

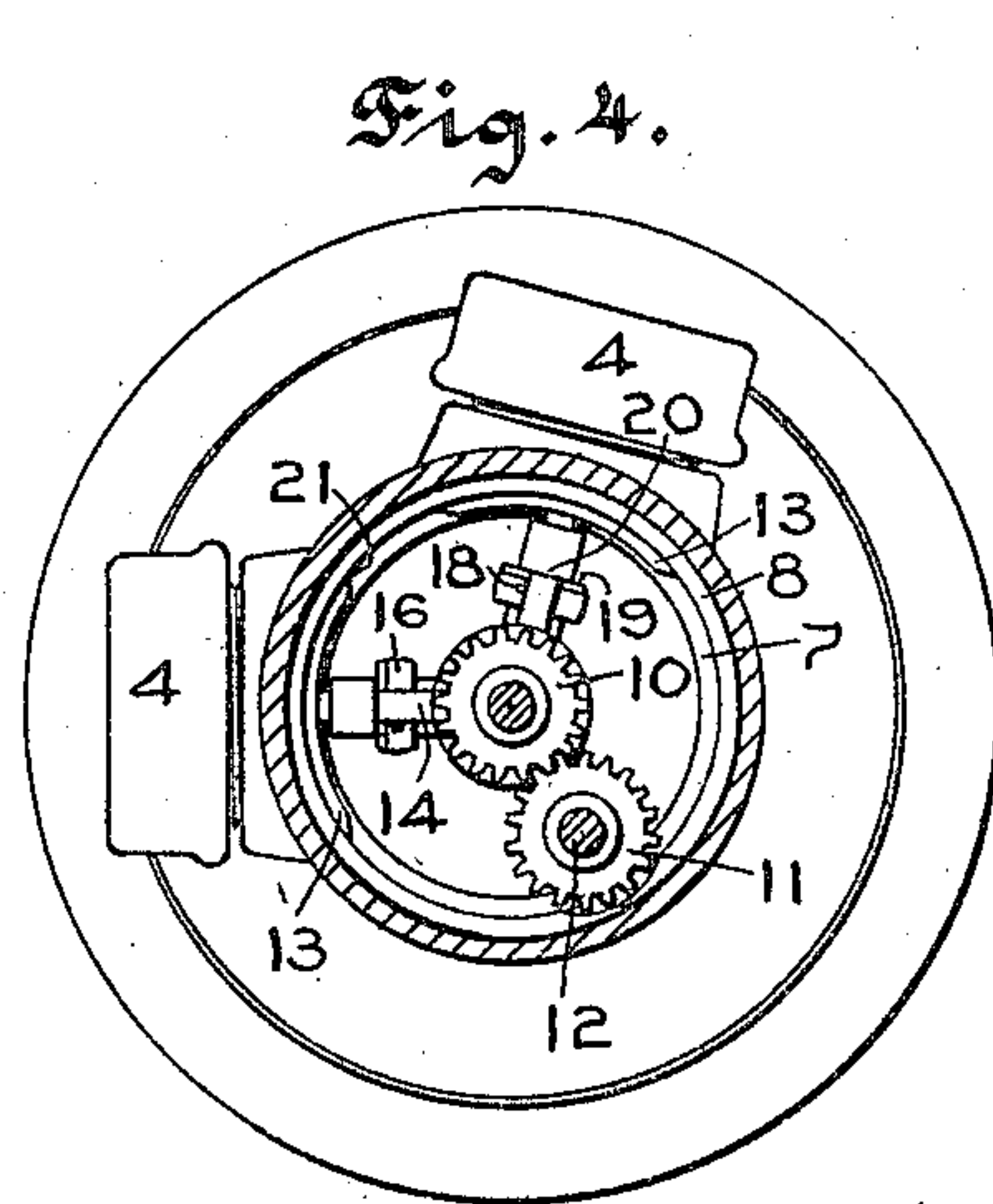
