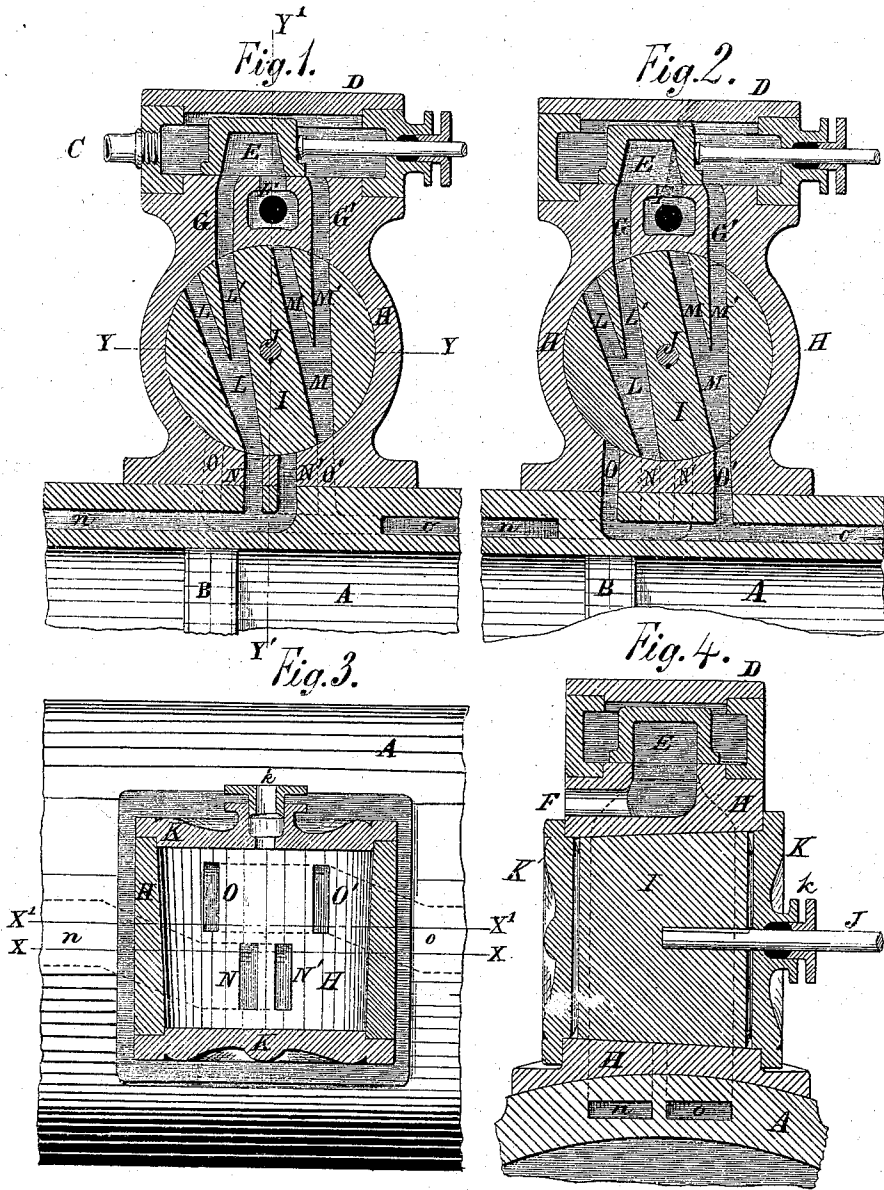


P. W. MELLEEN.

Reversing-Valves for Steam-Engines.

No. 137,229.

Patented March 25, 1873.



WITNESSES:

Geo. L. Swin.
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INVENTOR:

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UNITED STATES PATENT OFFICE.

PETER W. MELLEN, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN REVERSING-VALVES FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. 137,229, dated March 25, 1873.

To all whom it may concern:

Be it known that I, PETER W. MELLEN, of the city and county of St. Louis and State of Missouri, have invented a certain Improvement in Reversing-Valves for Steam-Engines, of which the following is a specification:

My improvement consists in the manner of construction of the steam-ports in the oscillating valve, as described, so that the engine can be reversed or its speed graduated by partial rotation of the valve; also, in combination with said valve and a slide-valve, of the valve-case, in which the reversing-valve is inclosed and seated, and one side of which forms the seat of the slide-valve, as more fully described hereinafter.

Figure 1 is a section at X X, and Fig. 2 is a section at X' X', Fig. 3. Fig. 3 is a section at Y Y with the reversing-valve removed, and Fig. 4 a section at Y' Y', Fig. 1.

A is a portion of the engine-cylinder, and B of the piston, at near mid-stroke. C is the steam-pipe, D the steam-chest, and E the slide-valve. F is the exhaust-port. G G' are the steam-ports in the case H of the reversing-valve, these ports extending from the steam-chest to the reversing-valve I. The reversing-valve I is preferably of frusto-conical form, to enable its adjustment to compensate for wear. It is operated through the medium of a stem, J, passing through a stuffing-box, k, in the head K. The valve I is traversed by steam-passages L L' and M M', which connect the ports G G' with the ports and passages N N' n and O O' o in the case H and cylinder A. The steam-ports N N' and passage n communicate with one end of the cylinder, and those O O' o with the other end of the cylinder.

It will be seen by reference to the drawing, Figs. 1 and 2, that when the passage M M' is in communication with O' o and G', and the

slide-valve E in the position shown, the steam will enter the cylinder through G' M' M' O' o, and will exhaust through n, N, L, L', G, and F, and as the slide-valve is brought to the other position the course of the steam is reversed, except as to the steam and exhaust pipes C and F. Suppose the reversing-valve to be turned so as to bring the passage L to connect G and O, at the same time connecting G' and N' by the passage M. Then the valve E, being in the position shown, Figs. 1 and 2, the steam enters the cylinder through G' M N' n and exhausts through o O L G, and the rotation of the crank and main shaft will be reversed.

To regulate the speed of the engine it is only necessary to turn the reversing-valve I more or less so as to regulate the size of the steam-openings between the steam-ports of the case H and valve I.

This device forms a compact and efficient substitute for the "link-motion" used on locomotives and in other positions.

I claim as my invention—

1. The reversing-valve I having steam-passages L L' and M M', substantially as and for the purpose set forth.

2. In combination with the valve I, constructed as described, the case H having ports G G' N N' O O', and forming upon one side the seat of the slide-valve E.

3. The combination of the reversing-valve I and case H, constructed as specified, with the slide-valve E and a steam-engine cylinder, substantially as and for the purposes set forth.

PETER W. MELLEN.

Witnesses:

SAML. KNIGHT,
ROBERT BURNS.