

S. BRENTANO.
FIRE HYDRANT.

No. 468,781.

Patented Feb. 16, 1892.

Fig. 1

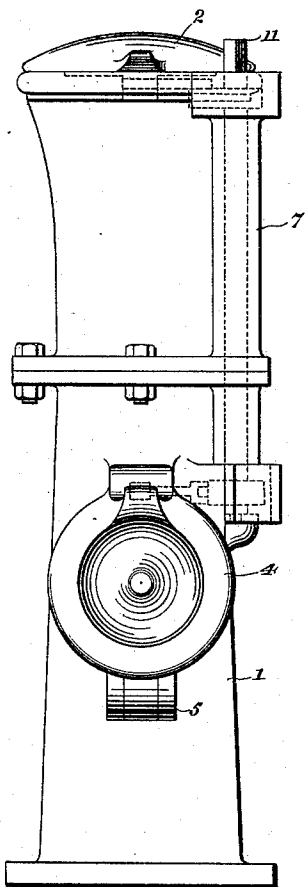


Fig. 2

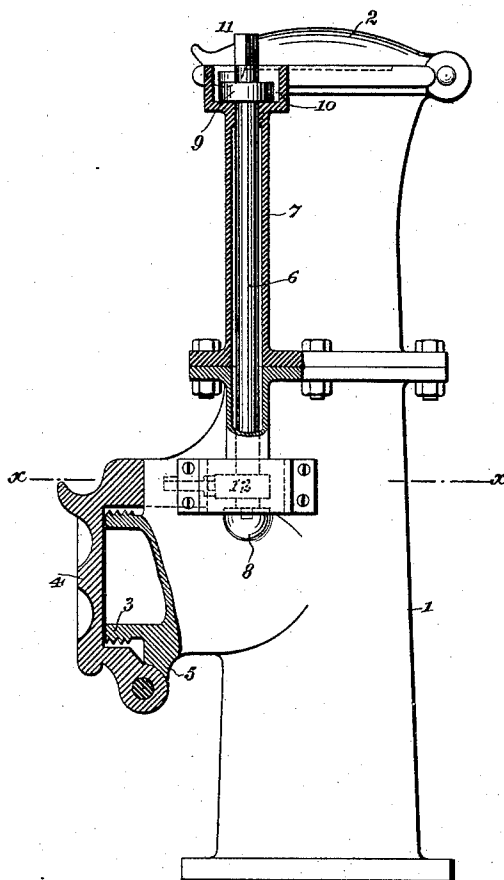


Fig. 3

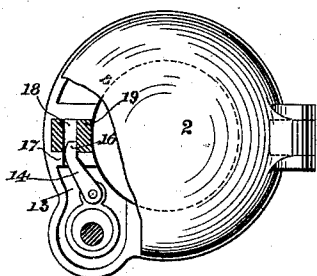
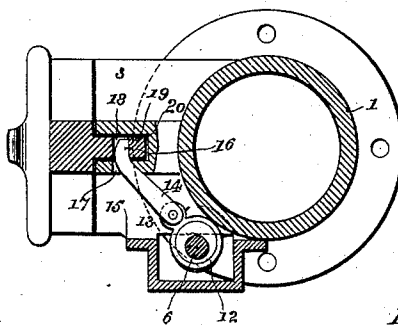


Fig. 4



Witnesses:

Kaspar A. Netter
Charles E. Smith

Inventor

by Simon Brentano
Attorney.

(No Model.)

