

(No Model.)

3 Sheets—Sheet 1.

C. E. LOETZER.
FIRE HYDRANT.

No. 570,031.

Patented Oct. 27, 1896.

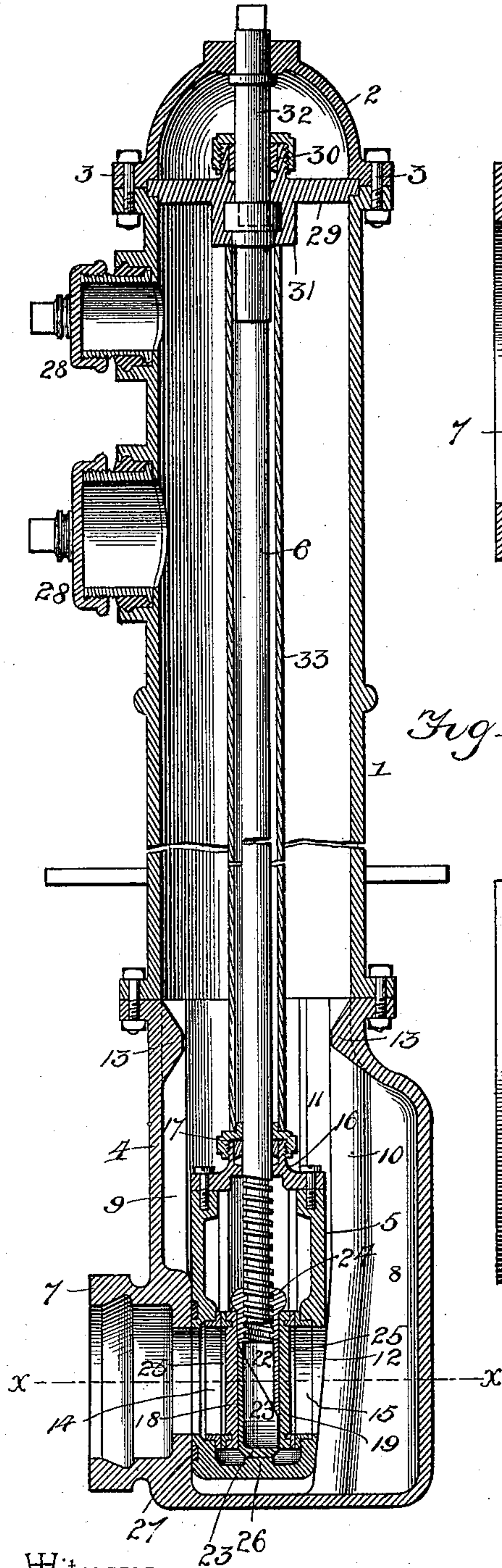


Fig. 1.

