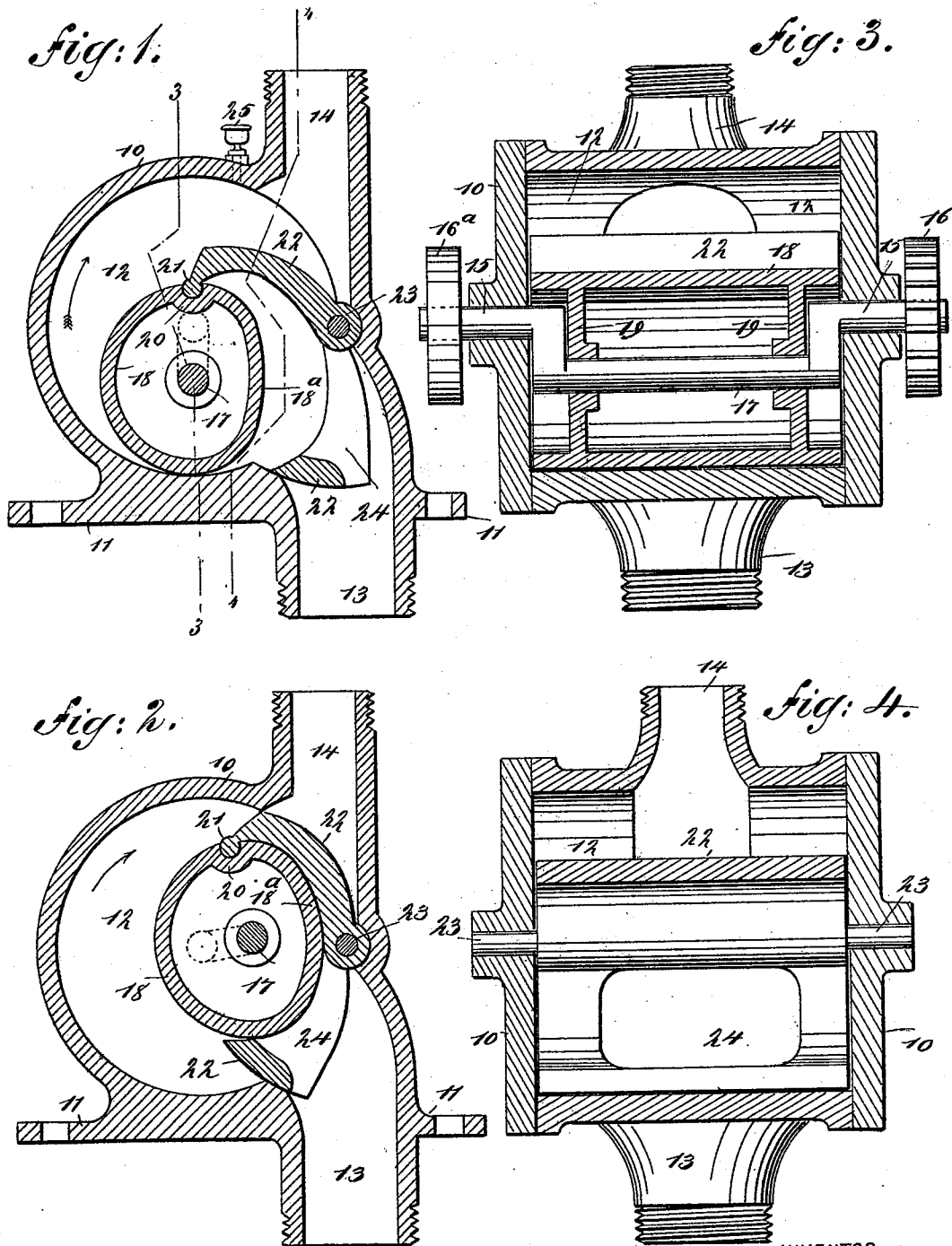


(No Model.)

C. RUMLEY.
ROTARY PUMP.

No. 516,406.

Patented Mar. 13, 1894.



WITNESSES:
Chas. Viala.
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UNITED STATES PATENT OFFICE.

CHARLES RUMLEY, OF HELENA, MONTANA.

ROTARY PUMP.

SPECIFICATION forming part of Letters Patent No. 516,406, dated March 13, 1894.

Application filed June 28, 1893. Serial No. 479,040. (No model.)

To all whom it may concern:

Be it known that I, CHARLES RUMLEY, of Helena, in the county of Lewis and Clarke and State of Montana, have invented a new and Improved Rotary Pump, of which the following is a full, clear, and exact description.

