

T. HYE.

ROTARY PUMP.

APPLICATION FILED JULY 30, 1912.

1,061,544.

Patented May 13, 1913.

3 SHEETS—SHEET 1.

Fig. 1.

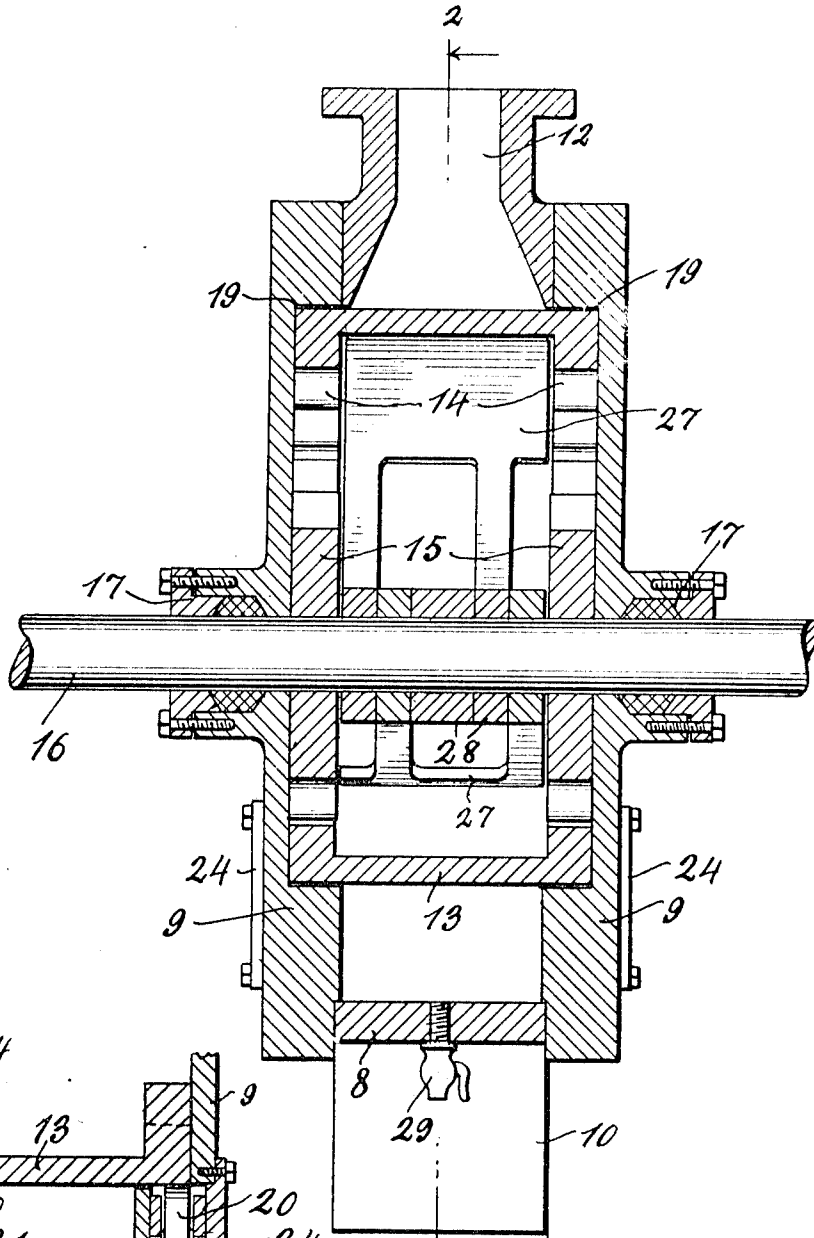
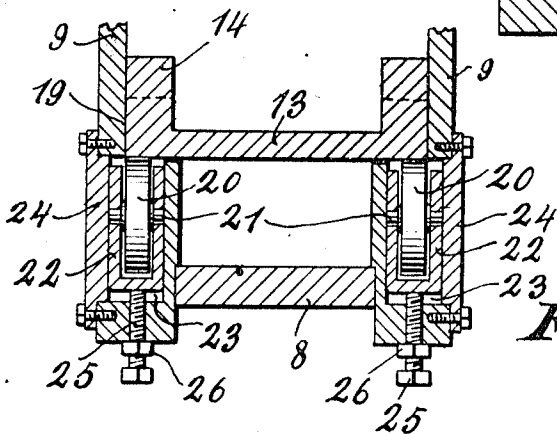


Fig. 3.



