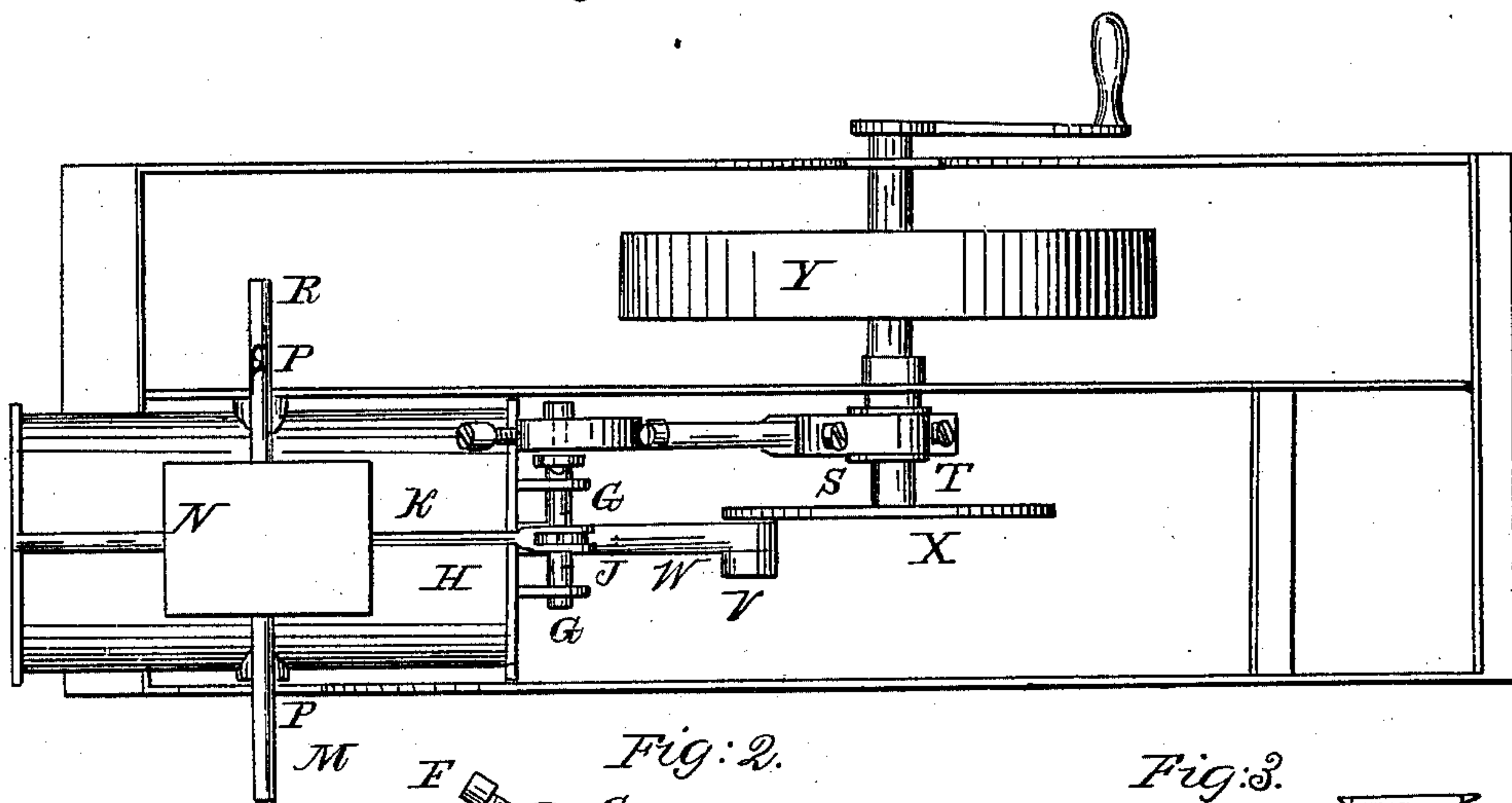
