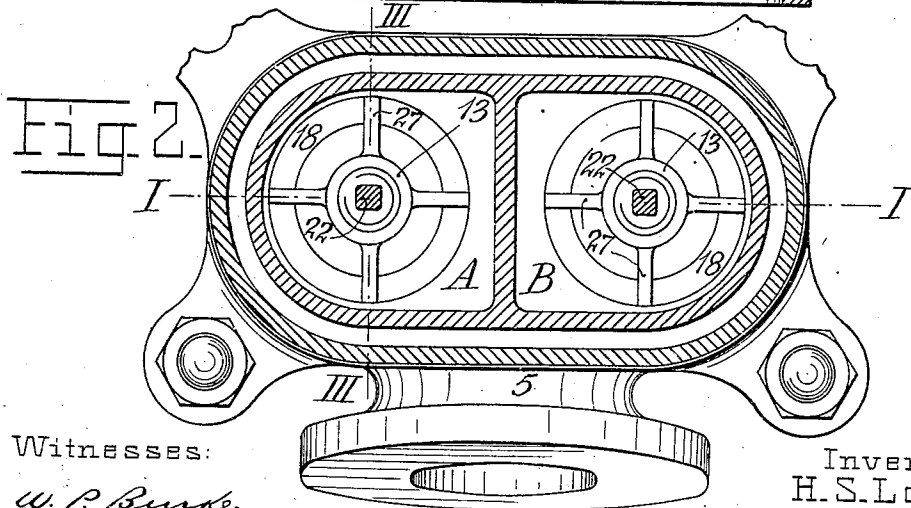
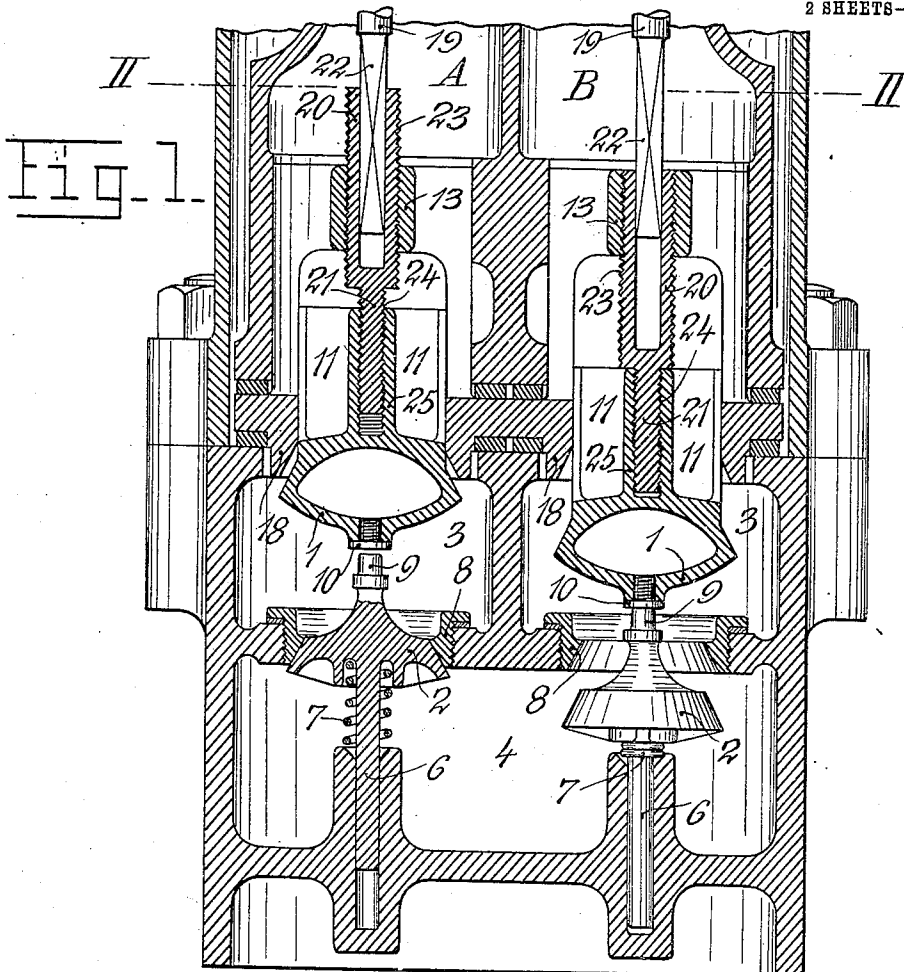


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VALVE FOR HYDRANTS, STAND PIPES, AND THE LIKE.
APPLICATION FILED FEB. 16, 1909.

935,373.

Patented Sept. 28, 1909.

2 SHEETS—SHEET 1.



Witnesses:

W. R. Burke.

James E. Smith

Inventor:
H. S. Lange

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Attorney

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Fig. 3.