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 3 SHEETS—SHEET 2.

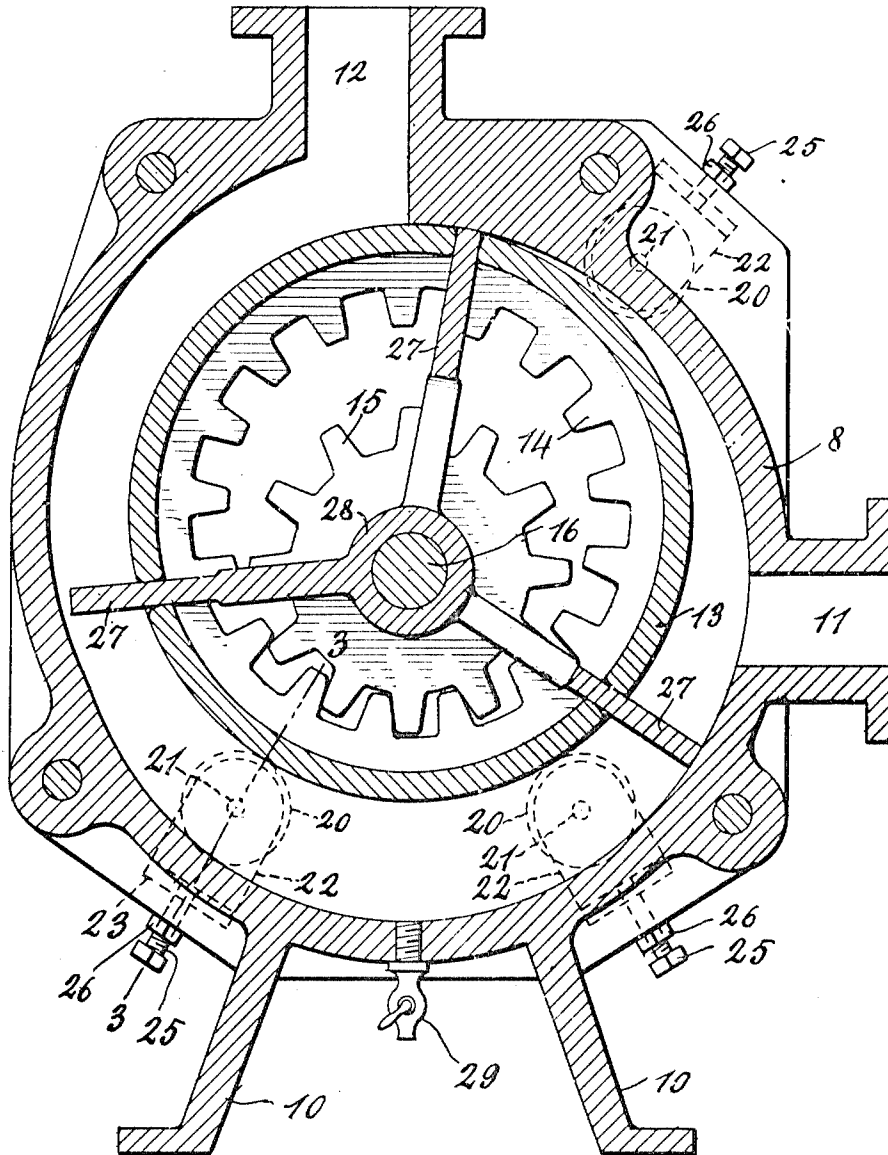


Fig. 2.

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 3 SHEETS-SHEET 3.

