No. 681,901. Patented Sept. 3, 1901.

O. L. WHITEMAN.

HYDRANT.

(Application filed June 13, 1901.)

(No Model.)

Fig. 1.

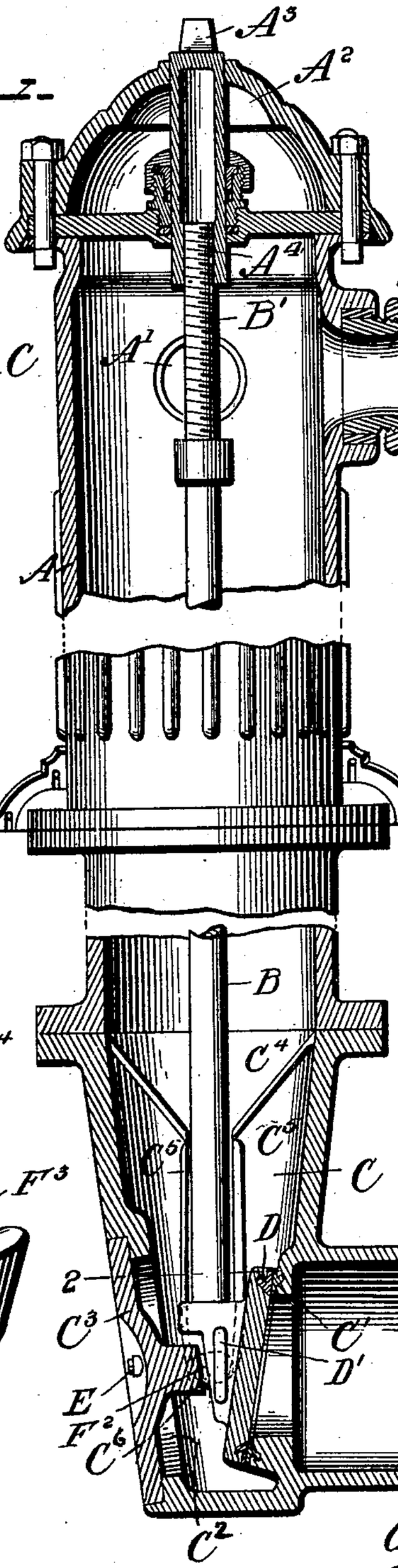


Fig. 2.

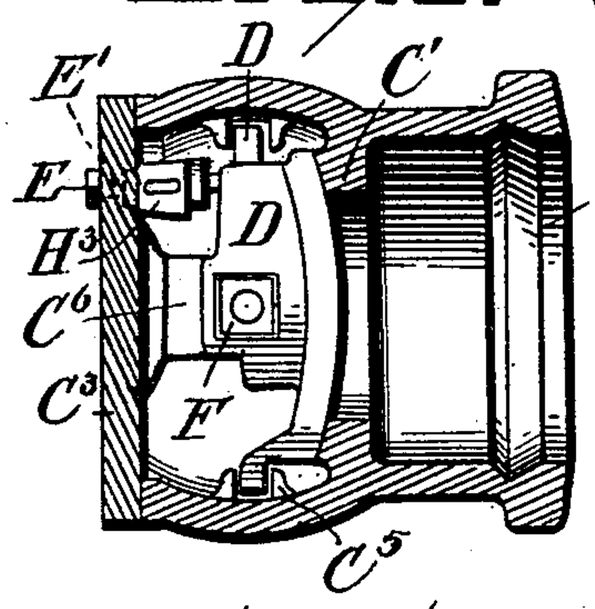


Fig. 5.

