

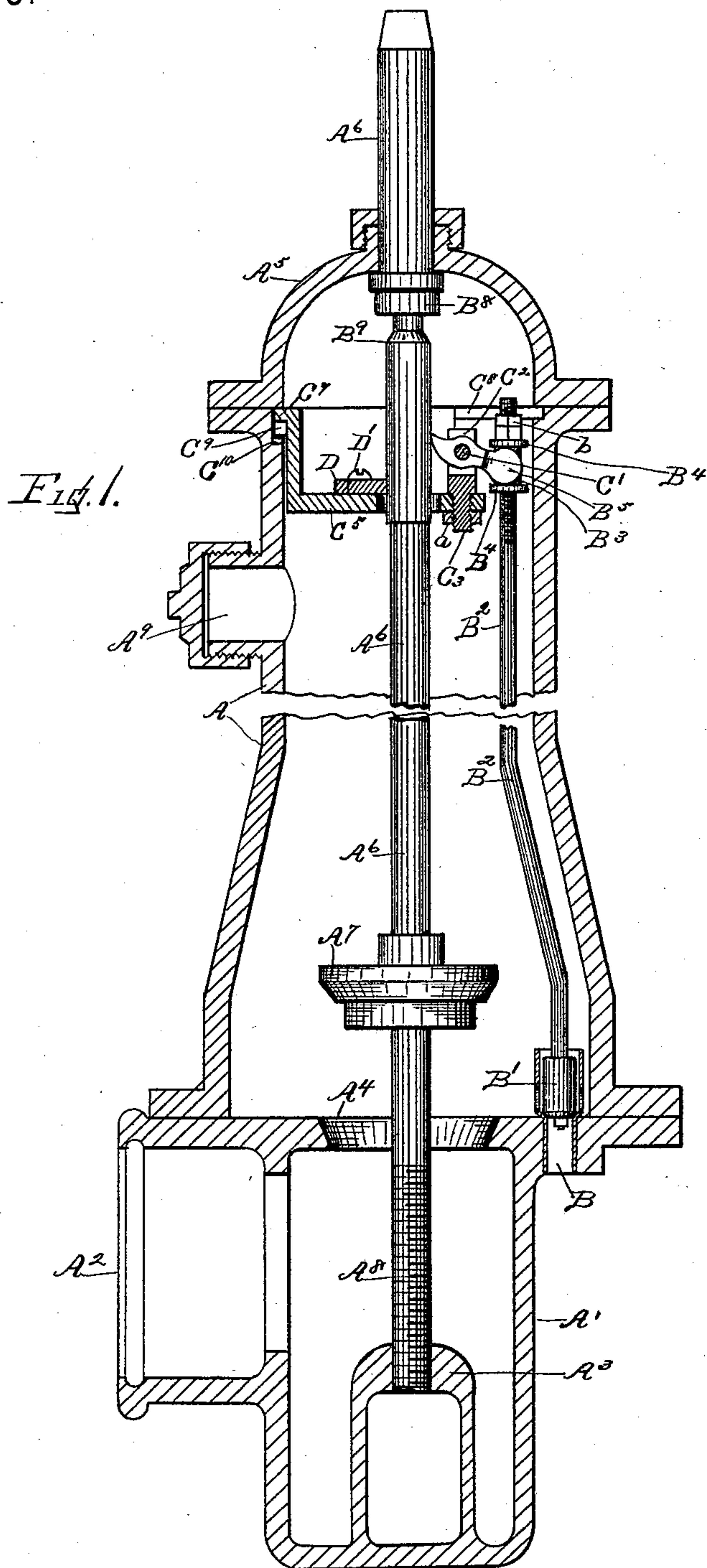
(No Model.)

2 Sheets—Sheet 1.

W. H. BOOTMAN.
HYDRANT.

No. 485,603.

Patented Nov. 8, 1892.



Witnesses:
Frank E. Curtis.
J. H. Mosher.

Inventor:
William H. Bootman,
by Geo. Mosher
att'y.

