

No. 612,976.

Patented Oct. 25, 1898.

E. L. POWELL, Dec'd.

H. POWELL, Administratrix.

FILTERING APPARATUS.

(Application filed Oct. 15, 1897.)

(No Model.)

Fig. 1.

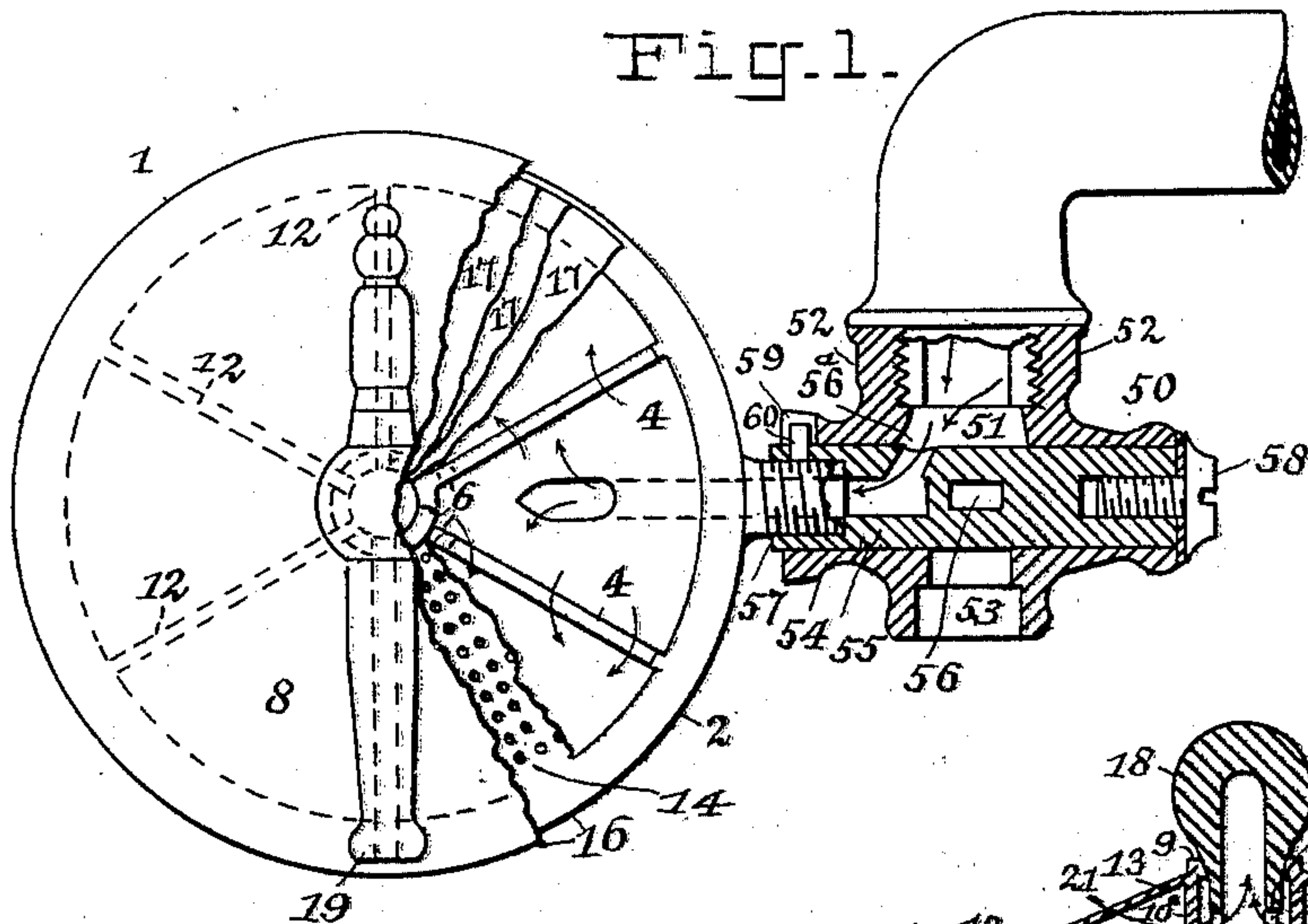


Fig. 3.

