

No. 629,796.

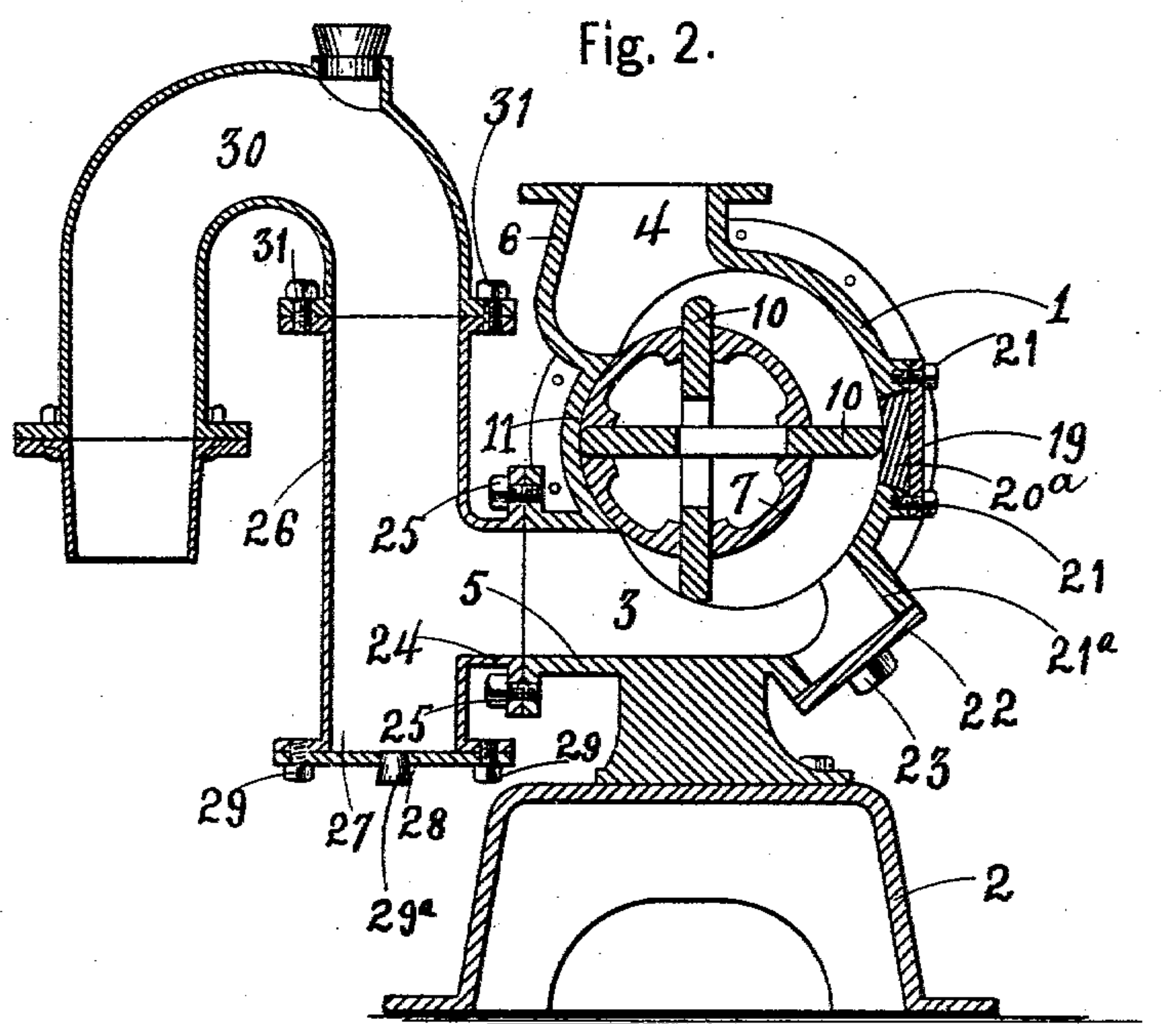
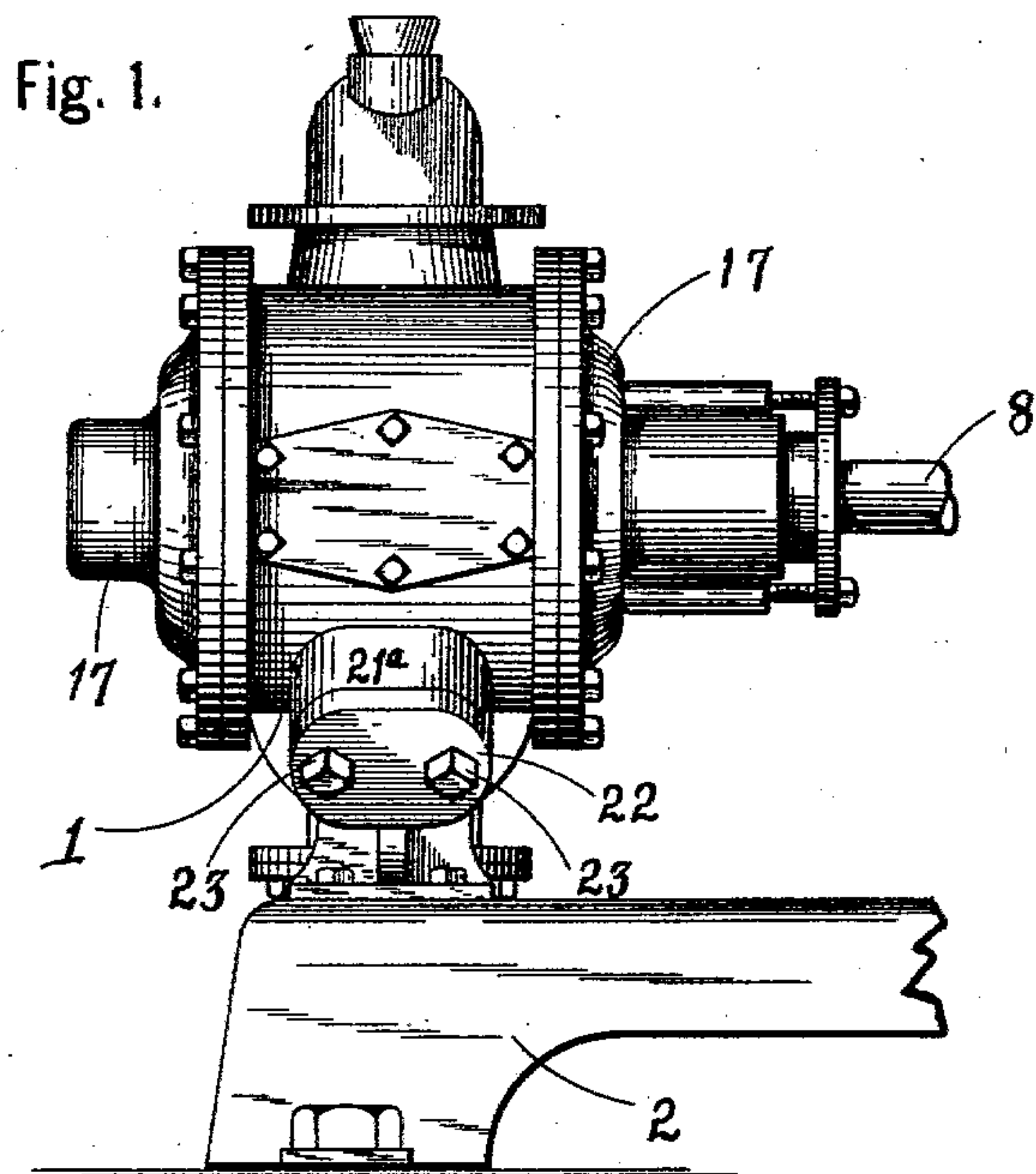
Patented Aug. 1, 1899.