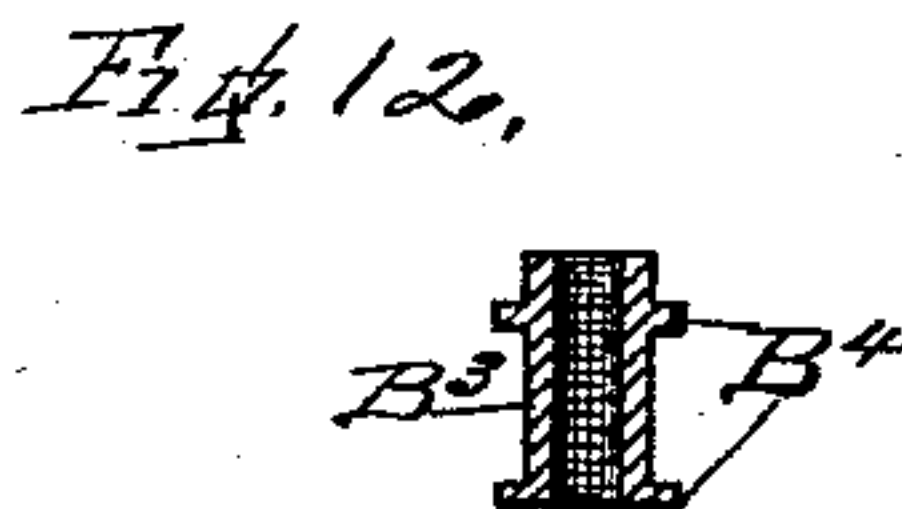
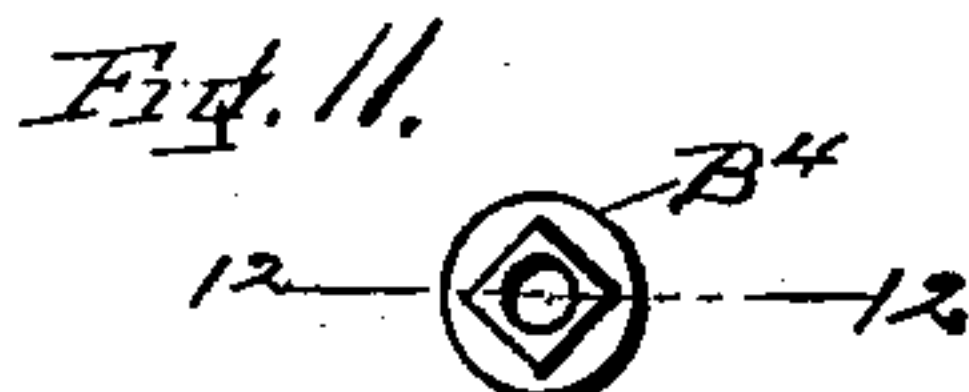
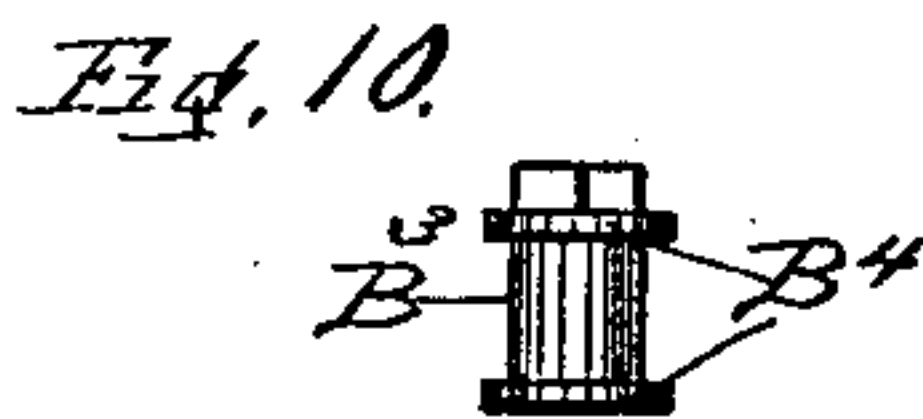
