

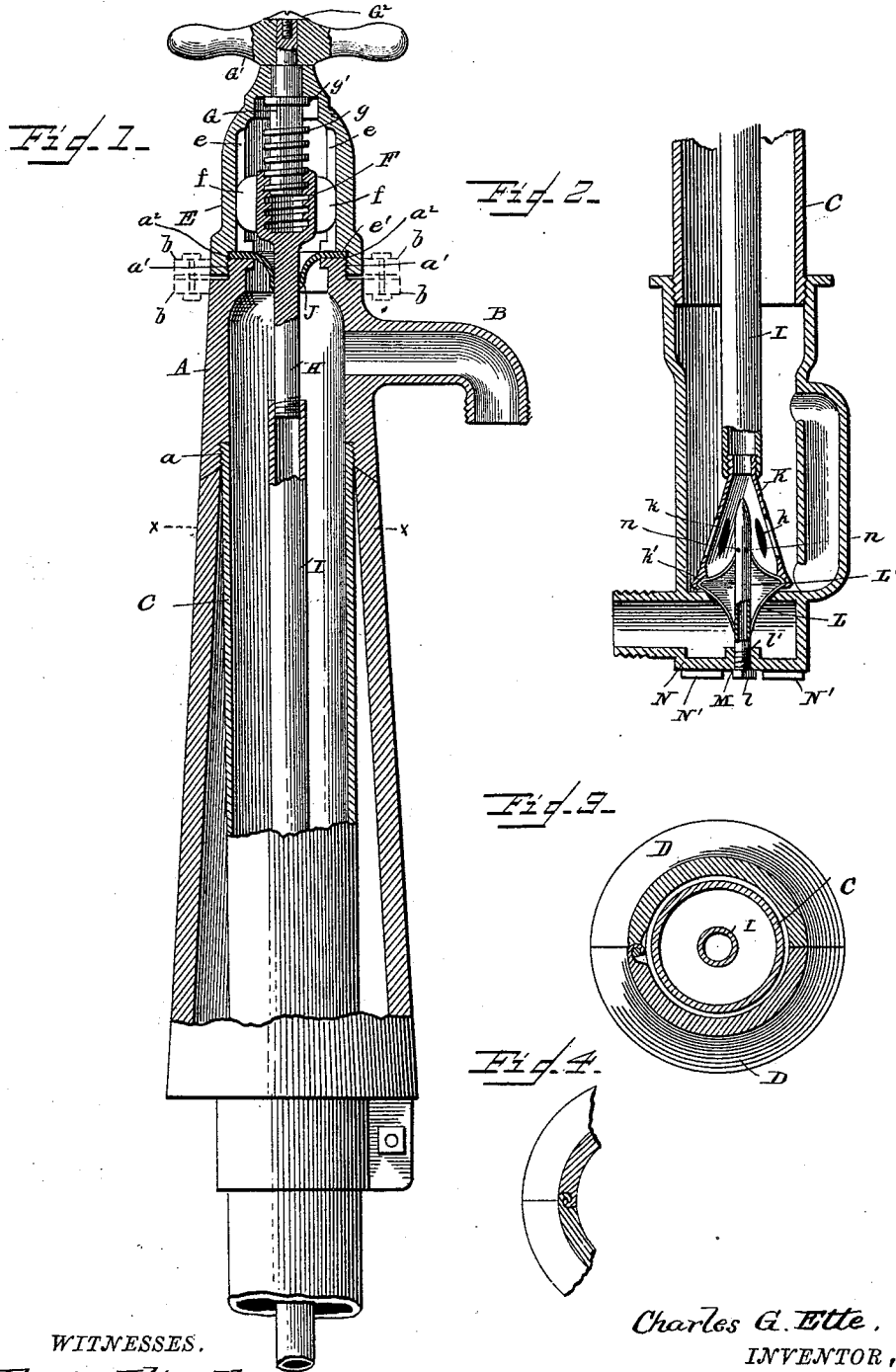
(No Model.)

C. G. ETTE.

HYDRANT.

No. 394,478.

Patented Dec. 11, 1888.



WITNESSES.

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HYDRANT.

SPECIFICATION forming part of Letters Patent No. 394,478, dated December 11, 1888.

Application filed June 28, 1887. Serial No. 242,772. (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, of which the following is so full, clear, and exact a description as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of my hydrant. Fig. 2 is a longitudinal vertical section of the valve and its mechanism. Fig. 3 is a horizontal section of Fig. 1, taken on the line *x x*. Fig. 4 is a partial section of a modification of the connection shown in Fig. 3.

The object of my invention is to construct a cheap, durable, and efficient hydrant, which may be quickly and easily repaired, will not be likely to get out of order, and which will be positively non-freezing; and the invention consists in the construction, arrangement, and combination of parts, substantially as will be hereinafter described and then claimed.

In the accompanying drawings, A designates the upper solid shell, which is slightly beveled at its lower edge, and which is provided with the usual water-spout, B. The shell A is internally screw-threaded at *a*, and the main pipe is externally screw-threaded, which adapts the two to be securely screwed together. The outer casing of the lower portion of the hydrant is made of two sections, D D. These sections are hinged together at one side, and are rigidly secured at the opposite side by a screw, bolt, rivet, or other suitable device for rigidly securing the edges together. The upper ends of these sections are slightly beveled, as above described. The upper portion of the shell A is also screw-threaded at *a'*, and in some instances the cap E is screwed to the upper portion of the shell A. It is quite obvious, however, that the cap E and the shell A may be bolted together through suitable flanges, *b b*, without in any way departing from the spirit of my invention.