B. LOBEE.
ROTARY PUMP.

(Application filed Jan. 10, 1899.)

2 Sheets—Sheet 1.

(No Model.)



WITNESSES:

L. M. Gillings.
G. A. Neubauer.

INVENTOR

Bart Lobee
BY
A. J. Sangster.

ATTORNEY.

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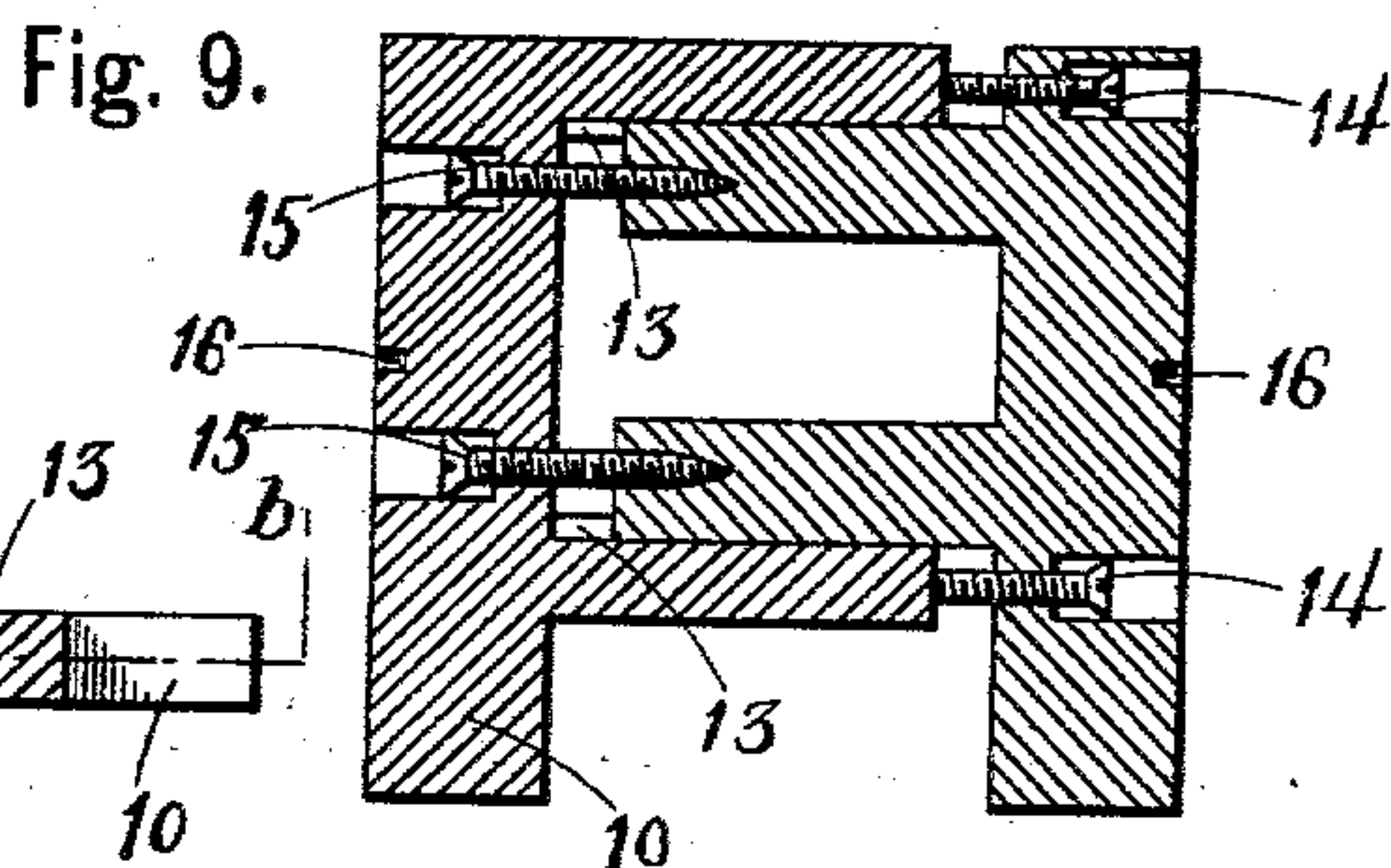