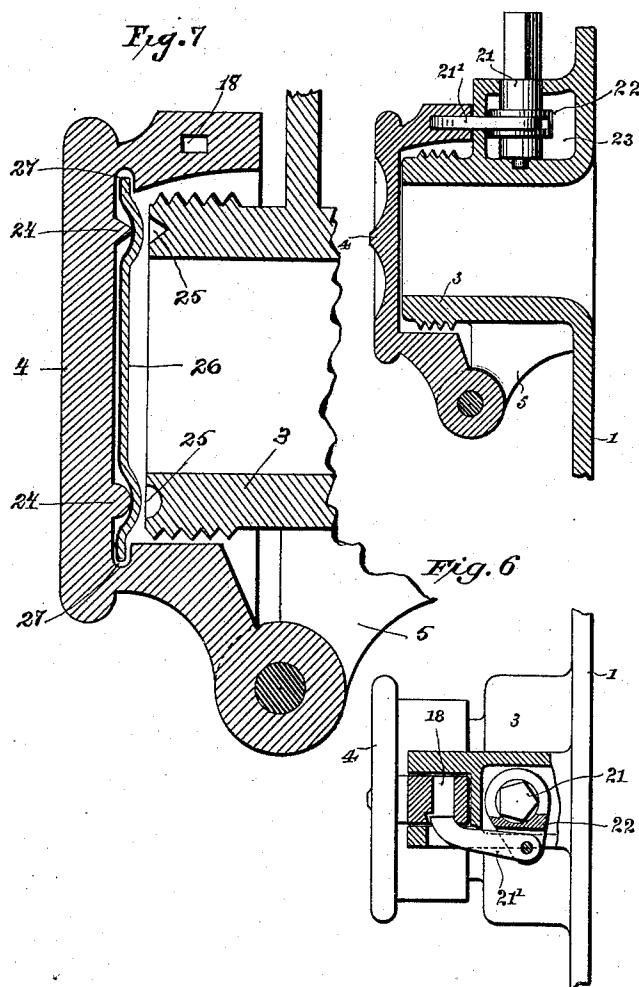
2 Sheets—Sheet 2.

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Fig. 5



Witnesses:

Raphael Netter
Charles E. Small.

Inventor

Simon Brentano
by *William H. Brown*
his Attorney.

UNITED STATES PATENT OFFICE.

SIMON BRENTANO, OF NEW YORK, N. Y.

FIRE-HYDRANT.

SPECIFICATION forming part of Letters Patent No. 468,781, dated February 16, 1892.

Application filed August 8, 1890. Serial No. 361,416. (No model.)

To all whom it may concern:

Be it known that I, SIMON BRENTANO, of the city, county, and State of New York, have invented certain new and useful Improvements in Fire-Hydrants, of which the following is a specification.

Heretofore a common and usual type of fire plugs or hydrants has been, and is, in extensive use, wherein a cover is employed which covers and protects from unauthorized manipulation the valve-operating mechanism and wherein a screw-threaded cap is employed, screwing onto and protecting the hose-nozzle to which the fire-hose is attached when the same is to be used. Now hydrants of this type are open to a number of serious objections. On the breaking out of a fire it is absolutely essential that water should be turned thereon in the shortest possible time. The great majority of improvements which have been made in connection with appliances used in and by fire departments have had for their object the minimization of time. The main objection, therefore, to the type of hydrants referred to is the time which is necessarily consumed in putting them into use. It is necessary to detach the cover, to unscrew the cap covering the nozzle, to screw on the hose-coupling, and to turn on the water before a stream can be directed onto the fire. These operations are necessarily performed in great haste, and as a result the screw-threads of the nozzle are frequently damaged so badly that the hose-coupling will not fit, and at times the caps become so stuck and fastened to the nozzles (especially so when the threads have been previously damaged) that it is impossible to remove them. Now attempts have heretofore been made to overcome these difficulties. As an example of such attempts, reference may be had to Letters Patent of the United States No. 50,235, granted to Jacob Fricker October 3, 1865. In this patent the cap which covers and protects the hose-nozzle is unthreaded. It is pivotally connected to the hydrant-body, so as to swing in a vertical plane, and its center of gravity is outside of its pivotal connection, so that when released it automatically swings down and uncovers the nozzle. This cap is also secured in its normal position, closing the nozzle, by the same removable bolt which locks the