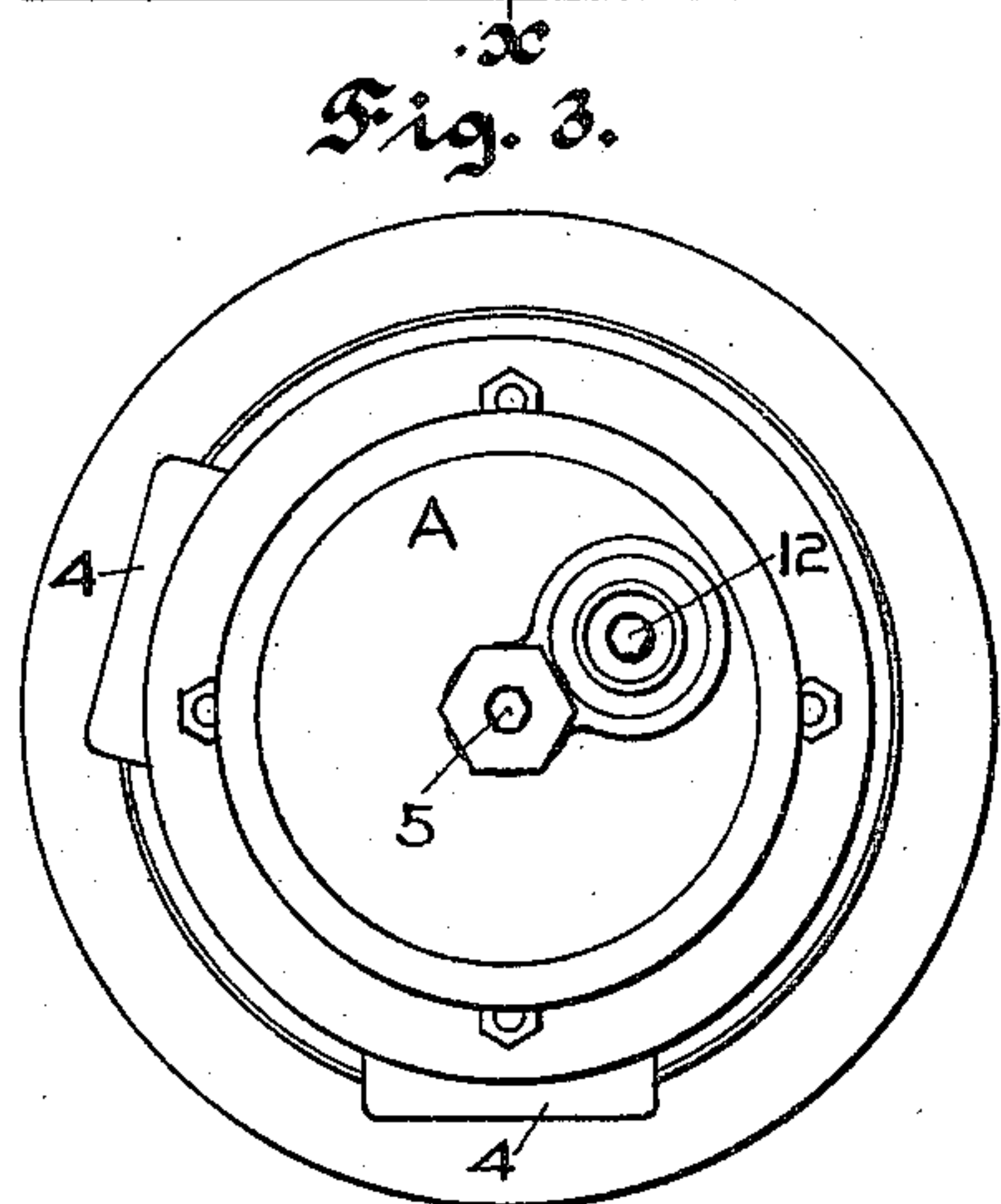