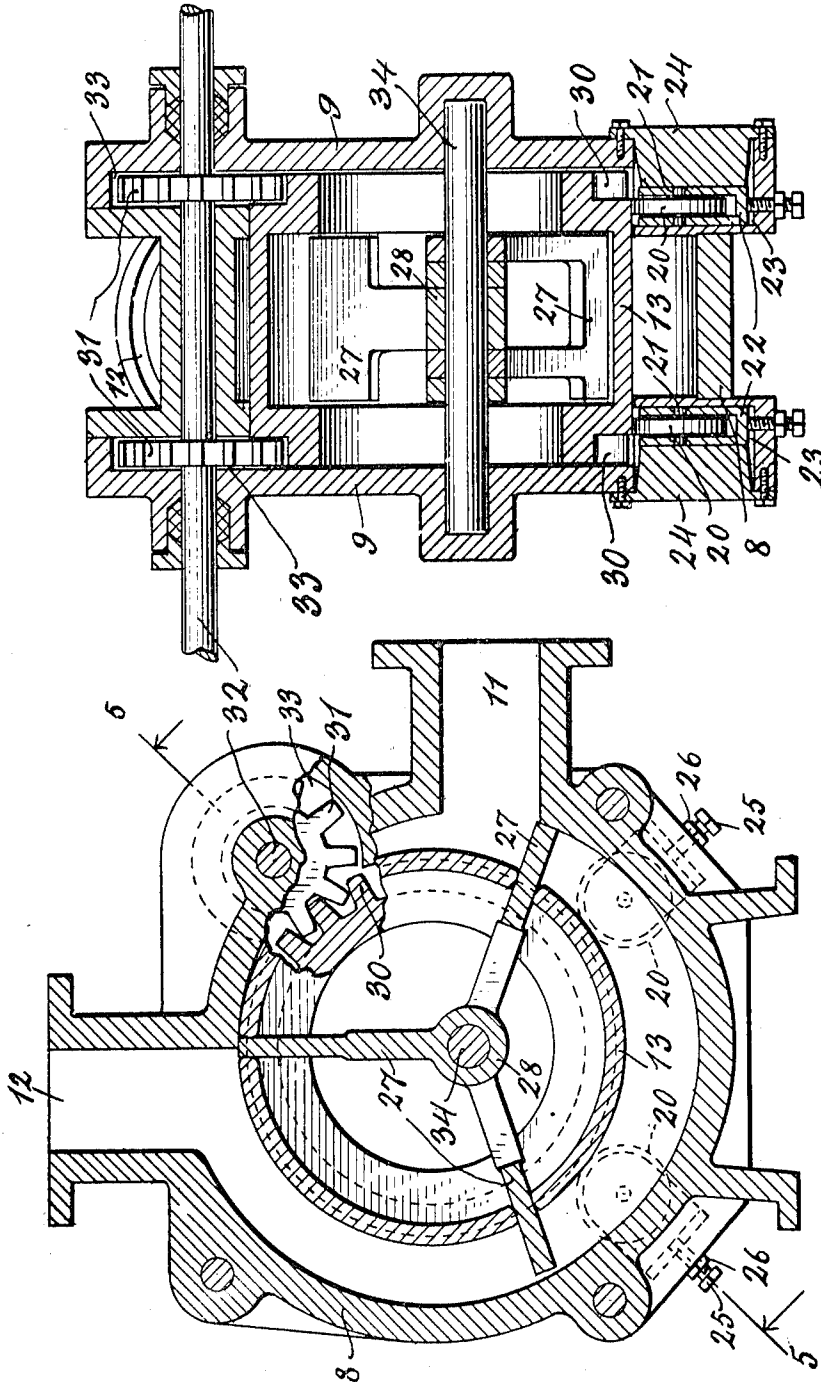


Fig. 5.

Fig. 4.

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ROTARY PUMP.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, THOMAS HYE, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Rotary Pumps, of which the following is a specification.

This invention relates to rotary pumps characterized by a cylinder in which operates a rotor, the latter being eccentric to the cylinder and carrying radial piston wings.

