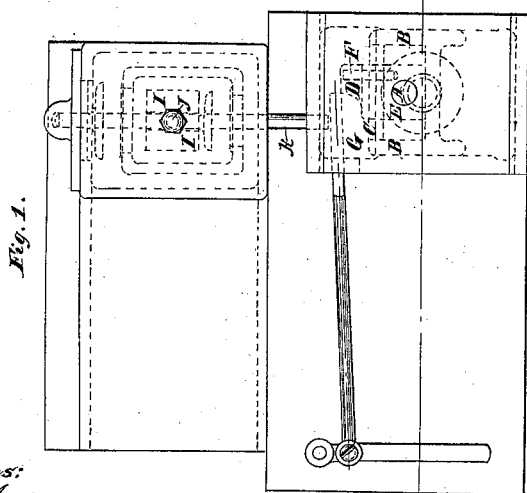
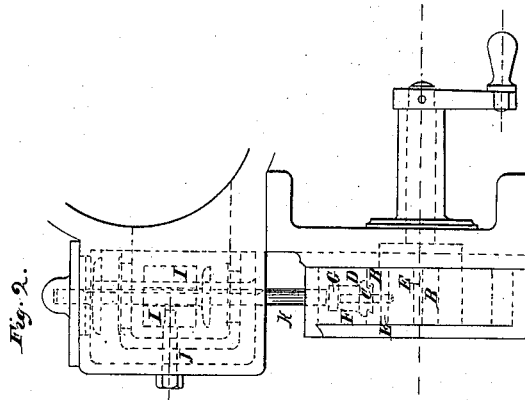
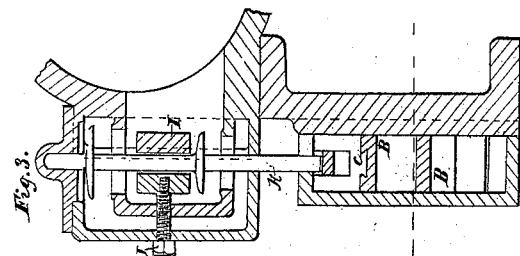
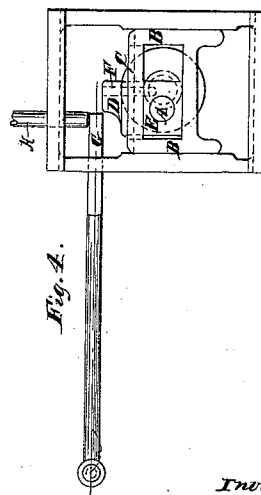
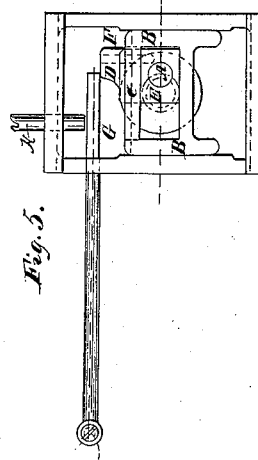


*J. L. Hervey,*  
*Steam-Engine Valve-Gear.*  
*N<sup>o</sup> 54,153.      Patented Apr. 24, 1866.*



Witnesses:  
*Wm. H. H. H.*  
*James H. H. H.*



Inventor:  
*Joseph L. Hervey*

# UNITED STATES PATENT OFFICE.

JOSEPH L. HEWES, OF NEWARK, NEW JERSEY.

## IMPROVEMENT IN CUT-OFF VALVES.

Specification forming part of Letters Patent No. **54,153**, dated April 24, 1866.

*To all whom it may concern:*

Be it known that I, JOSEPH L. HEWES, of Newark, in the county of Essex, in the State of New Jersey, have invented a new and Improved Means for Regulating and Working Steam-Valves as Cut-Offs and Reducing the Steam-Passages; 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.

Figure 1 is a side elevation of the improvement; Fig. 2, an end elevation; Fig. 3, a vertical section through the center of steam-port; Fig. 4, a side elevation of valve-movement, showing the position of regulating-toe when the governor-balls are at their highest point; Fig. 5, a side elevation of movement, showing the position of the regulating-toe when the balls of the governor are at their lowest point.

The first part of this invention consists in operating the valves by means of the revolving crank A, which has double the throw required to lift the valve its proper height. As the crank A revolves it gives vertical motion to the slide-block B, which has connected to it, by means of the dovetail slide C, a cut-off toe, D. This cut-off D is also connected to the crank-pin box E by means of the pin F, and receives thereby a horizontal motion equal to the throw of the crank A.

The governor attachment consists in a regulating-toe, G, and lever H. The lever H is connected to the governor by the usual means, and when the balls of the governor are at their highest point the regulating-toe G is withdrawn, (see Fig. 4,) so that the cut-off toe

D may receive its motion without touching the regulating-toe G, and the valve is not opened. When the balls of the governor are at their lowest point the regulating-toe G is thrown forward, (see Fig. 5,) allowing it to rest on the cut-off toe D throughout the entire stroke of the piston, and allowing the steam to follow full stroke. As the balls of the governor diverge the regulating-toe G is withdrawn, allowing the valve to fall and cutting off the steam.

The second part of this invention consists in placing in the valve-chamber the collar I, for the purpose of occupying the space in the steam-passages which is not required after the lower valve is in its place. The collar I is held in its place by the screw J, and has a hole in it large enough to allow the valve-stem K to work freely through it, and is for the sole purpose of reducing the quantity of steam which is necessarily thrown away at each stroke of the piston.

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

1. The revolving crank A, having double or more throw than the valve is required to lift, in combination with the cut-off toe D and regulating-toe G, and their combination with the governor, in the manner and for the purpose substantially herein set forth.

2. The collar I, or its equivalent, placed in the valve-chamber, in the manner and for the purpose substantially herein set forth.

JOSEPH L. HEWES.

Witnesses:

WM. H. INSLEE,  
JAMES M. HICKS.