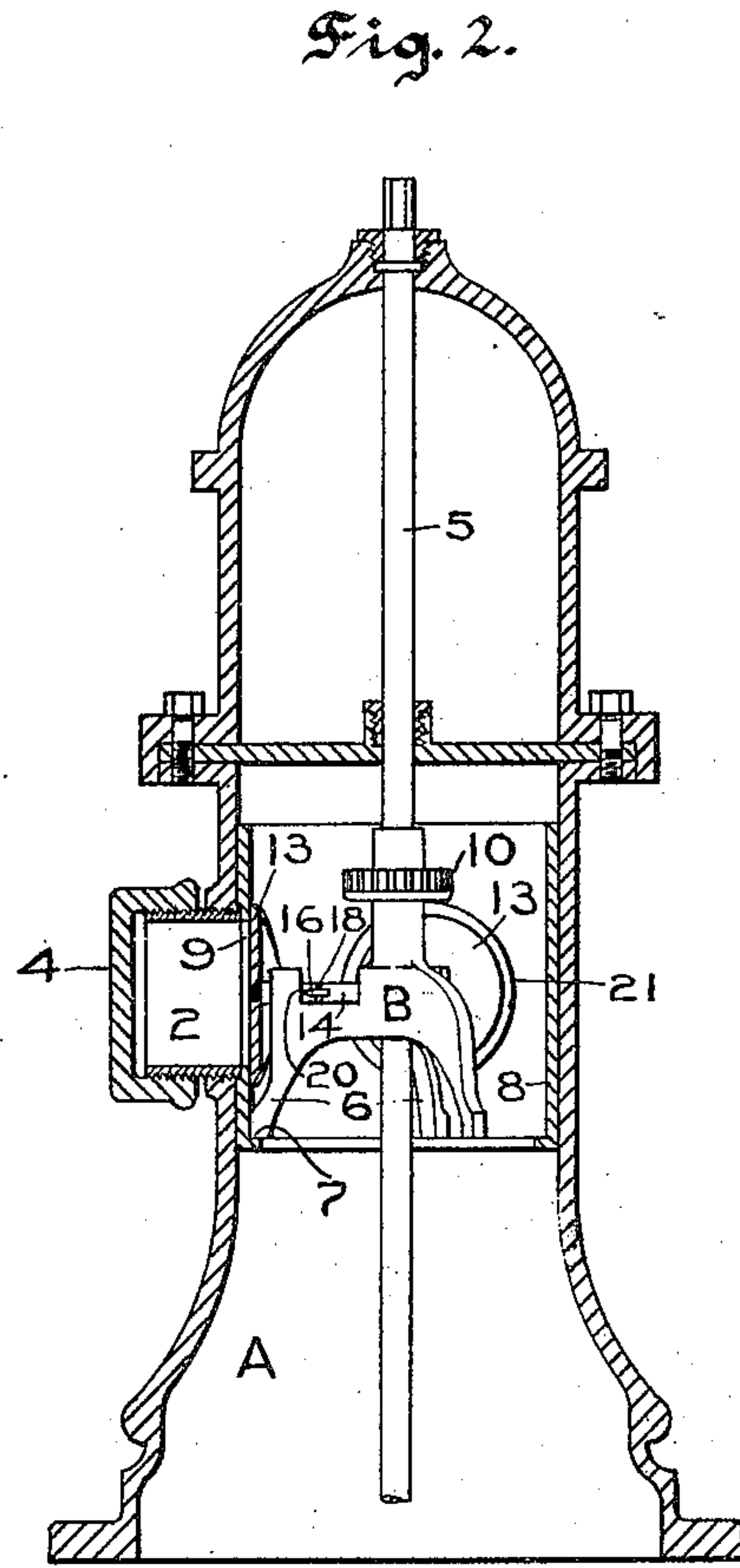