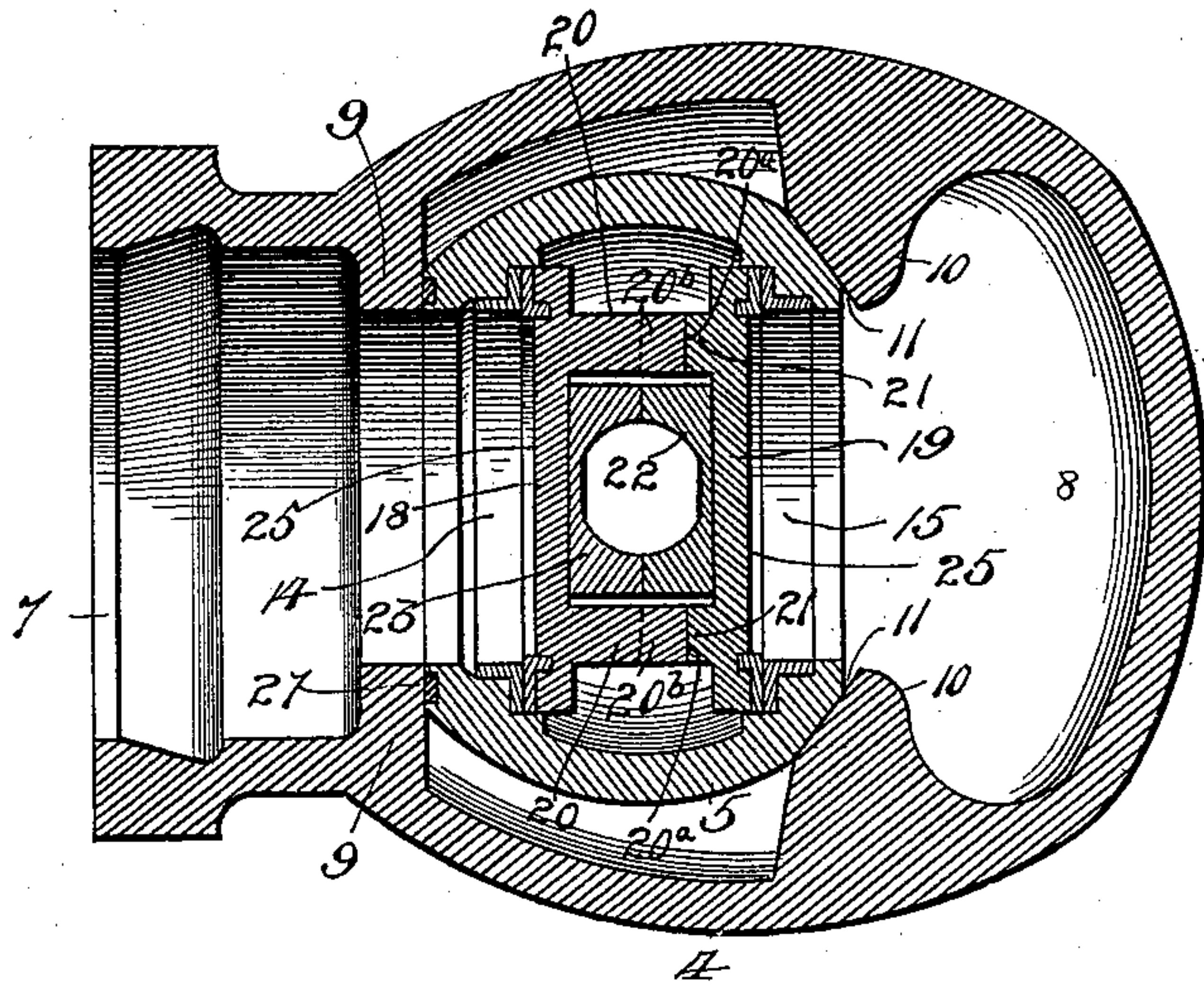


Fig. 3.

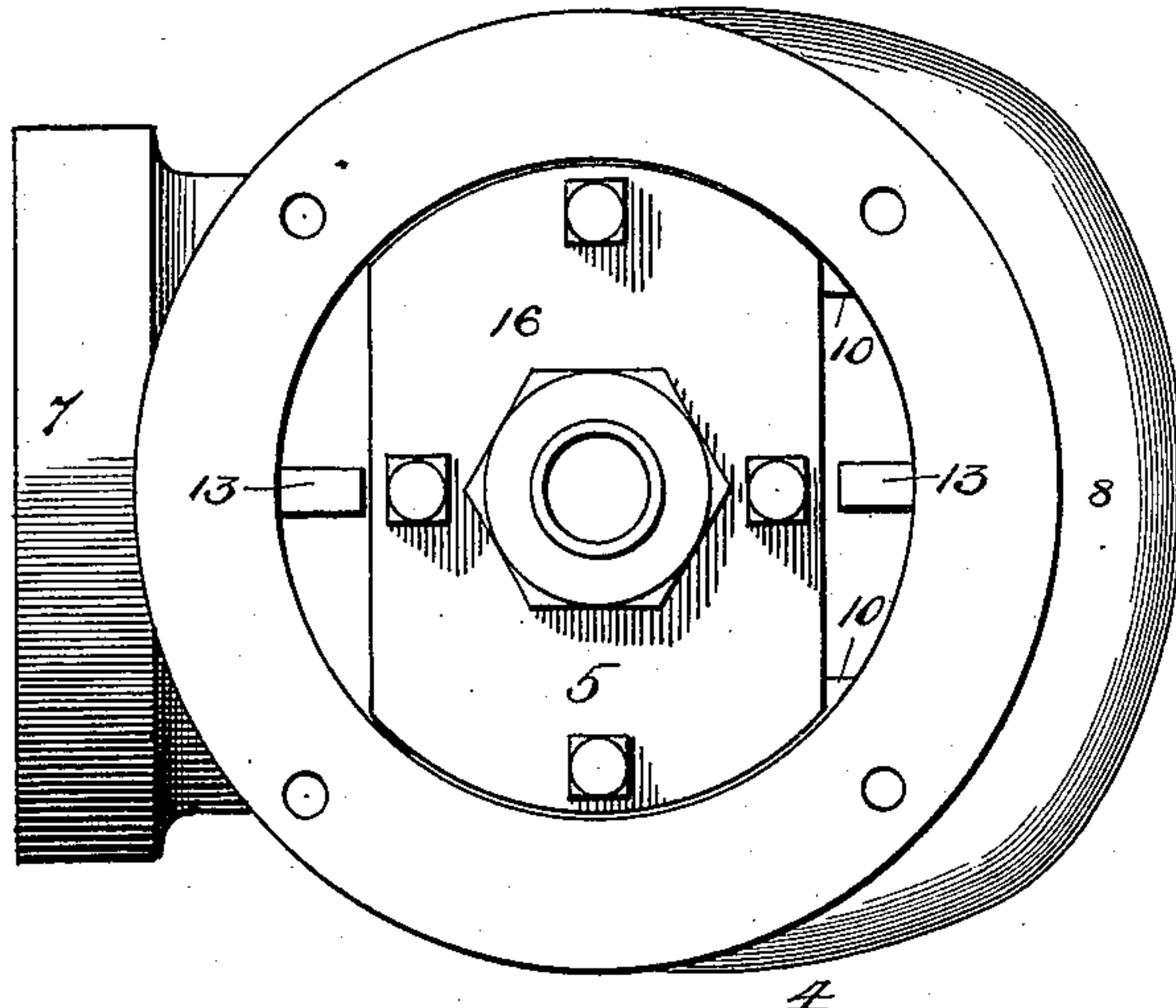


Fig. 4.

