

W. A. DAVIS.
ROTARY ENGINE.

No. 109,878.

Patented Dec. 6, 1870.

Fig 1

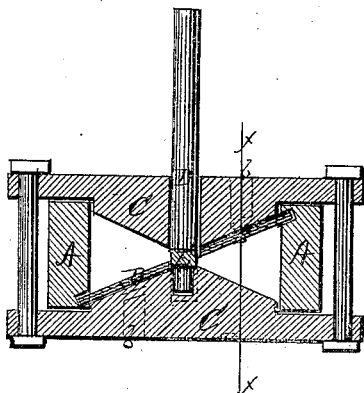


Fig 2

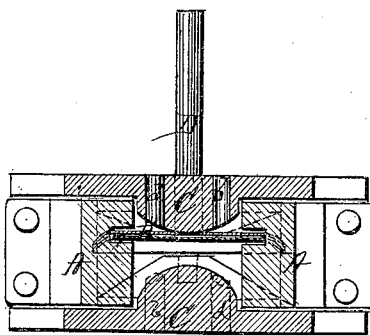


Fig 3

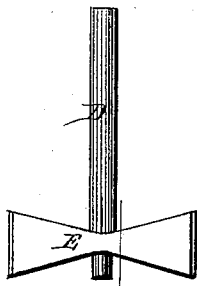
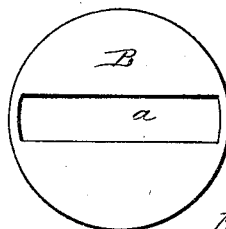


Fig 4



Witnesses

Harry King
C. A. Curt.

Inventor.

William A. Davis.
per Alexander Mason

Atty.

United States Patent Office.

WILLIAM A. DAVIS, OF SALEM, OHIO.

Letters Patent No. 109,878, dated December 6, 1870.

IMPROVEMENT IN ROTARY ENGINES.

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 A. DAVIS, of Salem, in the county of Columbiana and in the State of Ohio, have invented certain new and useful Improvements in Rotary Motion for Engines, Pumps, &c.; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a device for producing rotary motion, calculated for steam-engines, pumps, water-wheels, or any machine where pressure is to be used for power, or where pressure is formed by power.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a vertical section of my machine.

Figure 2 is a vertical section through line *x x* of fig. 1.

Figures 3 and 4 are detached views of parts not plainly shown in figs. 1 and 2.

A represents a cylinder of any suitable dimensions, having on its inner circumference a diagonal groove in which moves one or more circular plates B.

The plates B have a slot, *a*, cut across the center, which slot is the exact length of the inner diameter of the cylinder; or, in other words, the ends of the slot will be flush with the inner circumference of the cylinder.

C C are the heads for the cylinder A. These heads are convex on the inside, forming an abutment with the plates B on each side, as shown in fig. 1.

Through one of the heads C passes a shaft, D, which, within the cylinder, is provided with a piston, E, constructed as shown in fig. 3; that is, it increases from the center out in width equally on both sides of the shaft, and fits snugly within the slot *a* of the plates B and between the convex portions of the heads C.

In each head C is a receiving-port, *b*, and an exhaust-port, *d*, said ports being situated one on each side of the point where the head and plates B join together, as shown in fig. 2, the ports of the two heads being consequently on opposite sides of the center.

By this construction of my machine I obtain, actually, two engines in one, the operation being exactly the same on both sides of the plates B.

The steam enters through the port *b*, and as the plates B and the cylinder-head come together between the receiving and discharge-ports *b d*, the steam cannot go from one to the other without going round, and the piston E being between them, it has to move the piston and plates by forming a pressure the same as the slide-engine; that part of the piston which last passed over the receiving-port being always the valve for the one going before, as it cuts off the steam from the one before, and when the one going before passes over the discharge-port it discharges or exhausts that which is behind it.

The operation is the same on each side of the plates B, forming a double engine in the same cylinder, and balancing the plates as the two sides bear in opposite directions, the plates thus floating between the two pressures.

This device may be used in any machine where pressure is to produce power, and also in machines where power is used to form pressure, as in pump, blowers, &c.

For pumps, the water is let in at *b* and is carried around to the discharge-port *d*, where it is discharged through the pipe.

Having thus fully described my invention,

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

1. The engine constructed with a cylinder, A, two heads with convex faces and ports, a slotted plate moving in diagonal grooves, and a piston, all substantially as set forth.

2. The combination of the cylinder A, plates B, heads C, with their ports *b d*, and the piston E, all constructed and arranged as described, to operate substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 4th day of August, 1870.

WILLIAM A. DAVIS.

Witnesses:

JACKSON COTTON,
T. E. VICKERS.