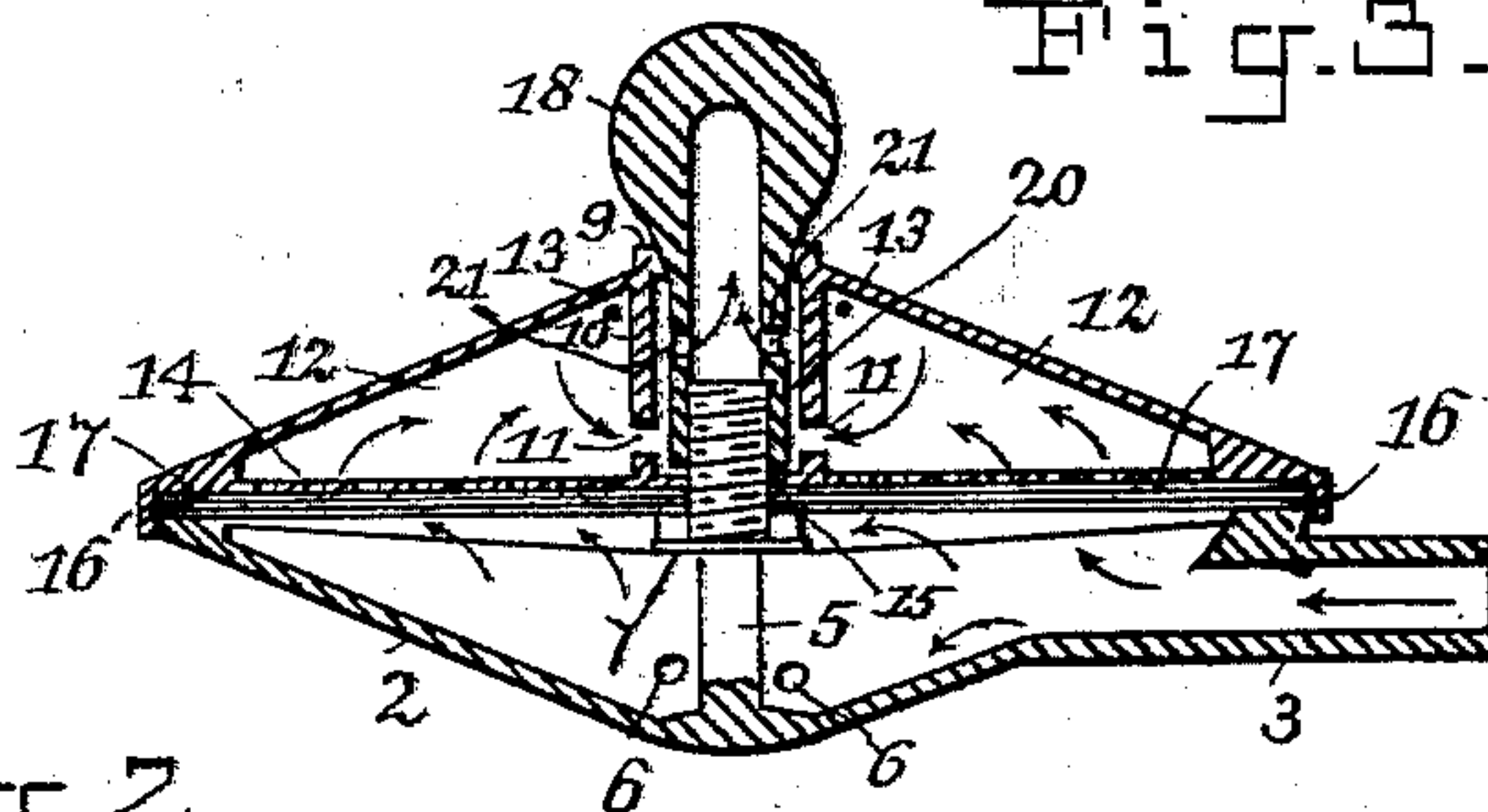


Fig. 2.

