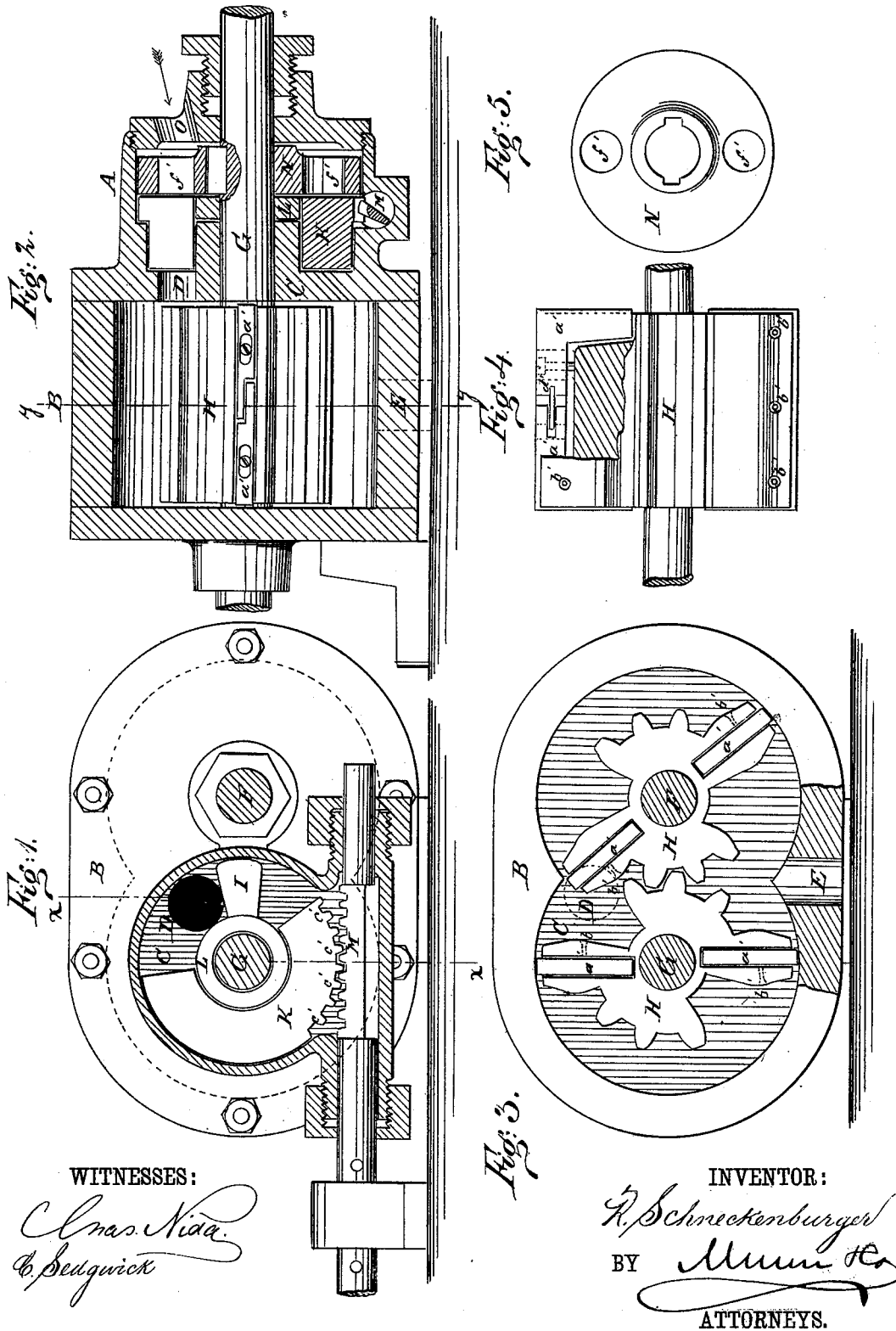


R. SCHNECKENBURGER.  
Rotary Steam-Engine.

No. 219,984.