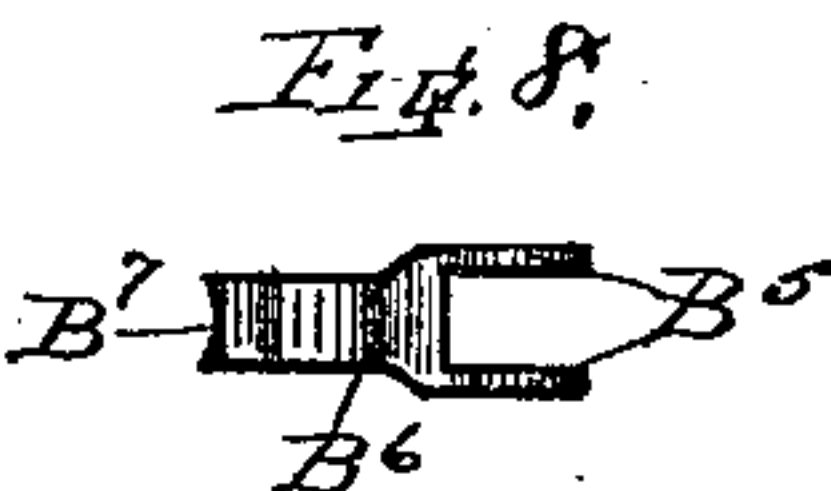
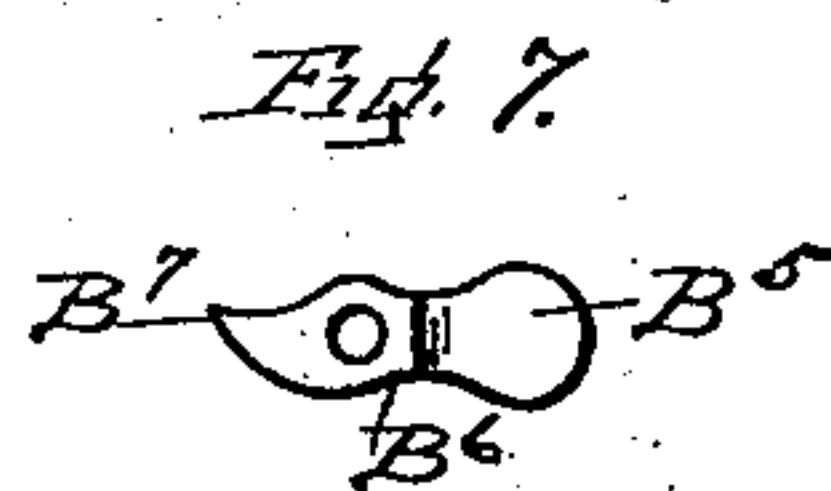
