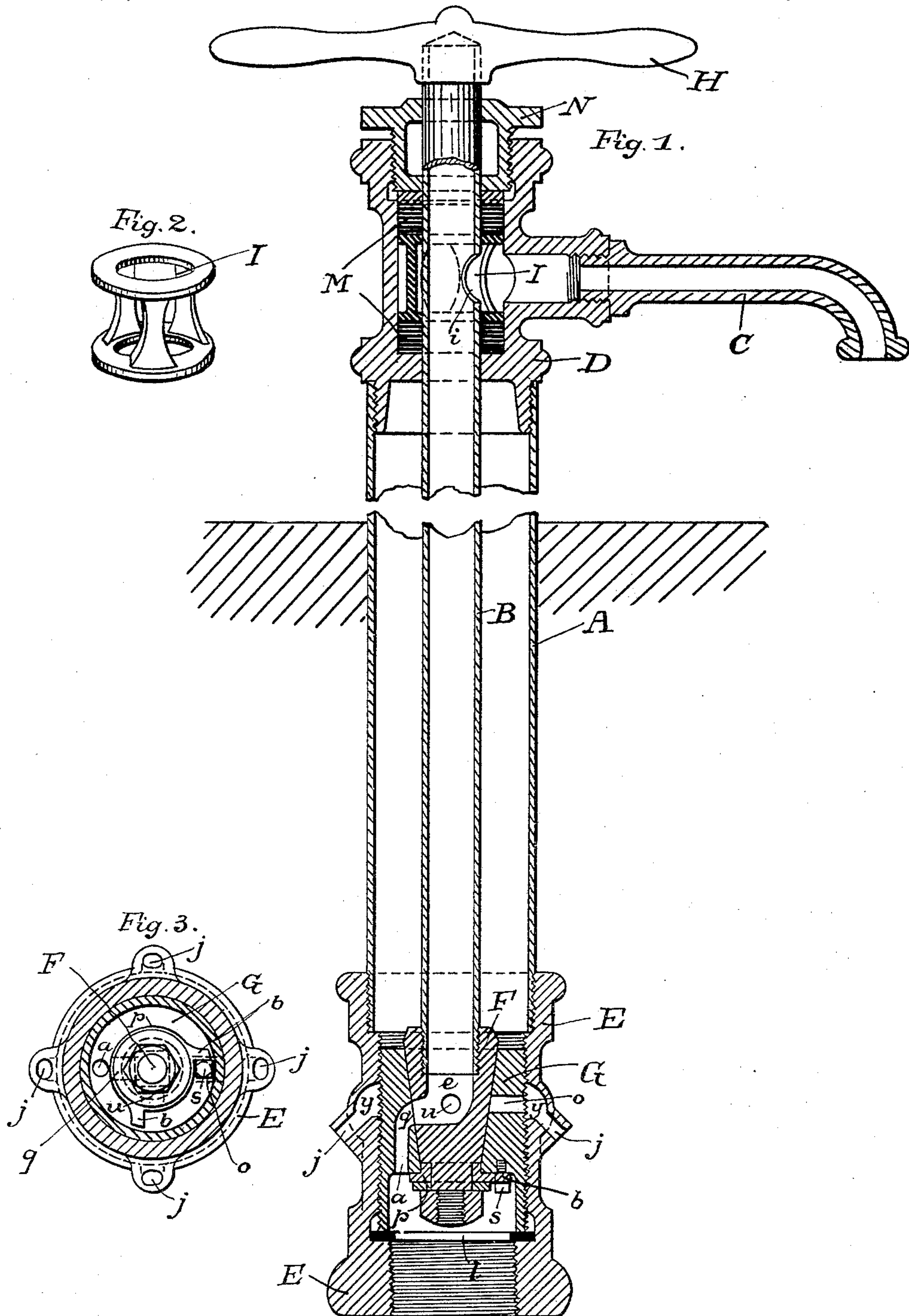


(No Model.)

F. PETER & H. RUPPEL.  
HYDRANT.

No. 327,822.

Patented Oct. 6, 1885.



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# UNITED STATES PATENT OFFICE.

FRITZ PETER AND HEINRICH RUPPEL, OF CLEVELAND, OHIO.

## HYDRANT.

SPECIFICATION forming part of Letters Patent No. 327,822, dated October 6, 1885.

Application filed July 29, 1884. Serial No. 139,059. (No model.)

*To all whom it may concern:*

Be it known that we, FRITZ PETER and HEINRICH RUPPEL, both of Cleveland, in the State of Ohio, have invented certain new and  
5 useful Improvements in Hydrants, of which the following is a specification.

Our invention relates to improvements in street-hydrants; and it consists in a simple and cheap construction of the working parts of the  
10 same, so as to prevent any water from remaining and freezing after the hydrant is shut off from the main water-pipe, and so as to secure perfect water-tight joints, even after the said hydrant has been in use for a long time.

15 Heretofore many contrivances for the same purpose have been in use, which were, however, very complicated, and therefore expensive.