Patented Sept. 23, 1879.



# UNITED STATES PATENT OFFICE.

ROBERT SCHNECKENBURGER, OF JACKSON, MICHIGAN, ASSIGNOR TO HIMSELF AND SARAH A. FROST, OF SAME PLACE.

## IMPROVEMENT IN ROTARY STEAM-ENGINES.

Specification forming part of Letters Patent No. **219,984**, dated September 23, 1879; application filed April 7, 1879.

*To all whom it may concern:*

Be it known that I, ROBERT SCHNECKENBURGER, of Jackson, in the county of Jackson and State of Michigan, have invented an Improved Rotary Steam-Engine, of which the following is a specification.

Figure 1 is an end elevation of the engine, with the cap of the valve-chamber and the movable valve removed. Fig. 2 is a longitudinal sectional elevation on line *x x*, Fig. 1. Fig. 3 is a sectional elevation through *y y*, Fig. 2. Fig. 4 is a side view of a cam, partly in section. Fig. 5 is a front elevation of the moving valve that is keyed to the shaft.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish a rotary steam-engine with novel valves and cams that shall produce better results in the working of rotary engines than any others now in use.

The valve-chamber A is separated from the steam-cylinder B by the partition or diaphragm C, through which is cut the steam-port D for the passage of steam from A to B. At the bottom of the cylinder is the exhaust-port E. Through the elliptic centers of the cylinder pass the shafts F and G, having keyed upon them the peculiarly-shaped cams H H, that are provided with packing-strips *a' a'*, inserted in slots in the elongated teeth of the cams, and capable of being passed outward against the inner surface of the cylinder by the steam, which is admitted under them through the holes *b b*. These strips are each made in two parts, with lap-joints, and secured to the cams by screws, in slots in which joints are the movable slides *d' d'*, that make them steam-tight.

The elongated teeth do not lap and mesh into each other quarteringly after the usual method, and I find that this arrangement insures an easier continuous motion to them.

In the valve-chamber, and secured upon the face of the partition C, near the steam-port, is a stop or abutment, I, of an equal depth with the thickness of the cut-off valve K, that moves on the ring or collar L, which is set loosely on the shaft G, that passes through the chamber. A portion of the periphery of this

valve is furnished with gear-teeth *c' c'*, that mesh into the governor-rack M, that projects through the lower part of the chamber, through which the adjustment of the valve may be effected by means of a lever or the application of centrifugal force.

Keyed upon the shaft G outside of the cut-off valve, and in close contact with it, is the movable valve N, provided with two opposite steam-ports, *f' f'*. When this valve is set for the passage of steam, the steam entering through the port O will pass through one of the ports in the valve N, and through the port D upon the ends of the cams, instead of upon or against their tops or peripheries, as is usual. The abutment I, being stationary, causes the valve N to deliver steam always at the same point, while the cut-off valve, being adjustable by the rack, enables the engineer to cut the steam off at any desired time, so that what enters the steam-cylinder may work by expansion.

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

1. The within-described combination, with the valve-chamber A and steam-cylinder B of a rotary engine, of the diaphragm C, provided with a steam-port, D, the peculiarly-shaped cam-pistons H H, provided with jointed packing-strips *a' a'* and slides *d' d'*, the abutment I, the cut-off valve K, with geared or toothed periphery, the collar L, governor-rack M, movable valve N, provided with steam-ports *f' f'*, and the port O, all constructed and arranged substantially as herein shown and described.

2. In a rotary steam-engine, the peculiarly-shaped cam-piston H H, provided with jointed packing-strips *a' a'* and slides *d' d'*, substantially as herein shown and described.

3. In a rotary steam-engine, the combination of the jointed packing-strips *a' a'* and the slides *d'* with the elongated teeth of the pistons provided with holes *b*, substantially as and for the purpose set forth.

ROBERT SCHNECKENBURGER.

Witnesses:

ANSEN TOWNLEY,  
EDWARD CARVER.