

J. Parsons
Rotary Steam Engine.

N^o 27,148.

Patented Feb. 14, 1860.

Fig. 2.

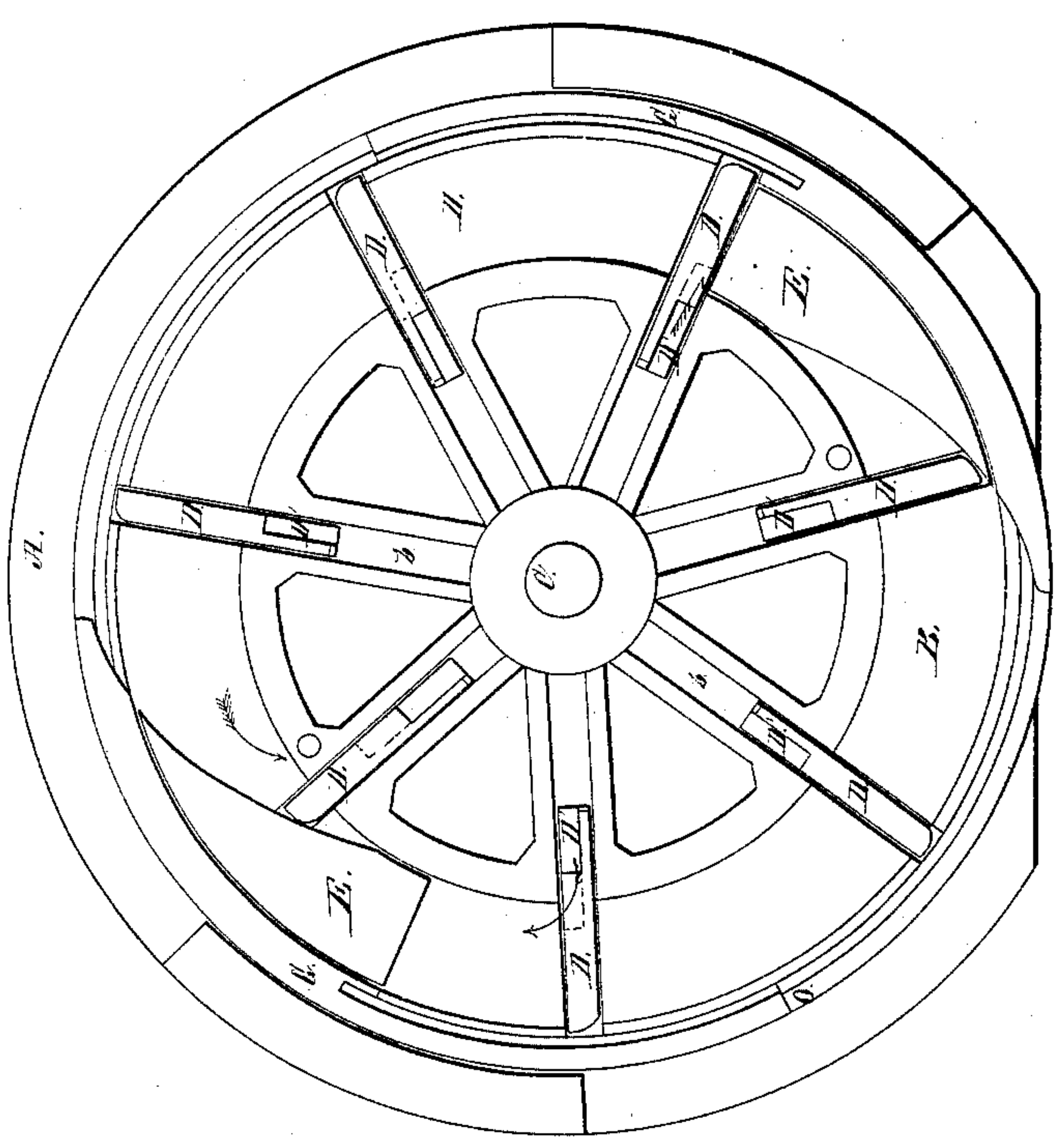