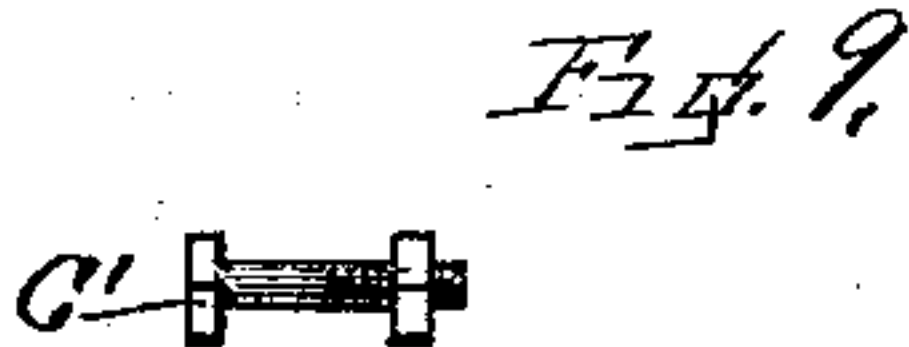
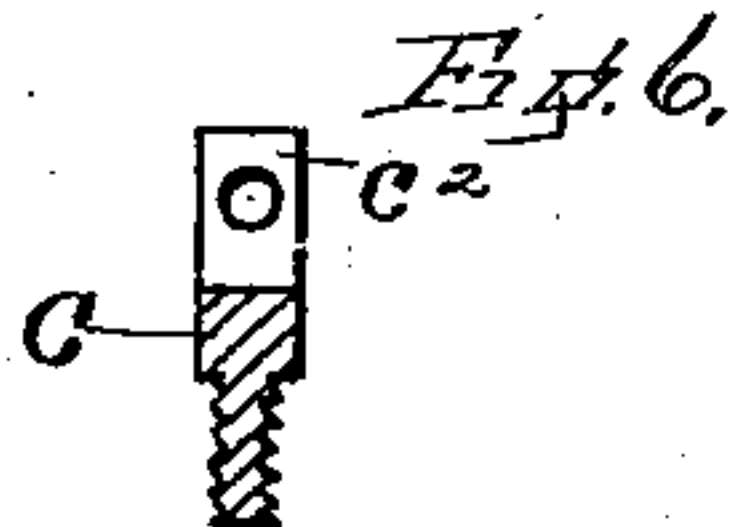
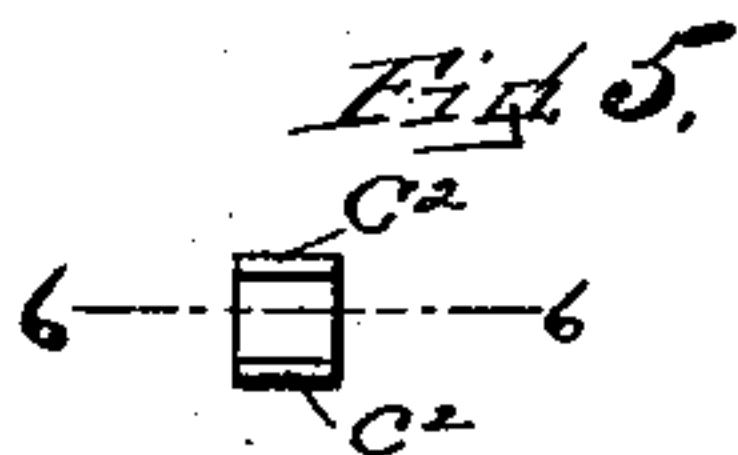