Witnesses
E. H. Monroe
V. B. Hillyard.

By *his* Attorneys,

C. A. Snow & Co.

Inventor
Christian E. Loetzer

(No Model.)

3 Sheets—Sheet 2.

C. E. LOETZER.
FIRE HYDRANT.

No. 570,031.

Patented Oct. 27, 1896.

Fig. 5.

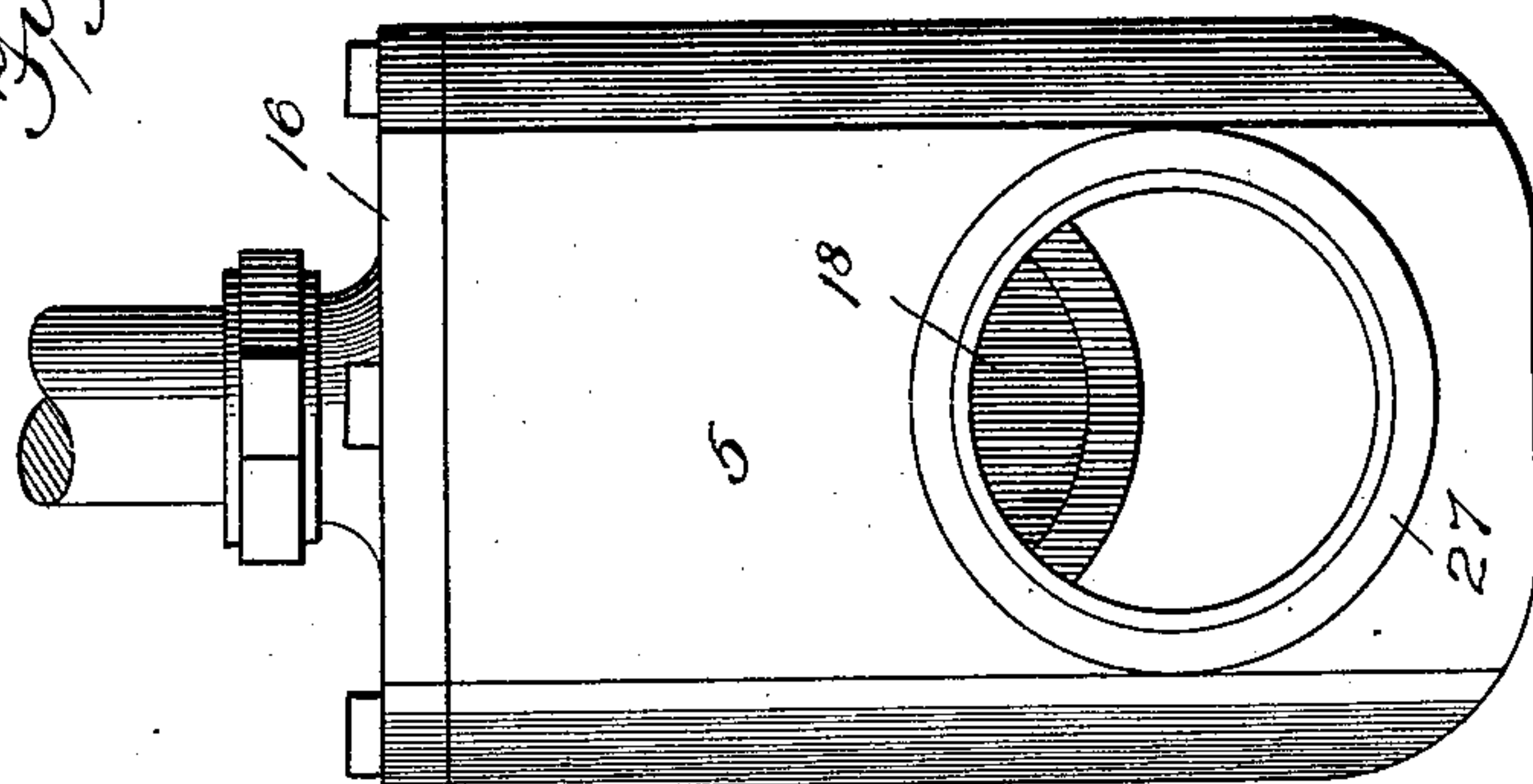
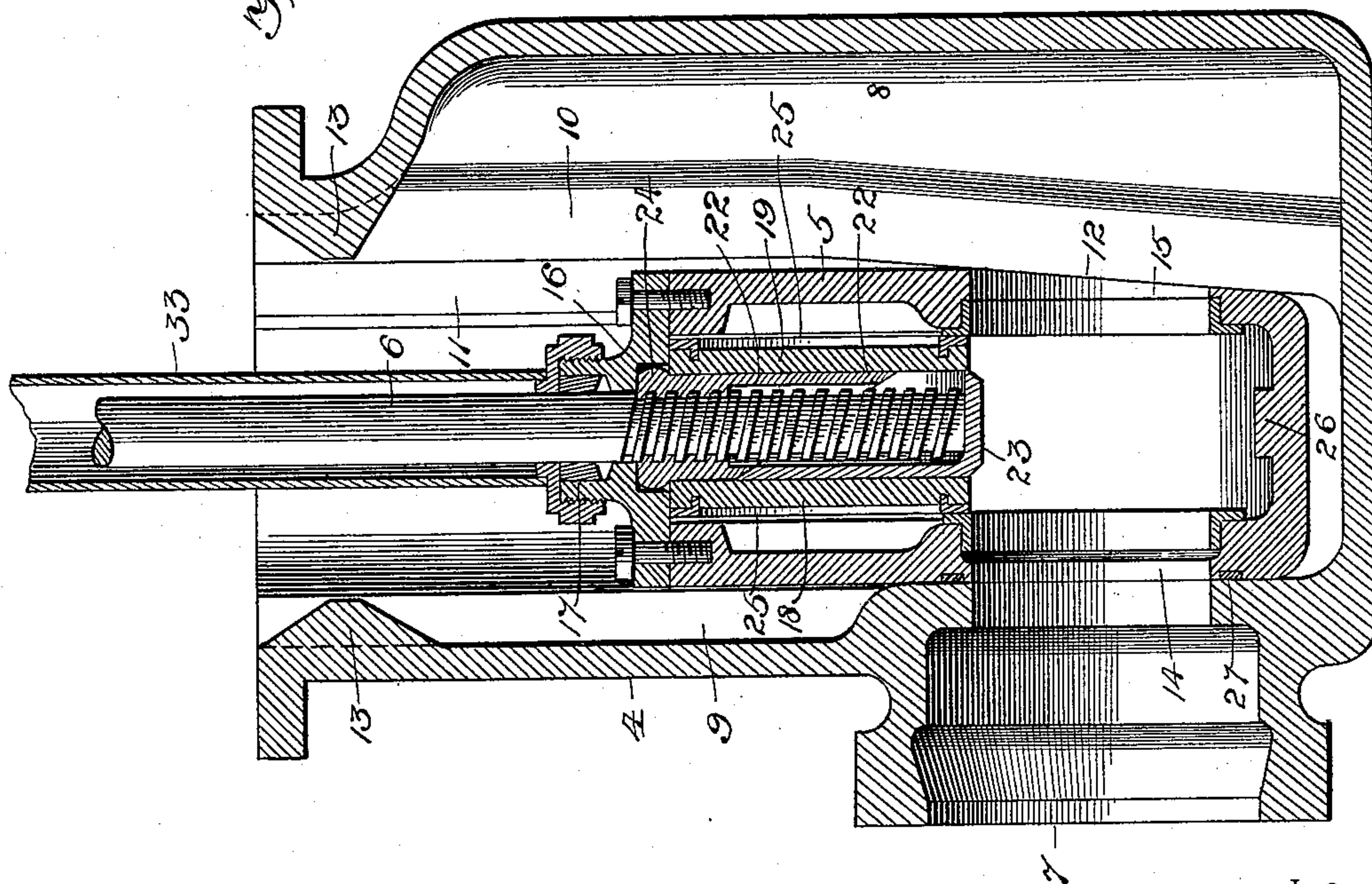