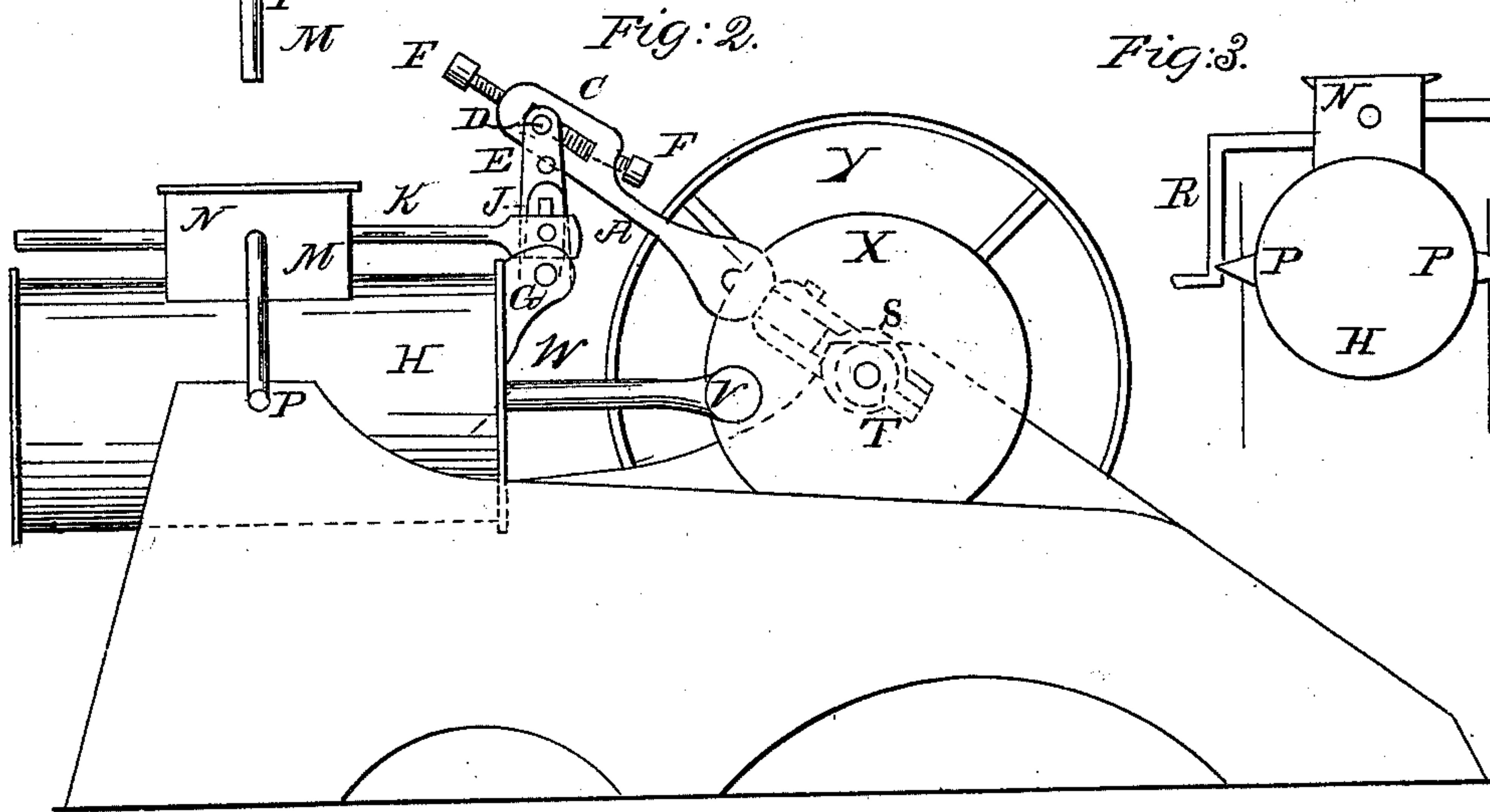


