P. PEARTREE.

Operating Slide-Valves.

No. 134,218. Patented Dec. 24, 1872.

Fig. 1

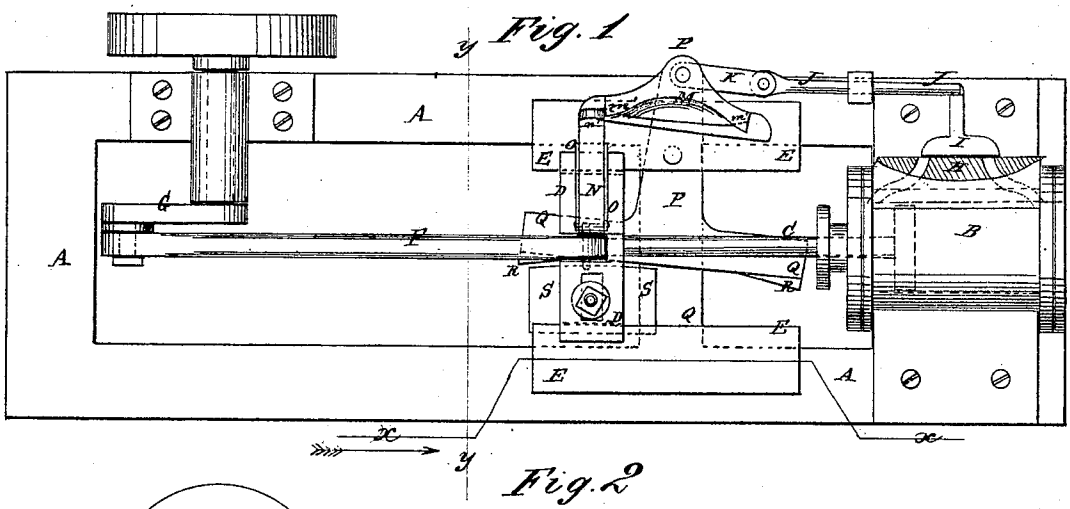


Fig. 2

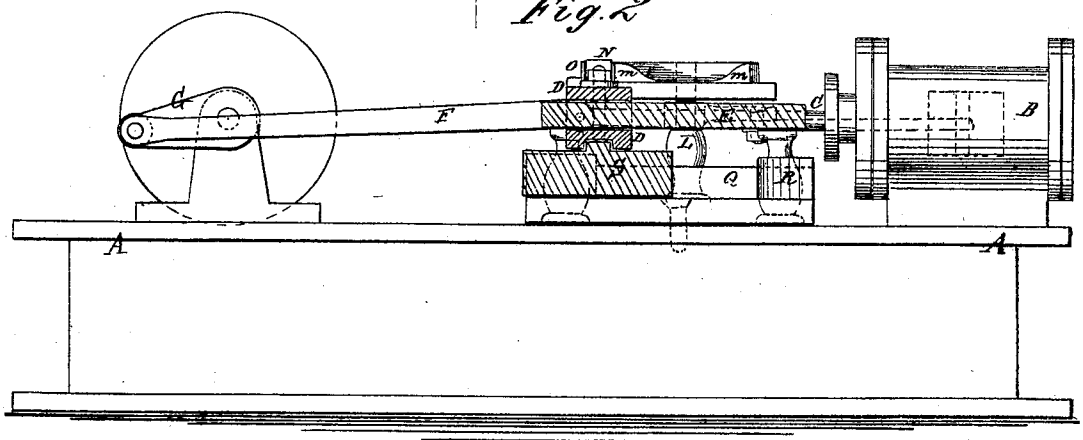
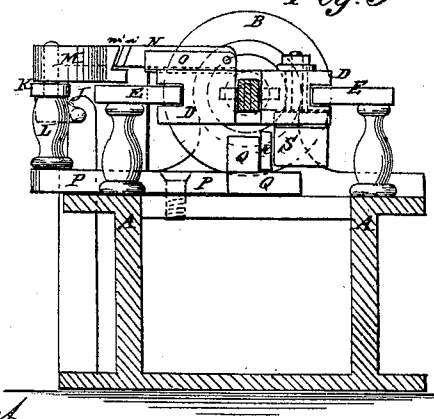


Fig. 3



Witnesses:

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UNITED STATES PATENT OFFICE.

