(No Model.)

C. G. ETTE.

HYDRANT.

No. 479,259. Patented July 19, 1892.

Fig. 1.

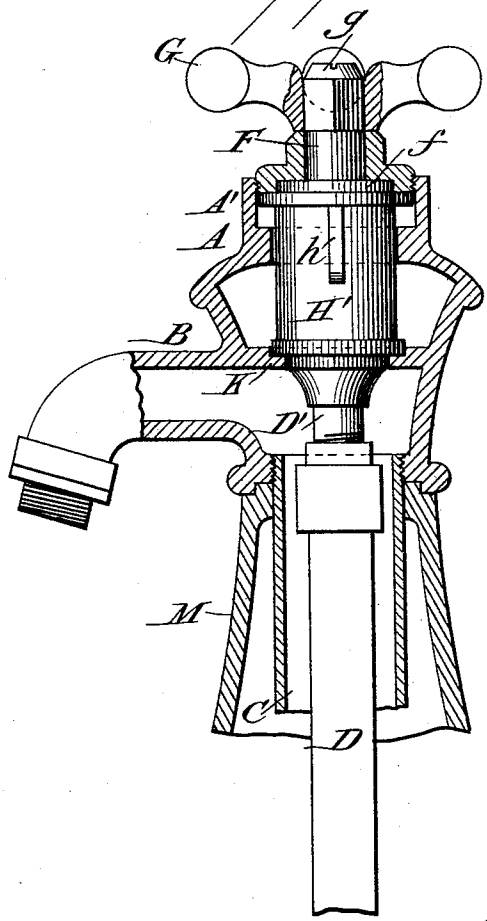


Fig. 2.

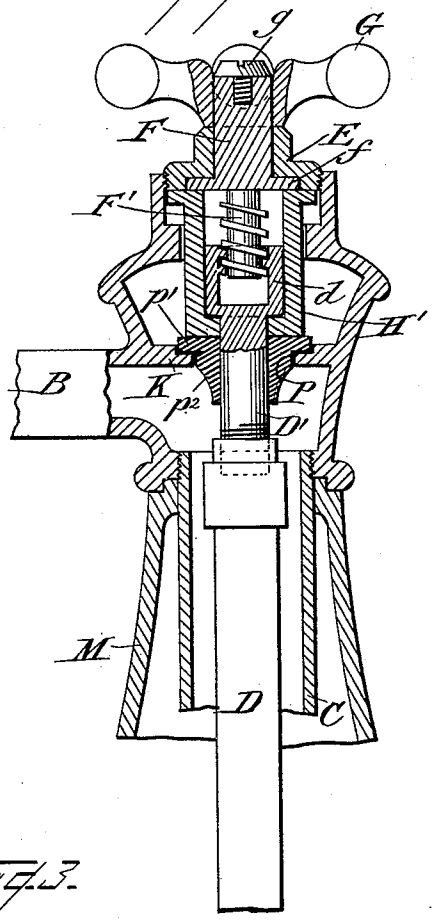
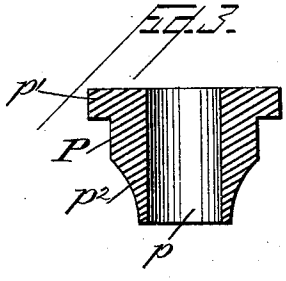


Fig. 3.



Attest:

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HYDRANT.

SPECIFICATION forming part of Letters Patent No. 479,259, dated July 19, 1892.

Application filed October 24, 1891. Serial No. 409,732. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. ETTE, a citizen of the United States, residing at St. Louis, in the State of Missouri, 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.

My present invention relates to an improvement in hydrants, and refers more particularly to that portion or section of the hydrant which is commonly denominated the "nozzle-section," it being the upper part which carries the nozzle, the object of the invention being to simplify, perfect, and complete the construction and arrangement of the stuffing-box and accompanying parts at the upper end of the hydrant, so as to prevent sand and gritty substances, water, or other foreign and injurious materials from entering the working parts of the hydrant at this point; also, to prevent freezing, as well as placing the stuffing-box where it is not easily affected by heat, cold, or outside interference, and yet so arranged that the whole of it can be withdrawn for repair purposes; and the invention therefore consists in the construction, arrangement, and combination of parts, substantially as will be hereinafter described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a vertical sectional elevation of my improved hydrant. Fig. 2 is a similar vertical section showing in section the parts that are shown in elevation in Fig. 1. Fig. 3 is an enlarged detail section of the conical perforated rubber stuffing or packing ring.

Similar letters of reference designate corresponding parts throughout all the different figures of the drawings.

A designates the upper or top section of a hydrant or similar article, it being that portion of the hydrant which is ordinarily denominated the "nozzle," and it has the nozzle B cast integral therewith. The nozzle-section A may be of any suitable form, size, and shape, and I do not intend to restrict myself to the particular form shown in the drawings.

