

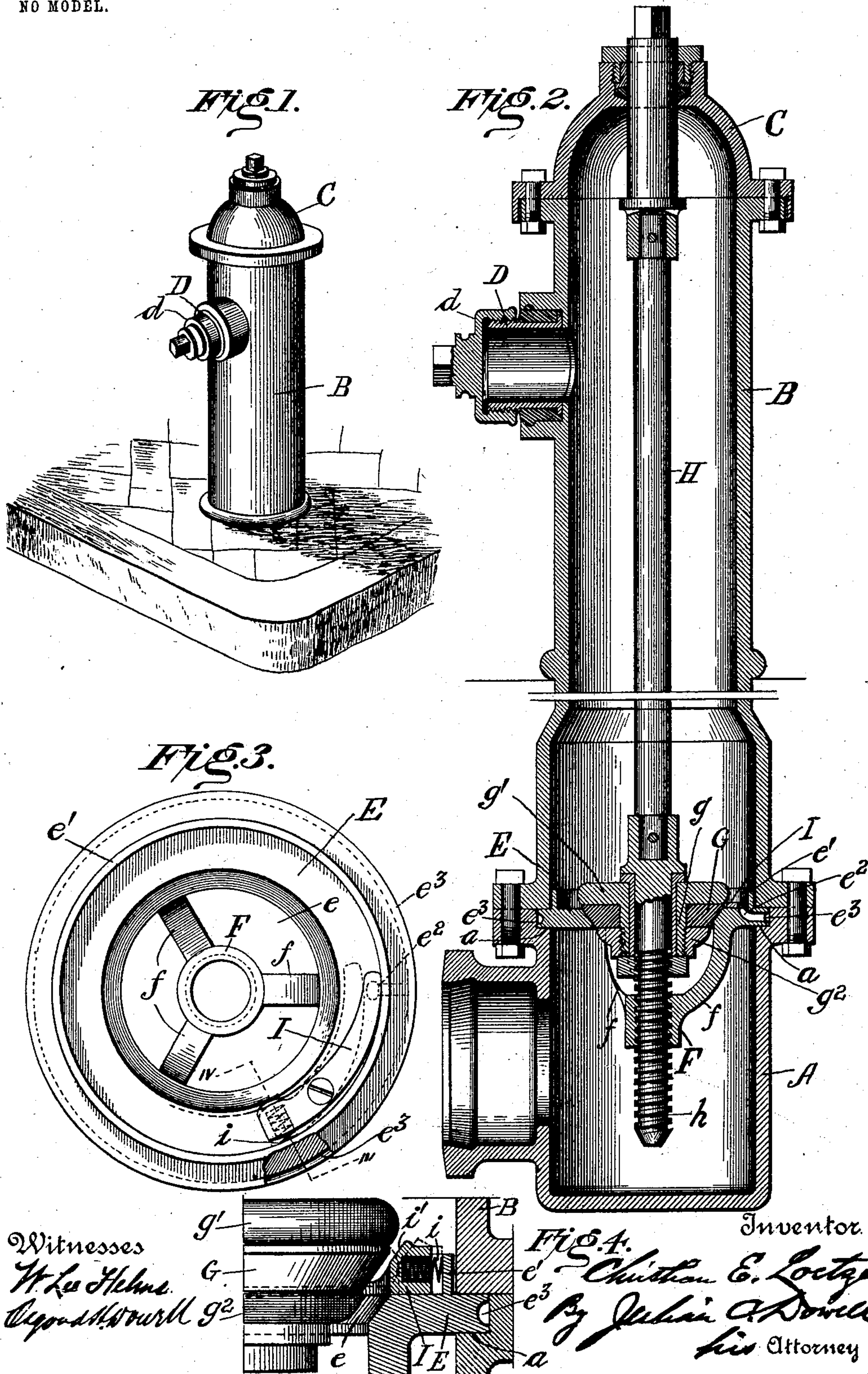
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HYDRANT.

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NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

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HYDRANT.

SPECIFICATION forming part of Letters Patent No. 720,716, dated February 17, 1903.

Application filed January 9, 1902. Serial No. 89,067. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN E. LOETZER, a citizen of the United States, residing at Towanda, in the county of Bradford and State of Pennsylvania, have invented certain new and useful Improvements in Hydrants; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to hydrants and plugs, more especially to that type in which the outlet from the distributing-main is controlled by a vertically-movable valve operated by an axial stem or valve-rod.

The principal object of the invention is to provide a hydrant, adaptable for use as a fire-plug, which will be simple and economical in construction and highly efficient and durable in service.

Further objects are to secure perfect alignment of the valve and stem with relation to the valve-seat, so that the valve may be forced or drawn true to its seat and held closely thereagainst, thus obviating the common defect of leakage from the main into the stand-pipe when the valve is closed; to prevent disturbance of such relation or displacement of the parts; to provide improved drip devices for permitting escape of water from the stand-pipe when communication is shut off from the distributing-main, thus obviating all liability of freezing; to render the hydrant easily accessible for repairs or inspection and to permit withdrawal of the valve and stem without disturbance of other parts; to reduce the number of parts and render the structure rigid and compact, and to improve generally upon devices of the same character.

With the above-stated objects in view the invention will be hereinafter first fully described with reference to the accompanying drawings, which form a part of this specification, and then more particularly pointed out in the claims following this description.

In said drawings, in which corresponding parts in the several views are designated by similar letters of reference, Figure 1 is a perspective view of a hydrant embodying my invention, the same being represented in place

in a street as a fire-plug and only the upper or external portion thereof appearing. Fig. 2 represents a vertical cross-section of the hydrant as a whole. Fig. 3 is a detail plan view of the valve-seat ring, showing also the drip-controlling valve; and Fig. 4 represents a fragmentary vertical section taken on line IV IV of Fig. 3, also partially showing therein the hydrant-valve in elevation.