The cap E is perforated at its upper portion, and is provided on its inside with suit-

able grooves, *e e*, which serve as tracks for the guides *f f* on the internally-screw-threaded sliding sleeve F.

The body portion of the stem is screw-threaded at *g*, and is provided with a shoulder, *g'*, which prevents the vertical displacement of the stem by its being slid up too far. The upper portion of the section G of the valve-stem is provided with a suitable handle, *G'*. This handle will prevent the downward movement of the stem G when it is secured to the top of said stem, as shown in Fig. 1. This fastening may be effected by a suitable rivet or screw, *G²*.

The central section, H, of the valve-stem is screw-threaded at its lower portion to correspond with screw-threads on the section I, which forms the valve-stem proper. The upper end of the section H has formed integral therewith the sleeve F, which is internally screw-threaded, as above described, and provided with the guides *f f*.

Above the line of the upper inner surfaces of the water-spout B the shell A is provided with a bearing, *a² a²*, upon which I place a cup-washer, J. The inner lower portion of the cap E and shell A are secured together, as shown in Fig. 1, bearing firmly against the cup-washer J. The inner central portion of the cup-washer encircles the section H of the valve-stem and prevents the escape of the water up through into the working parts in the upper part of the hydrant. This same washer also serves as a packing in the joint between the cap E and the shell A, where the two are secured together. The stem I is also screw-threaded at its bottom portion to correspond with the upper portion of the washer-holder K, which is also correspondingly screw-threaded at its upper end. This holder K is made in this instance in the shape of a conical shell, which is provided with suitable openings, *k k*, and is recessed at *k'* to embrace the outer edges of the washer L, which in this instance is made in the shape of a double cone. This washer L is perforated centrally to receive a vertical tube, *L'*, which tube is provided with perforations *n n* at its upper portion and is pointed at its top.

Formed integral with the tube L is a square

head, *l*, and a portion of the tube *L'* is screw-threaded at *l'* to fit into the bottom of the valve-casing, which is also correspondingly screw-threaded through the perforation *M* in the bottom of the valve-casing proper. It will be observed that the main valve-seat is slightly beveled, which will cause the double conical washer *L* to tightly close the valve, and the beveling of the seat will also serve to compress or double the conical washer around the hollow tube *L'*, and thus prevent the escape of the water through the interstices between the tube *L'* and the double conical washer when the valve is closed.

The construction of a washer in the shape of a double cone, as shown and described, forms a washer which, by the action of the water alone, would tend to hug the central tubing, whether the pressure come from the top or bottom, or both, the reason being that the walls of a cone-shaped washer are necessarily thin and very pliable at their extremities.

A valve of this character should be made of any kind of elastic material which will serve the purpose in this capacity, and preferably rubber. This valve-plunger is adapted to be used with the ordinary valve-casing, as *N*, which casing should be perforated at the bottom to permit of the introduction of the hollow tube *L'*.

The casing *N* should be provided with suitable projections, *N' N'*, to slightly raise the valve-casing, which should be mounted on stones or other suitable rubble to prevent the waste-pipe *L'* from becoming clogged, all of which will be readily understood and appreciated by those skilled in the art.

The operation of my device is as follows: The working parts and main casing are first put together and put in position, when the sections *D D* are put around the main casing *C*, as shown in Fig. 1, to strengthen the outer part of the main portion of the hydrant and to give it a greater bearing-surface. These sections *D D* are hinged together at one side, as above described, and are rigidly secured at their opposite side, and are firmly secured in some instances to the main casing *C* at the lower portion. When the hydrant is closed, the valve-seat, as shown in Fig. 2, and the upper end of the double conical valve will come just below the line of the bottom of the perforations *n n*. Thus the waste water will pass down through the openings *k k* in the washer-

holder *K*, through the perforations *n n* in the tube *L'*, and thence down through the tube *L'* out at the bottom of the hydrant, which will of necessity be several inches below the freezing depth, provided, of course, that the valve of the hydrant is placed at the lower limit of the freezing-point. Thus it will be seen that the hydrant will waste at the bottom directly beneath the valve and working parts of the hydrant, and there will be no danger of water from the escape flooding the lower portion of the valve, as is quite likely to be the case where a pipe escapes from the top. By opening the hydrant, which is effected by turning the handle *G*, the double conical valve will be raised, which will close the openings through the perforations *n n* at the same time that it opens the main water-way up through the bottom of the hydrant.

From the nature of the case it will be understood that the rubber will become somewhat depressed as the valve is closed, and before the valve shall have left its seat proper the upper conical portion of said valve will have completely closed the openings *n n* through and into the hollow pipe *L*.

Having now described the objects, uses, and construction of my invention, what I desire to secure by Letters Patent, and what I therefore claim, is—

1. In a hydrant, the combination, with the casing, valve-seat, and stem, of the holder connected to the stem and having openings and a recessed portion of said holder, the washer connected to the recessed portion of said holder, and the perforated tube passing through said washer, which washer controls the perforations in said tube, which is connected to the valve-seat, as shown and described.

2. The combination, with the valve-casing provided with a waste-pipe, the valve-stem carrying the cone-shaped holder with open sides, of the flexible double conical washer having the perforated tube located within the same, and the valve-seat, substantially as and for the purposes set forth.

In testimony that I claim the above as my invention I hereunto set my hand in the presence of two subscribing witnesses.

CHAS. G. ETTE.

Witnesses:

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