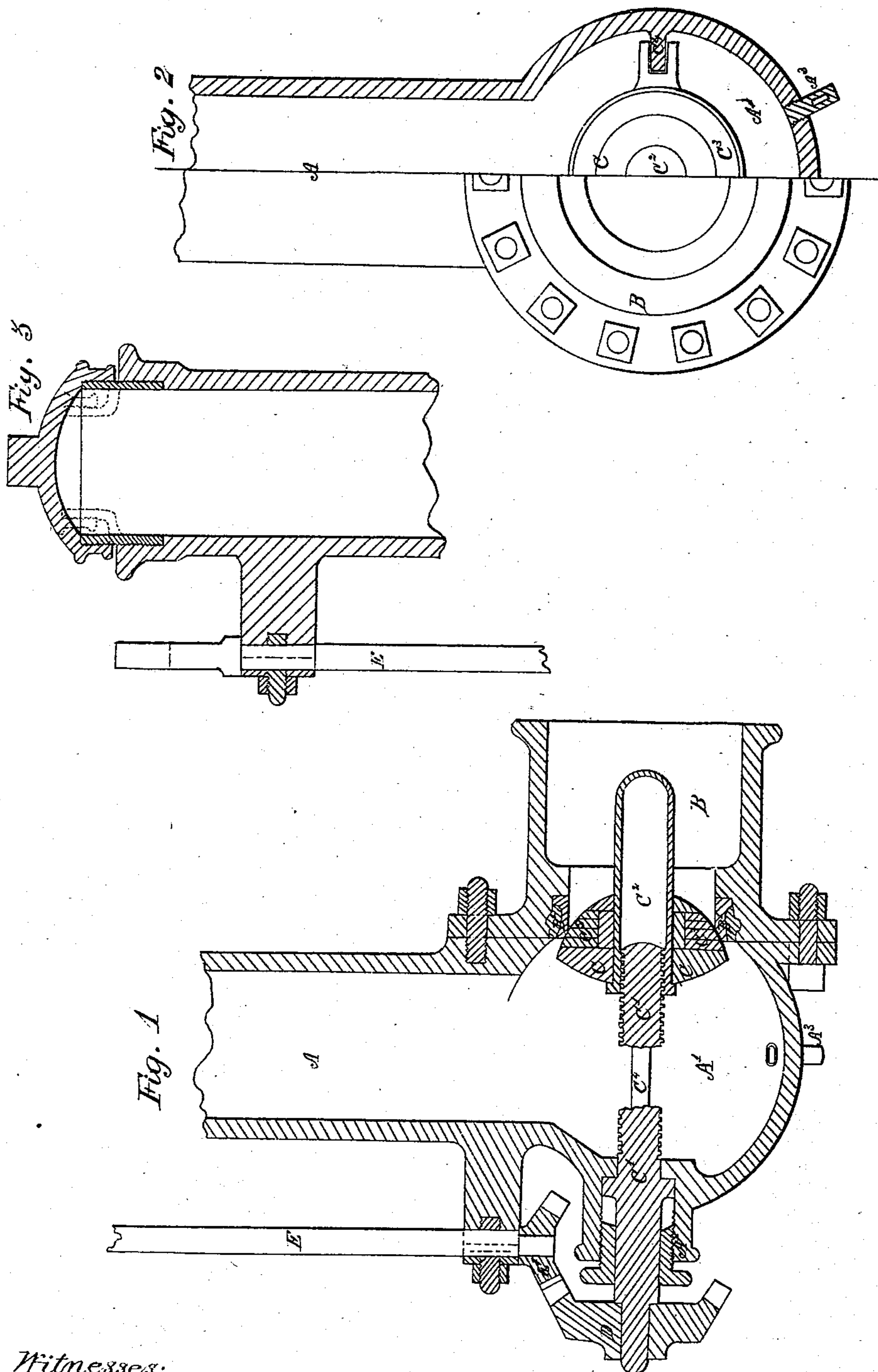


S. McELROY.  
HYDRANT.

No. 36,663

Patented Oct. 14. 1862.



Witnesses:  
Walter Nichols  
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# UNITED STATES PATENT OFFICE.

SAMUEL McELROY, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. 36,663, dated October 14, 1862.

*To all whom it may concern:*

Be it known that I, SAMUEL McELROY, civil engineer, of the city of Brooklyn, State of New York, have invented a new and Improved Fire-Hydrant, of which the following is a full and exact description.

