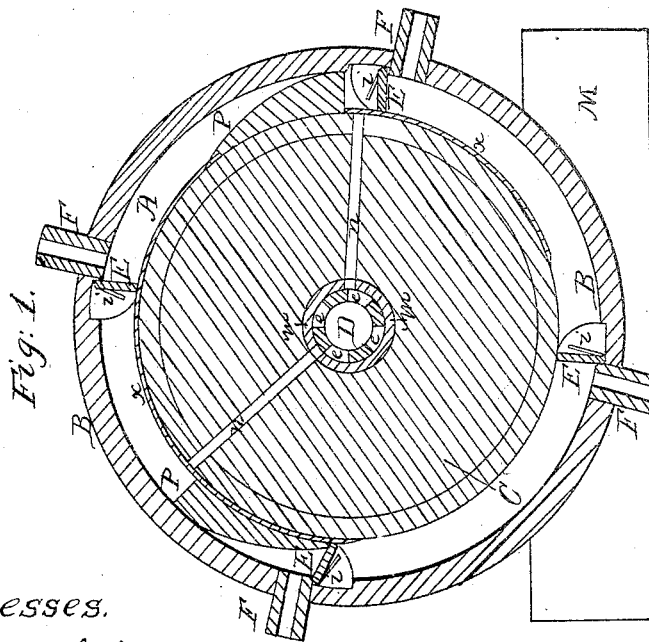
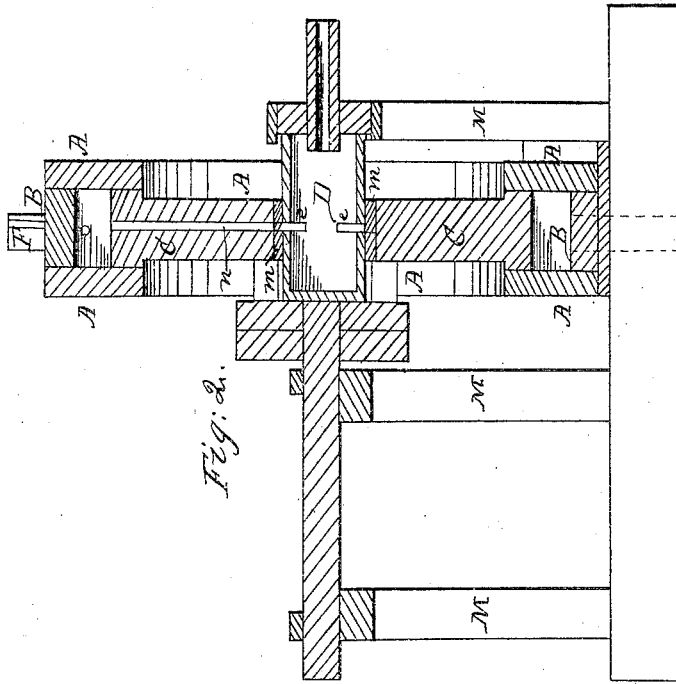


S. M. DAVIS.
ROTARY ENGINE.

No. 49,610.

Patented Aug. 29, 1865.



Witnesses.
M. Randolph.
Wagner

Inventor.
Seth M. Davis

UNITED STATES PATENT OFFICE.

SETH M. DAVIS, OF RUSHVILLE, MISSOURI.

IMPROVEMENT IN ROTARY ENGINES.

Specification forming part of Letters Patent No. 49,610, dated August 29, 1865.

To all whom it may concern:

Be it known that I, S. M. DAVIS, of the town of Rushville, in the county of Buchanan and State of Missouri, have invented a new and useful Improvement in Rotary Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 of the annexed drawings is a sectional elevation of the engine, showing all its parts. Fig. 2 is a transverse vertical section of the same.

To enable those skilled in the art to construct and use my engine, I will proceed to describe its construction and operation.

A circular groove formed by the annular plates A, bolted to the sides of the annular plate B, the inner diameters of which they overlap, forms the cylinder within which the pistons P revolve. There are two pistons P P, which are firmly secured to the periphery of the wheel C, which revolves around the hub D, the hub remaining stationary and forming the steam-chest, from the open ports *eeee* of which steam is introduced into the cylinder through the tubular openings *nn*, which are made in the wheel C for that purpose.

The longitudinal axes of the tubes *nn* are radial from the center of the hub or steam-chest, and the angle which they inclose is equal to one hundred and thirty-five degrees. The pistons are wedge-shaped, the sharp points of the wedges being directed forward, as it is intended this engine shall work only in one direction, without any reverse motion.

The back ends of the pistons, against which the steam presses, are made flat, and are radial from the center of the wheel C, with the periphery of which they join just in advance of and close to the orifices of the tubes *nn*, so that the two pistons inclose three-eighths of the periphery of the wheel C between them.

The steam-ports *eeee* are each of them made to take up one-quarter of the periphery of the hub D, and the space left between each two of the ports is equal to the length of one

port. This arrangement of the steam-ports, in connection with that of the steam-pipes *nn*, already described, secures the orifice of one of the steam-pipes being constantly over one of the open ports, so that direct steam is constantly pressing upon one piston. There are four piston-heads, E, hinged to the annular plates A, at regular intervals, in such a manner that when they are shut up they close entirely the cylinder in which the pistons revolve.

Recesses are formed in the annular plate B, into which these piston-heads fall, in order to allow the pistons to pass over them unobstructed. There is a small spring, *i*, attached to the backs of the piston-heads to throw them out of the recesses, so that the steam may strike on the back side of them as soon as the piston shall have passed and throw them up to the seat upon which they are to rest when the steam is upon them.

The sharp end of the wedged pistons will strike each of these heads in succession and throw them back out of the way while the pistons are passing that particular point, after which the spring will throw out the heads again, ready to receive the steam, as before mentioned. Suitable metallic packing, *m*, is introduced around the hub D, in order to secure a steam-tight joint between it and the wheel C. Packing *x* is also used to make a tight joint between the wheel C and the annular plates A.

There are four exhaust-ports, F, arranged around the periphery of the plate B at regular intervals. These ports are located just behind the cylinder-heads E. The whole of the stationary portions of this engine is erected upon suitable frame-work, M.

Having described my engine, I claim—

Two pistons, P P, in combination with the steam-pipes *nn* and the steam-ports *eeee* of the steam-chest D, when constructed as described and set forth.

SETH M. DAVIS.

Witnesses:

M. RANDOLPH,
A. WAGNER.