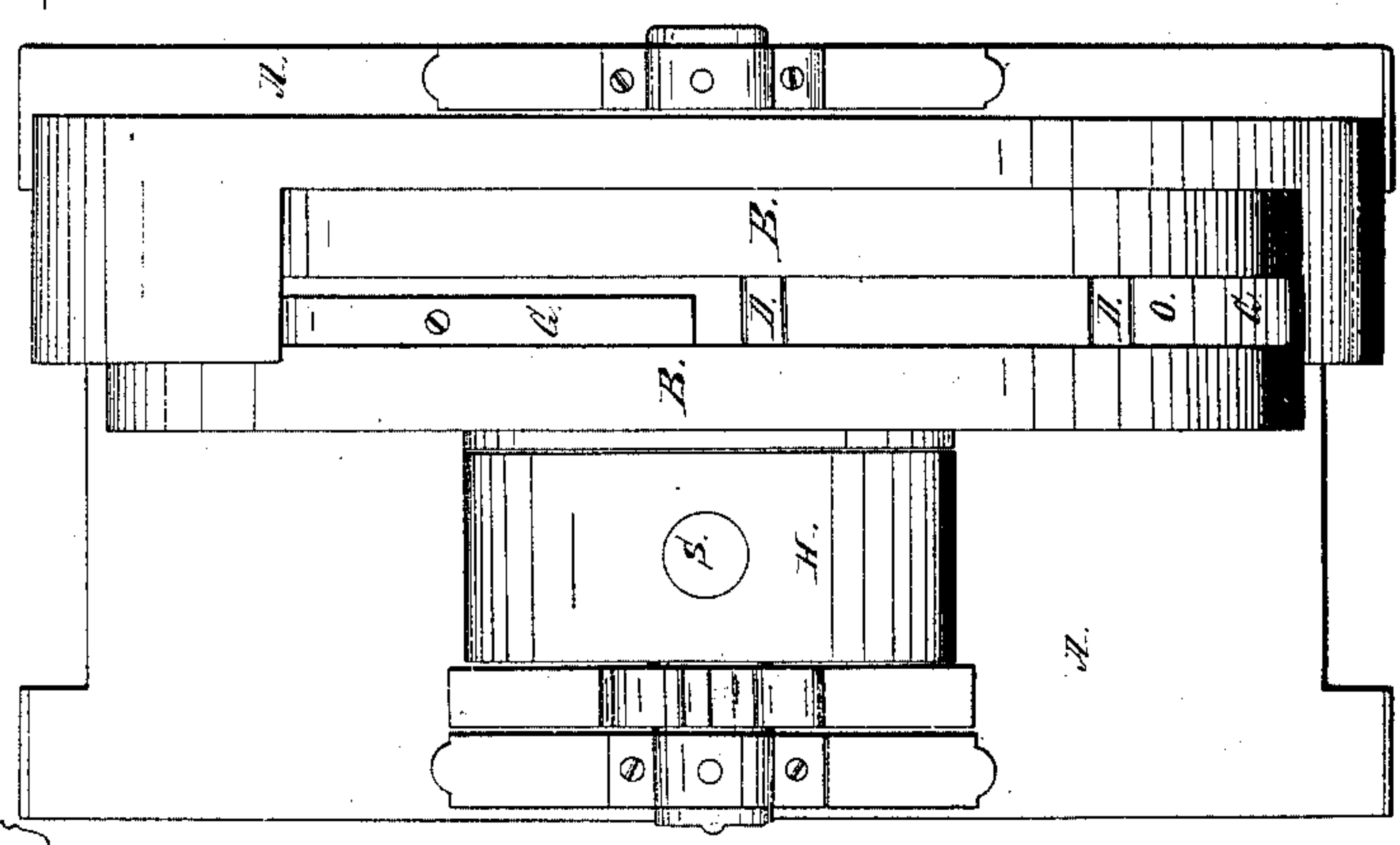


Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPHUS PARSONS, OF CARTHAGE, OHIO.