Fig. 2.



Inventor

Christian E. Loetzer.

Witnesses

E. N. Monroe
U. B. Hillyard.

By *his* Attorneys,

C. A. Snow & Co.

(No Model.)

3 Sheets—Sheet 3.

C. E. LOETZER.
FIRE HYDRANT.

No. 570,031.

Patented Oct. 27, 1896.

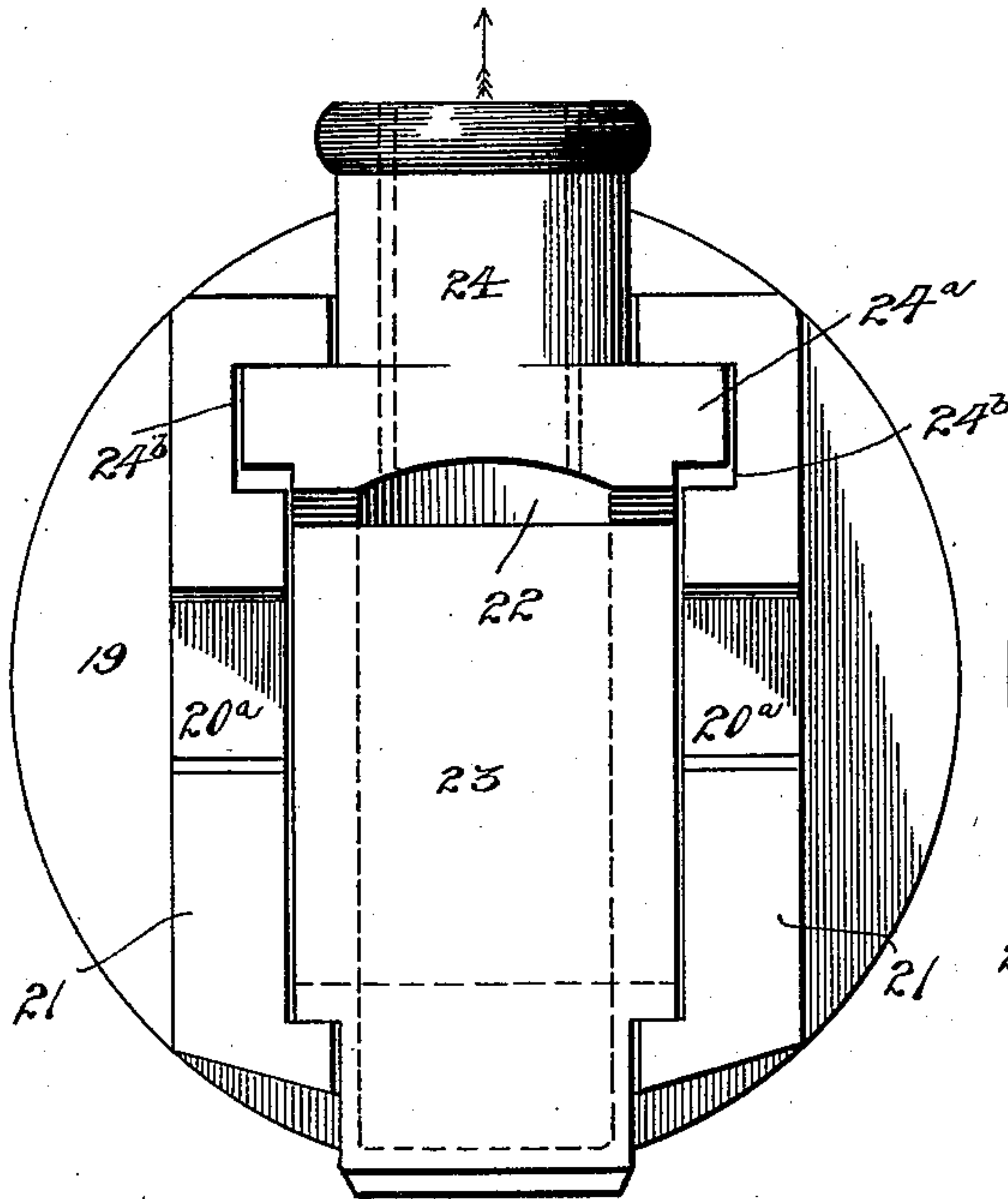


Fig. 6.

