R. F. Brower,

Rotary Steam Engine.

No. 27,100. Patented Feb. 14, 1860.

Fig: 2

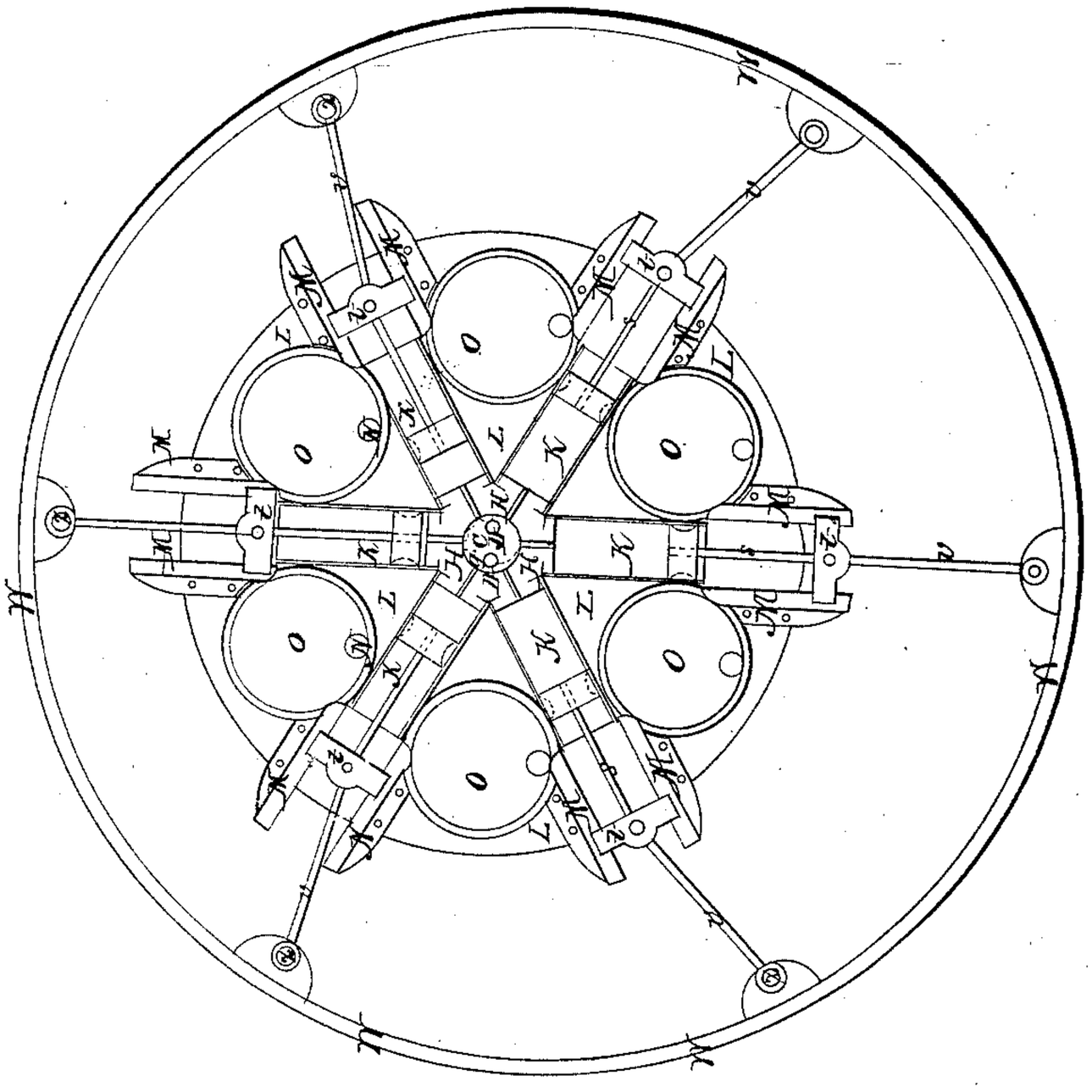
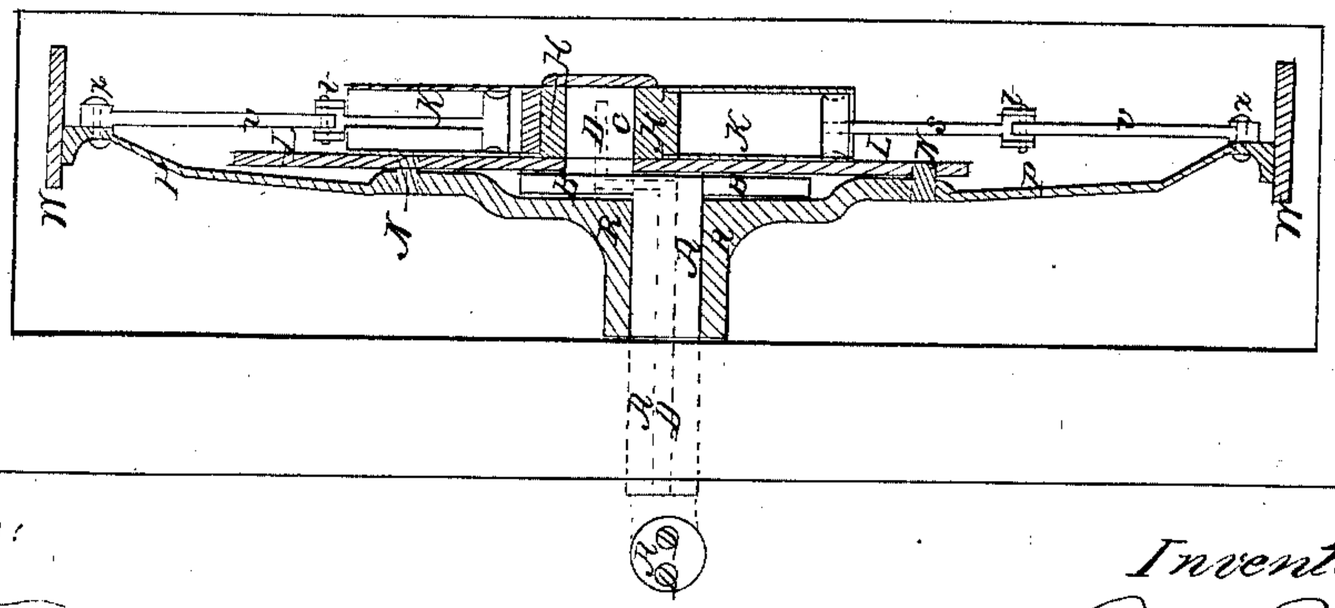


