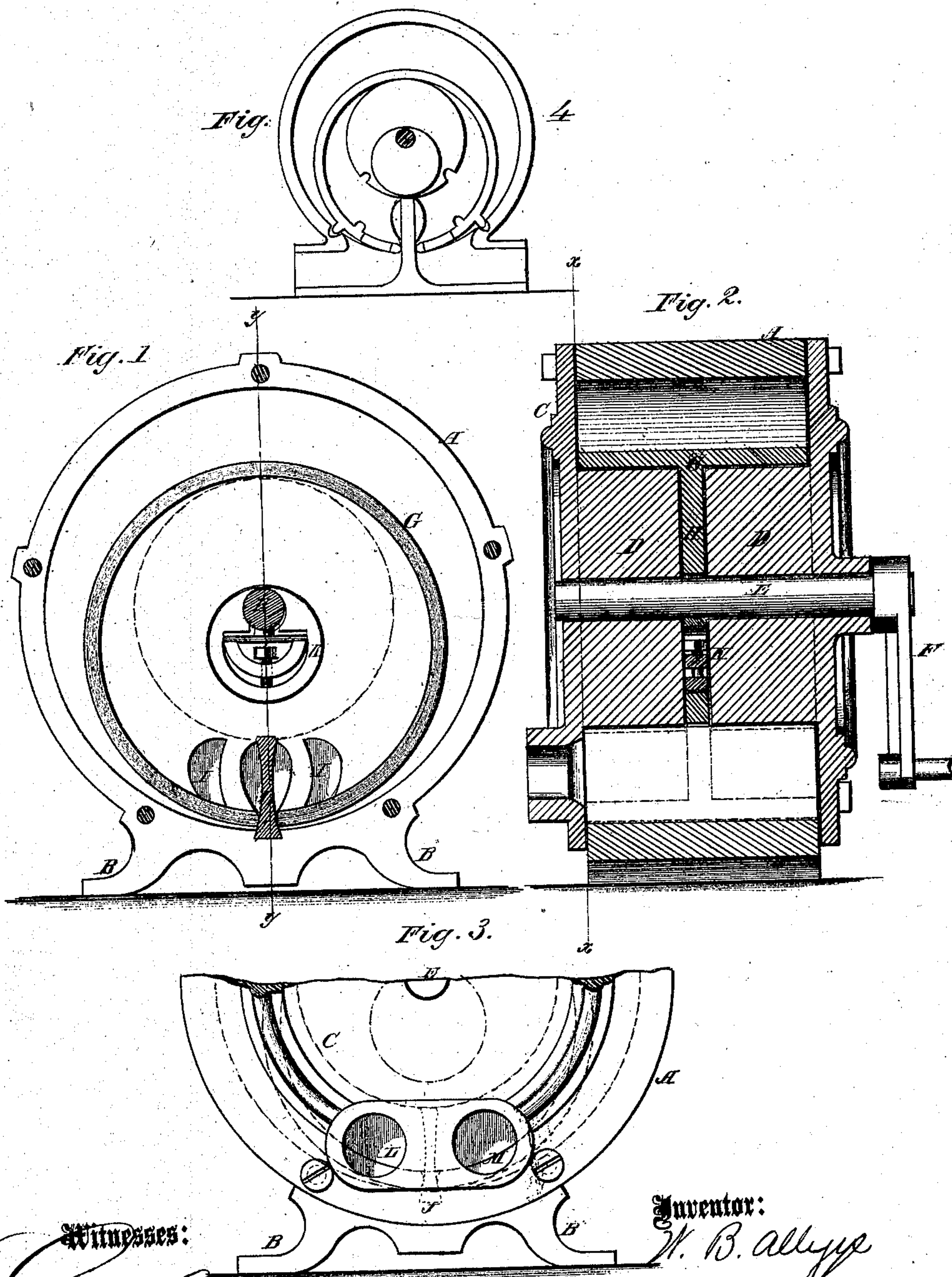


W. B. Allyn,

Rotary Pump.

No. 104,403.

Patented June 21, 1870.



Witnesses:

Gustave Dittich
S. J. Mabie

Inventor:

W. B. Allyn

PER

Mmm Co
Attorneys.

United States Patent Office.

WILLIAM B. ALLYN, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 104,403, dated June 21, 1870.

IMPROVEMENT IN ROTARY PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM B. ALLYN, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in 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.

The object of this invention is to provide a machine for throwing a constant stream of water, by means of an annular piston operated by means of an eccentric on a central shaft; and

It consists in the construction and arrangement hereinafter described.

In the accompanying drawing—

Figure 1 is a vertical section of the pump on the line *x x* of fig. 2.

Figure 2 is a central vertical section of fig. 1 on the line *y y*.

Figure 3 is a sectional side view showing the water-orifice.

Figure 4 is a modification of figs. 1 and 2.

Similar letters of reference indicate corresponding parts.

A is the shell or casing, which is a cylinder open at both ends, with flanges, B, for fastening it down to any fixture.

O O represent the heads fastened on the ends of the cylinder A by screws.

Each head has an inward central hub, D, through which the driving-shaft E works or is revolved by means of the crank F, or by any other suitable means.

G is the piston, which is a cylinder, with a central partition, H, in which is a central orifice and water-apertures, I I, as seen in fig. 1. The piston also has a slot, by means of which it is connected with the fixed abutment J.

K is an eccentric on the shaft, which works in the central orifice in the piston. The eccentric is adjusted or secured firmly in place by means of a set-screw and a curved or semicircular bar, as shown in figs. 1 and 2.

The throw of the eccentric is equal to the difference in the diameter of the piston and the cylinder in which it works, so that, as the shaft and eccentric revolve, the outer surface of the piston is carried around in contact with the interior surface of the cylinder, without revolving, but sliding on the abutment as it is oscillated by the eccentric.

L and M represent the orifices for the ingress and egress of the water, one on each side of the abut-

ment, as represented in fig. 3, where the abutment is seen in dotted lines.

While the exterior surface of the piston is operating in connection with the casing to force water from the variable annular space between the two, the inner cylinders of the piston, on each side of the partition H, are working in connection with the hubs D D of the heads in the same manner. These interior cylinders receive water as the piston descends on the abutment, and after the outer surface has commenced forcing the water from the outer cylinders, so that the pressure is constant, and the steam discharged uniform in volume.

The central partition H of the piston works watertight between the two hubs D D, thus making three compartments or cylinders into which water enters, and from which it is forced at every revolution of the shaft.

When it is desired to pass the water in and out through the edge of the pump instead of the side, as seen, cleats on the piston and grooves in the casing and hubs may be arranged as seen in fig. 4.

These cleats prevent a direct communication between the sides of the cylinder during any part of the stroke.

It will be seen that this pump works with very little friction; it is therefore durable, and not liable to get out of order.

In the use of this pump I do not, of course, confine myself to pumping water, as it is obvious that it may be employed for various other liquids with equal advantage. It may also be used for pumping air, and may be used as a motor for either steam or water under pressure.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The cylinder-piston G, and hubs D D, operating in combination, substantially as and for the purposes described.

2. The combination of the double-cylinder piston G, with the casing A, arranged and operating as described.

3. The abutment J, in combination with the piston G, arranged and operating substantially as and for the purposes described.

WILLIAM B. ALLYN.

Witnesses:

A. W. ADAMS,
J. N. DURELL.