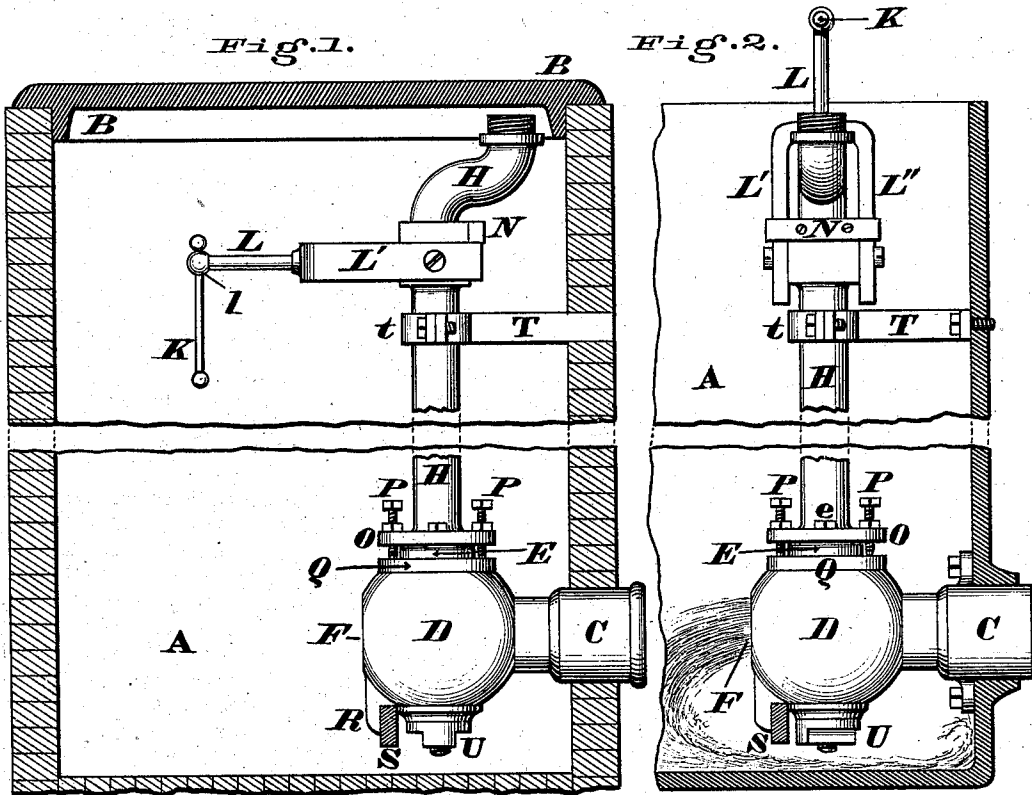


F. LATTA & W. H. HUGHES.  
 Combined Fire-Plugs and Cisterns.

No. 137,006.

Patented March 18, 1873.



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 Attys.

# UNITED STATES PATENT OFFICE.

FINLEY LATTA AND WILLISON H. HUGHES, OF CINCINNATI, OHIO.

## IMPROVEMENT IN COMBINED FIRE-PLUGS AND CISTERNS.

Specification forming part of Letters Patent No. 137,006, dated March 18, 1873.

### *To all whom it may concern:*

Be it known that we, FINLEY LATTA and WILLISON H. HUGHES, both of Cincinnati, Hamilton county, Ohio, have invented a Combined Fire-Plug and Cistern, of which the following is a specification:

### *Nature and Object of the Invention.*

The first part of our improvements consists in locating a fire-plug entirely within a suitable shallow cistern or tank that is provided at or near the level of the pavement with a detachable cap, the removal of which enables access to any part of the plug, and permits a supply of water to be obtained either directly from said plug or from the cistern, as may be most convenient or effective. The plug, situated as above described, is arranged in such a manner as to discharge water directly within the cistern whenever it is desired to supply one or more suction-engines, or a line of leading-hose may be screwed to said plug in the usual way, and the water be thereby conducted to the fire without the intervention of a steam or other fire-engine; this latter method being employed after the conflagration has been stayed, and when only a comparatively limited quantity of water is required. The second part of our improvements relates to a peculiar construction of the valve of the three-way cock which we employ in connection with our concealed fire-plug, said valve being arranged in such a manner as to prevent its being jammed tightly within its seat by the hasty and forcible application of the key whereby such valves are usually opened for the purpose of turning the water on, the details thereof being hereinafter more fully described. The third part of our improvements consists in the provision of a pivoted handle for operating the fire-plug, said handle being elevated when in use, and turned down when not needed, by which means the plug and its accessories are all contained within the cistern, and completely protected by the removable cap of the same.

