

No. 609,104.

Patented Aug. 16, 1898.

H. M. KUNZ.
HOSE HYDRANT.

(Application filed Dec. 4, 1897.)

(No Model.)

WITNESS

John Buckler
L. M. Fuller

INVENTOR

Henry M. Kunz,

81

BY
Edgar Salter
ATTORNEYS

ATTORNEYS

UNITED STATES PATENT OFFICE.

HENRY MAX KUNZ, OF NEW YORK, N. Y.

HOSE-HYDRANT.

SPECIFICATION forming part of Letters Patent No. 609,104, dated August 16, 1898.

Application filed December 4, 1897. Serial No. 660,784. (No model.)

To all whom it may concern:

Be it known that I, HENRY MAX KUNZ, a citizen of the United States, residing at New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Hose-Hydrants, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to hose-hydrants of that class which are adapted to be used as fire-plugs; and it has for its object to provide a simple and improved hydrant of this character which will provide an effective closure for the hose connection and which will comprise in one mechanism means for opening said closure and conjointly opening the valve.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same letters of reference in each of the views, and in which—

Figure 1 is a vertical transverse sectional view of a hose-hydrant embodying my improvements. Fig. 2 is an elevation of the front of the upper part of the same; and Fig. 3 is an elevation of the upper part of the hydrant, the casing being broken away to show the interior construction.

In the drawings forming part of this specification, A designates a casing which is preferably of cylindrical construction and embodies a top portion adapted to project above the ground *g* and a lower portion extending beneath the ground. The casing may be in the main of any suitable or adapted contour and is provided with a top or cap *a*, serving to close the top opening, and with a closed bottom, as shown at *a'*. Exteriorly upon the casing may be provided an annular shoulder or flange, as at *a²*, adapted to rest upon the ground *g* and support the casing in position.

B designates the feed-pipe, which enters the lower portion of the casing laterally near the bottom and extends upwardly therein to a point opposite a mouth or opening *a³*, located at a convenient point in the upper part of the casing. The top end of the upwardly-projecting or vertical portion of the feed-pipe may be turned outwardly or horizontally, as

at *b*, so that it faces or registers with the mouth or opening *a³*, and this top end may be exteriorly threaded to provide for the convenient attachment of the hose connection. The top or cap *a* of the casing is preferably of concavo-convex contour and is provided with a central opening.

C designates a slide which is adapted to normally close the mouth or opening *a³*. This slide preferably comprises a plate of sufficient area to fully cover or close the opening *a³* and embodies a top carrying-arm, as at *c*, projecting inwardly and carried upon a tubular rotatable plug D, which corresponds to and is fitted in the opening in the cap *a* and has an exteriorly-projecting top end *d*, which is adapted to be engaged by a suitable key or handle in the operation of the hydrant. This exteriorly-projecting end *d* is preferably of angular contour, adapted to be engaged by a corresponding angular socket in an operating key or handle, and embodies an annular shoulder *d'* at its base.

E designates a rotary valve-stem which extends vertically and longitudinally within the casing A and has its top end received by the tubular plug D. The plug is provided at its base with a flange *d²*, and upon the valve-stem at a suitable distance below the plug is provided a flange *e*, between which flanges *d²* and *e* is mounted a coiled spring F. The top end *e'* of the valve-stem is adapted to engage or interlock with the end *d³* of the bore or longitudinal recess of the tubular plug D when the latter is depressed against the tension of the spring F, and for the purposes of this engagement the top end *e'* of the valve-stem may be of angular construction, adapted to engage the corresponding angular terminal recess at the end of the bore of the plug.

Interiorly within the casing A and at the bottom and one side of the mouth or opening *a³* is provided a flange or projection, as at *a⁴*, which serves as a limiting-guide in the return of the closure slide or plate C to normal position.

The top portion of the feed-pipe B below the horizontal outlet end *b* is preferably flattened or contracted, as shown at *b'*, and said flattened and contracted top portion may also be flared or widened laterally in approximately fan shape, as shown at *b²*, Fig. 3, the

purpose of this contracted practically at right angles to the plane of the openings a^3 and widened end portion being to concentrate the jet of water flowing from the pipe and secure greater force or power, as with a nozzle.

The vertical rotary valve-stem E carries upon its lower end a rotary valve H, of any suitable or adapted construction, operating in the horizontal or base portion of the feed-pipe B, and this valve is provided with an extended bottom end, as at h , projecting through an opening in the closed bottom a' of the casing and into the top end of a waste-pipe I, extending from said opening. The valve is provided in its exterior surface with a vertical groove h' , adapted to communicate with the feed-pipe B and with the waste-pipe I.

The operation and advantages of my invention will be readily understood. When the mechanism is in normal position, the mouth or opening a^3 is securely closed by the slide or plate C, and the inlet-valve H is also closed. When thus in normal position, the plug D cannot be depressed to interlock the valve-stem E and effect the turning of the same by reason of the fact that the closure-plate C, which is fixed to said plug, engages the bottom portion of the interior limiting-flange a^4 .

