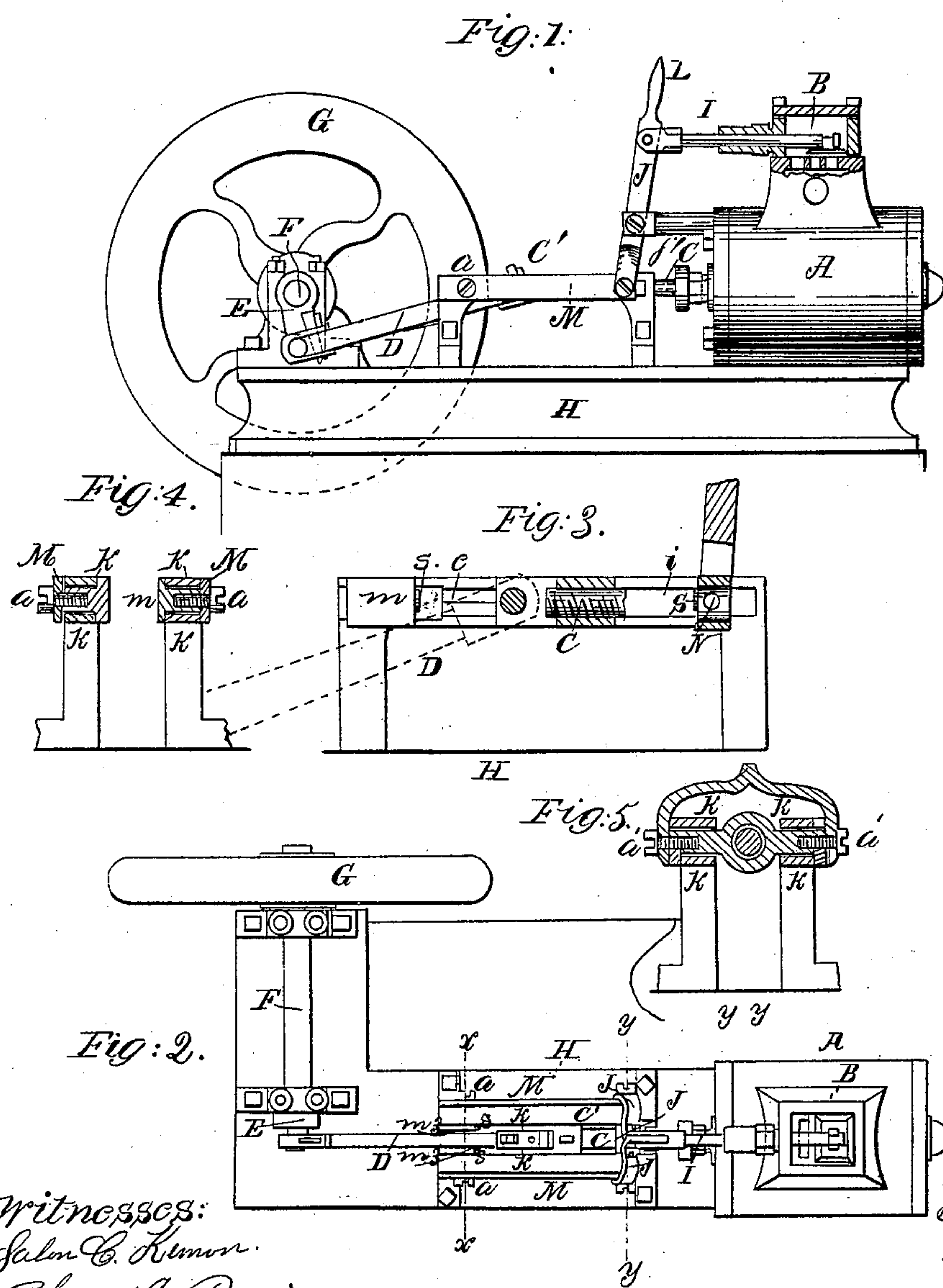


*S. S. Jamison, Jr.,*  
*Steam-Engine Valve-Gear.*  
*N<sup>o</sup> 76,769.      Patented Apr. 14, 1868*



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# United States Patent Office.

