J. M. Curry,

Rotary Engine.

No. 103,431. Patented May 24. 1870.

Fig. 1.

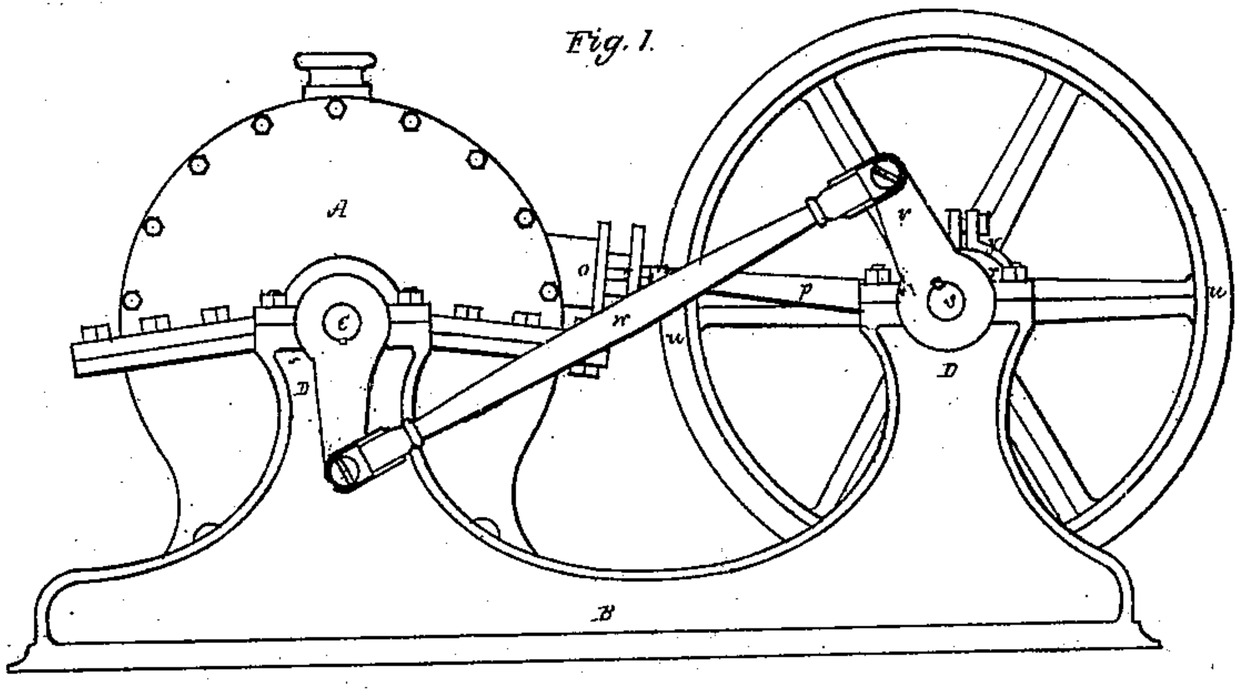


Fig. 3.

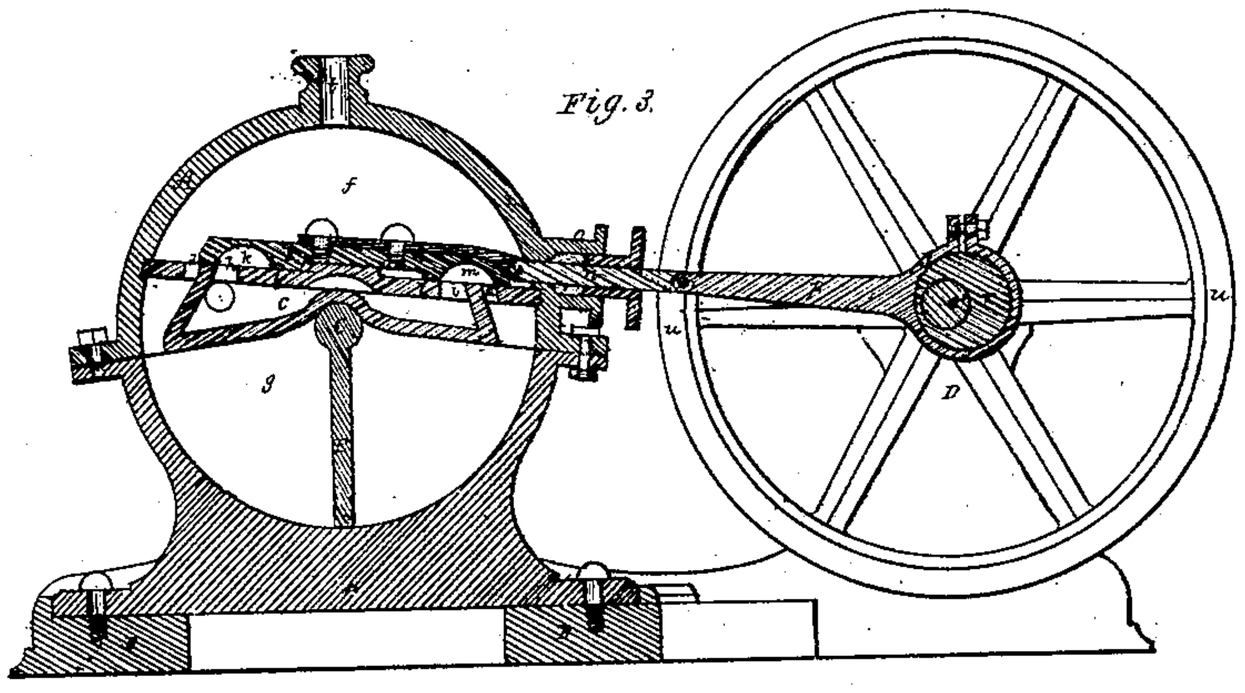
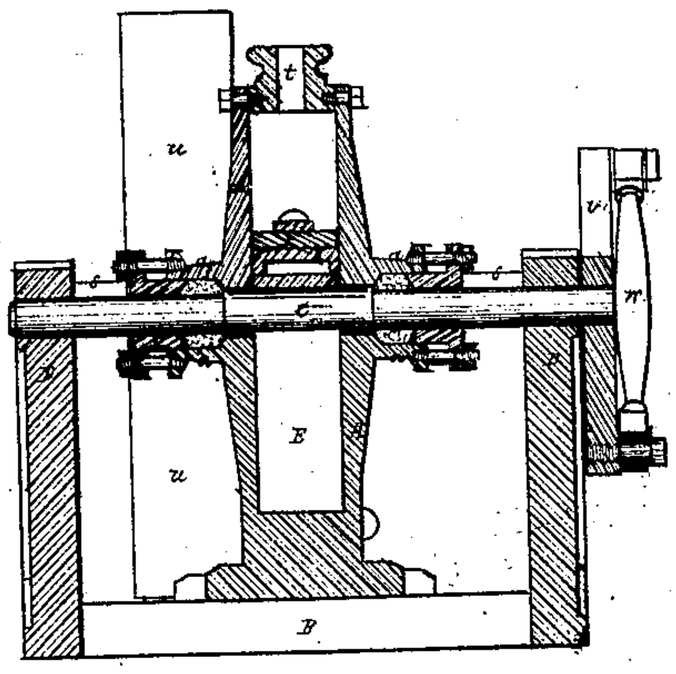