cover in its normal closed position. This construction obviates some of the objections to the usual type of hydrants; but it possesses defects which have prevented its extensive use. To place the Fricker hydrant in condition for use, it is necessary to first remove the screw-bolt and to subsequently lift the cover before the cap will drop down, since the cap is held in place by the cover as well as by the screw-bolt. For the sake of economy of time the cap should be released either before the cover or at least simultaneously therewith, since the attachment of the hose-coupling consumes more time than opening the hydrant-valve. The screw-bolt which locks the cap and cover in place is detachable from the hydrant and must be removed before the cap and cover can be operated, which is a serious objection, since the screw-bolt is very liable to be lost during the excitement and confusion accompanying a fire, and no provision is made in the Fricker construction for the numerous class of hydrants where the hydrant has a plurality of hose-nozzles.

Now the present improvements relate to fire plugs or hydrants of the type referred to, and have for their object the perfection of the constructions embodied in the Fricker hydrant. I employ outwardly-swinging unthreaded caps for the hose-attaching nozzles, which are pivoted to the hydrant. It is not necessary that they should swing downwardly; but preferably they are pivoted to swing in a vertical plane with their centers of gravity outside of their pivotal points, as in the case of the Fricker patent. In accordance with the present invention, however, each cap is provided with a separate locking device which is controlled by a shaft, and this shaft may simultaneously control the locking mechanism of the cover and of any number of caps with which the hydrant may be provided. The locking devices and the shaft controlling the same are the primary features of the invention. Other subsidiary features will be hereinafter referred to.

The present improvements are illustrated in the accompanying drawings, wherein—

Figure 1 is a front view of a hydrant constructed in accordance with this invention. Fig. 2 is a side view thereof, partly in vertical section. Fig. 3 is a plan view partly in

horizontal section. Fig. 4 is a horizontal section in a plane indicated by the line 4 4 in Fig. 2. Fig. 5 is a vertical section of a portion of the hydrant, showing a modification.

Fig. 6 is a plan view of the modification, partly broken away. Fig. 7 is a vertical section of a portion of the hydrant, showing the packing which is preferably employed between the discharge-nozzle and its closing-cap.

1 indicates a fire-hydrant having the usual hinged top cover 2 and a screw-threaded discharge-port or hose-attaching nozzle 3.

Instead of the usual form of cap screwing onto the discharge-nozzle 3 an unthreaded cap 4 is provided, which is hinged to a lug or bracket 5 on the nozzle 3, so as to swing downwardly in order that it may automatically drop away from the nozzle when unfastened. The cap might be hinged so as to swing laterally in a horizontal plane; but the construction shown is preferred.

In order to facilitate and save time in unfastening the top cap or cover 2 and the cap 4, suitable fastenings or bolts are provided for locking the caps, and a suitable mechanism is provided for operating the bolts.

As shown in the drawings, a vertical shaft or rod 6 is employed, which is mounted in a chamber or casing 7 on the exterior of the hydrant. Said rod is stepped at its lower end in a seat 8, and at its upper end it is suspended by means of a rib or collar 9, which rests and turns in a recess or cavity 10 at the upper end of the casing 7. The upper end of the rod 6 is formed with a wrench-head 11 for the reception of a key or wrench to turn the rod 6. Near its lower end the shaft or rod 6 carries a collar 12, which is formed with a projecting lug 13. To this lug is pivoted the inner end of a locking pawl or bolt 14, which plays in a chamber or recess 15 in the hydrant-casing. One side of this chamber or recess is provided with an aperture 17, with which (when the cap 4 is closed) registers an aperture 18 in an upwardly-projecting lug 19 on the cap, which enters a recess 20 in the hydrant-casing. The outer curved end 16 of the locking pawl or bolt 14 plays in the aperture 17, and engages the aperture 18 in the lug 19 to lock the cap 4 in its closed position. In a similar manner the cover has a lug 19, (see Fig. 3,) having an aperture 18, which registers (when the cover is closed) with an aperture 17 in the wall of a chamber or recess 15 at the upper part of the hydrant-casing. A locking pawl or bolt 14 is pivoted to a lug 13 on the upper collar 9 of the rod or shaft 6. This bolt is located in the recess 15, and its outer curved end 16 plays in the aperture 17 and engages the aperture 18 to lock the cover. (See Fig. 3.)