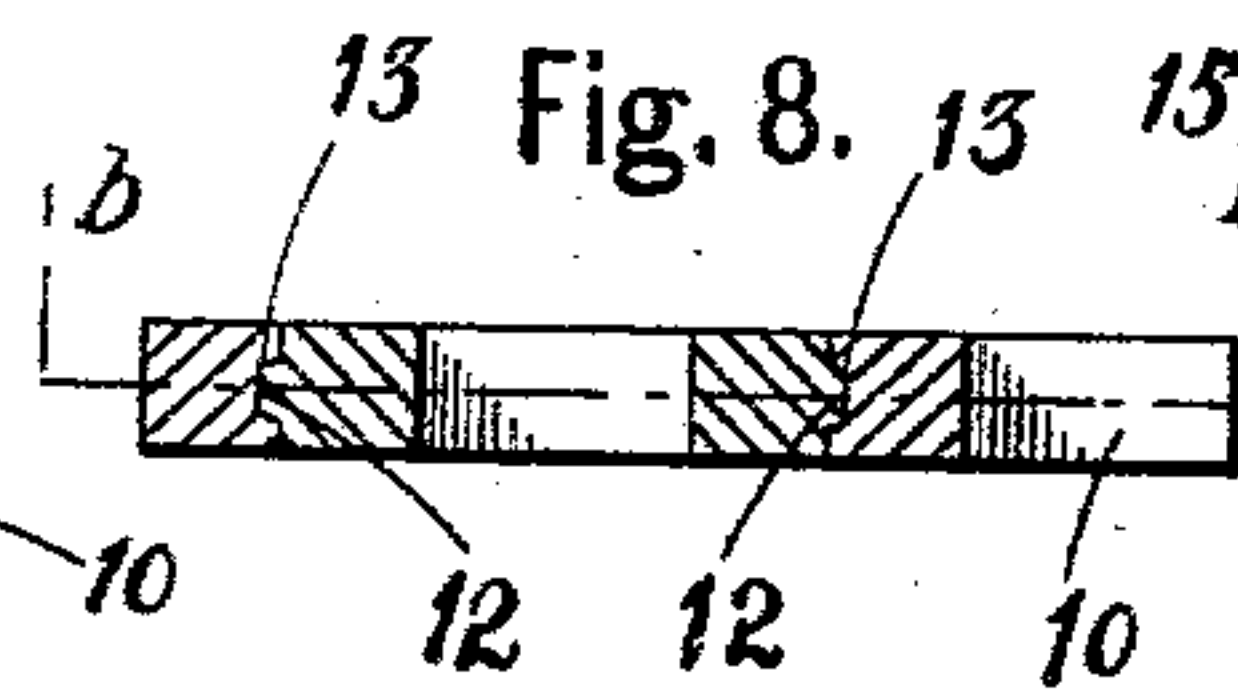
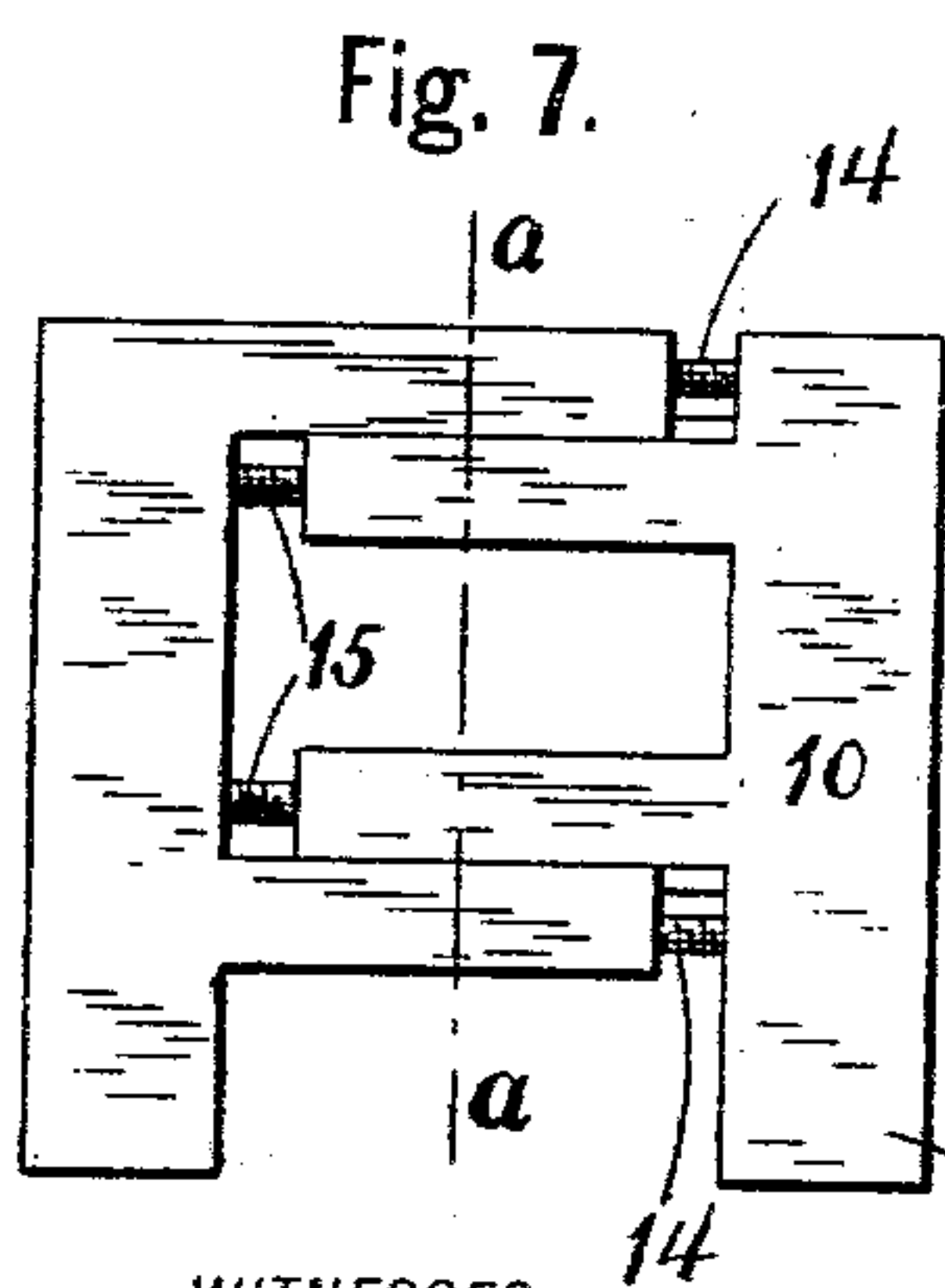
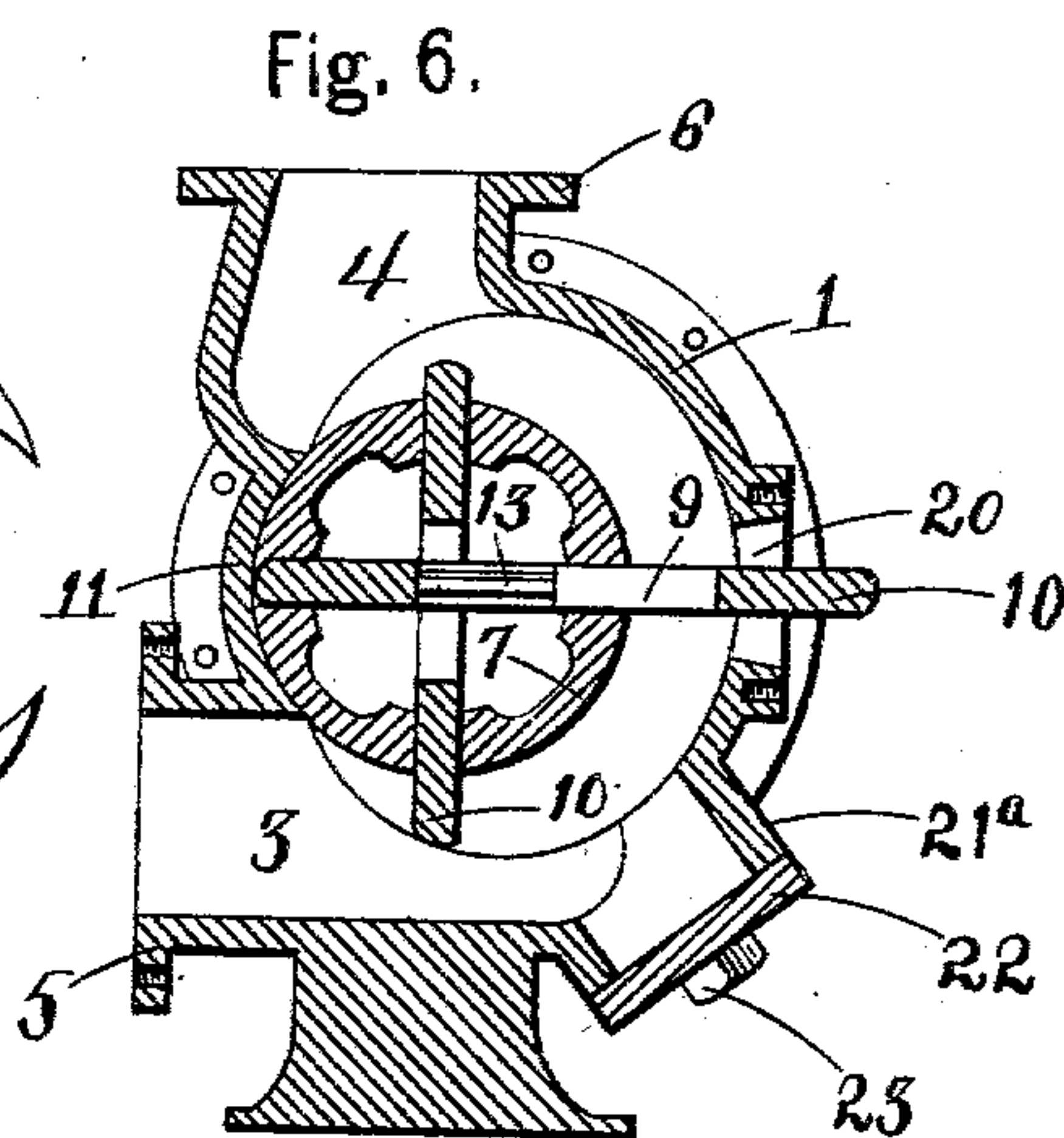