My invention relates to improvements in pumps and particularly to rotary pumps; and the object of my invention is to produce a very cheap, simple and strong pump, which runs with very little friction, which is extremely durable and little likely to get out of repair, and which is adapted to discharge a large volume of water in proportion to the size of the pump.

To these ends my invention consists of certain features of construction and combinations of parts, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a sectional elevation of the pump embodying my invention, with the discharge pipe open. Fig. 2 is a similar section with the discharge pipe closed. Fig. 3 is a longitudinal section on the line 3—3 in Fig. 1; and Fig. 4 is a longitudinal section on the line 4—4 in Fig. 1.

The pump is provided with a suitable cylinder or case 10 which has preferably a base flange 11, to facilitate its attachment to a support, and it has within it a water chamber 12 connecting with an inlet pipe 13 at the lower end of the pump cylinder and with a discharge pipe 14 at its upper end. The cylinder is provided with a shaft 15 which extends longitudinally through it and is journaled in its ends, the shaft being provided with a driving gear 16 and the pulley 16^a, so that power may be applied to either or both ends to enable it to run steadily and it may be driven in any convenient way. A crank 17 on said shaft extends longitudinally across the cylinder and on it is mounted loosely the piston 18 which is of a nearly cylindrical form, but it is flattened on one side, as shown at 18^a to enable it to fit snugly

against the pump valve which connects with the piston and which will be described presently. The ends 19 of the piston 18 are depressed, as shown clearly in Fig. 3, to make room for the ends of the crank 17, and on one side the piston is thickened longitudinally, as shown at 20, to provide for the joint 21 which connects the piston with the oscillating valve 22, which is secured to a shaft 23 journaled in the cylinder 10, parallel with the shaft 15 and at a point about midway between the inlet 13 and discharge 14. The ends of the shaft 23 are journaled in the ends of the cylinder 10 and, if desired, these bearings may be provided with the usual oil cups, so that they may be kept lubricated; similar provision may also be made for lubricating the bearings of the shaft 15. The upper end of the valve 22 extends across the cylinder 10 and is adapted to close the discharge pipe 14 and the lower end swings opposite the mouth of the inlet pipe 13, but is provided with a hole or port 24 through which the water may enter the chamber 12. On the top of the cylinder 10, near the discharge pipe 14, is an oil cup 25 which delivers through the cylinder and upon the joint 21 between the piston 18 and the valve 22, when the joint is in its upper position, and in this way the joint may be kept lubricated when the pump is dry. The connection described enables the piston 18 to, at all times, fit closely against the wall of the chamber 12 when the pump is set in motion, and this causes the valve 22 to oscillate on its pivot so as to alternately open and close the inlet and discharge pipes, but the water cannot flow through the port 24 of the valve when the piston 18 is up in position against the valve, as shown in Fig. 2. When the pump is set in motion, the piston swings away from the lower portion of the valve 22, as shown in Fig. 1, and the water flows in from the pipe 13 through the port 24 of the valve, until the piston makes almost a revolution, during the last part of which the discharge pipe 14 is closed. At the next revolution the piston, as it leaves the valve, opens the discharge pipe, and as it travels upward gradually forces the water from the chamber 12 and through the discharge pipe, the valve

22 serving to prevent the water from passing downward in front of the piston; in this way the revolution of the piston will alternately open and close the inlet and discharge water from the pipe 14.

It will be observed from the above description that the pump has very few pieces, is constructed and arranged to be very durable, that it may be steadily driven, easily operated, and in proportion to its size will pump a large quantity of water.

This pump may be used for pumping foul gases from mines and other places and may also be used as an air pump to supply air under pressure for ventilating or other purposes.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A rotary pump, comprising a cylinder having an inlet and discharge pipe, an oscillating valve fulcrumed on the cylinder and

adapted to swing opposite the inlet and discharge pipes the said valve being composed of an imperforate upper portion and an apertured or ported lower portion 24, and a revoluble piston held to turn eccentrically in the cylinder, the piston being pivoted to one end of the valve, substantially as described.

2. A rotary pump, comprising a cylinder having suitable inlet and discharge pipes, an oscillating valve fulcrumed in the cylinder between the inlet and discharge pipe so as to swing opposite the same, the valve having a port which is opposite and constantly open to the inlet pipe, and a revoluble piston pivoted at one end of the valve and adapted to follow the wall of the cylinder and fit against the inner faces of the valve, substantially as described.

CHARLES RUMLEY.

Witnesses:

WILLIAM H. DE WITT,
CHARLES R. SANDERS.