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A. J. POCOCK.  
HYDRAULIC PUMP.  
APPLICATION FILED JUNE 27, 1908.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 1.

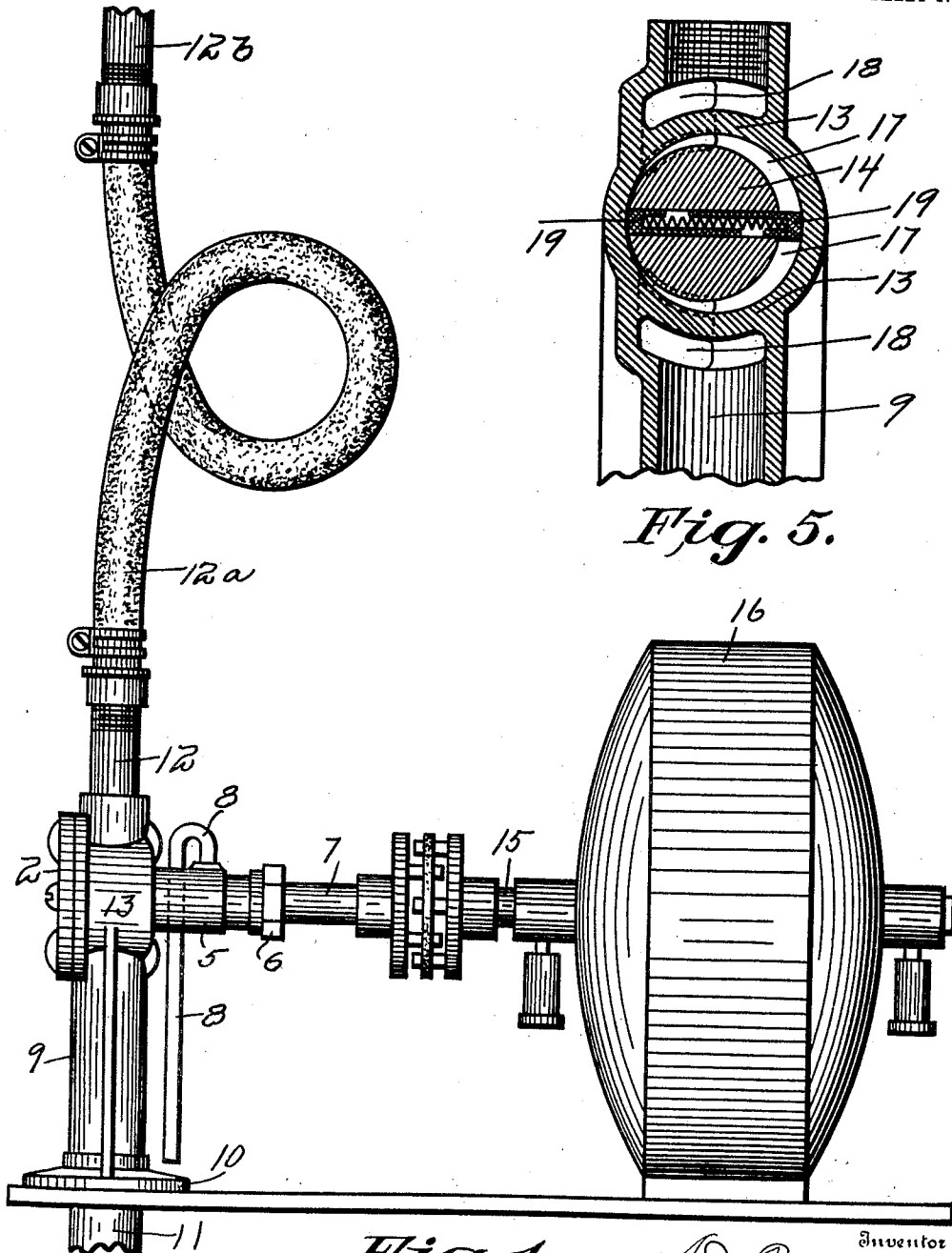


Fig. 1.

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Witnesses  
M. Siebler.  
C. M. Shebald.