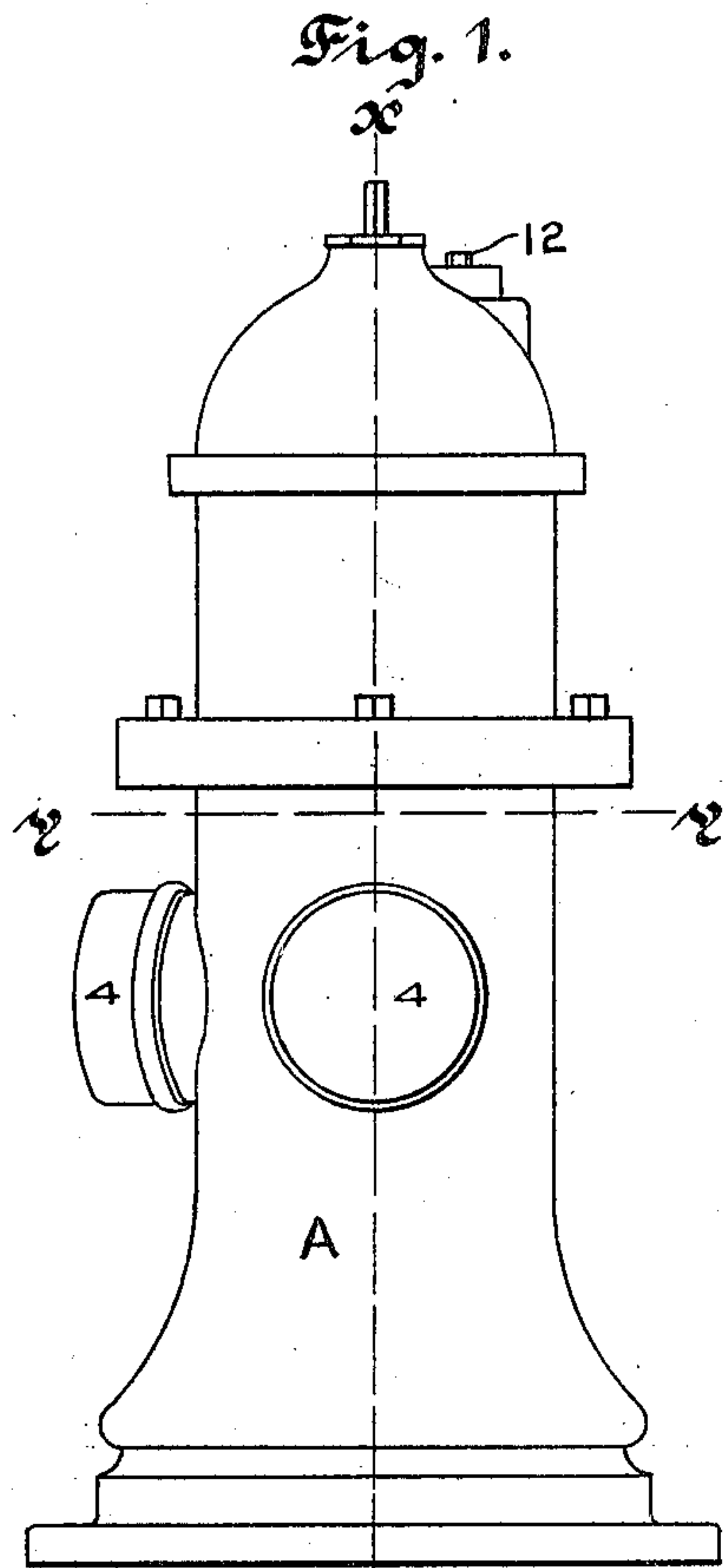
No. 812,407.