### *General Description.*

Figure 1 represents our fire-plug and cistern in their closed condition, the former being shown in elevation, and the latter in section. Fig. 2 represents the plug in condition for discharging into the cistern. Fig. 3 shows the

plug adapted to discharge into a leading-hose and not into the cistern. Fig. 4 is an enlarged axial section of the three-way cock, the parts being in corresponding position to those in Fig. 3. Figs. 5, 6, and 7 are horizontal sections through the three-way cock and its accessories, showing the position the plug proper assumes corresponding to Figs. 1, 2, and 3, respectively.

A represents a shallow tank or cistern, having a removable cap or cover, B, designed to be on a level with the pavement. A customary service-pipe, C, enters the side of a barrel or chamber, D, of a three-way cock or plug proper, E, of the usual conical form. It is preferred that the plug E should be made of brass or other non-corrodible metal; and said plug is attached to a collar, O, by means of nuts *e*, as more clearly shown in Fig. 4. A side port, F, in the barrel allows the water to pass directly through the cock into the cistern when the plug is turned to the position represented in Figs. 2 and 6. A passage, G, upward through the top of the plug and into the hollow stem H directs the water through the top of the plug, whence it may be conducted by a leading-hose, I, screwed thereto, as seen in Fig. 3, the cap J, shown in Figs. 1 and 2, being previously removed for this purpose.

Our plug is turned without the necessity of the customary loose key, which is liable to be lost or mislaid when most urgently needed. Instead of such customary appliance, we provide a handle, K, which occupies an orifice, *l*, in a bar, L, whose bifurcated lower portion L' L'' is pivoted to the hollow stem. External projections N from the hollow stem serve to hold the bar L to either the vertical or horizontal position, as may be necessary for the time being. In order to prevent the possibility of the plug proper being jammed so tightly in its chamber as to resist turning, we provide at the lower end of the stem H a collar, O, which is traversed by a number of equidistant screws, P, whose points enter and rest upon a ring, Q, which itself rests upon the top of the barrel. By raising or lowering of these screws the plug proper is held with any desired proximity to its seat or chamber, but in such a way as to make it impossible for a rough or clumsy operator to jam it too tightly in its seat.

When desired to close the plug, the handle is so turned as to bring the plug into the position shown in Fig. 5, which action shuts off the supply, while it at the same time allows any water left in the hollow stem to run into the cistern, and so avoid the liability to clog the plug by the freezing up of water left within it.

A lug, R, that projects downward from the chamber or barrel engages over an iron beam, S, which supports the plug in position. The discharge pipe or stem H is maintained in a vertical position by a bracket or support, T, which is secured to one end of the cistern or tank A. This support is furnished with a cap, t, the removal of which permits the withdrawal of the stem H and its attached three-way cock E after the nut U has been disengaged from the lower and screw-threaded portion of said stem H.

Our cistern or tank may be of masonry properly cemented, or of cast or wrought iron having its surface protected by painting or otherwise.

During intensely-cold weather the cistern may be emptied and the cock be protected by a bag of horse-manure, which being withdrawn the plug will be ready for instant service.

Our plug, as described, may be of considerable use in some places in a dry well or pit not adapted to contain water, the side opening F being in that case omitted.

The port F may be omitted from the shell D, and the water be discharged into the cistern A from the upper end of the tubular stem H. In order to accomplish this result it is only necessary to provide the upper end of stem H with a swivel-coupling or goose-neck,

which, when turned down, would permit water to flow into the tank, and which, when turned up, would discharge into a leading-hose or else directly into the suction-tube of a fire-engine.

The handle arrangement, as represented at K L L' L'' l, may be dispensed with, and the stem H rotated by simply grasping the goose-neck or curved upper end of said stem, or a wrench-key or spanner may be applied to the non-circular portion to which the stop N is secured.

#### Claims.

We claim as new and of our invention—

1. The fire-plug, substantially as described, located entirely within a suitable cistern or tank provided with a detachable cap, the removal of which gives access to any part of the plug, and enables a supply of water to be obtained directly therefrom or from the cistern by turning the stem H, substantially as set forth.

2. The described arrangement of pivoted and folding handle L on the hollow stem H of the fire-plug, as and for the purpose explained.

3. The provision in the plug proper of collar O, having the screws P, resting upon a ring, Q, supported and revolving upon the top of the barrel, as and for the object set forth.

In testimony of which invention we hereunto set our hands.

FINLEY LATTA.  
WILLISON H. HUGHES.

Attest:

GEO. H. KNIGHT,  
JAMES H. LAYMAN.