It is the object of the invention to provide a novel and improved drive for the rotor; to provide a support for the rotor which reduces friction to a minimum and makes an easy running pump and increases the efficiency thereof; and furthermore, to provide a pump embodying certain novel and improved details of construction to be herein-
after described and claimed.

In order that the invention may be better understood, reference is had to the accompanying drawings in which—

Figure 1 is a longitudinal section of the pump. Fig. 2 is a vertical section on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a vertical section showing a modification. Fig. 5 is a section on the line 5—5 of Fig. 4.

Referring specifically to the drawing, 8 denotes a stationary pump cylinder closed at its ends by heads 9. The cylinder is supported on feet 10 cast integral therewith, and has a side inlet 11 and a top outlet 12. In the cylinder is eccentrically mounted a rotor 13 which is in contact with the cylinder wall at one point, the point of contact being on that side of the outlet which is nearest to the inlet. Starting at this point the inner surface of the cylinder wall is an arc having for its center the center of the cylinder, and at a point slightly below the horizontal center line of the cylinder, on the side opposite the side having the inlet, and up to the outlet, said surface is an arc having for its center the center of the rotor. By this arrangement there is a continuous wide water space in the cylinder from the inlet to the outlet, which results in a free flow of water and prevents choking of the pump.

The rotor 13 is annular and has at each end an internal gear 14, and in mesh with each of said gears is a pinion 15 which is fast on a drive shaft 16, passing through stuffing boxes 17 on the cylinder heads 9.

The shaft will be driven from any suitable source of power, and is supported in bearings located on the outside of the cylinder. The inner sides of the cylinder heads have circular recesses 19 which are eccentric to the cylinder, and in which recesses the ends of the rotor seat.

The rotor 13 is supported at the bottom on rollers 20, said rollers being located on opposite sides of the vertical center line of the cylinder. The rollers are mounted on a shaft 21 carried by a yoke 22. In the cylinder heads 9 are radial recesses 23 in which the yokes 22 are mounted, said recesses opening into the recesses 19, and through the outer surface of the cylinder heads, and being closed by cover plates 24, which latter are bolted to the cylinder heads and are removable so that the yokes and the parts carried thereby may be put in place or removed. Through the edge of the cylinder heads are threaded screws 25 which engage the outer ends of the yokes and serve to adjust the same and properly position the rollers with respect to the rotor. The screws are provided with lock-nuts 26. A pair of rollers as herein described also engage the rotor adjacent to one side of the outlet 12.

The rotor 13 is provided with radial piston wings 27, three of such being shown, although this number may be varied. The wings are loosely mounted on the shaft 16, they being formed with hubs 28 through which the shaft passes. The wings pass through openings in the rotor and project therefrom into contact with the cylinder wall. In the bottom of the cylinder is a drain cock 29.

In operation, the shaft 16 being in motion, the rotor is operated by the herein described gears, and the piston wings 27 are carried around in the water chamber, whereby the water is drawn into said chamber from the inlet and forced out of the same through the outlet. The pump is highly efficient in operation, it runs smooth and easy, is simple in structure and devoid of complicated parts to get out of order, and it can also be run as an engine by reversing its operation.

In the modified form of pump shown in Figs. 4 and 5 of the drawing the rotor 13 has spur gears 30 at its ends which are in mesh with pinions 31 mounted on a drive shaft 32, said pinions working in pockets 33 in the cylinder heads. The piston wings 27

are mounted on a shaft 34 supported in bearings on the cylinder heads.

I claim:

5 The combination of a cylinder, heads closing the ends of said cylinder, said heads being formed with circular recesses which are eccentric to the cylinder and pockets in communication with said recesses, a rotor mounted in the cylinder and seating at its
10 ends in the aforesaid recesses, spur gears on

the ends of the rotor, pinions in mesh with said gears, said pinions being mounted in the pockets of the cylinder heads, and driving means for said pinions.

In testimony whereof I affix my signature 15
in presence of two witnesses.

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Witnesses:

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