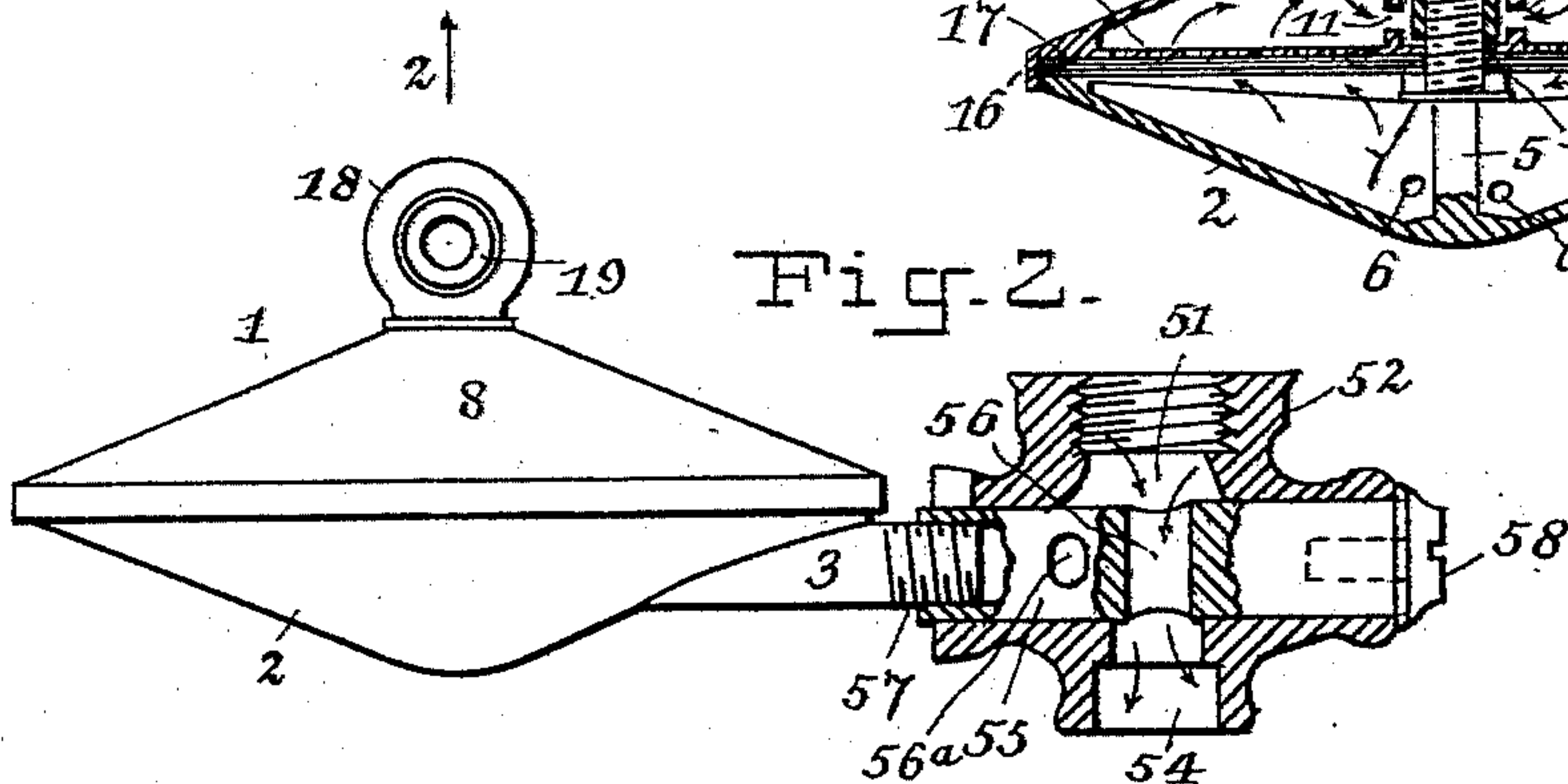


Fig. 4.