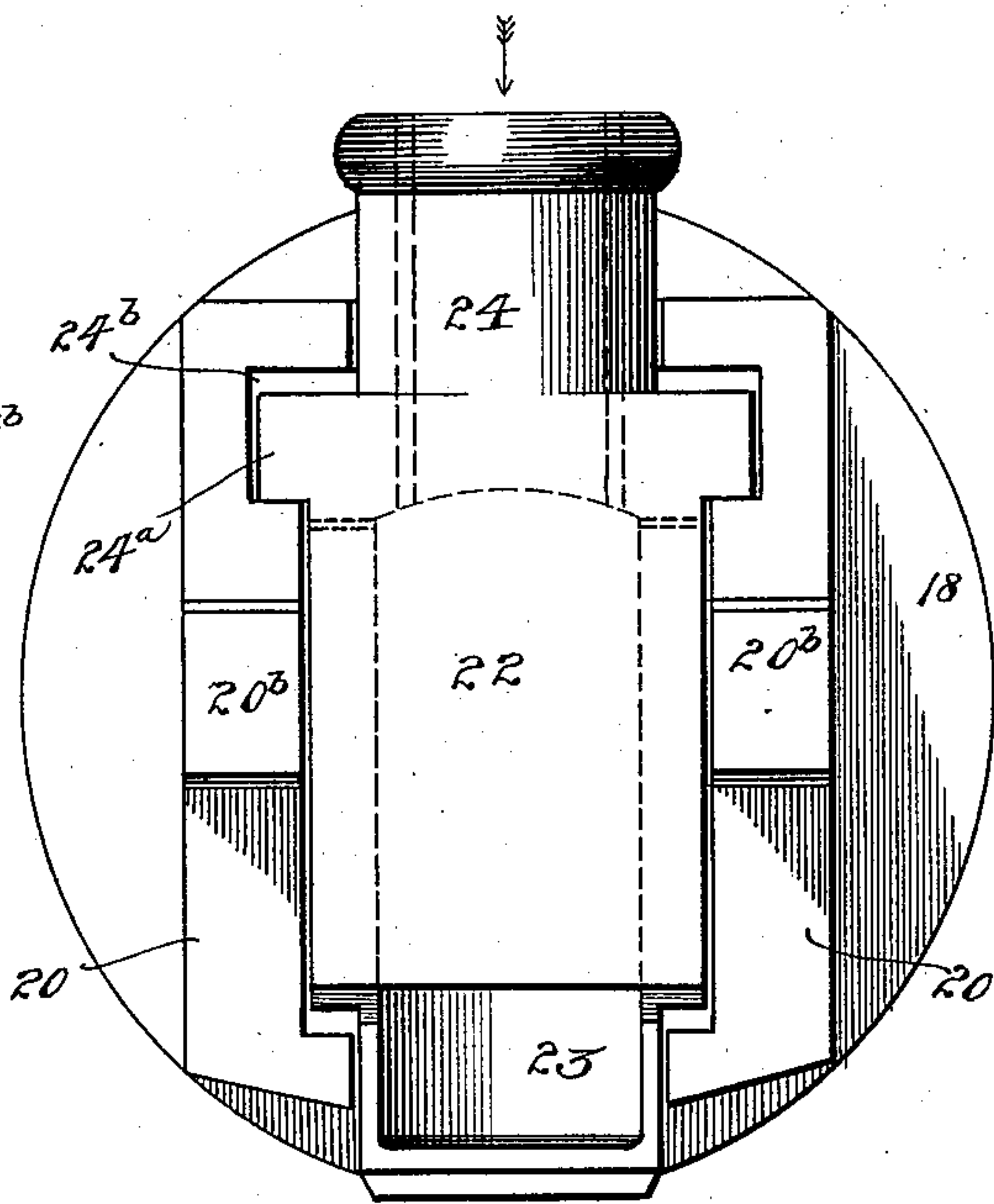


Fig. 7.

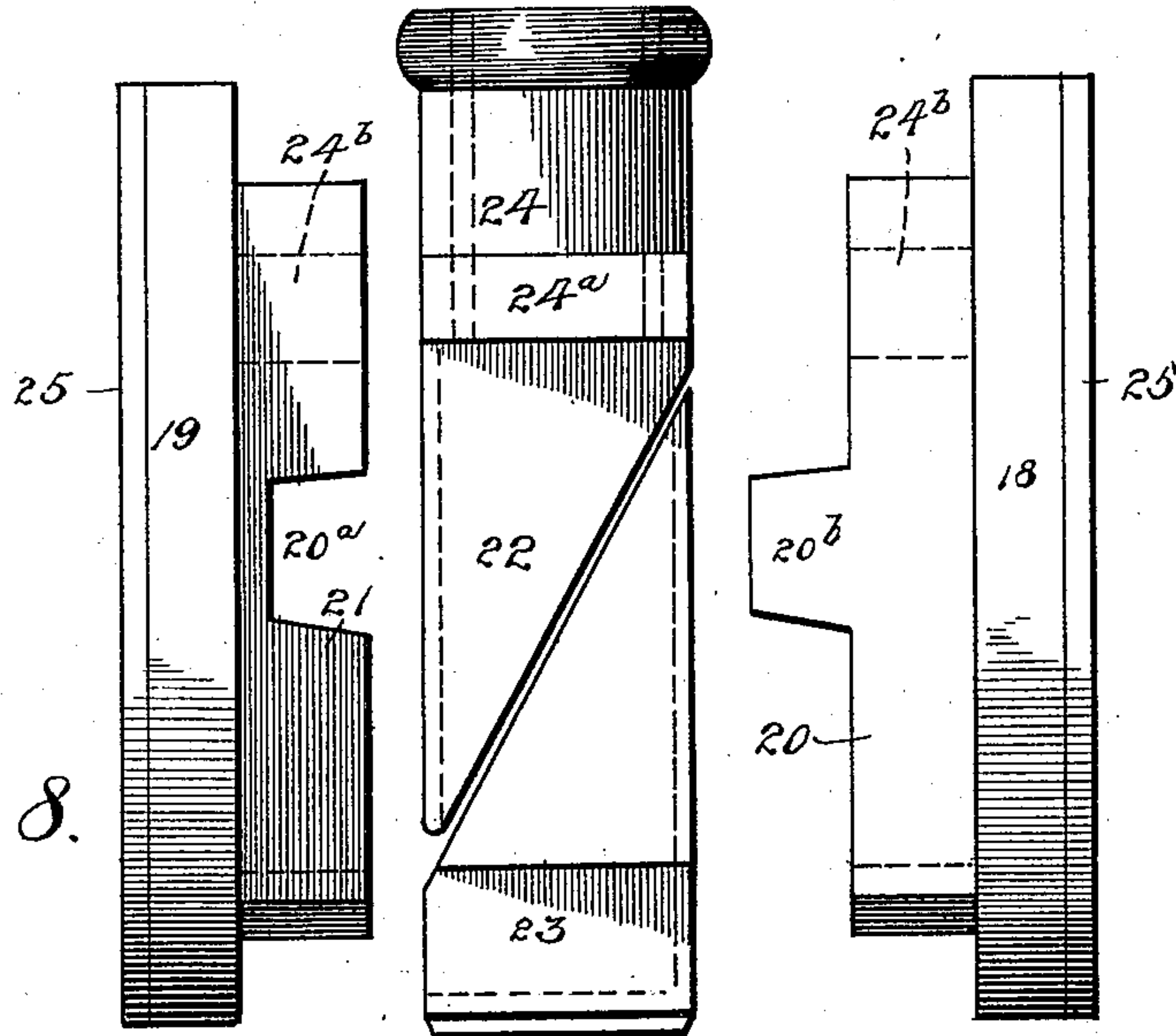


Fig. 8.

Inventor
Christian E. Loetzer

Witnesses
E. M. Mott
U. B. Hillyard.

By *his* Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

CHRISTIAN E. LOETZER, OF WILLIAMSPORT, PENNSYLVANIA.

FIRE-HYDRANT.

SPECIFICATION forming part of Letters Patent No. 570,031, dated October 27, 1896.