By reason of the foregoing construction when a wrench or key is applied to the upper end of the rod 6 and turned the cap and cover are unlocked simultaneously and the cap 4 by its own weight falls away from the

port 3. The hose may then be at once screwed onto the port 3.

In case there are several side ports, they may be provided with caps and locks, as above described, a single rod being suitably connected with the bolts.

In the modification shown in Figs. 5 and 6 the side cap 4 is unlocked independently of the cover of the hydrant by means of a short shaft 21 and a bolt 21', pivoted to a collar 22 on the shaft 21, said bolt and shaft being located in a chamber 23 on the hydrant. It is preferable, however, to have the cover and side cap unlocked simultaneously, as hereinbefore described.

In Fig. 7 is shown means for packing the joint or seat between the cap and the nozzle in order to prevent leakage, which is preferably employed in all cases. The abutting inner face of the cap and outer rim of the nozzle are formed with reciprocally-engaging annular projecting bead 24 (preferably having a sharp outer edge) and annular groove 25. The bead may be either on the cap or the nozzle, the groove being on the other part, as the case may be. Interposed between the bead and groove is a washer 26, of rubber, leather, or other suitable material. This washer is preferably carried by the cap and covers the entire inner face thereof, as shown in Fig. 7, the packing-disk thus provided being held in place by its outer peripheral edge entering an annular groove 27 in the cap. It will be observed that the cap is so mounted on the hydrant that when closed its inner face carrying the washer-seats against the outer rim of the nozzle simultaneously and uniformly throughout the entire periphery of the outer rim of the nozzle.

While a particular construction and arrangement of locking mechanism has been shown and described in connection with the caps, the invention is not limited to such construction and arrangement, since they may be varied without departing from the essential features of the invention.

Having described the invention, what I claim is—

1. A fire-hydrant having a nozzle, a cover, an outwardly and automatically opening unthreaded cap for the nozzle, separate locking mechanisms for locking the cap and cover of the hydrant, said cap being mounted so as to open automatically as soon as its locking mechanism is operated, and means for simultaneously operating said separate locking mechanisms, substantially as set forth.

2. A fire-hydrant having a cover, an outwardly and automatically opening unthreaded cap, bolts for locking the cap and cover of the hydrant, said cap being mounted so as to open automatically as soon as its bolt is withdrawn, and a mechanism for simultaneously operating the bolts, substantially as described.

3. A fire-hydrant having a cover and an outwardly and automatically opening unthreaded

cap, in combination with a rotary operating-shaft and separate bolts for locking the cap and cover, said bolts being actuated by said shaft, substantially as described.

5 4. A fire-hydrant having a vertical chamber 7 exterior to the barrel or casing of said hydrant, a rotary rod or shaft mounted within said chamber, a locking-bolt at the lower end of said rod or shaft and connected to the same, 10 and an outwardly and automatically opening unthreaded cap with which said bolt engages, substantially as set forth.

5. In a fire-hydrant, a nozzle having an-

nular groove 25, in combination with a cap having annular bead 24, co-operating with 15 said groove, groove 27, and washer 26, consisting of a packing-disk covering said bead 24, with its peripheral edge entering said groove 27, substantially as described.

In witness whereof I have hereunto signed 20 my name in the presence of two subscribing witnesses.

SIMON BRENTANO.

Witnesses:

SOL GUGENHEIM,
DANIEL DOLAN.