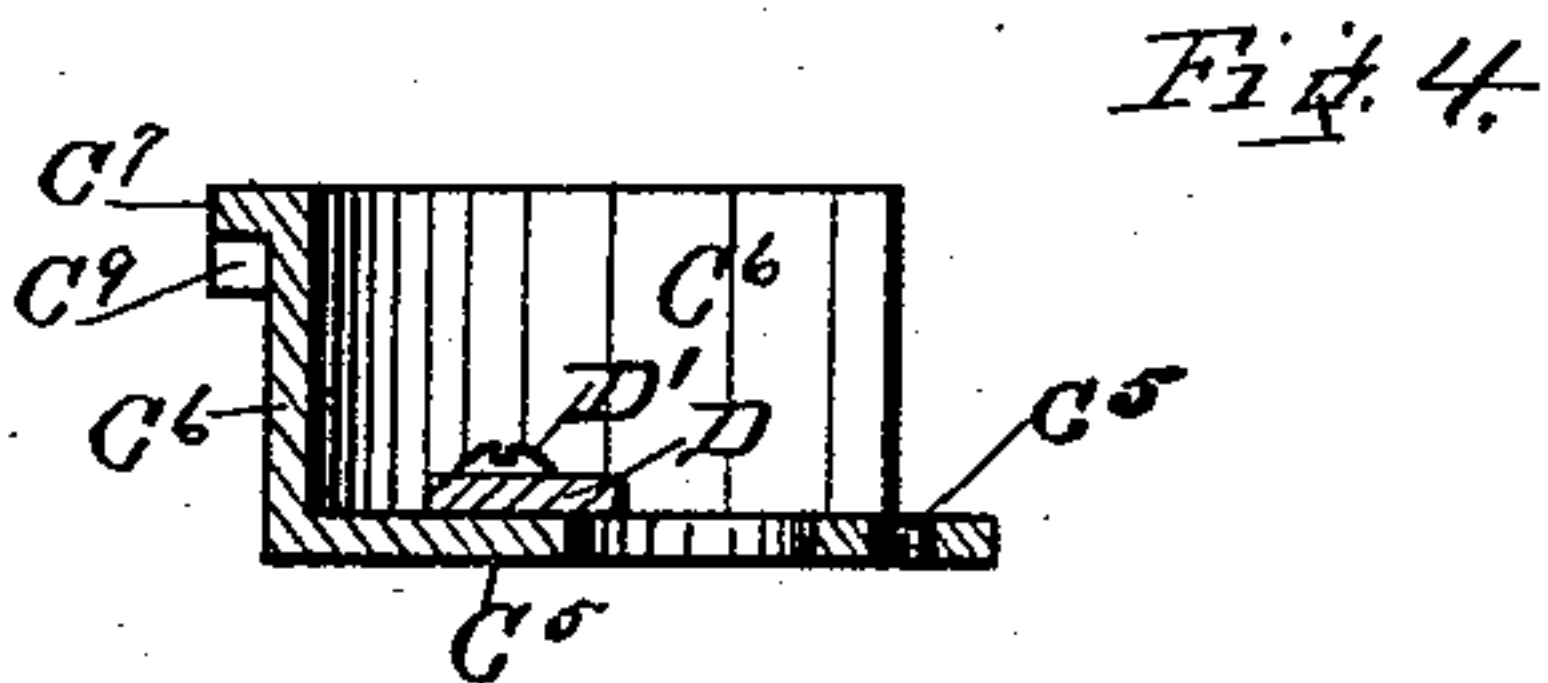
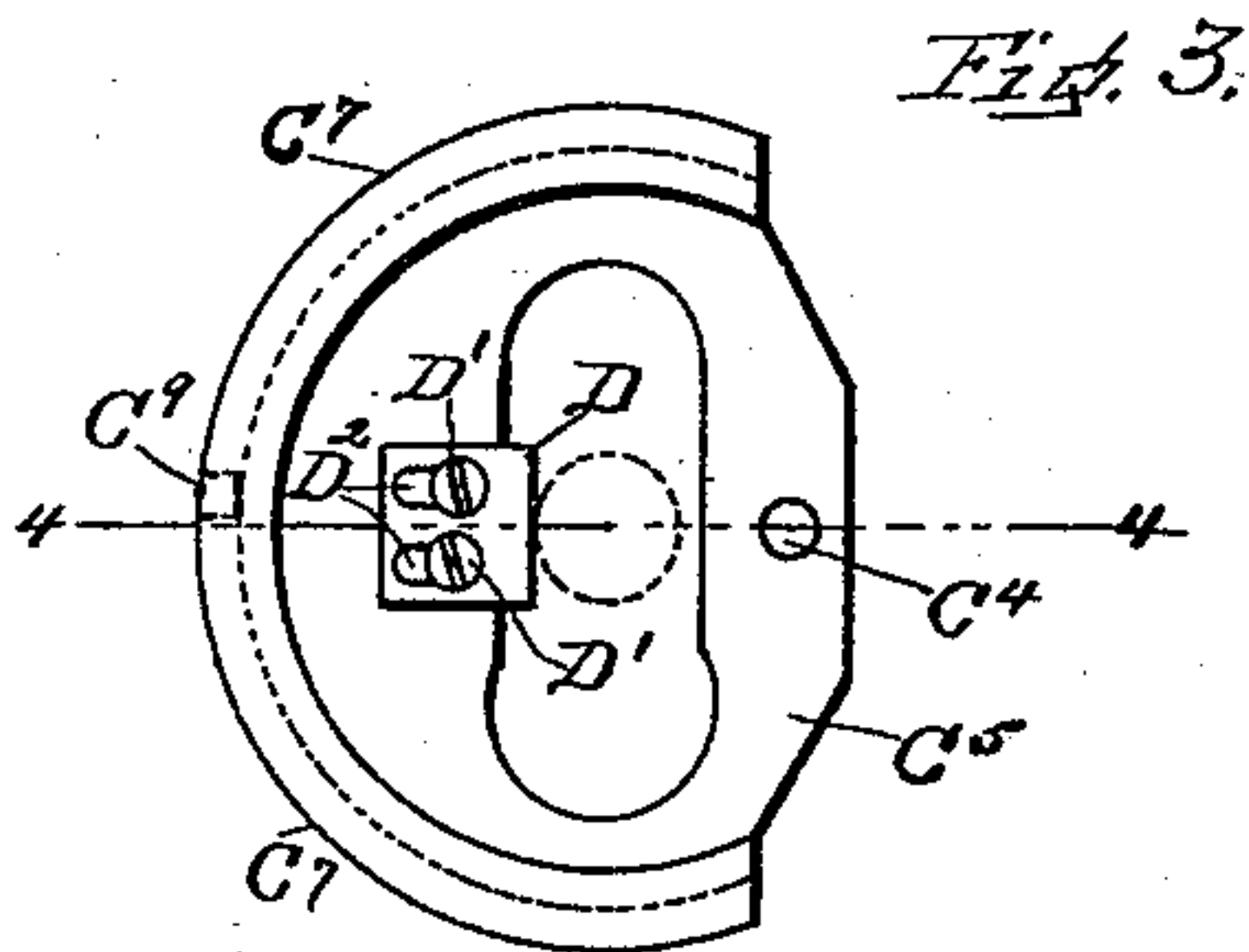