When it is desired to open the hydrant to enable the attachment of the hose to the outlet end b of the feed-pipe, it is only necessary to engage the projecting top end d of the plug D with any adapted key or handle and turn the plug sufficiently to throw the closure-plate C away from the mouth or opening a^3 , the relative construction and arrangement being preferably such that a one-fourth part turn of the plug will accomplish this result, when the closure-plate will be free from engagement with the bottom portion of the interior flange a^4 . The plug can then be depressed by engagement of the key or handle upon the shoulder d' , the downward movement of the closure-plate carried by said plug being now permitted to interlock the top end e' of the valve-stem with the end d^3 of the bore of the plug, when said plug may be further turned by means of the key or handle, the arrangement being preferably such that another quarter-turn will be sufficient to open the valve H and permit the flow of the water through the feed-pipe B. The depression of the plug D is against the tension of the spring F, which latter will serve to disconnect the interlocking end of the valve-stem with said plug D as soon as the pressure upon the latter is released. A reverse movement will serve to return the operative parts to normal position.

It will be seen from the foregoing description that I provide means for successively moving the plate to open the opening in the casing and for opening the valve and for closing said valve and moving the plate to close said opening in the casing—that is to say, the parts are so constructed that the valve cannot be operated while the plate is moving to

open or close said opening, but only when the plate stands to one side of said opening.

When the hydrant mechanism is turned to normal position, with the mouth or opening a^3 closed by the slide or plate C and the valve H also closed, the groove h' will then be in operative position to act as a drain by which the water in the upwardly-projecting portion of the feed-pipe will be drawn off through the valve to the waste-pipe I.

It will be noted that in the improved construction and arrangement as embodied in my invention and herein described the plug D serves the conjoint office of an opening device for the closed mouth of the hydrant and a valve-opener, these movements being accomplished in a relatively successive manner by simply operating the plug as above set forth. It will also be noted that without operation of the rotary and vertically-moving controlling-plug D by means of its key or handle the mechanism is protected against unauthorized or accidental opening of the hydrant or opening of the valve mechanism.

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

1. An improved hose-hydrant, comprising a casing having a mouth or opening, a slide or plate adapted to close the same, and a rotary plug rigid with said slide or plate and having an exteriorly-projecting operating end adapted to be engaged by a key or handle, substantially as and for the purpose set forth.

2. An improved hose-hydrant, comprising a casing having a mouth or opening and provided interiorly with limiting shoulders or flanges arranged with respect to said mouth or opening, a slide or plate adapted to close the opening and operating with respect to said interior flanges so that it engages the same when in normal position, and an operating-plug carrying said slide or plate and provided with an exteriorly-projecting operating end adapted to be engaged by a key or handle, substantially as and for the purpose set forth.

3. An improved hose-hydrant, comprising a casing carrying feed-pipe mechanism provided with an inlet-valve, a rotary stem connected with said valve and extending vertically within the casing, and a rotary depressible plug adapted to engage the valve-stem and provided with an exteriorly-projecting operating end adapted to be engaged by a key or handle, substantially as and for the purpose set forth.

4. An improved hose-hydrant, comprising a casing provided with feed-pipe mechanism having an inlet-valve, a valve-stem connected with said valve and extending vertically within the casing, a rotary and vertically-slidable operating-plug adapted to engage the end of the valve-stem and having an operating end exteriorly projecting from the casing and adapted to be engaged by a key or handle, and a spring mechanism for govern-

ing the connection of said operating-plug with the valve-stem, substantially as and for the purpose set forth.

5. An improved hose-hydrant, comprising a casing provided with a feed-pipe having an inlet-valve, a valve-stem connected with said valve and extending vertically within the casing, and a tubular operating-plug receiving the top end of said valve-stem and adapted to engage the same, said plug being rotatable and depressible with respect to the valve-stem and provided with a projecting end adapted to be engaged by operating devices, substantially as and for the purpose set forth.

6. An improved hose-hydrant, comprising a casing provided with a feed-pipe having an inlet-valve, a valve-stem connected with said valve and extending vertically within the casing, a tubular operating-plug receiving the top end of said valve-stem and adapted to engage the same, said plug being rotatable and depressible with respect to said valve-stem and provided with an operating end projecting exteriorly from the casing and adapted to be engaged by an operating device, and a governing coiled spring arranged between the valve-stem and said operating-plug, substantially as and for the purpose set forth.

7. An improved hose-hydrant, comprising a casing having a mouth or opening and provided with water-feed mechanism having an inlet-valve, a valve-stem connected with said valve and extending within said casing, a rotatable and depressible operating-plug adapted to engage the valve-stem, and a slide or plate adapted to close the mouth or opening in the casing and carried by said operating-plug, substantially as and for the purpose set forth.

8. An improved hose-hydrant, comprising a casing having a mouth or opening and provided with water-feed mechanism having an inlet-valve, a valve-stem connected with said valve and extending within the casing, a rotatable and depressible plug adapted to engage the valve-stem and provided with an operating end extending exteriorly from the casing and adapted to be engaged by an operating key or handle, a slide or plate adapted to close the mouth or opening and carried by said rotatable plug, and spring mechanism for governing the connection between the plug and valve-stem, substantially as and for the purpose set forth.