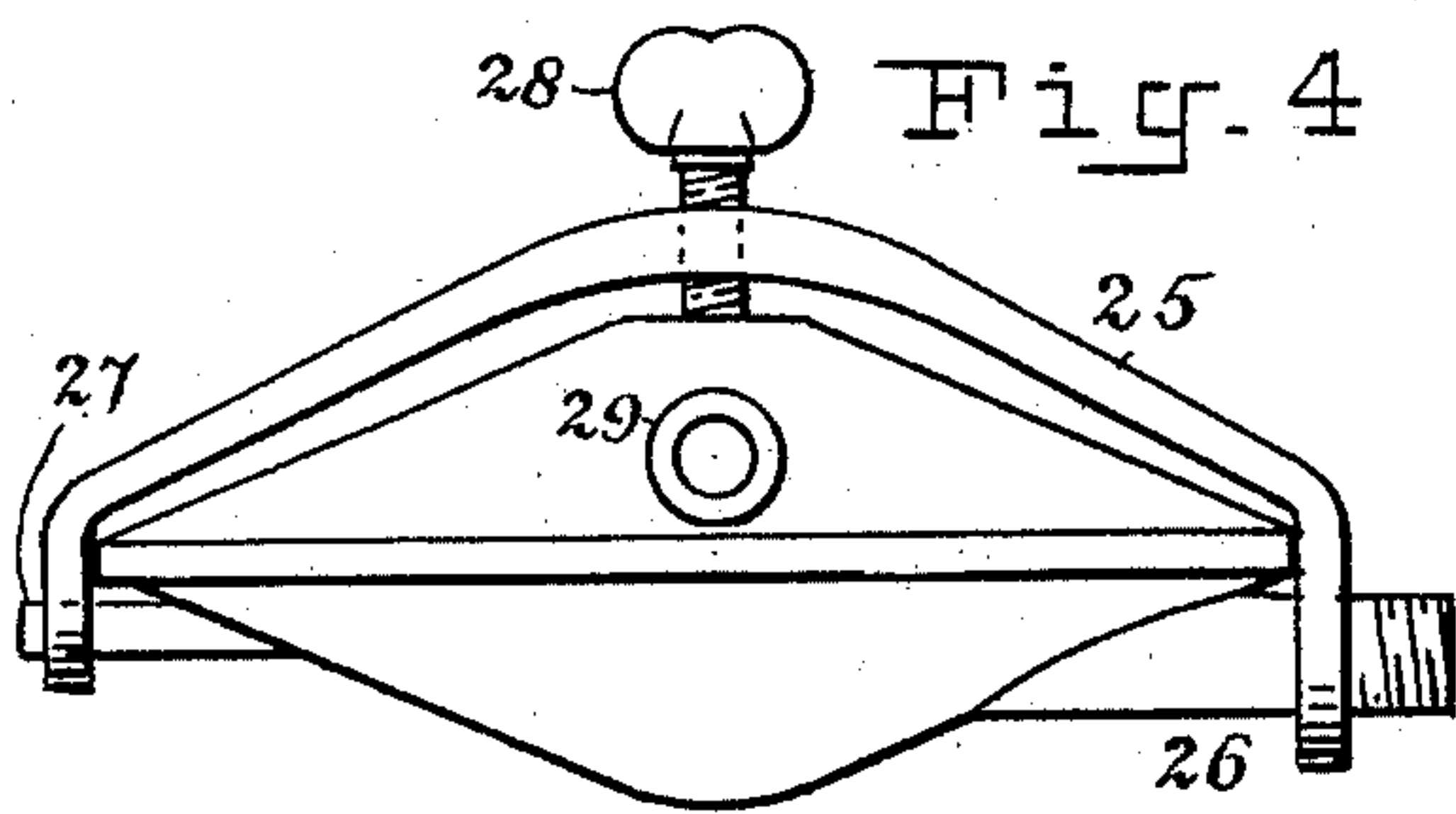


Fig. 5.