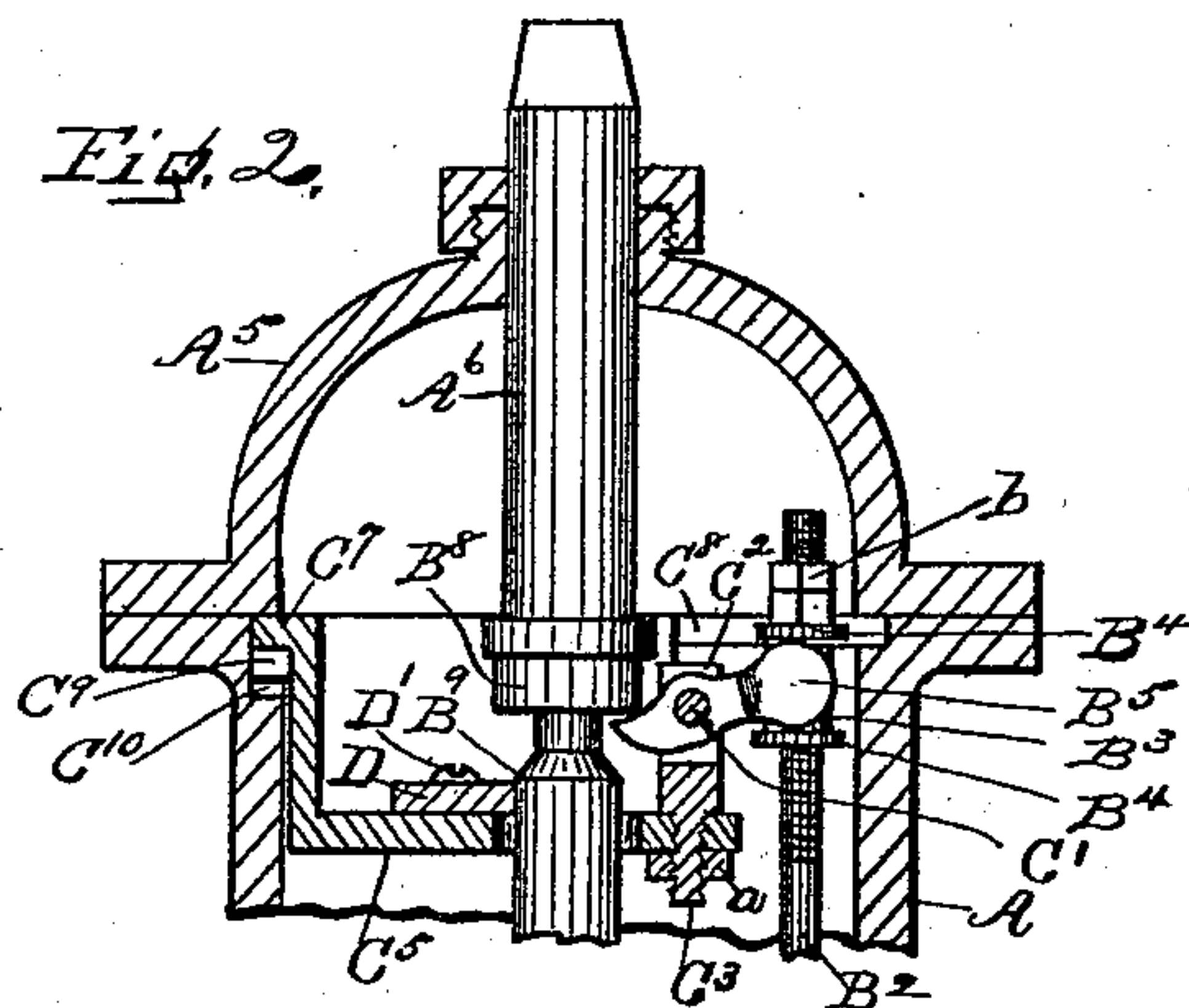
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2 Sheets—Sheet 2.