SAMUEL S. JAMISON, JR., OF SALTSBURG, PENNSYLVANIA.

Letters Patent No. 76,769, dated April 14, 1868.

## IMPROVEMENT IN STEAM-ENGINE VALVE-GEAR.

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, SAMUEL S. JAMISON, Jr., of Saltsburg, in the county of Indiana, and State of Pennsylvania, have invented a new and improved Valve-Gear for Steam-Engine; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side elevation.

Figure 2 is a top view.

Figure 3 is a longitudinal vertical section.

Figure 4 is a cross-section through the line *x x* of fig. 2.

Figure 5 is a cross-section through the line *y y* of fig. 2.

In this invention, the valve-gear is worked directly by the cross-head, the engine being thereby greatly simplified, and the power that operates the valves being more economically applied than in any other engine.

In the drawings, A represents the cylinder, B the steam-chest, C the piston-rod, D the pitman, E the crank, F the main shaft, G the fly-wheel, and H the bed upon which the engine is supported. All these parts are in nowise different from similar parts of other steam-engines, and I lay no claim to invention upon them.

My invention consists in operating the main valve-stem I, by the cross-head C', by means of the device which I will now describe.

On the outside of the slide-bars K K, I attach two plates or bars of metal, M M, which slide back and forth longitudinally with the slide-bars. Each slide, M, is attached to the slide-bar on which it works by means of a block, *m*, which slides back and forth in guide-grooves near the outer end of the slide-bars, there being one block to each slide-bar, and the pitman working between them. At their inner end, the slides M M are connected by a strong metallic block, N, which extends across the space between the slide-bars, its ends fitting in guide-grooves on their inner sides, and its central portion so enlarged that the piston-rod can work through an aperture in it, as seen in fig. 5.

The outer ends of the slides M M are bolted to the sliding blocks *m m* by screw-bolts *a a*, which pass through longitudinal slots *e e* in the slide-bars, as seen in figs. 1, 2, 3, and 4.

The inner ends of the slides are attached to the block N by screw-bolts *a' a'*, which also work in longitudinal slots *i i* in the slide-bars.

The cross-head C' moves back and forth between the blocks N and *m m*, striking the former, and pushing it in towards the cylinder, on its inward stroke, and striking against projecting shoulders on the latter, and pushing them outward, on its outward stroke.

The blocks *m m* N, and the slides M M, being all connected together, as above described, will all move in or out together, by the operation of the cross-head, in the manner described.

I then connect the slides M M with the valve-stem I by means of a lever, J, working on a fulcrum, *j*, near its centre, by which arrangement, at every stroke of the piston, the cross-head C' will reverse the valves.

The lever J may be provided with a handle, L, by which the engine can be reversed by hand.

This device is, perhaps, the simplest that can be constructed for the purpose of operating the valve-gear of steam-engines. It dispenses with the valve-eccentrics, eccentric-rods, &c., and greatly reduces the cost of the engine. It also works the valve-gear by the direct power of the whole engine applied to the greatest advantage.

The blocks *m m* and N can be adjusted on the slides so as to cut off the steam at any part of the stroke that may be thought desirable.

In order to prevent jarring, and give the engine an easy, noiseless action, I adjust rubber-spring cushions, *s s*, on the side of the blocks *m* and N towards the cross-head, which receive the stroke of the cross-head.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the slides M M, blocks *m m* N, lever J, valve-stem I, and cross-head C', when the said parts are constructed and arranged so as to operate the valve-gear from the cross-head, substantially as described.

2. The arrangement of the springs *s s* with the blocks *m* and N, substantially as specified.

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Witnesses:

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