Fig: 1



Witnesses:
Thos. J. Pope
George Place

Inventor:
Robert F. Brower

UNITED STATES PATENT OFFICE.

ROBERT F. BROWER, OF NEW YORK, N. Y.

ROTARY STEAM-ENGINE.

Specification of Letters Patent No. 27,100, dated February 14, 1860.

To all whom it may concern:

Be it known that I, ROBERT F. BROWER, of city, county, and State of New York, have invented a new and Improved Rotary Steam-Engine; and I do hereby declare that the following is a full and exact description thereof.

My invention consists of a union, of a series of steam cylinders with their bases abutting directly or obliquely against a center hub, which constitutes in its arrangement and by its motion, ingress, cut-off and egress steam valves, as it revolves about an immovable axis, that is eccentric to the center of motion of the driving wheel, the two revolving parts being so constructed as to afford a continuous and uniform point of counter resistance to the propelling power of the steam as each piston is successively acted upon.

To enable others skilled in the mechanic arts to make and use my invention, I here proceed to describe the characteristic features of my invention, and illustrate the same by the accompanying drawings.

The characteristic features consist of:

1. A shaft (A, Fig. 1) that does not revolve, having on its end a fixed crank like arrangement, (B, C, Fig. 1.) The distance between the centers of the crank pin axis (C, Figs. 1 and 2.) and of the shaft, (A Fig. 1) is half the measure of the stroke of the pistons hereinafter noticed. Through this shaft (A) (in this particular arrangement, given for illustration) the crank and the crank pin axis are two distinct steam passages (D, D Figs. 1 and 2) one for ingress, the other for egress. The crank pin axis has openings (*e. g.*, Fig. 2,) on its sides: on one side, as at *e*, Fig. 2, to admit steam to pass into the cylinders through the valvular hub, (H, Figs. 1 and 2,) on that side of the point where the crank pin axis is nearest to the periphery of the driving wheel, (W, Figs. 1 and 2,) where it is desired the steam shall act. On the other side of the crank pin axis there is an opening (*g*, Fig. 2) to allow the exit of the steam as soon as each piston successively has been driven to its working distance.

2. The valvular hub has a steam passage (*i*, Fig. 2,) to each cylinder. The cylinders (K, K, K, K, K, K, Figs. 1 and 2,) are attached to the hub, (*c*, Figs. 1 and 2) and as well also to a bed plate or frame (L, Figs. 1 and 2) which holds the piston rod guides, (M, M, Fig. 2.) The bed plate or frame, L, that is attached to, the valvular hub, H, and cylinders (K, K, K, &c.,) and the cross head slides, M, M, M, &c., has also, either, first, several circular openings, (O, O, O, O, Fig. 2,) the diameter of each of which, is the united measure of double the distance between the centers of the shaft, A, and of the crank pin axis, C, added to the measure of the diameter of the counter resisting pin or roller, (N, N, N, N, &c., Fig. 2,) which in this case is inserted into the plate (P, Figs. 1 and 2) or arms of the driving wheel, W, or, secondly, the bed plate, L, is supplied with counter resisting pins or rollers, which bear against circular openings in the plate or arms of the driving wheel, or, thirdly, the two principal revolving parts, that is to say the power creating part and the power conveying part, may be connected by a series of crank connections, the scope of the motion of which corresponds to the stroke of the pistons as they revolve about the power conveying part.

3. The driving wheel or drum, W, is connected to a hub, (R, Fig. 1,) by a plate, (P, Fig. 1) or arms, which hub and driving wheel revolves around the stationary shaft, A. The piston rods (*s*, *s*, *s*, *s*, *s*, *s*, Figs. 1 and 2) are attached to cross heads (*t*, *t*, *t*, *t*, *t*, *t*, Figs. 1 and 2,) and to shackle or connecting rods (*v*, *v*, *v*, *v*, *v*, *v*, Figs. 1 and 2,) which are coupled as at (*x*, *x*, *x*, *x*, *x*, *x*, Figs. 1 and 2,) to the interior of the drum or driving wheel plate or arms.

I do not confine the application of my claim to the particular arrangement here described, but include sundry arrangements by which revolving steam power may exert its force on a revolving driving wheel, wherein the centers of motion of the rotary power and driving wheel being eccentric to each other, yet have a controlling arrangement substantially as described, by which the steam rotary power and the driving wheel, maintain a uniform motion.

What I desire to secure by Letters Patent, is,

The methods or devices, substantially as described, which serve as steady and regular points of counter resistance to the direct action of steam, when employed in a series of diverging cylinders, which revolve eccentrically to the center of motion of the driving wheel, (without the aid of any other separate movable parts, such as valves or springs.)

ROBERT F. BROWER.

Witnessed by—
THO. J. POPE,
GEORGE PLACE.