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No. 485,603.

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witnesses:
Frank C. Curtis.
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Inventor:
William H. Bootman,
by Geo. A. Mosher
att'y.

UNITED STATES PATENT OFFICE.

WILLIAM H. BOOTMAN, OF WATERFORD, ASSIGNOR TO JOHN KNICKER-
BACKER, OF TROY, NEW YORK.

HYDRANT.

SPECIFICATION forming part of Letters Patent No. 485,603, dated November 8, 1892.

Application filed May 19, 1890. Serial No. 352,315. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BOOTMAN, a citizen of the United States, residing at Waterford, county of Saratoga, and State of New York, have invented certain new and useful Improvements in Hydrants, of which the following is a specification.

My invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a central vertical section of my improved hydrant, showing the main valve open and the drip-valve closed, the central portion of the barrel and valve-stems being broken away for convenience in illustration. Fig. 2 is a similar view of the upper portion of the hydrant, showing the relative position of the parts when the main valve is closed and the drip-valve open. Fig. 3 is a top plan view of the drip-plate detached. Fig. 4 is a central vertical section of the same, taken on the broken line 4 4 in Fig. 3. Fig. 5 is a top plan view of the drip part detached. Fig. 6 is a central vertical section of the same, taken on the broken line 6 6 in Fig. 5. Figs. 7 and 8 are respectively side and top views of the drip-lever detached. Fig. 9 is a plan view of the pivot-bolt, which connects the drip-lever with its supporting post. Figs. 10 and 11 are respectively side and top views of the drip nut or sleeve. Fig. 12 is a central vertical section of the nut, taken on the broken line 12 12 in Fig. 11.

A is the hydrant-barrel, which is bolted to the base-casting A', having the inlet A², fixed stem-nut A³, and valve-seat A⁴, surrounding the passage-way leading from inlet A² through the casting into the barrel. The upper end of the barrel is provided with a cap A⁵, having a central aperture adapted to receive the upper end of the valve-stem A⁶. The valve-stem is provided with the main valve A⁷, adapted to be seated upon seat A⁴ and close the passage-way into the barrel. The lower end of the stem is screw-threaded at A⁸ on its

lower end to fit the stem-nut. By communicating a rotary movement to the valve-stem it is made to travel vertically to and fro between the positions shown in Figs. 1 and 2. The barrel is also provided near its upper end with the capped outlet A⁹.

My invention relates more particularly to the mechanism for operating the drip-valve. The object of the drip-valve is to open an outlet B, leading from the barrel when the main valve is closed, in order that the barrel may be emptied when the hydrant is not in use. The drip-valve B' is adapted to close the outlet B and is fixed upon the stem B². The drip-stem is screw-threaded at its upper end and provided with a screw-threaded sleeve or nut B³, which I term "drip-nut," adapted to fit thereon. The drip-nut is provided exteriorly with two annular flanges B⁴. These flanges engage with the end B⁵ of the drip-lever B⁶, the other end B⁷ of the lever being adapted to engage with the stem A⁶ and the bosses or flanges B⁸ and B⁹ formed thereon. The drip-lever is supported by the drip-post C, upon which it is fulcrumed, the pivot or fulcrum bolt C' passing through an aperture in the ears or arms C² on the upper end of the post. The lower end C³ of the post is screw-threaded to fit a correspondingly-threaded aperture C⁴ in the drip-plate C⁵. The drip-plate has a segmental side provided with a vertical flange C⁶, adapted to enter and loosely fit the interior of the barrel. The vertical flange is provided with an exteriorly-projecting flange C⁷, adapted to fit an annular recess C⁸, formed interiorly of the upper end of the barrel. These flanges serve to support and hold the drip-plate in position within the barrel, the flange C⁷ having a downwardly-projecting spur or lug C⁹, adapted to fit into a short groove C¹⁰ in the inner side of the barrel, which groove opens into the recess to prevent the plate and its flanges from turning or revolving in the barrel.

When the main-valve stem is forced downward to close the main valve to the position shown in Fig. 2, the boss B⁸ engages with the end B⁷ of the drip-lever and lifts the drip-valve stem, as shown in Fig. 2, and opens the drip-valve, and when the main stem is raised to open the main valve the boss B⁹ engages

the same end of the drip-lever and forces the drip-stem downward to close the drip-valve, and the latter is locked in a closed position by the main stem, which continues in engagement with the lever, as shown in Fig. 1.