It is the object of our invention to construct  
20 a perfect hydrant as cheap as possible, which may be taken apart when in place and connected to the water-main from the street without digging out any part. The main part of said hydrant consists of a brass cock with suitable perforations, said cock ground into a  
25 brass seat provided with corresponding outlet and inlet perforations. Our improved hydrant is mainly constructed in the same way as is usual with a protecting-pipe of large diameter, which is provided at the top with the  
30 usual delivery-pipe screwed into a cast-iron head-piece, said head-piece containing the stuffing-box for a smaller central pipe, which is the water-pipe. The protecting-pipe of  
35 large diameter, being provided with a cast-iron bottom piece, is screwed with the same to the main water-pipe of the street, and contains within the same bottom piece the said cylindrical brass seat, which is provided with a  
40 vertical perforation for the inlet of the water from the street-main, and is also provided with one horizontal outlet-perforation for the waste water, leading into an annular hollow cast into the bottom piece, said annular hollow having  
45 four outlet-spouts delivering to the outside of the hydrant into a sink-hole or into the sewer-pipe of the street.

In order to prevent any leakage through the threads between the brass seat and the cast-  
50 iron bottom piece, especially after the said threads have become a little worn through a

repeated unscrewing of the seat for inspections or repairing sake, a ring of suitable packing is provided within an annular recess inside of the cast-iron bottom piece, and the  
55 brass seat is adapted to be screwed firmly down upon said ring of packing by means of an annular rim at its bottom end, so as to establish a perfect water-tight joint between the seat and the bottom piece. Said brass seat contains a conical hollow brass cock ground into  
60 the same centrally, said brass cock being secured to and communicating with the bottom end of the central water-pipe within the hydrant, and being kept with said seat by means  
65 of washer and screw-nut at the bottom end of the same. Two horizontal perforations at right angles to each other are provided within said cock, one corresponding to the horizontal perforation in the said seat, and the  
70 other corresponding to the vertical hole which is in the seat, said hole leading downward to the water-main. All the perforations of the cock lead into the hollow inside of the same, and are therefore in open communication with the vertical central water or  
75 discharge pipe of the hydrant, said water-pipe being provided with an outlet at the top corresponding to the delivery-pipe into the street, the packing being constructed so as never to  
80 lock the outlet of the communication between water-pipe and delivery. The central water-pipe of the hydrant reaches through the head-piece of the protecting-pipe unto the top of the  
85 hydrant, and is provided with a suitable handle. By turning the same, one of the two horizontal perforations of the brass cock may be brought either opposite to the horizontal perforation in the seat or to the vertical hole within  
90 the same leading to the water-main, while it is shut off from the annular hollow with the four spouts, or that it communicates with said annular hollow while it is shut off from the water-main, and in order to bring one of the two  
95 horizontal perforations in the brass cock either opposite to the hole in the seat leading to the water-main or to the hole leading to the annular hollow and spouts in the cast-iron bottom piece, the brass cock is made to be only  
100 movable at a quarter-turn corresponding to the two perforations at right angles of the cock. A lock-plate is secured to the bottom



end of the cock by means of the screw-nut with washer mentioned in the above, said plate having cast onto its periphery two projections at right angles to each other, said projections moving on the bottom end face of the brass seat and butting alternately against a set-screw secured into said bottom end face of the seat, thus limiting the play of the cock to a quarter-turn, and bringing the hollow inside of the cock with water-pipe either in communication with the street water-main or with the annular chamber with spouts. In order to prevent any displacement of the said plate with projections in regard to the cock, said plate is fitted, together with the washer, on a square shank between screw-nut and cock.

In order to make our invention fully clear, we shall describe it with reference to drawings accompanying this specification.

In said drawings, Figure 1 gives a sectional elevation of the hydrant complete. Fig. 2 represents a perspective view of a part contained within the stuffing-box, and Fig. 3 gives a sectional inverted plan of the cock with plate, set-screw, and brass seat.

Corresponding parts in different figures are marked with similar letters of reference.

A represents the protecting-pipe of the hydrant, which is provided at its top with the head-piece D, tapped into the same, said head-piece containing stuffing-box and delivery-pipe to the street, and further provided at its bottom end with the bottom piece, E, which contains the seat with cock, and which is screwed onto the street-main, which latter is not shown on the drawings. The cast-iron head-piece D contains the stuffing-box for the central water or stand pipe, B, passing through said piece.

The delivery-pipe C is screwed sidewise to the piece D, and opposite to the said outlet in piece D a hole, *i*, is provided in the water or stand pipe B. Above and below said hole *i* stand-pipe B is packed into piece D by means of the press-nut N, threaded into the top end of head-piece D, said press-nut pressing on a washer, and on the upper layer of packing M, above hole *i*, said packing is separated from the lower layer of packing below hole *i* by means of a seat, I, which consists of two disks fitting into the cylindrical inside of piece D and over the outside of pipe B, said disks connected by three stays cast thereto, as may be seen in Fig. 2. Said stays leave ample free space for the water delivered through hole *i* to pass between into the pipe C, and are provided in order to secure this free passage of the water for any position into which pipe B may be turned. The said seat I presses on the second layer of packing M below hole *i*, and this layer rests on an annular ring cast onto the piece D and inclosing pipe B. A handle, H, is secured to the top of pipe B.