*R. J. King,*  
*Oscillating Steam Engine.*  
*N<sup>o</sup> 82,126.                      Patented Sep. 15, 1868.*

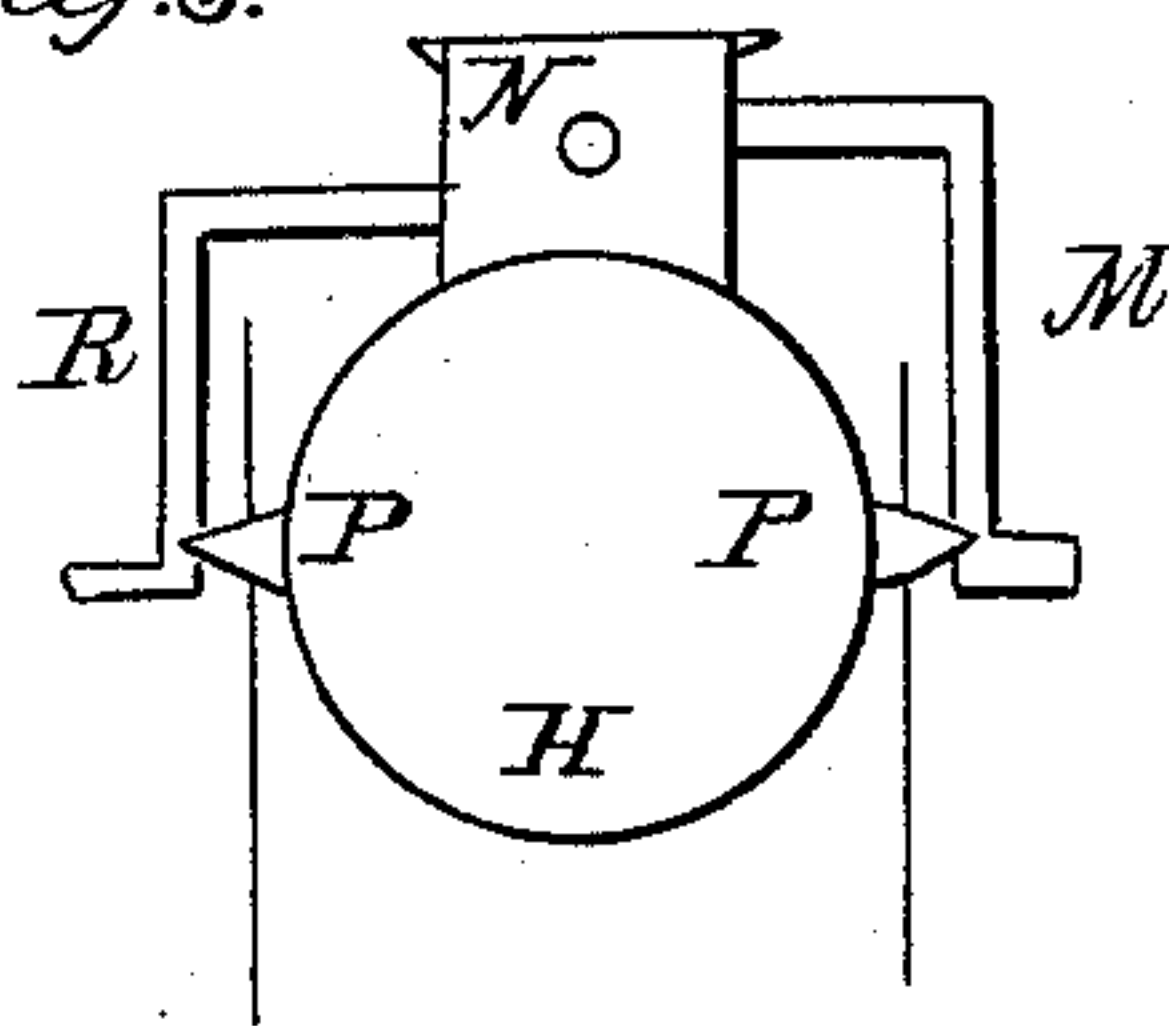
*Fig 1.*



*Fig: 2.*



*Fig: 3.*



*Witnesses:*  
*G. Mayhew.*  
*Thomas Cummins.*

*Inventor:*  
*Robert J. King.*  
*By his Atty*  
*J. H. Reed.*

# United States Patent Office.

ROBERT J. KING, OF LANCASTER CITY, PENNSYLVANIA.

*Letters Patent No. 82,126, dated September 15, 1868.*

## IMPROVEMENT IN OSCILLATING STEAM-ENGINES.

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

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, ROBERT J. KING, of Lancaster city, county of Lancaster, and State of Pennsylvania, have invented an Improved Oscillating Engine; and I hereby declare the following to be an exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification, in which—

Figure 1 represents a top view of the oscillating engine.

Figure 2 is a side elevation of the same.

Figure 3 represents a rear view of the steam-cylinder and chest, with the receiving and discharge-pipes on each, resting on the trunnions.

The nature of my invention consists in the arrangement of the connecting-rod A, with the devices for actuating the valve-stem K, with the steam-cylinder.

A is a connecting-rod, with its slot C, at one end, in which the adjustable pin D (of the upright lever E) operates, and is regulated in the slot C by means of the set-screws F F, for the purpose of adjusting the commencement of the stroke of the valve-rod.

G is the rock-shaft, that is attached to the head of the cylinder H, and the arm J that is attached to the rock-shaft G operates the valve-rod K.

M is the steam-ingress pipe, through which the steam is introduced into the steam-chest N. At the opposite side of the steam-chest N is a similar steam-pipe, R. The pipes M and R pivot on the trunnions P, as a centre. By this means I avoid heating the trunnions.

The eccentric, S, as constructed on the shaft T, operates in a direct line with the wrist or crank V.

The valve on top of the cylinder operates with the corresponding movements of the cylinder and eccentric on the shaft.

I obtain a different movement from the ordinary method, the valve moving, when it starts to shut off, until it opens nearly a full port, four times as fast as it does the other half or balance of the stroke. I get a full exhaust at once.

The moment the wrist or crank-pin is at the centre, I have a sixteenth lead, and immediately after, a full port, when the valve closes one-third the opening of itself. The action produced is similar to that of a tappet-valve.

The wrist V is attached to the outside of driving-wheel X, which revolves on the one end of the shaft T.

Y is the fly-wheel, also revolving upon the shaft T.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement of the connecting-rod A, with its slot C and regulating-devices D, E, and F, with the rock-shaft G and eccentric, S, as herein described.

2. The arrangement of the eccentric, S, with reference to the parts A, C, D, E, and F, and the shaft T, as herein set forth.

3. The arrangement of the angular pipes M and R with the steam-chest N and the trunnions P, as herein set forth.

ROBT. J. KING.

Witnesses:

J. FRANKLIN REIGART,

EDM. F. BROWN.