

UNITED STATES PATENT OFFICE.

AUGUST LEUCHTWEISS, OF CINCINNATI, OHIO.

IMPROVEMENT IN ROTARY PUMPS.

Specification forming part of Letters Patent No. **104,469**, dated June 21, 1870.

To all whom it may concern:

Be it known that I, AUGUST LEUCHTWEISS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and Improved Rotary Pump; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 represents a vertical central section of my improved rotary pump. Fig. 2 is a horizontal section of the same, taken on the plane of the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new rotary pump, which is constructed to throw a continuous stream with great force and without requiring great power.

The invention consists in the combination of a paddle-wheel with a rotary cut-off wheel and stationary packing for the same, as hereinafter more fully described.

A in the drawing represents the case of the pump. It is made in form of two cylinders, which are brought so close together as to be incomplete where they come in contact with each other. In one of these cylinders, *a*, is arranged a paddle-wheel, B—that is to say, a disk, *b*, from the lower face of which the arms or paddles *c c* are suspended.

The plate *b* rests on or is close above a fixed cylindrical projection, C, in the case A, the said projection having that part of its edge which faces the other cylinder, *d*, hollowed or made concave, as shown. The paddles fill the space transversely between the block C and the inner side of the cylinder *a*.

In the cylinder *d* is arranged a wheel, D,

which is of such size that its edge is close to the concave edge of the block C, a constant tight packing being there formed.

In the edge of the wheel D are as many notches or recesses as there are paddles on the wheel B, four being shown in the drawing. E is the suction-pipe, and F the discharge-pipe.

The wheels B and D are mounted upon shafts G H, respectively, which are revolved by gearing or otherwise in opposite directions, as indicated by arrows in Fig. 2.

The operation is as follows: The paddles *c*, moving away from the wheel D at suction-pipe, increase the space for receiving the water in the pump, and produce thereby the requisite suction. Opposite the discharge-pipe such space is constantly being reduced by the paddles approaching the wheel D, and the water is therefore discharged. When a paddle reaches the wheel D it enters one of the recesses of the same, and remains therein while it passes the concave edge of the block C.

The wings of the wheel D always keep the space between the suction and discharge pipes interrupted, preventing leakage and loss of power. The packing-block C is therefore of great importance.

The pump may be reversed in either direction and still operate in the same manner.

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

The paddle-wheel B, recessed wheel D, case A, and packing-block C, in combination with each other, to constitute a rotary pump, as set forth.

A. LEUCHTWEISS.

Witnesses:

J. HENRY PLUMP,
LOUIS STEUBING.