The cast-iron bottom piece, E, of the hydrant, screwed onto pipe A, is tapped in the inside and contains the cylindrical brass seat G, screwed into said tapped part. This seat G is screwed

down on a leather ring, *l*, placed into an annular recess and on an annular projection inside of the bottom part of piece E, packing thereby water-tightly the seat G into piece E, for the purpose already mentioned. Seat G contains the brass cock F, ground into the same, said brass cock being secured fast to the end of pipe B, turning therewith, and is kept within seat G by means of washer and nut provided on the bottom end of the cock, and by means, also, of the lock-plate *p*, plate *p* and washer fitted on a square shank of cock F just above the said nut and the main body of the cock. Cock F is hollow in the inside at *e*, communicating therewith with pipe B, and is provided with two perforations, *u* and *q*, (indicated also in dotted lines in Fig. 3,) said perforations being at right angles to each other, leading into the hollow space, and corresponding, with regard to their height and size, to the holes *o* and *a* in the seat G. Hole *o* is in constant communication with the annular space *y*, cast into the walls of piece E, and said annular space being in communication with the sewer or sink-hole outside of the hydrant by means of their four spouts *j j*. Hole *a* in seat G leads to the open bottom of piece E, and communicates, therefore, with the water-main, leather disk and plate *p*, with washer and nut, being thus located and of such a size as to never bar the passage of the water between water-main and hole *a*.

In order to limit the turn of cock F, so as to bring either space *e*, by means of outlet *q* and hole *a*, in communication with the water-main, while hole *u* is turned off from hole *o* in the seat, or to bring space *e* in communication with annular space *y* and the outside ground by means of hole *u* and hole *o*, while hole *q* is turned off from hole *a*, two projections, *b b*, also at right angles to each other and butting alternately against a set-screw, S, are secured into the bottom face of seat G, thus limiting the play of cock F to a quarter-turn. Therefore it is seen that when the hydrant is desired to deliver water, handle H has to be turned, such as shown in Figs. 1 and 3, and the water will rise from the water-main, through holes *a* and *q*, hollow *e*, and pipe B, with hole *i*, into the delivery pipe or spout C. By a quarter-turn the water may be turned off again, and then hollow *e* will communicate by hole *u* and hole *o* to annular space *y*, and all the water still standing within pipe B will flow out, emptying through spouts *j j* into the sewers or into the ground surrounding the hydrant.

If the hydrant has to be taken apart, head-piece D is screwed off and the pipe B is turned until seat G is screwed out of bottom piece, E. Thus any repairs may be easily made without need of any digging.

We are well aware that it is not new to construct hydrants so as to have the discharge-pipe and valve device easily removable without any digging when the same need inspection or repairs.

We are further aware that hydrants have



been constructed with two-way cock-valves and with annular chamber and spouts for the waste water. We disclaim all the said devices with exception of the cock-valves.

5 We are also aware that the play of ordinary cock-valves has been limited by means of a small lock-plate or a suitably-shaped washer fast to the cock and corresponding with a suitable stop or notch in the cock-seat. We dis-

10 claim this arrangement.

Piston-valves have also been constructed, especially in water-closets, with an air-chamber above the valve and around the valve-stem, which was packed within the air-chamber by 15 layers of suitable material. These layers were kept compressed by a flanged sleeve inserted between said packing and the valve-disk, said sleeve having the object simply to separate the space between valve-disk and packing to the 20 width of the diameter of the inlet water-pipe. As the water passage-way was between the valve-disk and seat, no perforations or holes were required within the sleeve between the two flanges. The sleeve shown would there- 25 fore not answer for our hydrant, as the sleeved portion of the seat I (shown in Fig. 2) must necessarily be partly open or perforated.

Having thus fully described our invention, what we claim as new, and wish to secure by Letters Patent, is—

30 In a hydrant, the combination, with a valve device constructed as shown and described in F, G, and E, and with a protecting-pipe, as A, and central discharge-pipe, as B, with delivery- 35 hole i, and handle H, of the head-piece D, with the delivery-spout C, and a stuffing-box contained therein and adapted to pack said discharge-pipe within the head-piece above and below the delivery-hole, said stuffing-box com- 40 posed of the layers of packing M M, of the perforated and sleeved seat I, and of the nut N, with washer, the whole for the purpose set forth, and substantially as shown and de- scribed.

In testimony whereof we hereunto sign our 45 names, in the presence of two subscribing witnesses, this 11th day of June, 1884.

FRITZ PETER.  
HEINRICH RUPPEL.

Witnesses:

ALB. FISCHER,  
WM. H. KEES.