The nature of my invention consists in the arrangement and application of a fire-hydrant of improved form and construction adapted to any form of head, which has a base chambered to take an improved valve-motion operated externally and a valve-seat hub, and which gives a free vent and delivery to the water in its full capacity of opening without the obstruction, friction, and counter-currents caused by the arrangement of fire-hydrants in common use, having other advantages in simplicity of construction.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, having reference to the annexed drawings, marked Figures 1, 2, and 3.

The hydrant is cast in two principal parts—viz., the vertical tube A and the valve-seat hub B, Figs. 1 and 2, in which the working and movable parts are attached to and connected with the vertical tube A, which has in addition to any form of "flush" or "stand-pipe" head that may be desired, and is not included in this description, a circular valve-chamber, A', an external valve motion and rod, E E' D, a stuffing-box, A<sup>2</sup>, an internal valve with its working parts C C' C<sup>2</sup> C<sup>3</sup>, and a joint-face to take the valve-seat hub B, which is bolted to the vertical tube A with a face-joint, and carries the valve-seat B', and a hub to take the hydrant-pipe direct. The lower part, A', of the hydrant-tube A, which may be carried to any desirable depth to avoid frost, is cast with a circular form, adapted to use as a valve-chamber, of such radius as to give the column of water from the hydrant-pipe attached to the main a free delivery to the vertical tube (which has also a free section of delivery to its nozzle) equal to the area of the hydrant-pipe and valve-opening when the valve is fully open, as the increased area of this chamber much exceeds the displacement of the valve-tank C<sup>2</sup>, or of the screw C' in case the tank is dispensed with, thus avoiding the obstruction, friction, and counter-currents of the hydrant-

tube in common use. This circular valve-chamber also frees by its form the valve-seat from any lodgment of gravel or other foreign substances, and permits the location of the automatic vent A<sup>3</sup> at a point below the valve-seat, insuring a more complete and desirable drainage when the hydrant is not in use than is now obtained with the common form of hydrant.

In Fig. 3 the hydrant-tube is shown in connection with a flush-head adapted to either a full-throat nozzle, or the ordinary two and a half inch nozzle, at will; and it may also be readily terminated by a stand-pipe head adapted to either size of nozzle.

The valve C (shown in section in Fig. 1 and in half-front elevation in Fig. 2) is made of cast-iron, brass, or any other suitable material, with a chamber properly constructed to take leather or other suitable packing, C<sup>3</sup>, which makes a joint against the valve-seat B'.

The valve is operated by a screw cut on the valve-shaft C', of brass or other suitable material, which takes into a valve trunk or cylinder, C<sup>2</sup>, of brass or other suitable material, as drawn, properly tapped to receive it, which also protects it, and is secured to the valve. In its opening and closing motion the valve is supported and guided by a projecting lug or guide, C<sup>4</sup>, cast on each side of the chamber A'.

The valve-shaft C' is properly packed and held in place by the stuffing-box and gland A<sup>2</sup>, and is operated by a bevel gear-wheel, D, attached to its outer end, which is in turn operated by a bevel gear-wheel, E', attached to a vertical or inclined rod, E, properly supported by two or more guide-bearings cast on the hydrant-tube, and fitted with suitable collars, caps, bolts, and nuts, and adapted at the upper end to receive the ordinary form of hydrant-wrench. The proportions of this bevel-gear may be changed at will, so as to modify the power or speed on the valve-shaft C', as is desirable in large hydrant-openings under heavy water-pressure. The relative angle of the valve-shaft with the hydrant-tube, which is ninety degrees as drawn, may be varied at will, and the screw may be cut on the outer end of the valve-shaft C', so as to be operated by the bevel-wheel D as a nut, dispensing with the stuffing-box collar, if in any case desirable,



by which means the projecting trunk C<sup>2</sup> or the projecting internal screw is dispensed with.

The valve-seat hub B is cast with a chamber or recess to take the valve-seat B', of brass or other suitable material, properly keyed or leaded in, and faced to make a joint with the packing of the valve C. It is secured to the hydrant-tube by a face-joint, being properly bolted to the same, and is cast with an expanded hub on its outer end to take the spigot end of the hydrant-pipe, which connects with the street-main. This avoids the use of the ordinary hydrant-bend with its lead joints, lugs, straps, and other fixtures, and permits the hydrant-tube to be detached at any time without the use of fire, usually required to melt

the lead joints at much risk, cost, and inconvenience thus obviated.

What I claim, and desire to secure by Letters Patent, is—

The combination and arrangement of the vertical hydrant-tube A, adapted to any form of head, having a base, A', chambered to take the valve-motion described, with the valve-seat hub B, and with the internal movable valve-shaft and valve, C C' C<sup>2</sup> C<sup>3</sup>, operated externally, substantially as described.

SAMUEL McELROY.

Witnesses:

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