By means of the screw-threaded connection between the drip-post and plate and the drip-nut and drip-stem I am able to conveniently and accurately adjust the post to the required height to cause the drip-lever to engage with the bosses B^8 and B^9 , to open the drip-valve when the main valve closes, and to close the drip-valve when the main valve opens. After the post and nut have been adjusted they may be securely held in the adjusted position by means of the lock-nuts a and b .

By having the drip-nut vertically adjustable on the drip-stem the drip-valve can be adjusted to fit tightly into its seat by turning the main valve open, so that the end of the drip-lever will be out of the groove in the valve-stem. Then by turning the drip-nut upon the drip-stem the drip-plug is forced down into its seat by the lower flange of the drip-nut coming in contact with the end of the drip-lever, and as the drip-nut and drip-lever are stationary the drip-plug is forced down. If the drip-plug is forced with too much pressure into its seat, the pressure may be relieved by turning the drip-nut down on the drip-stem.

By having the drip-nut, engaging end of the lever bifurcated, so as to inclose the nut between the bifurcate arms, and by having the ends of such arms disk or diamond shaped alternately, the stem is guided, supported, and operated. By having the drip-lever made forked the drip-nut can be turned easily between the forks or arms, thus allowing of the adjustment of the drip-rod as to its length when the drip-rod is in position. To keep the valve-stem in position, so that the pressure of the drip-lever will not displace the same from its position, I provide a bearing-plate D , preferably of composition metal, detachably secured to the drip-plate by the screws D' . The plate is provided with the slotted holes D^2 , through which the screws D' pass, by which arrangement the plate can be adjusted in contact with the valve-stem and held in the adjusted position by the screws D' , thus preventing a movement of the main stem away from the drip-lever when the hydrant is being operated.

By having the drip-plate which supports the drip-post and the bearing-plate for the main-valve stem suspended by the vertical flange at a plane lower than the junction of barrel and cap a larger chamber is formed in the upper part of the hydrant to provide ample room for the convenient arrangement in

an accessible position of the mechanisms employed in the operation of the drip-valve, and by providing the upper inner end of the barrel with a recess or groove to receive the horizontal flange or spur the drip-plate is securely held in place by the cap and prevented from getting out of place through a revoluble movement by the spur on such flange.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a hydrant, the combination, with a drip-lever actuated by the main-valve stem and fulcrumed upon a fixed support, a drip-valve, and a drip-valve stem threaded at its upper end, of an adjustable drip-nut provided with flanges and adapted to fit the threaded portion of the drip-valve stem and engageable with the drip-lever to adjust the length of the drip-rod to properly operate the drip-valve when all parts are in position, substantially as described.

2. In a hydrant, the combination, with a drip-lever fulcrumed intermediately of its ends upon a fixed support, engageable at one end with the main-valve stem and provided at its other end with bifurcate arms having disk-like terminals, of a drip-valve, drip-valve stem, and annular flanges upon the upper end of the drip-valve stem adapted to inclose and alternately engage the disk-like terminals of the lever, that portion of the stem between such flanges being adapted to enter the space between the bifurcate arms, substantially as described.

3. In a hydrant, the combination, with the main-valve stem, stem-actuated drip-lever, and drip-valve stem actuated by such lever, of a bearing-plate secured to a fixed support to bear against the main-valve stem on the side opposite the side engaged by the drip-lever, substantially as described.

4. In a cap-hydrant having a main valve and stem and a drip-valve and stem and connecting mechanism for operating the drip-valve by the main-valve stem, the combination, with the lever which connects the two valve-stems and the lever-fulcrum, of a plate for supporting such fulcrum, a vertical annular flange upon one edge of such plate, a horizontal exterior projection on the flange, adapted to enter and fit a recess in the upper end of the hydrant, the hydrant-cap, and cap-fastenings, substantially as described.

In testimony whereof I have hereunto set my hand this 16th day of May, 1890.

WILLIAM H. BOOTMAN.

Witnesses:

HILAND B. FAIRBROTHER,
GEORGE H. COLE.