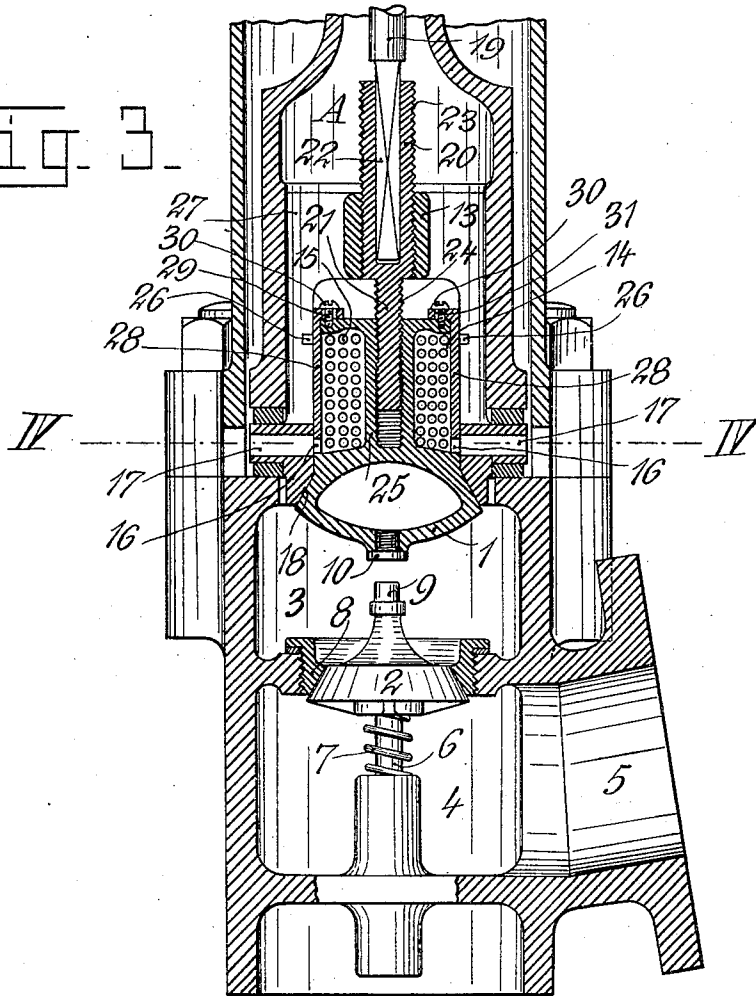
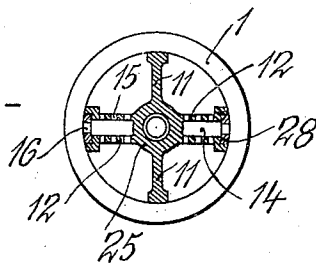


Fig. 4.



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UNITED STATES PATENT OFFICE.

HANS STEENBUCH LANGE, OF CHRISTIANIA, NORWAY.

VALVE FOR HYDRANTS, STAND-PIPES, AND THE LIKE.

935,373.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed February 16, 1909. Serial No. 478,285.

To all whom it may concern:

Be it known that I, HANS STEENBUCH LANGE, manufacturer, citizen of Norway, residing at the city of Christiania, Norway, have invented new and useful Improvements in Valves for Hydrants, Stand-Pipes, and the Like, of which the following is a specification.

In hydrants, stand-pipes and the like hitherto used, the valve or valves through which the water under pressure is supplied are usually arranged in the lower portion of that part of the hydrant which is buried in the earth. If such valves are to be inspected or repaired they must be arranged in such a manner that they can be reached from the outer protecting casing. For this purpose, however, the water under pressure must be first cut-off either by a cut-off cock specially inserted in the conduit to each hydrant or by a cock common to all the hydrants of a group. Both of these arrangements are inconvenient, especially that last mentioned, because all hydrants in the group are thrown out of operation when one of them is to be inspected or repaired.

The present invention has for its object to obviate the inconveniences above mentioned, and this desideratum is obtained by the provision of the construction hereinafter described in which the hydrant valve proper may be lifted up immediately after having been brought into stopping position.

The invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical section on the line I—I in Fig. 2 through the lower portion of that part of the hydrant or stand-pipe which is buried in the ground. Fig. 2 is a horizontal section on the line II—II in Fig. 1. Fig. 3 is a vertical section on the line III—III in Fig. 2, and Fig. 4 is a section of the valve proper on the line IV—IV in Fig. 3.