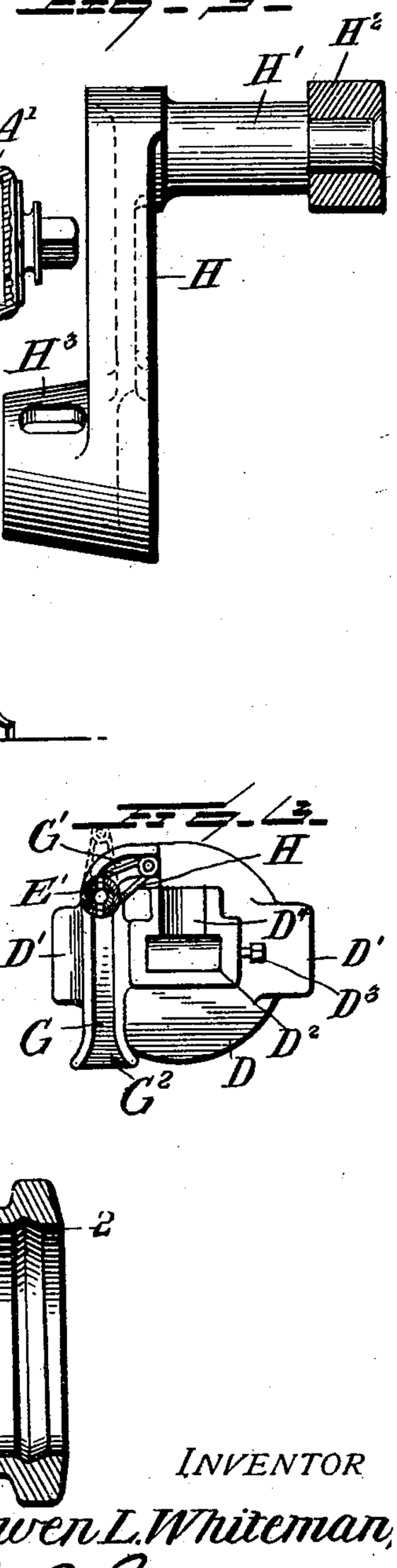


Fig. 6.

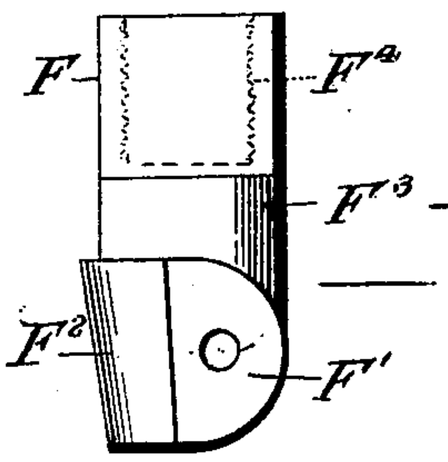
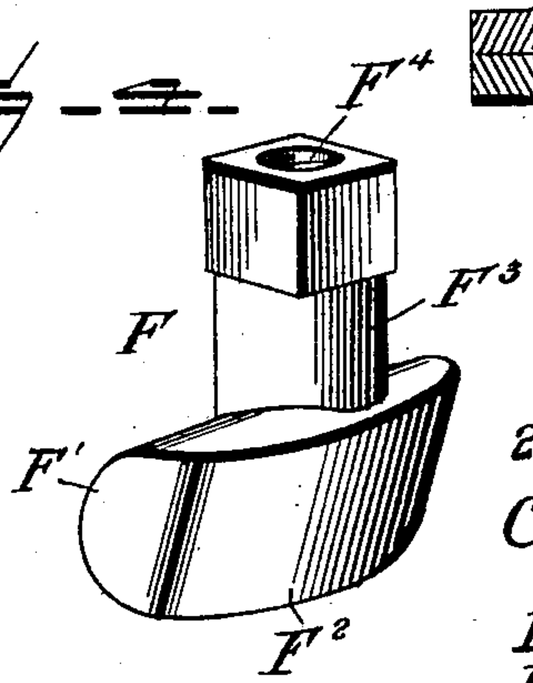


Fig. 3.

Fig. 4.



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HYDRANT.