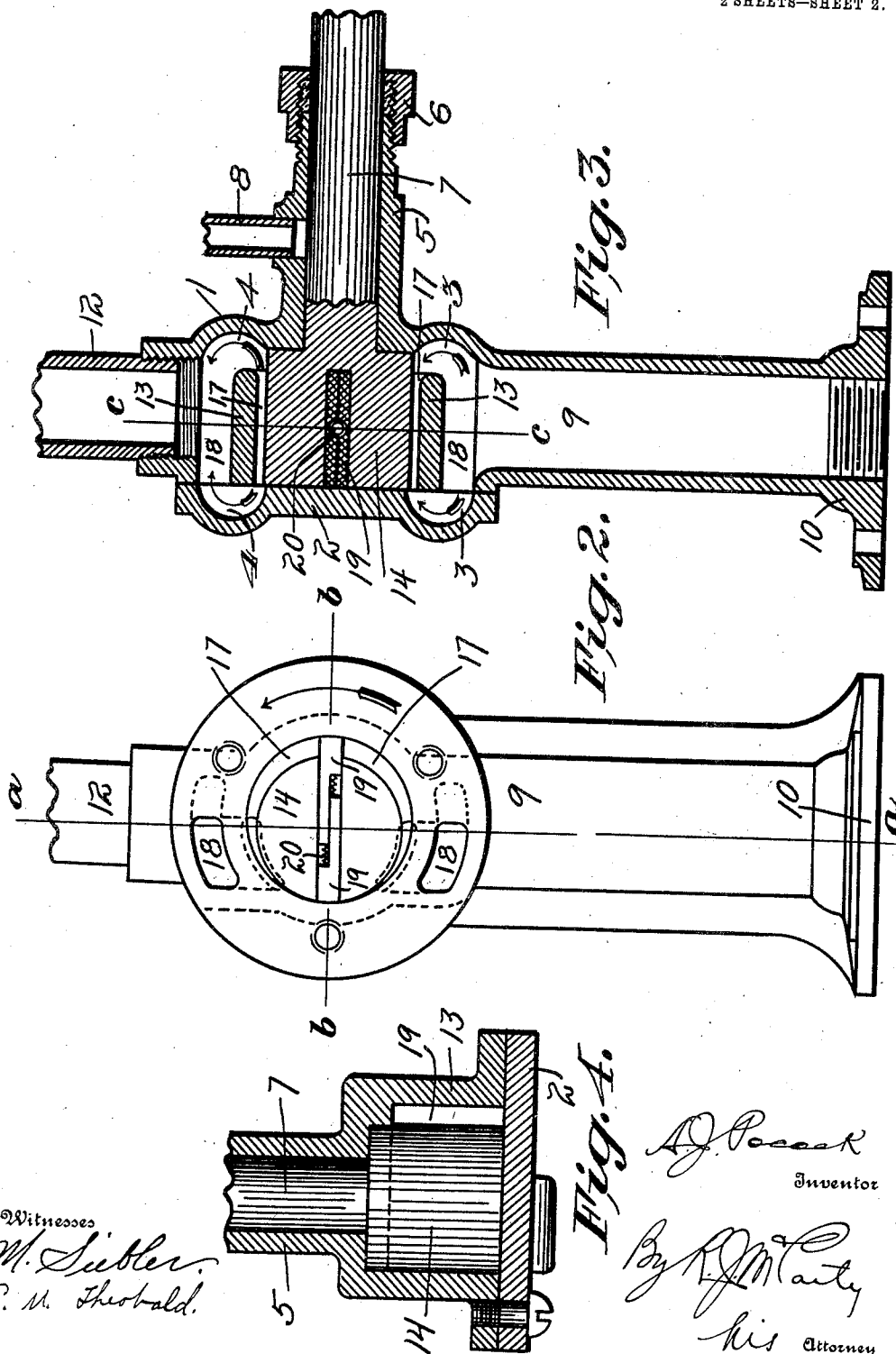
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R. J. M. Tait  
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# UNITED STATES PATENT OFFICE.

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## HYDRAULIC PUMP.

940,056.

Specification of Letters Patent. Patented Nov. 16, 1909.

Application filed June 27, 1908. Serial No. 440,606.

*To all whom it may concern:*

Be it known that I, AUGUSTINE J. POCOCK, citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Hydraulic Pumps; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in hydraulic pumps of the rotary type.