Fig. 2.



Witnesses.

S. N. Pipur.

J. Abbott

John M. Curry.

by his attorney.

N. Bailey

United States Patent Office.

JOHN MAYRS CURRY, OF SOUTH FRAMINGHAM, MASSACHUSETTS, ASSIGNOR TO HIMSELF, JOHN McLAUGHLIN, OF BROOKLYN, NEW YORK, AND DENNIS PHALEN, OF WATERTOWN, MASSACHUSETTS.

Letters Patent No. 103,431, *dated May* 24, 1870.

IMPROVEMENT IN STEAM-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all persons to whom these presents may come:

Be it known that I, JOHN MAYRS CURRY, of South Framingham, of the county of Middlesex and State of Massachusetts, have made a new and useful invention having reference to Steam-Engines; and do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, in which—

Figure 1 is a front elevation.

Figure 2, a transverse section, and

Figure 3, a longitudinal section of a steam-engine provided with my invention.

In this engine the piston is a rectangular wing, projecting from a rocker-shaft, and working in a cylindrical case, the upper portion of which constitutes the valve-chest, and contains a slide-valve and its ports.

By the operation of the piston, a reciprocating or oscillating motion will be imparted to its shaft, and a crank fixed on one end thereof.

In the drawings—

A denotes the case of the engine, it consisting of a cylindrical box or drum elevated in a bed-plate or frame, B.

A shaft, C, goes transversely through this cylinder, concentric with it, and is supported in boxes in the tops of standards D D. This shaft has stuffing-boxes *a a*, arranged at the sides of the case.

The piston E projects downward from the shaft, and within the case, and fits closely at its edges and lower end to opposite sides and the periphery of the interior of the case. Such sides and end of the piston may be provided with metallic or other packing, to cause the piston to work steam-tight in the case.

Over the shaft there extends across the case a partition, *b*.

Underneath the partition is an eduction-chamber, *c*, with ports or passages *d e* at its opposite ends. These ports open communication with the space *f* (above the partition *b*) and the space *g* below the chamber *c*.

The said space *f* is the valve or steam-chest, while the space *g* is that in which the piston travels or operates.

Eduction-ports *h i* go through the partition *b* and open into the eduction-chamber *c*, which should have a steam-escape opening leading out of one side of it and into an eduction-pipe which may be applied to the case.

On the partition *b* is a slide-valve, F, which has three chambers, *k l m* in it, to operate with the four ports of the valve-seat. The stem *n* of the said valve goes through a stuffing-box, *o*, fixed to the periphery of the case. This stem is jointed to the connecting-rod *p* of the yoke *y* of an eccentric, *r*, fixed on the fly-wheel shaft *s* of the engine.

At the upper part of the case is an induction-passage, *t*, through which steam for working the engine is to be introduced.

The shaft *s*, supported in suitable boxes, has a fly-wheel, *u*, fixed to it, and at one end such shaft has a crank, *v*, which is connected with the engine-crank by a rod, *w*, pivoted to the two cranks.

The valve chest *f* being supplied with steam, the operation of the engine may be thus described:

On the valve being moved so as to uncover one of the ports *d e*, the steam will rush through such port into the cylindric sector *g*, and will act against and move the piston through such sector or space *g*. In so doing, the steam will cause such a rotary motion of the fly-wheel shaft as to effect a movement of the valve, so as to cover the port last open and uncover the other of the two. Steam next will rush through the latter port, and will drive the piston in a direction opposite to that in which it was previously moved. The exhaust steam will then be driven out of the closed port through the valve, and into the eduction-chamber, from whence it will escape by the exit-pipe.

I claim as my invention—

The arrangement of the slide-valve F, the partition *b*, the eduction-chamber *c*, and the series of ports *d e h i*, as described, in a circular drum or case, A, and with respect to a wing or piston, E, and shaft C to operate therein, the whole being as specified.

JOHN MAYRS CURRY.

Witnesses:

R. H. EDDY,

J. R. SNOW.