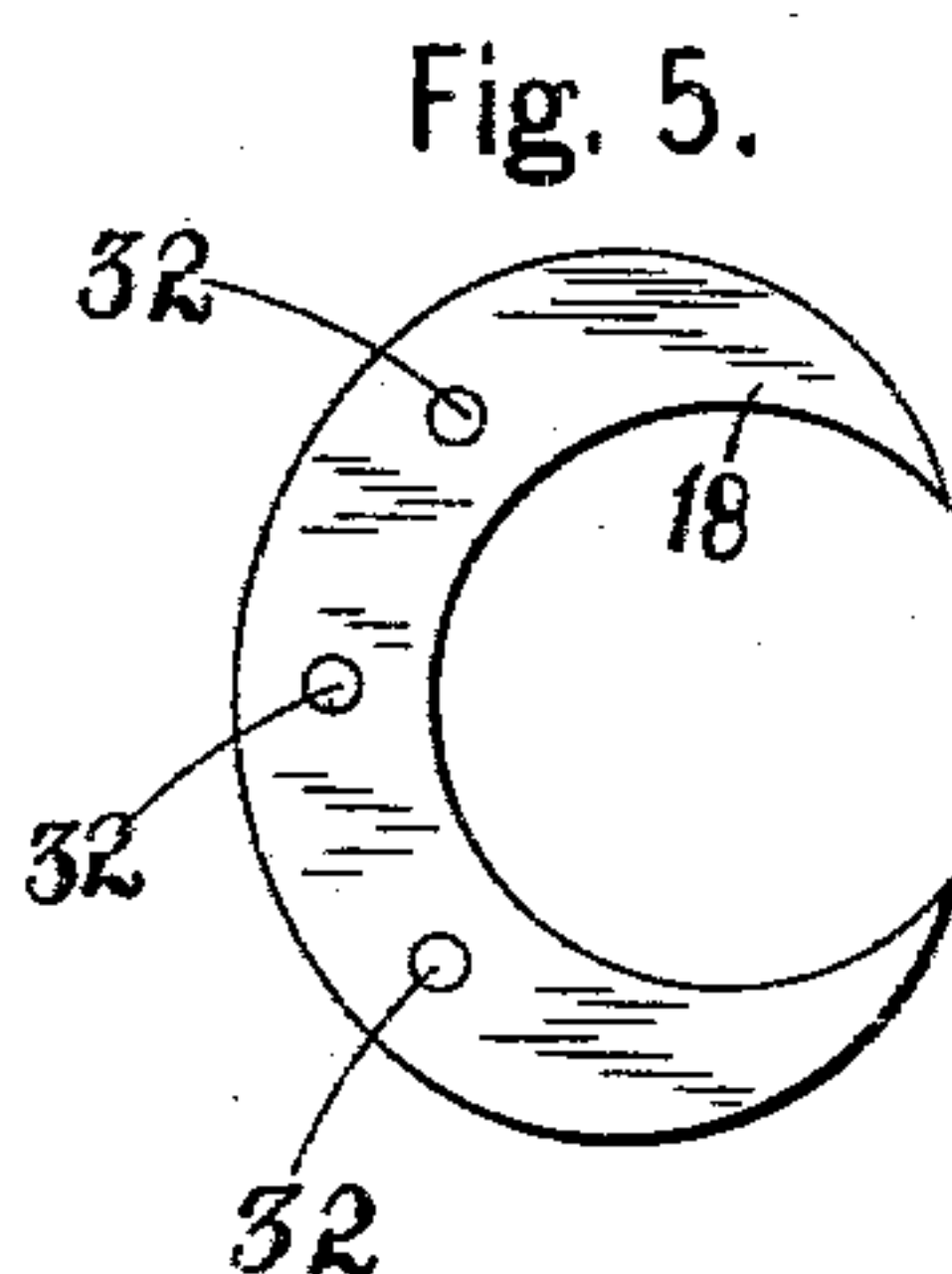
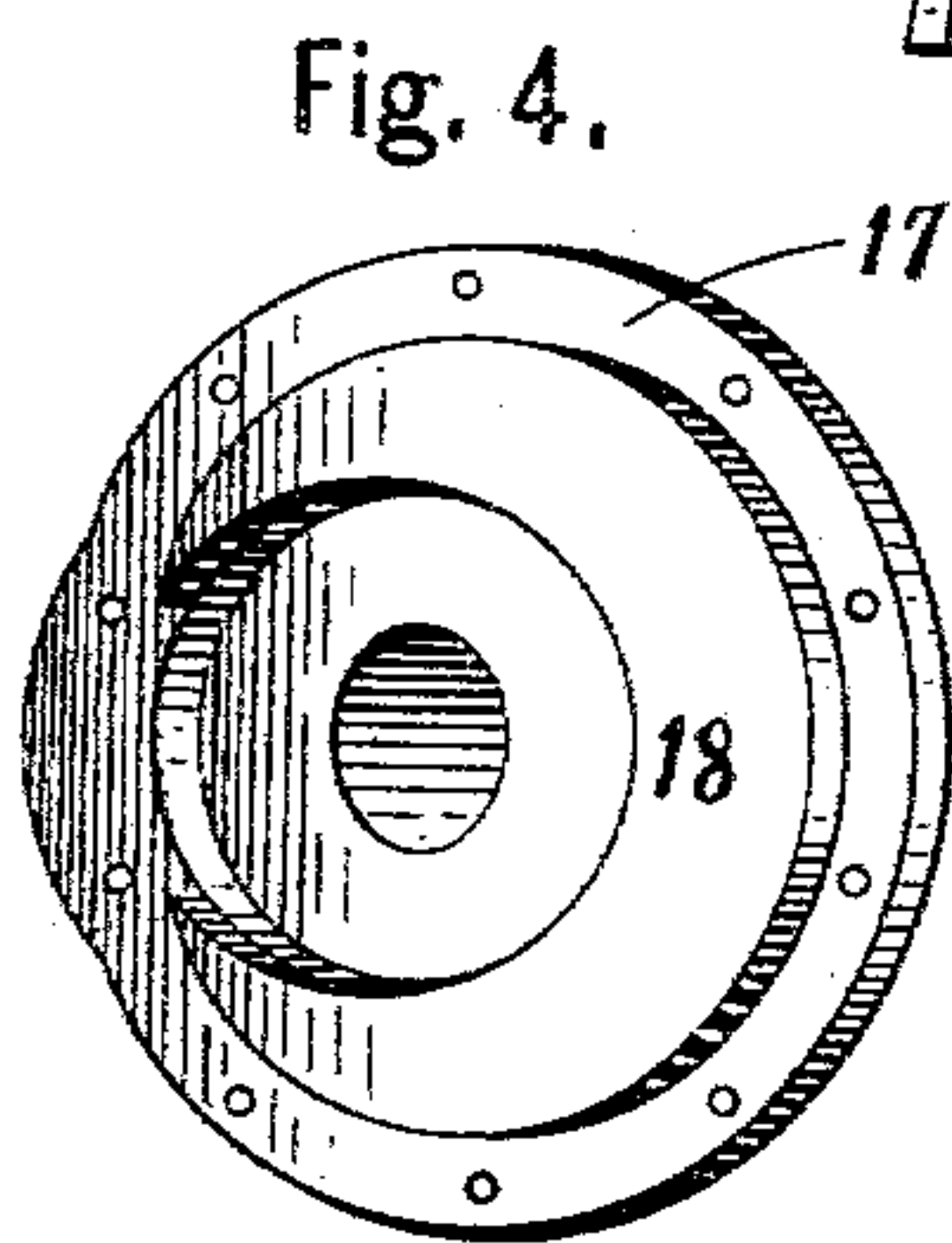
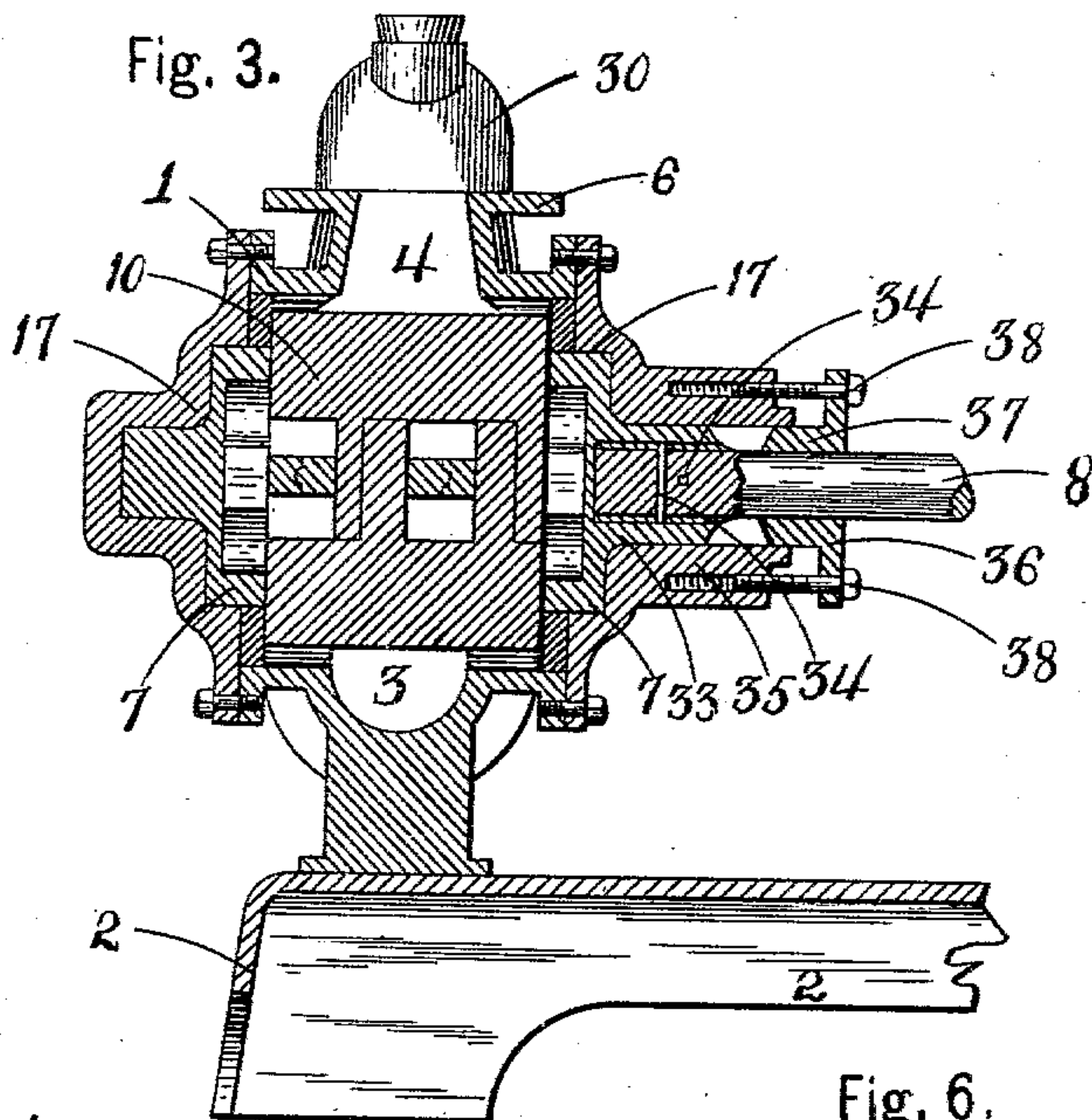
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B. LOBEE.
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(Application filed Jan. 10, 1899.)