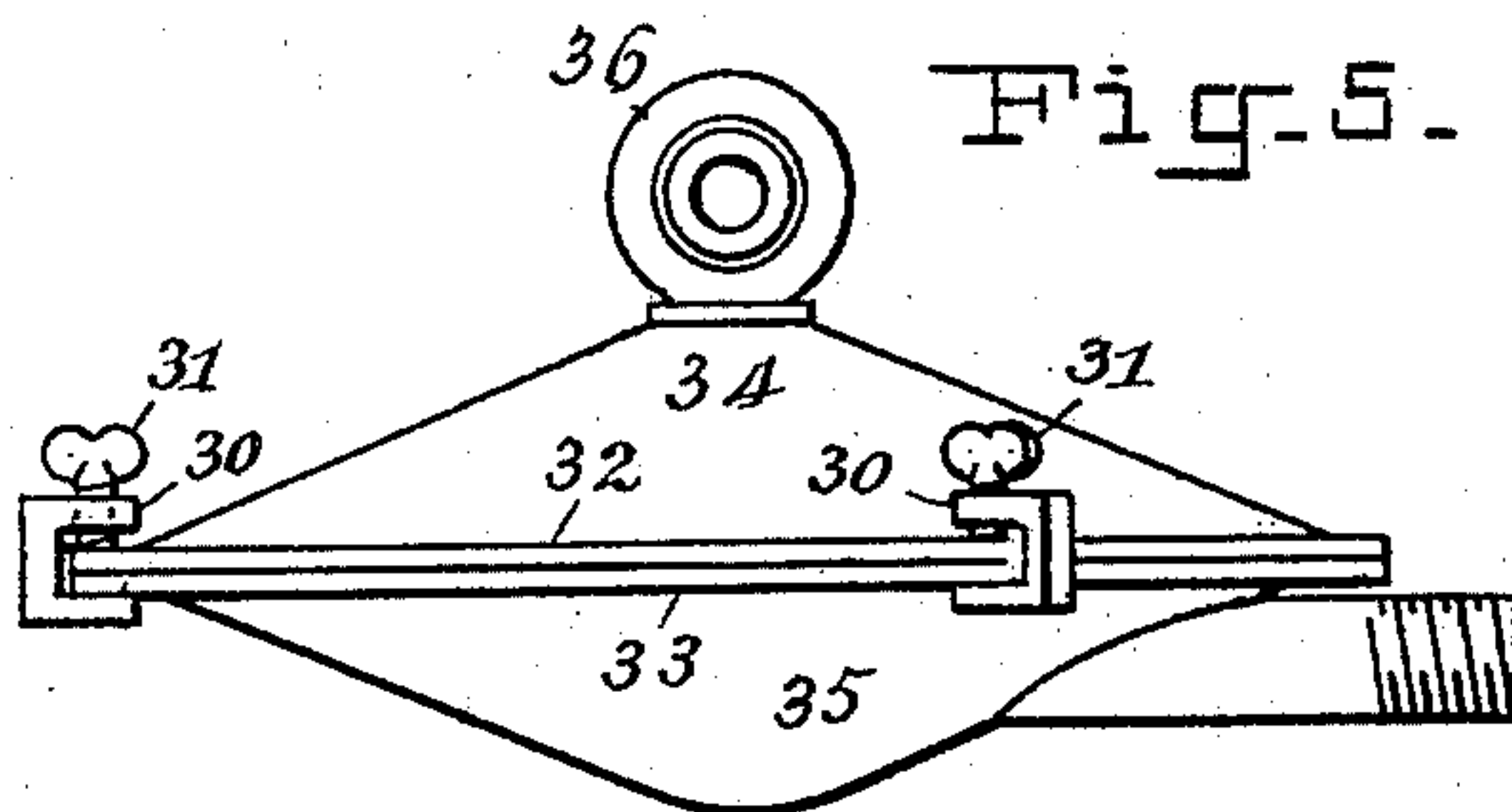