Referring to the drawings, the hydrant-casing is preferably constructed in three parts or sections, comprising a base A, having the usual branch or elbow for connection with a water-main, an intermediate section or stand-pipe B, and a dome or cover C, closing said stand-pipe, the said sections being secured together by fastening-bolts entered through flanges or projections at their adjacent ends or by other suitable means. The stand-pipe or intermediate section is provided near its upper end with a suitable discharge-nozzle D, which may be closed by a removable cap or cover *d* when the hydrant is not in use.

The hydrant is internally divided by a valve-seat ring E, having the usual water passage or opening *e* therein, controlled by the hydrant-valve G, which is secured upon and operated by an axial stem or valve-rod H. The said hydrant-valve may be of any suitable construction, though preferably conical in form, the valve herein shown consisting of a conical disk or annulus adapted to fit closely within the correspondingly-formed valve-seat surrounding the opening *e* and removably fitted on a bushing *g* on the stem between an upper flange or collar *g'* of said bushing and a lower fastening device *g*².

The valve-seat ring E is preferably clamped between the lower and intermediate sections of the hydrant-casing, its outer peripheral portion being closely fitted within an annular recess or groove *a*, formed at the extremity or junction of one or both of said sections, though preferably at the extremity of the lower section, whereby said ring is properly centered within the casing and secured rigidly in position. The said ring may also be provided with an upper annular flange or projection *e'*, fitting closely within the casing, thus affording additional means for cen-

tering the valve-seat, strengthening the junction or connection between the two members of the hydrant, and serving to maintain the drip-valve in place when the valve-seat ring is removed, as will hereinafter appear.

A tubular member or sleeve F, constituting a guide for the valve-stem, is preferably formed integrally with the valve-seat ring, being herein represented formed at the junction of a number of converging arms or hangers *g*, depending from said ring, the structure thus having the form of a cage or spider. Said sleeve or guide is in axial alinement with the valve-seat and preferably interiorly screw-threaded to receive the lower threaded portion *h* of the valve-stem, the upper portion of which passes through an opening in the dome or cover C, a suitable packing device being fitted around the same to maintain a water-tight bearing. By this construction the stem is firmly guided in close proximity to the valve-seat and said stem and valve maintained in perfect alinement with relation to the valve-seat, so that in shutting off the water the valve may be drawn true to its seat without improper movement or deflection and forced tightly against the same to secure a water-tight joint, while by reason of the rigidity of the structure disturbance of such relation or displacement of the parts is rendered practically impossible. The said sleeve or guide is preferably located below the valve-seat, as shown, and the valve arranged to operate above its seat, whereby the stem may be unscrewed from its guide and the valve withdrawn without removal of the other parts.

The valve-seat ring is provided with a drip-port *e*², leading to a drip-passage, as the annular groove *e*³, formed in the outer edge or periphery of the ring, and communicating with a suitable discharge-port. Said drip-port is controlled by a valve I in the form of a rocking lever lying horizontally and flatwise upon the valve-seat ring, said lever being spring-actuated to close the drip-port when the hydrant-valve is raised from its seat, but operated by said valve to uncover said port when the hydrant-valve is forced to its seat, and thus permit escape of water remaining in the stand-pipe when the valve is closed. As herein represented, a compression-spring *i* is interposed between the tail portion of said lever and the flange *e*¹, said spring being fitted within a suitable recess therefor in an enlarged portion of said lever, while the inner side of said enlarged portion is cam-faced or inclined, as shown at *i*¹, for engagement by the curved outwardly-projecting periphery of the flange or collar *g*¹ of the main hydrant-valve when the latter is lowered to its seat,

so as to move the drip-valve or lever I to position to open the drip-port.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a hydrant, the combination with the casing of the valve-seat ring secured therein having an integral stem-guide, the main hydrant-valve having an axial stem working in said guide, a drip-port in said valve-seat ring, and a valve therefor consisting of a horizontal lever pivoted to said ring, said lever being spring-actuated to close the port when the hydrant is open and operated to open the same by engagement with the hydrant-valve when the latter is forced to its seat; substantially as described.

2. In a hydrant, the combination with the casing, of the valve-seat ring secured therein having a stem-guide beneath the valve-seat, the main hydrant-valve working above said valve-seat and having an axial operating-stem working in said guide, a drip-port in said valve-seat ring, and a valve therefor consisting of a horizontally-rocking lever pivoted to the ring, said lever being spring-actuated to cover said port when the hydrant is open, and a projection above the main hydrant-valve for engaging and moving said lever to open said port when said valve is lowered to its seat; substantially as described.

3. In a hydrant, the combination with the valve-seat, main valve and valve-stem, of the drip-port, and valve therefor consisting of a horizontally-rocking lever pivoted beside the valve-seat, a spring forcing said lever to cover the port when the hydrant is open, and a projection on said valve-stem engaging and moving said lever to uncover said port when the hydrant is closed; substantially as described.

4. In a hydrant, the combination with the casing, of the valve-seat ring secured therein, an interiorly-threaded stem-guide beneath said ring in axial alinement with the valve-seat, the main hydrant-valve, an axial threaded stem therefor working in said guide, a projecting curved flange or collar above said valve, a drip-port in said valve-seat ring, and a valve therefor consisting of a lever spring-actuated to cover the same when the hydrant is open, said curved flange or collar being adapted to engage and move said lever to uncover said port when the main valve is screwed against its seat; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHRISTIAN E. LOETZER.

Witnesses:

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