PETER PEARTREE, OF LANSINGBURG, NEW YORK.

IMPROVEMENT IN OPERATING SLIDE-VALVES.

Specification forming part of Letters Patent No. **134,218**, dated December 24, 1872.

To all whom it may concern:

Be it known that I, PETER PEARTREE, of Lansingburg, in the county of Rensselaer and State of New York, have invented a new and useful Improvement in Device for Operating Slide-Valves, of which the following is a specification:

Figure 1 is a top view of a steam-engine to which my improvement has been applied. Fig. 2 is a side view of the same, partly in section, through the line *x x*, Fig. 1. Fig. 3 is a detail cross-section taken through the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved device for operating the valve of a steam-engine, which shall be so constructed as to enable the steam to be cut off at any desired part of the stroke, and which will operate the valve so as to give a lead, which may also be regulated at will; and it consists in the construction and combination of the various parts of the device, as hereinafter more fully described.

A represents the bed; B, the steam-cylinder; C, the piston-rod; D, the cross-head; E, the ways upon which the cross-head works; F the connecting-rod, one end of which is pivoted to the cross-head D, and the other end to the crank G. H is the valve-seat, in which the ports are formed. The valve-chest is removed to expose the valve I, which moves back and forth upon the seat H, opening and closing the ports alternately. J is the valve-stem, the outer end of which is pivoted to the arm K, the other end of which is pivoted to the stud L, to the upper end of which is attached a block, M, upon the inner upper part of which, near its ends, are formed projections *m'*. The inner upper part of the block M, between the projections *m'*, is recessed, as shown in Figs. 1 and 2. N is a block, placed in a trough or guide, O, attached to the cross-head D, the sides of which are designed to prevent any lateral movement of the block N. The inner end of the block N is pivoted to the sides of the guide O, near their inner ends, as shown in Figs. 1 and 3. The outer end of the block N rests upon the upper side of the block M.

By this construction, as the cross-head D moves in either direction from the central part of its stroke, the outer end of the block N slides along the upper surface of the block M, over the top of the projection *m'*, and drops down upon the outer side of said projection. As the cross-head begins its return stroke the end of the block N strikes against the inclined side of the projection *m'*, which operates the block M and opens the valve to admit the steam. The forward end *n'* of the block N and the projections *m'* of the block M are detachable, so that when worn they may be easily detached and replaced with new ones.

The lower end of the stud L is attached to the outer end of the bar P, which is pivoted near its center to a cross-bar of the bed A. To the other or inner end of the bar P is attached a cross-head, Q, the upper part of the outer side of which is rabbeted, as shown in Figs. 1, 2, and 3. To the vertical shoulder formed by the rabbet at its ends are adjustably secured wedge-shaped blocks R. In the rabbet of the cross-head Q slides a block, S, adjustably attached to the under side of the end of the cross-head D.

By this construction, after the valve has been opened by the action of the blocks N M, as the cross-head B advances the block S strikes against the shoulder of the cross-head Q, which operates the pivoted bar P and closes the valve or cuts off the steam. As the cross-head D continues to advance the block S strikes against the inclined or wedge-shaped blocks R, which moves the bar P a little further, and slightly opens the valve in front of the piston just before it completes its stroke. The lead thus obtained may be regulated as desired by adjusting the wedge-shaped blocks R nearer to or further from the center of the cross-head Q.

The point at which the steam is cut off may be regulated by adjusting the block S upon the cross-head D, so that the cross-head D may move a greater or less distance before the block S comes in contact with the cross-head Q.

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

1. The combination of the block M, pivoted block N, the pivoted bar P, cross-head Q, and adjustable block S with the cross-head D of the piston-rod C and with the stem J of the valve I, for closing the valve and cutting off the steam, substantially as herein shown and described.

2. The combination of the inclined or wedge-shaped adjustable blocks R with the cross-head Q, pivoted bar P connected with the stem J of the valve I, and with the block S attached to the cross-head D of the piston-rod C, for "giving a lead," substantially as herein shown and described.

PETER PEARTREE.

Witnesses:
EUGENE HYATT,
GEO. H. HEARMON.