R. B. KIDDER.
Rotary Engine.

No. 201,113. Patented March 12, 1878.

Fig. 2.

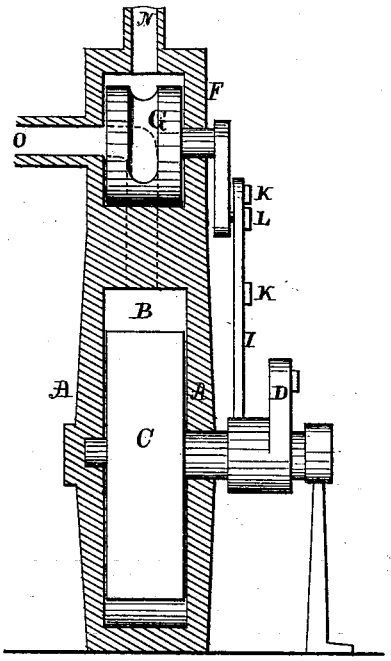
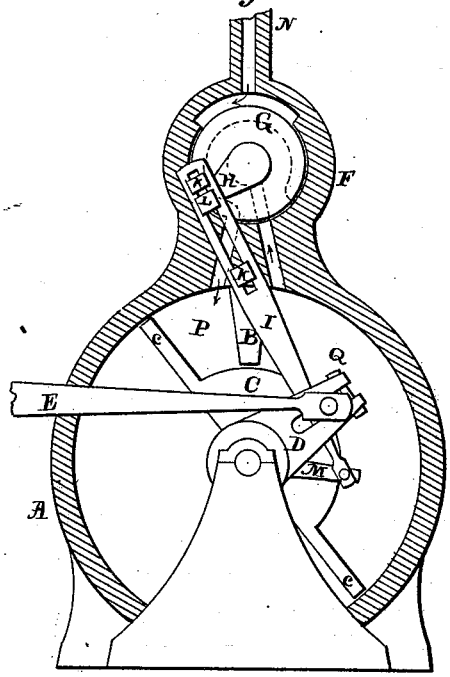


Fig. 1.



Witnesses.

Harvey Rowell
Edwin E. Kidder.

Inventor:

Richard B Kidder

UNITED STATES PATENT OFFICE.

RICHARD B. KIDDER, OF COLUMBUS, WISCONSIN.

IMPROVEMENT IN ROTARY ENGINES.

Specification forming part of Letters Patent No. **201,113**, dated March 12, 1878; application filed October 28, 1876.

To all whom it may concern:

Be it known that I, RICHARD B. KIDDER, of the town of Columbus, county of Columbia, and State of Wisconsin, have invented an Improvement in Steam-Engines, of which the following is a specification:

The object of my invention is to provide a simple semi-rotary piston which will work on easy bearings without ways, and apply the power directly to the pitman-rod and directly to the valves, as shown in the accompanying drawings, of which—

Figure 1 is a front, and Fig. 2 a side, view.

In Figs. 1 and 2, A represents the cylinder, having an abutment, B. C is a piston on a shaft in the center of cylinder, having piston-rings *c c*. D is the crank on the piston-shaft, to which is attached the pitman-rod E. F is a valve-cylinder; G, a rocking valve, which is attached to a crank, H. I is a connecting-rod, having a slot in which are set blocks K K, and sliding on crank-pin L. The connecting-rod is attached to a crank, M, on piston-shaft, from which it derives its motion. N is the supply-pipe, and O, Fig. 2, the exhaust.

The piston C is on a shaft passing through the center of the outside cylinder A. The piston consists of a cylinder or section of a cylinder having for its radius the distance from the center of the cylinder A to the inner face of the abutment B. From this section of a cylinder extend piston-wings to the inner surface of the cylinder, (shown at *c c*, Fig. 1;) or, in a single-acting engine, the two wings may be connected, forming a semi-cylinder. This mode of construction leaves two separate spaces for the steam—one on each side of the partition B. A rocking valve is placed over the partition, connected by the slotted connecting-rod to the crank M, in such a manner that the close of each stroke of the piston changes the valves.

In Fig. 1 the steam enters through the supply-pipe N, and passes around the open valve, into the chamber in the cylinder F. Its expansive force presses the piston around on its bearings until the block K on the connecting-rod I strikes the valve crank-pin L and changes the position of the valve, when the steam passes into the chamber Q and reverses the motion. The crank D, Fig. 1, applies the force to the pitman-rod E, Fig. 1.

I claim as my invention—

The combination of the cylinder A, having abutment B, rotating reciprocating winged piston C *c c*, cranks D M, pitman-rod E, slotted connecting-rod I, blocks K, crank H, valve G, and cylinder F, with its supply and exhaust ports N O, all constructed and arranged to operate substantially as herein shown and described.

RICHARD B. KIDDER.

Witnesses:

HARVEY ROWELL,
EDWIN E. KIDDER.