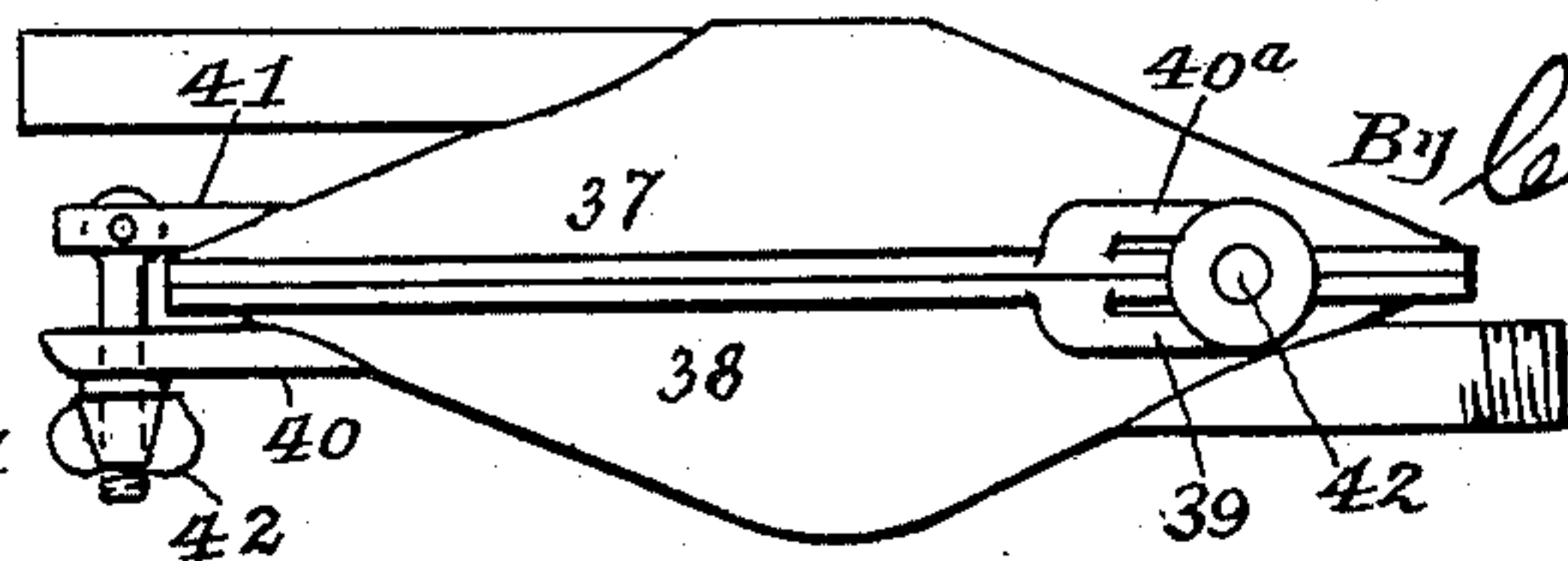


