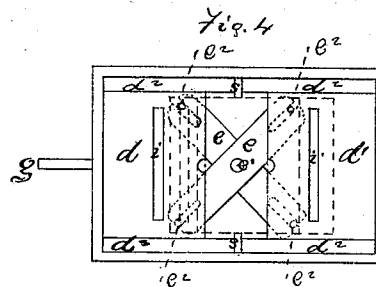
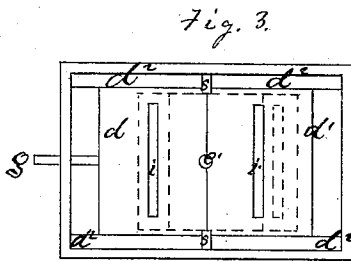
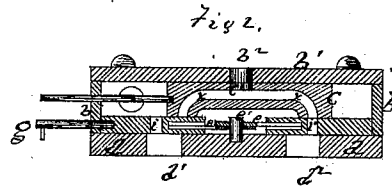
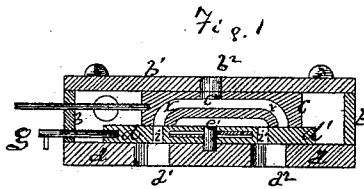


O. M. PIKE.

Improvement in Slide-Valves for Steam-Engines.

No. 127,642.

Patented June 4, 1872.



Witnesses

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UNITED STATES PATENT OFFICE.

OZI M. PIKE, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN SLIDE-VALVES FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. 127,642, dated June 4, 1872.

SPECIFICATION.

I, OZI M. PIKE, of Hartford, in the county of Hartford and State of Connecticut, have made certain Improvements in Reversible Valves for Steam-Engines, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 is a central vertical longitudinal section of the steam-chest, common valve, and reversible valves, all the valves being in position for running the engine in one direction—say forward. Fig. 2 is a precisely similar view of the same parts as shown in Fig. 1, but the position of the reversible valves changed so as to reverse the motion of the engine. Fig. 3 is a plan view of the parts shown in Fig. 1, the top plate of the steam-chest removed and the outline of the common valve merely indicated in dotted lines, the parts being in the position shown in Fig. 1. Fig. 4 is a plan view of the parts in the position shown in Fig. 2, the top plate of the steam-chest removed and the outline of the common valve merely indicated in dotted lines.

This improvement in valves is more particularly designed for use on locomotive-engines, though it is applicable to all engines. Its purpose is to effect a reversal of the motion of the engine.

The letter *a* indicates the valve-seat, with steam-ports *a*¹ *a*² leading to the two ends of the cylinder in the common way. *b* is the valve-box or steam-chest, with top plate *b*¹ fastened on in the usual manner. Steam is admitted through the port *b*². The common valve *c* has the common to-and-fro motion, but this motion is not so great in either direction but that the port *b*² always overlaps some part of the corresponding part or passage *c*¹ in this common valve, which opens into the steam-way *x*. This common valve rests upon the reversing-valves *d* *d*¹, which slide in ways *d*²,

and are connected together by the arms *e*, which are pivoted on the pin *e*¹, and have slots in their ends embracing the pins *e*². The opposing edges of the valves *d* *d*¹ are grooved or mortised to allow the arms *e* to shut into them when the valves *d* *d*¹ are shut together, as in Figs. 1 and 3. The effect of this arrangement is such that when the valve *d* is pulled away from the pin *e*¹, which can be done by means of the valve-rod *g*, the valve *d*¹ is moved an exactly equal distance in the opposite direction. The valves *d* *d*¹ have slots *i* *i*¹ for the passage of the steam to the ports *a*¹ *a*². When the parts are all in the position shown in Figs. 1 and 3, the steam is flowing in to the cylinder through the port *a*¹ and out from the opposite end through the port *a*², escaping into the vacant body of the steam-chest, from which it is appropriately conveyed away. Now, suppose that it is desired to reverse the motion of the engine at this precise moment, a pull upon the lever *g* puts the valves *d* *d*¹ into the positions shown in Figs. 2 and 4, and now the steam is flowing into the cylinder through the port *a*² and out from the opposite end of the cylinder through the port *a*¹, and consequently the motion of the engine is reversed. The pins *s* are guide-pins for the common valve *c*.

It will be thus seen that the motion of the engine can be reversed with the utmost ease, even when the engine is under its utmost speed.

I claim as my invention—

The combination and arrangement of the steam-conducting main valve *c* with the reversing-valves *d* *d*¹, made equally extensible from a common center, the whole constructed and operating substantially as described, and for the purpose set forth.

OZI M. PIKE.

Witnesses:

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