The objects of the invention are to provide such type of pump combining simplicity of construction both with a view to efficiency and cost of production, and to thus render the same available for a broad range of use, both domestic and otherwise.

The essential and desirable features of construction include the pump casing consisting of a hollow standard providing an inlet from below and an outlet from above, both inlet and outlet being substantially in vertical alinement, and an annulus located between said inlet and outlet in which an impeller is placed, the fluid entering the space between the annulus and the impeller and discharging from said space by lateral passages around the ends of the annulus as will be hereinafter more fully described.

In the accompanying drawings, Figure 1, is an elevation of the pump connected with an electric motor. Fig. 2, is an elevation with the detachable side plate removed. Fig. 3, is a vertical longitudinal section through the pump on the line *a a* of Fig. 2, with the detachable side plate in position. Fig. 4, is a horizontal sectional view on the line *b b* of Fig. 2 with the detachable side plate in position. Fig. 5, is a sectional view through the head of the pump on the line *c c* of Fig. 3.

In a detail description of the invention, similar reference characters indicate corresponding parts.

The pump consists of two side plates 1 and 2, the former being integral with a hollow standard 9 which provides an inlet for the fluid, and a screw-threaded portion to receive a pipe 12 which provides for the outlet from the pump, said inlet and outlet being

in a substantially vertical alinement. The side plate 2 is similar in construction to the side plate 1 but is detachable from the pump. A ring 13 also forms a part of the same casting, and as shown in Figs. 1 and 5, said ring forms opposite sides of the pump casing and also the inner walls of the suction and outlet chambers 18. The interior of said ring communicates with said chambers above and below through inlet or suction ports 3 and 3 and outlet ports 4 and 4 provided in the side plates 1 and 2 and communicating with the ends of said ring. The impeller 14 lies eccentrically within said ring and the ports 3 and 4 are essentially on one side of a vertical plane through the axis of the pump as shown in Fig. 5, and communicate with the chamber or surrounding space 17. The shaft 7 of the impeller is extended through a hollow bearing 5, which is also a part of the single casting, which, as before stated, consists of the hollow or pipe-like standard 9, the side plate 1, the ring 13 and the screw-threaded aperture which receives the outlet pipe 12. The bearing 5 is fitted with a stuffing box 6 and a drip pipe 8.

The impeller is provided with two blades 19 which are expanded by springs 20 to maintain them in contact with the ring 13 as the impeller is rotated, and the positions of the inlet and outlet ports are such that in the rotation of the impeller, one of the blades 19 has forced the liquid before it through the outlet port, while the other of said blades has opened the suction port below by a complete movement over it.

In Fig. 1, the pump is shown mounted on a base by means of the flange 10 thereof with a suction pipe 11 communicating with the bottom thereof by being screwed into the base or flange 10. The construction is so simplified that it might be said to consist of practically a single pipe with a swell in the body thereof to permit the fluid to enter said pipe and pass out of the pipe after passing around the impeller located in the swell.

The pump as shown in Fig. 1 is driven from an electric motor 16, the shaft 15 of which is coupled to the shaft of the pump by any common form of coupling. The outlet pipe 12 has connected to it a distributing pipe 12<sup>a</sup> which connects with a metallic pipe 12<sup>b</sup> leading to the storage tank or distributing system (not shown). The placing of

the vibratory or flexible pipe 12<sup>a</sup> between the pump and the distributing system, materially lessens the noise due to the forcing of the water through the pump.

5 Having described my invention, I claim:

A pump of the type specified, consisting of a hollow standard constituting an inlet pipe and extending on one side in a side plate and on two opposite sides in a swell or enlargement which extends in the form of a ring, an impeller within said ring, said swell or enlarged portion and the side plate integrally joined to the hollow standard, terminating at the top of the pump in a screw-threaded nozzle or extension in alignment with the hollow standard, an outlet pipe connected with said nozzle, the said

ring forming on the interior of the pump walls between the impeller and inlet and outlet chambers communicating with the hollow standard and the outlet pipe, and a detachable side plate opposite the integral side plate, said detachable and integral side plates providing ports leading from the inlet chamber below the impeller to the interior of the ring, and from the interior of the ring above the impeller to the outlet chamber, substantially as specified. 20 25

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

AUGUSTINE J. POCOCK.

Witnesses:

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MATTHEW SIEBLER.