Fig. 6.



Witnesses:

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EDWARD L. POWELL, OF ATLANTIC HIGHLANDS, NEW JERSEY; HENRIETTA POWELL ADMINISTRATRIX OF SAID EDWARD L. POWELL, DECEASED.

FILTERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 612,976, dated October 25, 1898.

Application filed October 15, 1897. Serial No. 655,276. (No model.)

To all whom it may concern:

Be it known that I, EDWARD L. POWELL, a citizen of the United States, residing at Atlantic Highlands, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Filtering Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to apparatus for removing impurities from liquids, and particularly to such apparatus adapted to be connected with the faucets of water-supply pipes used to furnish water for drinking and culinary purposes, and some of the objects of this invention are to provide a simple, cheap, and effective apparatus of this character which can be readily attached to and detached from the ordinary faucets of water-supply pipes and also which when so connected may be used as a filter or may be thrown out of use while still in position upon the faucet, and, furthermore, to provide a filtering apparatus capable of long service and having renewable parts, which can be readily inserted; and with these and other objects in view the invention consists substantially of the construction, combination, and arrangement of parts, hereinafter more fully described in the specification and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, partly broken away, of my improved filtering apparatus, showing the connection for the faucet in section. Fig. 2 is an edge view of the same when the filter is not in use, also showing the faucet connection in section. Fig. 3 is a sectional view showing the interior construction of the parts. Fig. 4 shows a modified form of clamping device, and Figs. 5 and 6 illustrate still other forms of the clamping devices.

Similar characters of reference designate like parts throughout the several views.

Referring to the drawings, and particularly to the construction shown in Figs. 1, 2, and 3 thereof, the numeral 1 designates a filter constructed in accordance with my improvements, consisting of a conical back portion 2,

provided with an induction or supply tube 3, communicating with the interior thereof, as shown in Fig. 1, and formed on or connected to the interior concave face or side of the back portion 2 are radial vanes or ribs 4, extending outwardly from a solid shank or screw-threaded projection 5, projecting vertically from the center of the concave face or side of the back portion, and the inner lower portions of the ribs 4 around the base of the shank 5 are preferably provided with ports or openings 6, and, if desired, the shank 5 may have secured thereon a washer 7.

The front portion 8 of the filter is provided with a central opening 9, with which communicates a tubular extension 10, provided with lateral ports or openings 11, and from the extension 10 project radial ribs or vanes 12, provided adjacent to their connection with said extension with ports or openings 13, and secured to the inner face or rim of the front portion is a perforated screen or similar device 14, having a central opening 15, registering with the bore of the tubular extension 10, and the front portion 8 is preferably provided with an inwardly-directed annular flange or rim 16 to inclose the periphery of the back portion when the parts are connected.

Secured on the shank 5 are disks 17, of filter-paper or any other suitable material, over which is placed the front portion of the filter, and also upon said shank 5 is removably secured a discharge-nozzle 18, having a depending spout 19 and a right-angled tubular extension 20, provided with lateral ports or openings 21 and having a screw-threaded interior adapted to receive the screw-threaded extremity of the shank 5, whereby the front and back parts of the filter are detachably connected.

The foregoing construction constitutes the main and essential features of my invention; but I may, if desired, employ other means for detachably connecting the front and back portions of the filter—as, for instance, the construction shown in Fig. 4, in which I employ a clamping-yoke 25, the ends of which engage the inlet-tube 26 and a diametrically opposite lug or projection 27, said yoke being provided with a central set-screw or clamp of any preferred construction, and when this

clamp is employed the front portion will be provided with an eccentric discharge-spout 29.

In Fig. 5 I have shown detachable clamps 30, provided with set-screws 31, adapted to engage the annular horizontal flanges 32 and 33 on the front and back portions 34 and 35, respectively, of the filter, and in this construction a discharge-spout 36 of any preferred form is employed.

Still another construction for connecting the front and back portions 37 and 38, respectively, of the filter is illustrated in Fig. 6, in which the back portion 38 is provided with a plurality of sets of peripheral lugs or yokes 39 and a slotted lug 40, while the front portion carries peripheral lugs 40^a and 41, the former being adapted to be pivotally secured by a pin or split key 42 between the sets of lugs 39, thus forming a hinge connection for the front and back portions, and the lug 41 carries a clamping-screw 43, which engages the slotted lug 40, as will be understood.

I do not confine myself to any specific forms of clamping means herein shown and described, as I may use that construction which is found preferable in practice and which is best adapted for the purpose.

My improved coupling or connection employed in attaching the filter to a faucet of a water-supply pipe consists of a casting or coupling 50, provided with a central vertical bore 51, the upper end whereof is enlarged and the inner walls of which are screw-threaded to afford attachment with the faucet of the water-supply pipe, and, if desired, the outer rim thereof may be provided with a plurality of flattened faces 52, adapted to receive a wrench or other instrument used in connecting and disconnecting the coupling, and the opposite end of said bore is provided with a tubular discharge-opening 53.