SPECIFICATION forming part of Letters Patent No. 681,901, dated September 3, 1901.

Application filed June 13, 1901. Serial No. 64,436. (No model.)

To all whom it may concern:

Be it known that I, OWEN L. WHITEMAN, a citizen of the United States, residing at Coxsackie, in the county of Greene, State of New York, have invented certain new and useful Improvements in Hydrants, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to hydrants, and particularly to such a structure employing a movable gate-valve.

The invention has for an object to construct this valve and the guiding means therefor so that it shall be adjustable in different directions in order to fit upon its seat and be clamped thereto when the valve is closed.

A further object of the invention is to provide means carried by said movable valve-gate for positively and automatically operating a drip-cock to permit the escape of water from the casing of the hydrant, which is necessary when the valve is closed upon the seat, and which drip-cock should be positively closed when the valve is opened to admit water into the hydrant-casing.

Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a vertical section through the hydrant with parts broken away. Fig. 2 is a horizontal section on the line 2 2 of Fig. 1. Fig. 3 is a rear elevation of the valve-disk of Fig. 2, with the cover-plate at the rear of the casing removed and also the connection with the valve-rod. Fig. 4 is a detail perspective of the nut adapted to be carried by the valve-disk. Fig. 5 is a detail elevation of the drip-valve connection to be operated in the vertical movement of the valve-disk, and Fig. 6 is a side elevation of the stem-nut.

Like letters of reference indicate like parts throughout the several figures of the drawings.

In the drawings the letter A designates the hydrant casing or casting, which may be of any desired construction or configuration and is formed with any preferred construction of outlet or hose connections, as shown at A′, while the upper portion of the casing is provided with a cap A^2, carrying any desired construction of valve-operating means adapted to vertically reciprocate the valve-rod B, which at its upper end is provided with a threaded portion B′ and at its lower end is connected with the valve-disk by means to be hereinafter described. For the purpose of reciprocating this rod B the cover has applied thereto a rotatable collar A^3, having a wrench-hold at its upper end and a threaded portion A^4 at its lower end, adapted to engage the threads B′ of the valve-rod, which collar is suitably mounted in a packing-box, as shown. All of these features of construction, however, are well known in the art and have not been very particularly described, as the invention is in no wise confined thereto.

At the lower end of the valve-casing A the elbow C is applied and is provided upon one face with the bearings C′ for the valve-disk D and upon the opposite face with an opening C^2, adapted to be closed by the cover-plate C^3, which may be adapted to carry the drip cock or valve E. The inner face of this elbow is also supplied at opposite sides with the guide-flanges C^4 at the upper portion thereof, tapering toward each other and terminating at the upper ends of the guides C^5, which are adapted to receive and guide the lugs D′ at opposite sides of the valve-disk D, so that the same may be withdrawn or inserted from the upper portion of the casing and readily guided into position. The cover-plate C^3 is provided upon its inner face with a beveled or inclined lug C^6, which forms an abutment opposite the disk D in order that the same may by the wedging action be forced into firm contact with its seat C′. The valve-disk D is carried by the stem-nut F, particularly shown in Fig. 4, which nut is provided at its lower portion with a curved face F′, adapted to seat in the socket D^2, provided one face of the disk D should be secured therein by means of a suitable device—for instance, a set-screw D^3, entering a recess in one end of said nut. Opposite the curved face F′ a wedging-face F^2 is provided, which is curved longitudinally and at a right angle to the face F′, while said face F^2 is also beveled slightly inwardly from the upper edge downward in order to coöperate in its wedging function with the lug C^6. Extend-

ing upward from the center of the lower portion of this nut is the cylindrical stem F^3, adapted to travel within the socket D^4 from the face of the disk D, which stem terminates in the threaded connection F^4, by which the valve-rod B is secured thereto. It will be seen that the valve is capable of oscillation in relation to the stem-nut in a horizontal plane by reason of the socket D^2, and the valve and nut are both capable of oscillation in a vertical plane by reason of the threaded connection between the nut and the valve-stem B, while the nut is retained in its relation with the valve at all times by a set-screw D^3. It will also be observed that the curved face F^2 of the nut is adapted to rock upon the wedge-lug C^6, thus permitting the necessary movement for the valve to accurately fit its seat, while the downward pressure upon this face produces a wedging action to firmly hold the valve in contact with its seat.