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2 Sheets—Sheet 2.



WITNESSES:

L. M. Billings
G. A. Neubauer

Bart Lobee. INVENTOR

BY A. J. Sangster.

ATTORNEY.

UNITED STATES PATENT OFFICE.

BART LOBEE, OF BUFFALO, NEW YORK.

ROTARY PUMP.

SPECIFICATION forming part of Letters Patent No. 629,796, dated August 1, 1899.

Application filed January 10, 1899. Serial No. 701,723. (No model.)

To all whom it may concern:

Be it known that I, BART LOBEE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Rotary Pumps, of which the following is a specification.

My invention relates to an improved rotary pump; and the main objects of the invention are to so construct the valve-blades as to render them adjustable in length to take up wear, to provide the pump-shell with a removable plate to afford means for removing the valve-blades when desired without dismounting the pump or withdrawing the shaft from the shell, to provide a siphon having a horizontal adjustable nozzle, and to arrange trap devices to catch the heavier particles of matter in the liquid being pumped, and thereby prevent the clogging of the pump.

My invention also relates to certain details of construction, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved pump. Fig. 2 represents a vertical transverse section through the pump. Fig. 3 is a vertical longitudinal section through the same. Fig. 4 is a detached perspective view of the head and filling-piece. Fig. 5 is a detached side elevation of the filling-piece. Fig. 6 is a vertical transverse section to illustrate the manner of removing the valve-blades. Fig. 7 is a detached side elevation of one of the valve-blades. Fig. 8 is a section through one of the valve-blades on or about line *a a*, Fig. 7. Fig. 9 is a section through the valve-blades on or about line *b b*, Fig. 8.

In referring to the drawings in detail like numerals represent like or duplicate parts.

The pump casing or shell 1 is mounted upon a base 2 and is provided with the usual suction and discharge openings 3 and 4, having pipe extensions or nozzles 5 and 6.

A cylindrical valve-plate-supporting portion 7, cored out, as shown in Fig. 2 of the drawings, is rigidly fastened to the inner extreme of the operating-shaft 8 and is provided with transverse openings 9, preferably four in number, arranged at equal distances apart, which form slideways for the valve-plates 10.

These openings pass through the thicker portions of the cylindrical support 7, parts between the openings being cored out, as before described, to lighten the weight without decreasing the strength of construction. The portion 7 is eccentrically arranged within the shell of the pump and in close proximity to the inner surface of the part 11 of the shell between the suction and discharge openings 3 and 4, (see Fig. 2,) this portion of the shell being concaved to correspond to the circular peripheral formation of the portion 7. With the exception of the part 11 the inner surface of the shell is substantially oval in formation.