Connected to the lower portion of the nozzle-section A are the lower section M of the hydrant and the interior vertical water-pipe C, within which pipe C is the inner rod or tube D, which runs down to the base of the hydrant and is connected to the valve and which operates to open or close said valve. Further, it will be observed that the nozzle-section A is provided with the circular seat K, located in line with the upper part of the nozzle proper B, so as to be out of the way of the water coming up through the water-pipe C; also, the nozzle-section is provided at its upper end with the cylindrical extension A′, which is internally screw-threaded and which receives a screw-threaded adjusting-ring E, having an annular recess on its lower face, as shown in Figs. 1 and 2. The valve-rod or pipe D is provided at its upper end with an upwardly-projecting rod D′, firmly screwed or otherwise firmly connected thereto, said rod being formed at its upper end with a head-section *d* of greater diameter, which is provided with an internal screw-threaded bore to furnish a female screw which will receive and be engaged by a male screw F′, projecting downwardly from an integral metallic piece or block F, located within the adjusting-ring E and shaped on its upwardly-projecting end with flat edges, so as to be pentagonal or otherwise polygonal in cross-section and adapted to permit a correspondingly-slotted handle G to fit thereover and be secured in place by a central clamping-screw *g* or by any other suitable and convenient means, said block or metallic piece F being further provided with a collar *f*, which fits neatly within the annular recess on the under side of the adjusting-ring E.

A single cone-shaped perforated rubber stuffing or packing ring acts both upon the seat K of the nozzle-section and also upon the stem D′ of the operating-rod D. This cone-shaped rubber packing device is shown in enlarged detail in Fig. 3. It is shown very clearly in the combination in Fig. 2. It is designated by the reference-letter P. It consists of a suitably-shaped cylindrical block of rubber or analogous material, having therethrough a passage *p* of proper size and shape to permit the stem D′ to be located closely and neatly therein. The upper end of the ring P is provided with an encircling flange *p′*, which fits down neatly into the rabbet belonging to

the circular seat K. The lower end of the ring P is cut away with a bevel or incline at p^2, so as to make the ring cone-shaped, it being therefore thinner at its lower than at its middle and upper parts. The cylinder H in the present modification appears as cylinder H′, which is substantially the same as cylinder H, except that it is longer and has its lower end differently shaped or formed, it being simply provided with a central perforation of proper size to permit the passage through it of the stem D′, the head *d* being located inside of the cylinder H′, the same as before. Therefore the lower end of the cylinder H′ rests upon the flanged ring P and confines the latter closely upon its seat K. The adjusting-ring E may of course be manipulated for the purpose of adjusting the cylinder H′ and confining the packing-ring more closely when desired.

The packing-ring P is stationary. Being so and consisting only of a single block of rubber having a general conical form, it makes but few joints and is therefore easy and cheap of construction and location and efficient in operation. The precise and exact form may vary considerably without departing from the invention. I deem this packing-ring of importance. It may be used for various other purposes than that contemplated in the present specification. I do not therefore intend to confine it to a particular valve or combination of parts herein specified, but reserve the liberty of using it wherever I may desire. I consider that this mode of packing is far superior to the old style cotton stuffing or for other methods of making tight joints in hydrants or apparatus which are used with cold water. I reserve the liberty of holding this conical packing-ring to its seat in any manner which may be found preferable and desirable and am not restricted to the particular way shown and described herein. Other devices may be substituted for the cylinder H′ for the purpose of holding the packing-ring down upon its seat. When the ring is held properly upon its seat, there is very little danger of leakage, since on account of the outer area of the cone part of this ring it will be noticed that the more the pressure tries to escape between the rubber and the rod the more likely it is to make it tight, as the outer area on which the pressure acts, as well as on the joint, is so much greater than at the point of the cone part.

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

1. In a hydrant, the combination, with a nozzle-section having an integral nozzle, of the stem which connects with the valve in the water-way, a conical perforated rubber packing-ring on said stem and seated upon the seat in the nozzle-section, the cylinder bearing upon said packing-ring and located non-rotatively within the nozzle-section, an adjusting-ring screwed in the upper end of the nozzle-section, and a metallic block within said ring, provided with a screw-threaded projection engaging the head of the valve-stem, all arranged substantially as described.

2. In a hydrant, the combination of a nozzle-section having an integral nozzle, a circular seat and the internal screw-threaded upwardly-projecting cylindrical extension, the stem which is connected to the valve in the water-way, a single conical perforated rubber packing-ring on said stem and seated on the aforesaid circular seat, a cylinder located within the nozzle-section so as to be adjustable vertically, but non-rotative, said cylinder bearing at its lower end upon the packing-ring, an adjusting-ring screwed into the aforesaid screw-threaded extension, a block inside of said ring, having a downward screw-threaded projection engaging the head of the valve-stem, and a handle device secured to the aforesaid block, so as to rotate the same, and thus open or close the valve, substantially as described.

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

CHARLES G. ETTE.

Witnesses:
GEORGE JONES,
HARRY S. HARMON.