IMPROVED ROTARY STEAM-ENGINE.

Specification forming part of Letters Patent No. 27,148, dated February 14, 1860.

To all whom it may concern:

Be it known that I, JOSEPHUS PARSONS, of Carthage, in the county of Athens and State of Ohio, have invented a new and useful Improvement in Rotary Steam-Engines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

In the accompanying drawings, Figure 1 is a top view of my machine. Fig. 2 is the front view of the interior of my steam-wheel, the front plate being removed to show the working parts.

In the drawings, A represents the frame which supports the wheel B. The wheel itself has two plates B B, Fig. 1, which may be connected together in any suitable manner by screw-bolts or otherwise. In the spokes of this wheel are radial chambers *b*, into which are inserted shuttle-valves D, having steam-chambers D', Fig. 2. As the wheel B rotates upon the axle C these valves D come against cams E, by which the valves are pushed toward the center of wheel B. After the valve passes the cam E the action of the steam entering the chamber D' of valve D pushes the valve toward the circumference of the wheel B. Thus the valve plays back and forth like a shuttle, being pushed in one direction by the steam and in the other by the two cams E, Fig. 2. On both sides of the wheel B are placed plates *g*, which do not rotate, being supported like the cam E upon the frame of the machine. These plates are fitted by steam-tight joints between the two plates B of the hollow wheel. The cam E is also fitted in like manner between said plates B.

The operation of my machine is as follows: The steam is conducted into chamber H through opening S. Then from this steam-chamber H the steam passes out through two apertures into the chambers *h* in the radial arms of the wheel just at the moment the valves pass from the cams E, the valves being forced down along the head of the cam E, as seen in Fig. 2, upon the right. As the pressure of steam forces the valve against plate G, the steam enters between the valve D and the head of the cam E, but cannot escape. At this moment the chamber *h* and the space between valve D and cam E become one common chamber, and the pressure of the steam forces the valve D away from the head of the cam E, thus driving the wheel

B forward. As the space between the valve D and the cam E increases by the rotation of the wheel B, the steam continues to rush into chamber *b*, so as to keep up the pressure.

On the left hand of Fig. 2 the valve D is seen advanced about half-way from the cam E to the point O or end of plate G. In this position it is evident that the cam E also acts as a true piston, it being stationary while the valve D is making a stroke by the rotation of the wheel B. As this valve D advances, the steam is cut off from chamber *b* just before the valve reaches the point O. The next moment the valve D passes point O, Fig. 2, and thus the steam is allowed to escape through opening O, Fig. 1. When the steam is being exhausted on the left side of the wheel, Fig. 2, as just described, the valve D on the right hand is making its stroke, so that it is impossible to have any dead-point in revolution of my wheel.

The construction of my wheel, as well as the operation, is extremely simple, there being no springs, cog, gear, or other complicated arrangements. The plates B are the main castings. The shaft C may be cast with the main plate B, Fig. 2, or separately. The valves D and the steam-chamber within the wheel, or between it and the fixed plate G, and cam or fixed piston E, are nearly all that require finishing and much labor in completing my machine.

The chamber D' and various other details of construction may be somewhat varied without departing from my invention.

I am aware that radial valves and the other mechanical devices employed by me are not new when separately considered; but my above-described wheel and the particular mode of operation is an improvement in rotary engines when considered as a whole.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

The construction and arrangement of the wheel B, provided with radial shuttle-valves D and the steam-chambers, the said valves and the wheel itself being operated by steam, in combination with the cams, which also serve as stationary pistons, substantially as set forth, for the purposes described.

JOSEPHUS PARSONS.

Witnesses:

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