According to the present invention an auxiliary valve —2— opening downward is arranged beneath the main or proper hydrant valve —1— and separated from the same. The purpose of this auxiliary valve is to cut off the connection between the upper chamber —3— leading to the main valve —1— and the lower chamber —4— connected through the lateral supply —5— with the conduit for the water under pressure. In the drawing the hydrant is shown provided with two independent outlets —A—

and —B— and special valves for each of them. The auxiliary valve is arranged on a guiding stem —6— and is normally pressed up against its seat —8— by the helical spring —7—. On its upper side the valve carries an upright projection —9— which does not come in contact with the projection —10— on the main valve —1— when the latter is closed (Fig. 3). In this position obviously the admittance of the water under pressure to the chamber —3— is prevented by the auxiliary valve —2—, which takes up this position automatically as soon as the main valve is sufficiently near its cut off position (see the left hand side of Fig. 1). When the valve —1— is opened, however, its projection —10— strikes against the projection —9— and forces the auxiliary valve downward against the action of the spring —7— and of the water under pressure. The water then can flow up into the chamber —3— and, further, past the valve —1— between its guides —11, 12— and past the nut —13— of the guiding cross-head into the outlet (see the right hand side of Fig. 1).

The guides —12— of the main valve —1— are each made hollow so as to form a chamber —14—, the radial side walls of which are provided with a series of holes —15— and the outer wall of which is provided at the base with a single aperture or port —16—, communicating with a channel —17—, in the valve seat —18— when the valve assumes its cut-off position (Fig. 3). The channel —17— leads to cloaca and its purpose is to draw off any water which may remain in the outlets after the hydrant has been used. This emptying takes place by way of the chamber —14— hole —15—, ports —16— and channels —17—, so that the possibility of water freezing in the hydrant is prevented. If mud, sand or the like should partly obstruct the holes —15—, the water under pressure, as soon as the hydrant is opened, will cleanse or rinse the holes —15— during its passage through the ports —16—, the chambers —14— and said holes.

The main valve is operated by the stem —19— by means of a threaded sleeve —20—, 21—, into the upper squared hole of which projects the squared lower end —22— of the stem —19—. The upper part —20— of the sleeve is formed on its exterior with relatively coarse screw-threads —23— adapted

to turn in the nut —13— provided interiorly with corresponding screw threads. The lower part —21— of the sleeve —20— is provided with relatively fine screw-threads —24— and is screwed into the correspondingly threaded hub —25— of the main valve —1—. The rotation of the valve —1— is prevented by stops, such as small pins —26— engaging the ribs —27— of the guiding cross-head. By means of this arrangement of the sleeve —20, 21—, the valve —1— can be opened by the desired number of rotations of the stem —19— without the necessity of employing fine and consequently weak screw-threads, the movement of the valve by each revolution depending only upon the difference in the pitches of the threads —23— and —24—.

The outer walls of the chambers —14— preferably consist of angular pieces (Figs. 3 and 4), the vertical parts —28— of which are tightly fitted into grooves provided in the end edges of the side walls as shown in Fig. 4 and the horizontal parts —29— of which project over the upper edges of the ribs of the guide —12— and are attached by screws —30—. The latter pass through oblong holes providing free spaces —31—, so that the angular pieces are forced out against the edges of the seat —18— by the pressure of the water in the chamber —14— (see Fig. 3).

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

1. In a hydrant, the combination of a valve seat having a side passage therein, a main valve, guides on said valve, some of the guides having chambers therein, said guides having passages therein connecting the chambers with the interior of the hydrant, and a lower passage connecting the bottom of the chamber with said side passage when the valve is in closed and nearly closed position.

2. In a hydrant, a casing having an outlet therein, a valve seat having a side passage communicating with said outlet, a main valve, guides on said valve, two of the guides having chambers therein, said guides having passages therein connecting the chambers

with the upper portion of the casing, and a lower port connecting the chamber with the side passage when the valve is in closed or nearly closed position.

3. In a hydrant, the combination with a valve seat having a side passage therein leading to the exterior of the hydrant, a main valve, guides on said valve, some of said guides comprising perforated, radial side walls, and an end wall forming a chamber, said end wall having a port at its lower end communicating with the side passage when the valve is in closed or nearly closed position.

4. In a hydrant, the combination of a valve seat having a side passage therein communicating with the exterior of the hydrant, guides for said valve, two of the guides having chambers therein, each comprising perforated radial side walls, and a radially movable end wall, said side walls having grooves at their outer end for guiding the end wall, and said end wall having a port at its lower end communicating with the side passage when the valve is in or nearly in closing position.

5. In a hydrant, the combination of a valve seat having a side passage therein, leading to the exterior of the hydrant, a main valve, said main valve having passages therein, placing the upper valve casing in communication with the side passage when the valve is in or nearly in closing position, an inwardly threaded hub 25 on the valve, a fixed nut 13 above the valve, a screw sleeve 20 having a lower part 21 with relatively fine screw threads thereon, screwing in the valve hub 25, said sleeve having relatively coarse screw threads thereon screwing into said fixed nut, said sleeve 20 having a polygonal hole therein and the valve stem having a lower polygonal part passing into said hole.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HANS STEENBUCH LANGE.

Witnesses:

RICHARD STOKKE,
MAGNES FRAAS BUGGE.