PATENTED FEB. 13, 1906.

E. CRONSTEDT.
HYDRANT.

APPLICATION FILED NOV. 3, 1903.

2 SHEETS—SHEET 1.



Witnesses
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Emily F. Otis

Inventor,
Elias Cronstedt.
by J. O. Johnson
his Attorneys.

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2 SHEETS—SHEET 2.

Fig. 5.

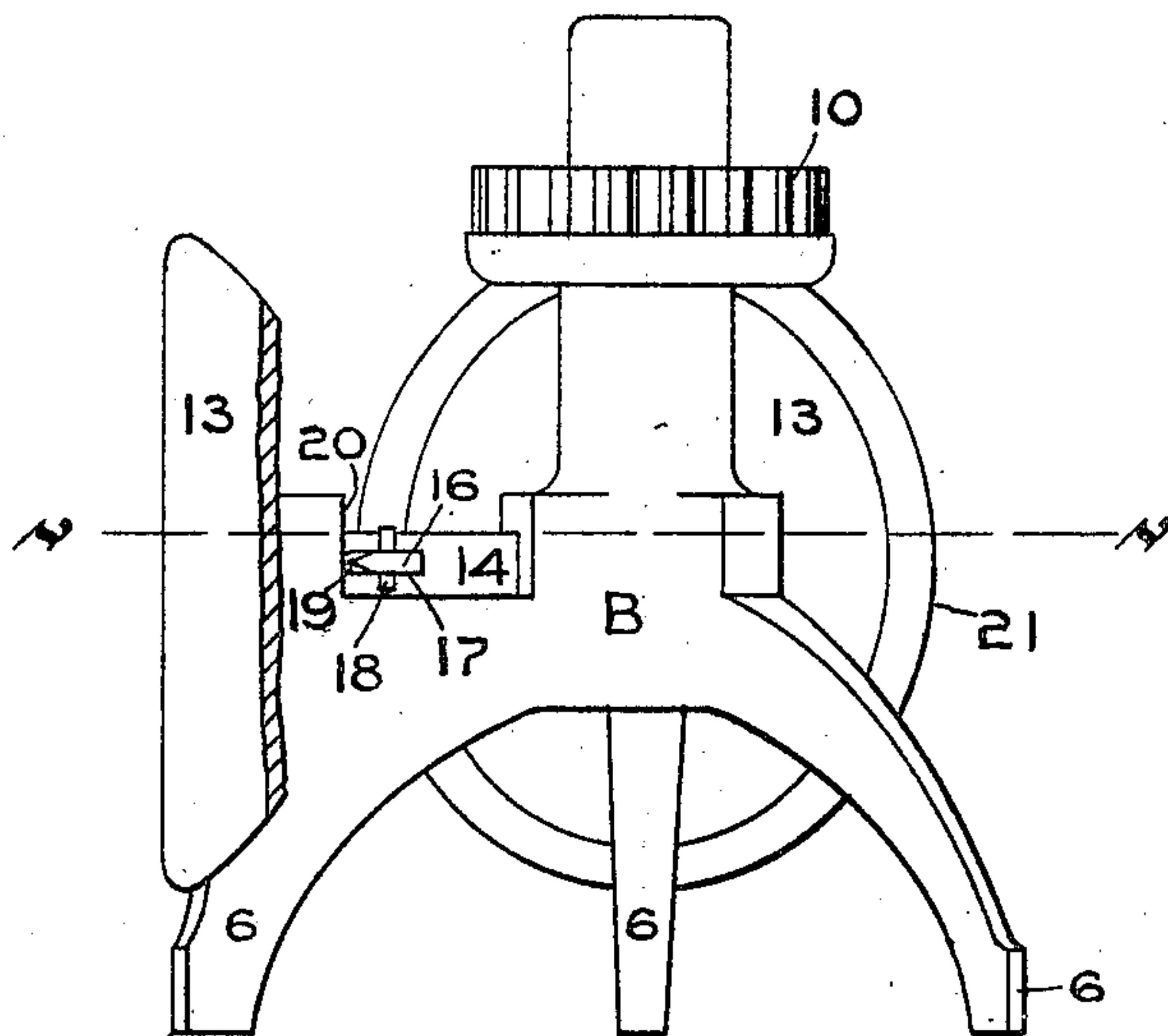
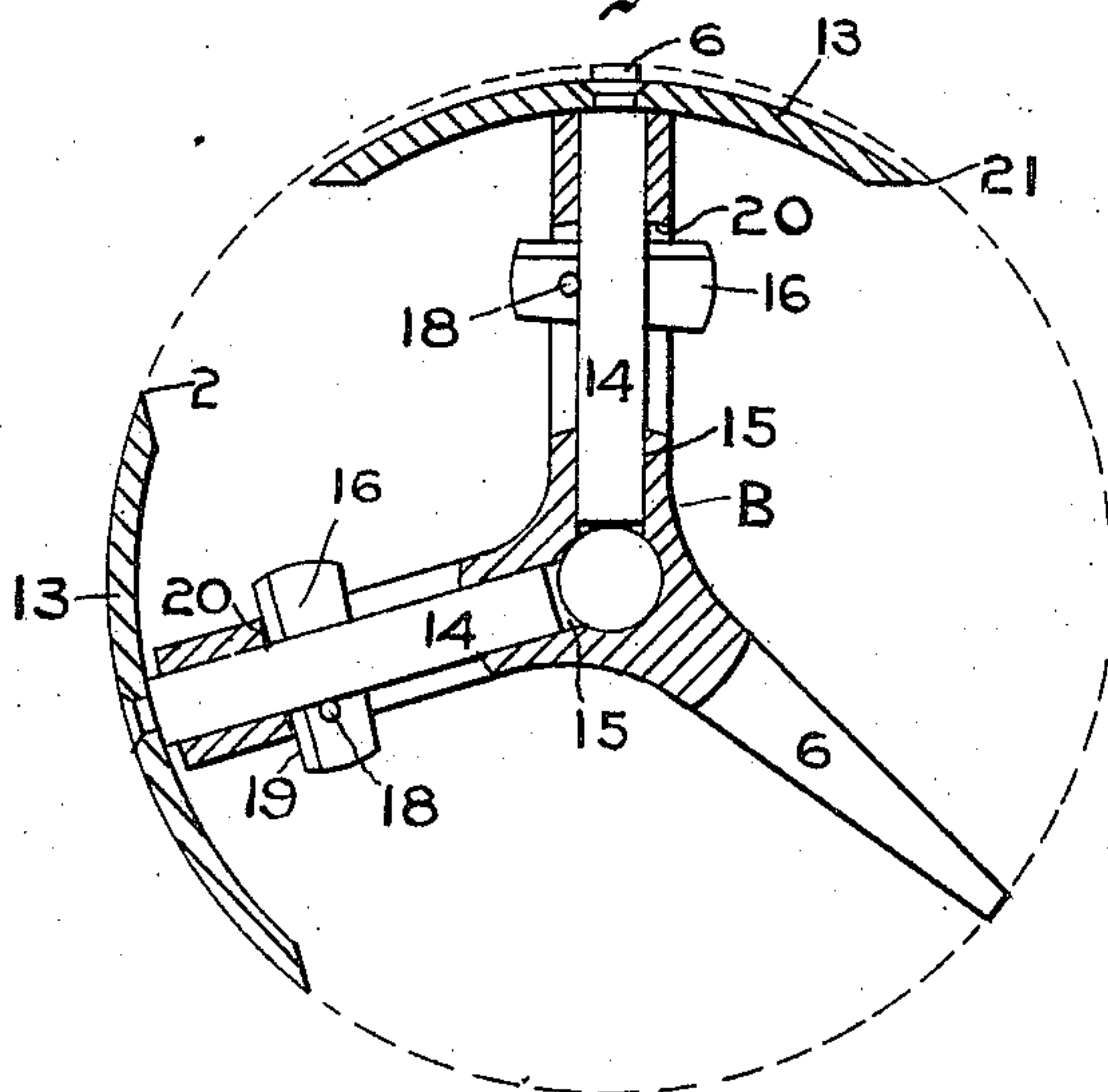