The valve blades or plates 10 are preferably formed in two interlocking dovetailed portions which are adapted to slide upon each other to afford longitudinal adjustment to take up wear, one of the portions being provided with longitudinal ribs 12 and the other with longitudinal grooves 13, forming slideways in which the ribs 12 are supported and travel. The two portions are adjusted relatively to each other by rotating the blunt-ended adjusting-screws 14, which pass through screw-threaded openings in one portion and abut against the other portion and are locked in their adjusted position by the locking-screws 15, which pass through screw-threaded openings in one portion and into the screw-threaded openings in the other portion. The valve-plates are also provided with screw-threaded openings 16, into which a tool for withdrawing the plates can be inserted and secured.

Each end of the shell is closed by means of the head-plate 17, formed substantially as shown in Fig. 4, and a filling-piece 18, of substantially the same formation as the space between the periphery of the cylindrical portion 7 and the oval portion of the interior of the shell, is rigidly fastened to the inner surface of each of the head-plates by bolts which pass through the head-plates and into the screw-threaded depressions 32 in the filling-pieces. It will be noted by referring to Fig. 1 that the ends of the casing are turned or bent outward to form flanges through which the bolts for fastening the head-plates 17 pass. The sides of the valve-plates slide against the inner surface of the filling-pieces, which when worn can be removed and replaced by a new

piece or strip of paper, or other suitable filling can be interposed between the filling-piece and the head to take up the wear. These filling-pieces 18 allow the valve-plates to be formed slightly narrower in width than the interior of the shell, so that they may be easily removed therefrom for repairs or replacement by detaching the cover 19 from the opening 20. The cover is secured in place over the opening 20 to close the same by the screw-bolts 21. The cover 19 is provided with a reduced inner portion 20^a, which may be either formed integral with said cover or in a separate portion and rigidly fastened thereto. The inner wall of the portion 20^a is concaved to correspond with the inner circular formation of the casing, so that when the cover 19 is in place a continuous curved wall is presented, upon which the ends of the valve-blades slide during the operation of the pump. Although the opening 20 does not extend the entire length of the casing, but only to the inner surface of the flanged ends of said casing, (see Fig. 1,) the filling-pieces narrow the space within the casing sufficiently to permit the blades used to be of such a width that they can be easily removed through the opening. The casing is also provided with a tubular extension 21^a, having a cap or cover 22, fastened thereto by bolts 23, which forms a trap to catch the larger and heavier particles of solid matter and prevent the same from clogging the pump or injuring or breaking the mechanism.

A bent inlet-pipe device is provided having a horizontal tubular extension 24, which is secured to the tubular extension 5, having the suction-opening 3, by the bolts 25 and a vertical tube 26, the lower end of which extends below the horizontal extension 24 to form a trap 27, the end of the tube being closed by the cap 28, secured thereto by the bolts 29. An opening is formed in the cap 28 to remove the liquid remaining in the trap after the pump is stopped without unscrewing the bolts and removing the cap. This opening is closed by the plug 29^a. A tube 30, which curves or bends upon itself, is secured at one end to the upper end of the tube 26 by the bolts 31. By removing the bolts 31 the tube 30 can be given a horizontal adjustment, thus providing means for moving the free end of the bent tube 30 to a certain extent to meet the end of a conducting-pipe without altering or changing the position of the pump.

The valve-plate-supporting portion is preferably fastened to the shaft end by filling the space between the periphery of the shaft and the interior of the reduced extension 33 of the

portion with a suitable metal poured therein in molten condition, the connection being strengthened by passing two or more pins 34 through the shaft with their ends projecting slightly above the periphery on each side, the metal filling in around the pin ends and rigidly fastening the shaft in place. The shaft journals in openings in the heads and has a stuffing-box composed of the socket 35, preferably formed or cast integral with the head, and an outer gland 36, the reduced portion 37 of which is inserted in the socket. The gland is held in place by the bolts or screws 38.

I am aware that changes in the form and proportion of parts and in the details of construction of the device herein shown and described as the preferred embodiment of my invention may be made by a skilled mechanic without departing from the principle or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifications and alterations as fairly fall within the scope of my invention.

I claim as my invention—

1. In a rotary pump, the combination with the casing, of valve-blades within said casing; each formed in two parts and one part having two parallel arms extending from the blade side and provided with longitudinal ribs and the other two parallel arms extending from the blade side and provided with longitudinal depressions forming slideways in which the ribs upon the arms of the other part seat and travel, adjusting-screws for adjusting the parts longitudinally with each other, and locking-screws for fastening said parts in their adjusted position, as set forth.

2. In a rotary pump, the combination with the casing, of valve-blades within said casing; each formed in two parts and one part having two arms extending at right angles therefrom and parallel with each other and provided with longitudinal ribs and the other having two parallel arms extending at right angles therefrom and provided with longitudinal depressions forming slideways in which said ribs seat and travel, blunt-ended adjusting-screws passing through screw-threaded openings in one part and against the ends of the arms of the other part, and locking-screws passing through openings in the other part and into screw-threaded depressions in the ends of the arms of the first-mentioned part for fastening said parts in their adjusted position, as set forth.

BART LOBEE.

Witnesses:

B. F. LOBEE,
L. M. BILLINGS.