Movably mounted in the tubular extension 54 of the coupling is a sleeve 55, having a transverse opening 56 therein, adapted to register with the vertical bore 51 of the casting or coupling when the sleeve is turned to a predetermined position, and this sleeve is provided with a by-pass passage or way 56^a, communicating with the central interiorly-screw-threaded opening 57 thereof and with the vertical bore 51 of the coupling 50 when the sleeve is turned in the proper position, and the extremity of this sleeve is preferably solid and is retained in position by a screw or similar device 58, and the tubular extension of the coupling is preferably cut away to form a segmental recess or notch 59, in which the stop-pin 60, carried by a sleeve, operates so that the movement of the latter can be regulated.

I may employ my improved filter herein described with or without the coupling before mentioned; but I prefer to use this coupling to form connection with the faucet of the water-supply pipe unless the construction of the faucet prevents the employment of the coupling.

I do not desire to confine myself to the spe-

cific construction, combination, and arrangement of parts herein shown and described, and I therefore reserve the right to make all changes in and modifications of the same as fairly come within the scope of my invention.

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

1. A filtering apparatus consisting of two detachable circular portions provided with radial ribs or vanes, one of said portions being provided with an inlet-tube and the other having a discharge-nozzle and filtering material between said portions.

2. A filtering apparatus consisting of a back portion provided with an inlet-tube, a front portion provided with a discharge-nozzle adapted to connect said portions and filtering material removably secured between said portions.

3. A filtering apparatus consisting of a conical back portion provided with an inlet-tube, a conical front portion having a discharge-nozzle adapted to unite said portions and filtering material secured between said portions.

4. A filtering apparatus consisting of a conical back portion provided with an inlet-tube and having a central screw-threaded shank and radial ribs or vanes, a conical front portion having a detachable discharge-spout to engage said shank and filtering material secured between said portions.

5. A filtering apparatus consisting of a conical back portion provided with an inlet-tube and having a central screw-threaded shank and radial ribs or vanes, a conical front portion having a central tubular extension to receive said shank and radial ribs or vanes and filtering material secured between said parts.

6. A filtering apparatus consisting of a conical back portion provided with a central shank and radial ribs or vanes, a conical front portion provided with a central tubular extension and radial ribs or vanes, an apertured disk secured above said ribs or vanes, filtering material secured between said portions and a removable discharge-spout adapted to enter said tubular extension and to engage said screw-threaded shank to removably connect the portions.

7. A filtering apparatus provided with a coupling having a vertical and horizontal bore passing therethrough and means movably mounted in the latter bore to permit the discharge of the liquid through the latter bore into the filter.

8. A filtering apparatus consisting of two circular portions provided with an inlet and discharge tube, filtering material removably secured between said portions and a coupling having a vertical bore, one end of which is screw-threaded for attaching with faucet of supply-pipe and the other forming a discharge-opening and a bore at right angles with the first bore, a sleeve provided with lat-

eral openings adapted to register with the first-mentioned bore and with a by-pass passage, said sleeve being adapted to be connected with said inlet, whereby when the sleeve is
5 in one position the liquid will be filtered and when in another position it will be discharged through the coupling.

9. A coupling provided with a vertical bore terminating at one end in a discharge-opening and at the other in an enlarged interiorly-screw-threaded attaching portion, said coupling being provided with a tubular right-angled extension, a sleeve mounted in said extension and provided with lateral ports and with
10 a by-pass passage, means for retaining the sleeve in position and for limiting the movement thereof, whereby when the sleeve is in

one position the liquid will be discharged from said discharge-opening and when in another position it will be discharged through
20 the sleeve.

10. A filtering apparatus consisting of a rear portion provided with an inlet-tube and radial ribs or vanes, a front portion having a discharge-nozzle and radial ribs or vanes, fil- 25
tering material between said portions and means for detachably connecting said portions.

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

EDWARD L. POWELL.

Witnesses:

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E. F. RYAN.