9. An improved hose-hydrant, comprising a casing having a mouth or opening and provided with water-feed mechanism having an inlet-valve, a valve-stem connected with said valve and projecting vertically within the casing, a tubular operating-plug receiving the top end of said valve-stem and adapted to engage the same and provided with an end projecting exteriorly from the casing and adapted to be engaged by an operating key or handle, a slide or plate adapted to close the mouth or opening in the casing and carried by said operating-plug, the operating-

plug being rotatable and depressible with relation to the valve-stem, and a coiled spring arranged between the valve-stem and plug and adapted to control the relation of said parts, substantially as and for the purpose set forth.

10. In a hose-hydrant, comprising a casing having a mouth or opening at the bottom of which is arranged an interior flange or limiting device, and having a stem extending from inlet-valve mechanism, a depressible and rotatable plug adapted to engage said valve-stem when the plug is depressed, and a slide or plate adapted to close the mouth or opening and carried by said plug, whereby the closure-plate permits depression of the plug only when said plate is beyond the mouth or opening and out of engagement with the interior limiting flange devices, substantially as and for the purpose set forth.

11. In a hose-hydrant comprising a casing having a closed bottom from which extends a waste-pipe, an inlet-pipe extending within said casing and provided with a rotary valve projecting into said waste-pipe and having an exterior groove adapted to form an outlet between the inlet-pipe and waste-pipe, substantially as and for the purpose set forth.

12. In a hose-hydrant, a casing having a lateral opening, a feed-pipe within said casing having a nozzle situated within the casing and opposite said opening, and means for closing said opening.

13. In a hose-hydrant, a casing having an opening, a feed-pipe within said casing having a nozzle situated within the casing and opposite said opening, and a movable plate on the inside of said casing adapted to close said opening.

14. In a hose-hydrant, a casing having an opening, a feed-pipe within said casing having a nozzle situated within the casing and opposite said opening, a movable plate on the inside of said casing adapted to close said opening, and limiting-flanges on the inside of said casing adapted to limit the extent of movement of said plate.

15. In a hose-hydrant, a casing having an opening, a feed-pipe within said casing having a nozzle situated within said casing and opposite said opening, and a movable plate on the inside of said casing adapted to close said opening and provided with a plug projecting through the casing and by means of which it can be moved.

16. In a hose-hydrant, a casing having a lateral opening, and a feed-pipe extending longitudinally within said casing and along the side thereof in which said opening is situated, the portion of said feed-pipe adjacent said opening being deflected or inclined away from the walls thereof and provided with a nozzle opposite said opening.

17. In a hose-hydrant, a casing having a lateral opening, and a feed-pipe extending longitudinally within said casing and along the side thereof in which said opening is situ-

ated, the portion of said feed-pipe adjacent said opening being contracted practically at right angles to the plane of said opening and provided with a nozzle opposite said opening.

5 18. In a hose-hydrant, a casing having a lateral opening, and a feed-pipe extending longitudinally within said casing and along the side thereof in which said opening is situated, the portion of said pipe adjacent said
10 opening being flattened and widened and provided with a nozzle opposite said opening.

19. In a hose-hydrant, a casing having a lateral opening, a feed-pipe having a nozzle situated opposite said opening, a valve controlling said feed-pipe, a movable plate for
15 closing said opening, and a common operating-plug for said plate and valve.

20. In a hose-hydrant, a casing having a lateral opening, a feed-pipe having a nozzle
20 situated at its upper end and opposite said opening, a valve controlling said feed-pipe, and a movable plate to close said opening having a plug extending through the casing, said plug being adapted for connection with
25 the valve-operating means.

21. In a hose-hydrant, a casing having a lateral opening, a feed-pipe having a nozzle situated opposite said opening, a valve controlling said feed-pipe, a movable plate to
30 close said opening having a plug extending through the casing, a valve-stem having a sliding connection with said plug, means for

connecting said valve-stem and plug so that they rotate together, and a spring for moving said plug and valve-stem to disconnect the
35 same.

22. In a hose-hydrant, a casing having an opening, a feed-pipe within said casing having a nozzle situated within the casing and opposite said opening, a valve controlling said
40 feed-pipe, a movable plate for closing said opening, and means for successively moving said plate to open said opening and for opening said valve and for closing said valve and for moving said plate to close said opening.
45

23. In a hose-hydrant, a casing having a feed-pipe leading upwardly from its lower end, a valve in the feed-pipe and at the bottom of the casing, a downward extension upon
50 said valve extending through the bottom of the casing and into a waste-pipe, and a passage leading through said valve from a point opposite the feed-pipe into said downward extension to establish communication between
55 said parts.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 3d day of December, 1897.

HENRY MAX KUNZ.

Witnesses:

M. A. KNOWLES,
L. M. MULLER.