For the purpose of operating the drip-valve E, which may be of any desired construction, but is here shown as a rotating cock, I have provided upon one face of the valve-disk D a track or way G, which at its lower portion extends in a vertical plane and at its upper portion G′ is curved into a horizontal plane, while the lower portion of this track or way is suitably tapered, as at G^2, to permit the same to pass over an operating arm or lever H, extending from the drip-valve. This lever is provided with a crank-arm H′, carrying at its outer end a friction-roller H^2, adapted to ride in the way G, while the opposite end of the lever is provided with the perforated sleeve H^3, adapted to fit over the apertured drip-pipe E′, whereby the aperture in the collar H^3 may be brought into alinement with a similar aperture in the drip-pipe to permit the escape of water from the casing, or when said apertures are thrown out of alinement the discharge of water through such pipe will be stopped.

In the operation of the valve it will be seen that when the valve is opened by rotating the collar A^3 the disk D will travel upward between the guides C^5, and in its upward movement the lever from the drip-valve will be thrown into a vertical position, as shown by dotted lines in Fig. 3, so as to close this valve and permit the discharge of water only from the hose connection A′ of the casing. In the return movement to close the valve the disk travels downward, throwing the lever H into position shown by full lines in Fig. 3, so as to open the drip-valve when the valve-disk D has reached its seat. During this downward movement the inclined face F^2 of the stem-nut is riding in contact with the beveled lug C^6, thus forcing or wedging the valve-disk toward its seat C′. It will be further observed that the stem-nut has the transverse horizontal extension thereof provided with the curved face F′ extending transversely of the extension and the curved face F^2 extending longitudinally of the extension. The first-mentioned face permits a rocking of the valve upon the stem-nut, while the latter permits a bodily rocking of the nut and valve upon the wedge-lug, while a movement of the valve-disk upon the rod B may be effected as before stated.

It will be obvious that changes may be made in details of construction and configuration of the several parts without departing from the spirit of the invention as defined by the appended claims.

Having described my invention, what I claim is—

1. In a hydrant, a supply connection provided at its lower portion with guides or ways upon its opposite walls, a gate-valve having lugs at opposite sides to travel in said ways, and a pivoting-socket upon one face having a recess at an angle thereto, a nut having a stem and pivoting-arms to fit said recess and socket, and means for reciprocating said nut; substantially as specified.

2. In a hydrant, a supply connection provided at its lower portion with guides or ways upon its opposite walls, and openings at each side of said guides, a gate-valve having lugs at opposite sides to travel in said ways, means for moving said valve, an inclined face carried by the back of said valve, and a cover-plate for one of said openings provided with a wedging-lug extending therefrom in alinement with said face when the valve is seated; substantially as specified.

3. In a hydrant, a supply connection provided at its lower portion with guides or ways upon its opposite walls, a gate-valve having lugs at opposite sides to travel in said ways, means for moving said gate-valve, an inclined face carried by the back of said valve, a wedging-lug extending from the casing in alinement with said face when the valve is seated, a drip-valve having a lever-arm extending therefrom, and a path or way carried by said gate-valve for oscillating said arm; substantially as specified.

4. In a hydrant, the combination with a casing provided with a valve-seat, a gate-valve having upon one face thereof a pivoting-socket, a stem-nut seated in said socket, a securing device carried by the socket for pivotally retaining the nut thereon, and means for reciprocating said nut; substantially as specified.