Application filed November 16, 1895. Serial No. 569,208. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN E. LOETZER, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Fire-Hydrant, of which the following is a specification.

This invention relates to fire-hydrants, and aims to obviate digging up or otherwise disturbing the stand-pipe in the event of it becoming necessary to make repairs of any kind or to inspect the gates and their seats.

A further purpose of the invention is to secure a tight joint between the gates and their seats and to utilize the water-pressure to maintain the gates in closed relation.

Other objects and advantages are contemplated and will become apparent as the nature of the invention is fully understood; and to this end the improvement consists in certain details of construction, novel features, and peculiar combinations of the parts which hereinafter will be more fully illustrated, described, and specifically claimed.

In the accompanying drawings is shown an embodiment of the invention, although various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, and in said drawings—

Figure 1 is a vertical central section of a fire-hydrant constructed in accordance with this invention. Fig. 2 is a view, similar to Fig. 1, of the case or shell forming the base of the stand-pipe and inclosing the gates and the parts intimately associated therewith, showing the gates open. Fig. 3 is a plan section on the line X X of Fig. 1. Fig. 4 is a top plan view of the case or shell, the housing or frame for the gates being in position. Fig. 5 is a front view of the said housing or frame. Fig. 6 is an enlarged view of the gate 19, viewed from the rear side and having the wedges in operative relation and showing the relative disposition of the parts when moving the gate upward. Fig. 7 is a view, similar to Fig. 6, of the gate 18, showing the relative location of the parts when applying a downward pressure. Fig. 8 is a side elevation of the two gates and the wedges, showing the parts separated.

The same reference-numerals indicate corresponding and like parts in all the figures of the drawings, and in the latter 1 denotes the stand-pipe; 2, the dome for closing the upper end thereof and which is secured in place by bolts 3, passing through flanges at their meeting parts; 4, the case or shell forming the base of the stand-pipe and inclosing the frame or housing 5, containing the gates and their seats, and 6 the stem or rod for operating the gates when it is required to open and close the same.

The case or shell 4 has an offstanding collar 7 at its lower end to make connection with the water-main, and its rear side is swelled or enlarged, as shown at 8, to form a waterway for the passage of the water to the stand-pipe when the gates are open.

Ribs 9 extend vertically and in parallel relation at the front side of the case 4, and their inner sides are planed or dressed to form guides for the front side of the housing or frame 5, and similar ribs 10 extend vertically and in parallelism and are disposed near the rear side of the case 4, preferably at the juncture of the swelled portion 8 therewith, and the inner corners of these ribs 10 are beveled or concaved, as shown at 11, to form seats for the rear side of the said housing or frame 5, thereby centralizing and properly positioning the same when pushed home into the case 4. The ribs 9 and 10 act jointly to fix the position of the housing or frame 5 when the latter is inserted into the case 4, and the lower portion of the ribs 10 is slightly inclined toward the front side of the case, as shown at 12, to produce a wedging action when forcing the housing or frame 5 to its place within the case, and the lower rear portion of the said housing or frame is correspondingly inclined to cooperate with the inclined portion 12 of the ribs 10 to attain the desired end. Lugs 13 are located at the entrance end of the case 4 and serve to give proper direction to the housing or frame 5 when placing the latter into the case 4. The contiguous ends of the stand-pipe and case are flanged and are secured together by bolts in the usual manner.

The housing or frame 5 is formed with registering openings which are supplied with seats 14 and 15 and which aline with the col-

lar 7 when the housing is in proper position. The upper end of the housing is open, and is closed by means of a cap 16, detachably connected therewith, and which is centrally provided with a stuffing-box 17, through which operates the stem or rod 6. The gates 18 and 19 are adapted to move vertically in the housing 5 and are directed in their vertical movements by suitable guideways, and are formed on their inner or opposing sides with flanges 20 and 21, which come together and inclose a space in which are placed the wedges, the flanges 21 having notches 20^a and the flanges 20 having corresponding projections 20^b to enter and interlock with the said notches 20^a to prevent vertical displacement of the gates. A nut 24 has a wedge 22 at its lower end, which matches with a corresponding wedge 23, located below, and this nut 24 has positive connection with both of the gates by means of lateral ribs 24^a, entering grooves 24^b in the sides of the gate-flanges, and receives the lower threaded end of the stem or rod 6, so that upon rotating the latter the gates 18 and 19 will be raised and lowered, accordingly as it is required to open or close the hydrant. Each gate will have a packing-ring 25 to coöperate with its respective seat to secure a close and tight joint. When lowering the gates, the lower wedge 23 will engage with a vertical projection 26 on the bottom of the housing 5, and the inclined faces of the wedges engaging and the wedges riding past one another will result in a wedging action, tending to spread the gates 18 and 19 and thereby force them close against their seats. A gasket 27, of lead or similar substance, is fitted into a recess in the front side of the housing 5 and encircles the inner end of the opening leading into the collar 7, and the purpose of this gasket 27 is to secure a tight joint between the housing 5 and the inner side of the case 4 opposite the collar 7, so as to prevent leakage.