Fig. 6.



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UNITED STATES PATENT OFFICE.

ELIAS CRONSTEDT, OF ST. PAUL, MINNESOTA.

HYDRANT.

No. 812,407.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed November 3, 1903. Serial No. 179,657.

To all whom it may concern:

Be it known that I, ELIAS CRONSTEDT, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Hydrants, of which the following is a specification.

My invention relates to improvements in hydrants, its object being to provide an improved construction of cut-off device for the discharge-openings; and it consists in the features of construction and combination hereinafter particularly described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a hydrant fitted with my improvements. Fig. 2 is a section on line xx of Fig. 1. Fig. 3 is a top view of the hydrant. Fig. 4 is a section on line yy of Fig. 1. Fig. 5 is a side elevation of the cut-off device partially broken away, and Fig. 6 is a section on line vv of Fig. 5.

In the drawings, A represents the casing or body of the hydrant provided with lateral discharge-openings 2, closed by caps 4.

Within the hydrant is arranged the supporting-spider B of the cut-off device rotatable upon a central valve-stem 5. The legs 6 of the spider rest upon the inwardly-extending shoulders 7 of the bushing 8, which is fitted within the hydrant-casing and is provided with openings 9, registering with the discharge-openings 2. The spider carries upon its upper end a horizontal pinion 10, with which meshes a pinion 11, mounted upon the lower end of an upright shaft 12, extending through the top of the hydrant, as shown in Fig. 1. In order to close the openings 2, I provide disk valves 13, secured upon the ends of the valve-stems 14 and curved to fit the inner wall of the hydrant. The valve-stems slide in radial openings 15 in the body of the spider and corresponding openings in the adjacent lugs 20.

To limit the outward movement of the valves, I provide tapering keys or stops 16, extending through openings 17 in the valve-stems and being held in position by pins 18. The keys 16 are so positioned as to limit the outward movement of the valves and prevent the disks from being forced by the pressure within the hydrant into such close engagement with the casing as to make it impossible or difficult to rotate the spider. Each key preferably has a sharp outer edge 19 to strike the adjacent lug 20 and cut away

frozen water or other collection. The edges 21 of the disk valves are similarly sharpened to cut away any frozen water or other collection from the inner wall of the hydrant.

In use, with the parts standing in the positions shown in Figs. 2 and 4, with the disk valves closing the outlet-openings of the hydrant, the turning of the spider through the medium of the shaft 12 will turn the disk valves away from either or both of the discharge-openings. For instance, referring to Fig. 4, by rotating the spider a certain distance to the right the discharge-opening to the left will be freed and the disk valve which had been closing it will be carried into position to keep closed the next discharge-opening. A continued turning of the spider will carry the closing-valve away from the right-hand discharge-opening, leaving both of the discharge-openings in communication with the interior of the hydrant.

As will be noted, the retaining-keys which pass through the valve-stems are so positioned that a certain amount of play of the valves is permitted. The pressure of the water within the hydrant will hold the valves outward in closing position, while the play of the valves will allow them to be moved inward by any collection between the valves and casing, thus preventing friction or breaking of any of the parts.

While I have shown two closing-valves, it is possible to increase the number without departing from the general construction.

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

1. In a hydrant, the combination with a casing formed with discharge-openings, of a rotatable spider arranged within the casing, a plurality of radially-slidable disk valves supported by the spider, valve-stems carried by said valves, and outwardly-extending retaining-keys removably supported in said valve-stems, for the purpose set forth.

2. In a hydrant, the combination with a casing formed with discharge-openings, of a rotatable spider arranged within said casing, disk valves slidably supported in said spider and curved to fit the inner wall of said hydrant, valve-stems carried by said valves and slidable in said spider, and retaining-keys extending through said valve-stems and outwardly from the sides thereof, for the purpose set forth.

3. In a hydrant, the combination with its

outer wall or casing provided with discharge-openings, of a rotatable spider arranged within said casing, a plurality of disk valves slidably supported in said spider and curved to fit the inner wall of said hydrant, said valves being each formed with a sharp outer edge, and means for rotating said spider.

4. In a hydrant, the combination with its outer wall or casing having discharge-openings, of a rotatable spider arranged within said casing, disk valves slidably supported in said spider and curved to fit the inner wall of said hydrant, keys holding said valves supported in said spider, said keys being each provided with an outer cutting edge, as and for the purpose set forth.

5. In a hydrant, the combination with its outer wall or casing having discharge-openings, and a valve-stem centrally supported in said hydrant, of a spider rotatably mounted upon said valve-stem, disk valves curved to fit the inner wall of said hydrant, valve-stems carried by said valves and slidable in said spider, and retaining-keys extending through

said valve-stems, said keys each having an outer cutting edge, as and for the purpose set forth.

6. In a hydrant, the combination with its outer wall or casing having discharge-openings, of a bushing fitted in said casing and provided with openings registering with the discharge-openings, a spider rotatable within said bushing and resting upon a flange carried thereby, disk valves for said openings curved to fit the inner wall of said hydrant, inwardly - extending supporting-stems for said valves slidable in openings in said spider, retaining-keys extending through said stems, each of said keys being provided with an outer cutting edge, and means for rotating said spider.

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

ELIAS CRONSTEDT.

Witnesses:

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EMILY F. OTIS.