5. In a hydrant, the combination with a casing provided with a valve-seat, a gate-valve having upon one face thereof a socket, and a lever-operating track, a drip-cock having a lever coöperating with said track, a stem-nut seated in said socket, means for reciprocating said nut, a wedge-lug opposite said valve-seat, and a beveled wedging-face carried by said stem-nut opposite said lug; substantially as specified.

6. In a hydrant, the combination with a casing provided with a valve-seat, a gate-valve having upon one face thereof, a socket,

a stem-nut seated in said socket, means for reciprocating said nut, a wedge-lug opposite said valve-seat, a beveled wedging-face carried by said stem-nut opposite said lug, a vertical extension from said stem-nut adapted to seat in a socket carried by the valve, and a rotatable connection between the said nut and means for operating the valve; substantially as specified.

7. In a hydrant, a gate-valve, means for operating the same, and a stem-nut connected to said valve and provided at its lower portion with a transverse body having a face curved transversely of said body, and an opposite longitudinally-curved face tapered from its upper portion downwardly; substantially as specified.

8. In a hydrant, a gate-valve, means for operating the same, a stem-nut connected to said valve and provided at its lower portion with a transverse body having a face curved transversely of said body and an opposite longitudinally-curved face tapered from its upper portion downwardly, and a socket secured upon one face of said valve-disk having a horizontal and vertical recess to receive said stem-nut; substantially as specified.

9. In a hydrant, the combination with a casing, of a gate-valve therein, means for operating the same, a curved path or way upon said gate-valve, a drip-valve carried by said casing, a lever for operating said drip-valve, and a crank-arm from said lever extending into said path or way; substantially as specified.

10. In a hydrant, the combination with a casing, of a gate-valve therein, means for operating the same, a curved path or way upon said gate-valve, a drip-valve carried by said casing, a lever for operating said drip-valve, a crank-arm from said lever extending into said path or way, a cover-plate at the rear of said gate-valve provided with an apertured drip-pipe, and an apertured sleeve carried by said lever and surrounding said drip-pipe; substantially as specified.

11. In a hydrant, the combination with a casing, of a gate-valve therein, means for operating the same, a curved path or way upon said gate-valve, a drip-valve carried by said casing, a lever for operating said drip-valve, a crank-arm from said lever extending into said path or way, a cover-plate at the rear of said gate-valve provided with an apertured drip-pipe, an apertured sleeve carried by said lever and surrounding said drip-pipe, and an inwardly-projecting wedge-lug carried by the inner face of said plate and adapted to engage and force said gate-valve to its seat; substantially as specified.

12. In a hydrant, the combination with a casing, of a gate-valve therein, means for operating the same, a curved path or way upon said gate-valve, a drip-valve carried by said casing, a lever for operating said drip-valve, a crank-arm from said lever extending into said path or way, a cover-plate at the rear of said gate-valve provided with an apertured drip-pipe, an apertured sleeve carried by said lever and surrounding said drip-pipe, an inwardly-projecting wedge-lug carried by the inner face of said plate and adapted to engage and force said gate-valve to its seat, a stem-nut connected to said valve to permit oscillation of the valve thereon, and a horizontally-curved face upon said nut adapted to seat and rock upon said wedge-lug; substantially as specified.

13. In a hydrant, the combination with a casing, of a gate-valve therein, means for operating the same, a path or way upon one face of said valve, a drip-valve carried by said casing, and an operating device for said valve extending into the path or way upon the gate-valve; substantially as specified.

14. In a hydrant, a water-supply connection provided at its lower portion with opposite openings, a cover-plate for one of said openings provided with a drip device therein, a gate-valve adapted to seat upon the opposite aperture and provided upon its face next the cover-plate with a path or way, and means for opening and closing said drip device projecting into the path or way upon the face of said gate-valve; substantially as specified.

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

OWEN L. WHITEMAN.

Witnesses:
EDWIN F. TIEL,
EDWIN P. MOORBY.