The stand-pipe 1 is provided at its upper end with connections 28 for the attachment therewith of the hose-pipe for conveying the water to the required point of use. These connections are normally closed by removable caps. A packing-plate 29 is secured between the dome 2 and the upper end of the stand-pipe and is formed on its top side with a stuffing-box 30 and upon its lower side with a bearing 31, in which is fitted the enlarged end or head of the stem or rod 6. An operating-rod 32 is journaled at its ends in the dome and packing-plate 29, and its lower end makes connection with the head or upper end of the stem or rod 6, so that upon turning the part 32 the stem or rod 6 will rotate therewith, thereby raising or lowering the gates, according to the direction of rotation of the part 6, as will be readily understood. The upper end of the operating-rod 32 projects above the dome 2 and is made angular or otherwise constructed to receive a suitable instrument by means of which the part 32 can be rotated.

When it is required to inspect the gates or repair the same, the dome 2 and the packing-plate 29 are removed, and by drawing upon the stem or rod 6 the housing 5, with the attached parts, is withdrawn through the stand-pipe, and after the necessary inspection or repairs have been made the housing is replaced by passing it down through the stand-pipe, and after the parts 29 and 2 have been secured in place the hydrant is again ready for use. A pipe 33 incloses the stem or rod 6 and rests upon the stuffing-box 17, and its top end comes in contact with the bearing 31, and the purpose of this pipe is to secure the housing or frame 5 in place and prevent any vertical movement thereof after the parts have been properly positioned. The pressure of the water against the gate 18 will be transmitted to the gate 19 and serve to force and hold the latter against its seat. Hence the greater the pressure exerted laterally against the gate 18 the firmer will the gate 19 be forced and held against its seat.

The interlocking feature of the gates and wedges is not claimed herein, as it is incorporated and claimed in an application for a like invention filed by me on or about July 24, 1896, Serial No. 600,404.

Having thus described the invention, what is claimed as new is—

1. A fire-hydrant comprising a stand-pipe, a base connected with the lower end thereof and having a lateral opening, a frame fitted within the base and removable therefrom through the stand-pipe and having seats to register with the aforesaid lateral opening, means for pressing the frame laterally against the inner side of the base, gates located within the frame and adapted to close against the seats, and actuating mechanism for opening and closing the gates, substantially as set forth for the purpose described.

2. In a fire-hydrant, the combination of a stand-pipe, a base having an offstanding collar at its lower end for connection with the water-main and having inclined guides opposite to the said collar, a frame fitted within the base and removable therefrom through the stand-pipe and having a portion inclined to coöperate with the aforesaid inclined guides, and having openings to register with the opening through the collar, gates operating within the frame to close the openings thereof, and actuating mechanism for the said gates, substantially as set forth for the purpose described.

3. The combination of a stand-pipe, a base connected therewith and having vertical guides, the rearmost guides having inclined portions, a housing having oppositely-disposed openings and fitted in the base and properly positioned by the said inclined portions, and removable through the stand-pipe, and gates movable within the housing and constructed to close the openings therein, substantially as set forth for the purpose described.

4. The combination with a case having an offstanding collar near the lower end of its front side and having its rear side swelled to form a waterway, of a housing removably fitted within the case and having openings in its front and rear side to register with the opening through the said collar, gates movable within the housing for closing against the inner ends of the openings therein, and provisions for operating the gates, substantially as and for the purpose set forth.

5. In combination, a stand-pipe, a case fitted to the lower end thereof and having an offstanding collar, a housing removably fitted within the case and having openings to register with the opening through the said collar, gates operating within the housing for closing the openings thereof, a packing-plate at the upper end of the stand-pipe having a bearing on its lower side and a stuffing-box on its top side, a pipe interposed between the packing-plate bearing and the upper end of the housing to hold the latter in place, a stem operating through the last-mentioned pipe for operating the gates and having an enlarged portion or head journaled in the bearing of the packing-plate, and a rod making connection with the head of the stem and obtaining a bearing in the packing-plate and the stuffing-box thereof, substantially as set forth.

6. In combination, a stand-pipe, a case fitted to the lower end thereof and having an offstanding collar, a housing removably fitted within the case and having openings in line with the opening through the said collar, gates operating within the housing to close

the openings thereof, a dome fitted to the upper end of the stand-pipe, a packing-plate held in place by the dome, a pipe between the packing-plate and the top end of the said housing, a stem or rod located within the pipe and adapted to operate the gates, and an operating-rod journaled in the dome and the said packing-plate and making connection with the upper end of the said stem, substantially as and for the purpose set forth.

7. A fire-hydrant constructed substantially as herein specified, comprising a stand-pipe, a case fitted to the lower end thereof and having an offstanding collar at its front side and a swelled portion at its rear side to form a waterway, and having vertically-disposed guides, the rearmost guides having the portion opposite the collar inclined, a housing removably inserted within the case and having its rear side correspondingly inclined to the aforesaid inclined guides, and having openings in register with the collar, gates operating within the housing, a stem or rod for operating the gates, a packing-plate, a pipe interposed between the packing-plate and the top end of the housing, and means for operating the said stem for opening and closing the gates, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHRISTIAN E. LOETZER.

Witnesses:

HUGH GILMORE,
EDWARD J. FISHER.