(No Model.)

W. JACKSON.

BALANCED SLIDE VALVE.

No. 345,235. Patented July 6, 1886.

Fig. 1

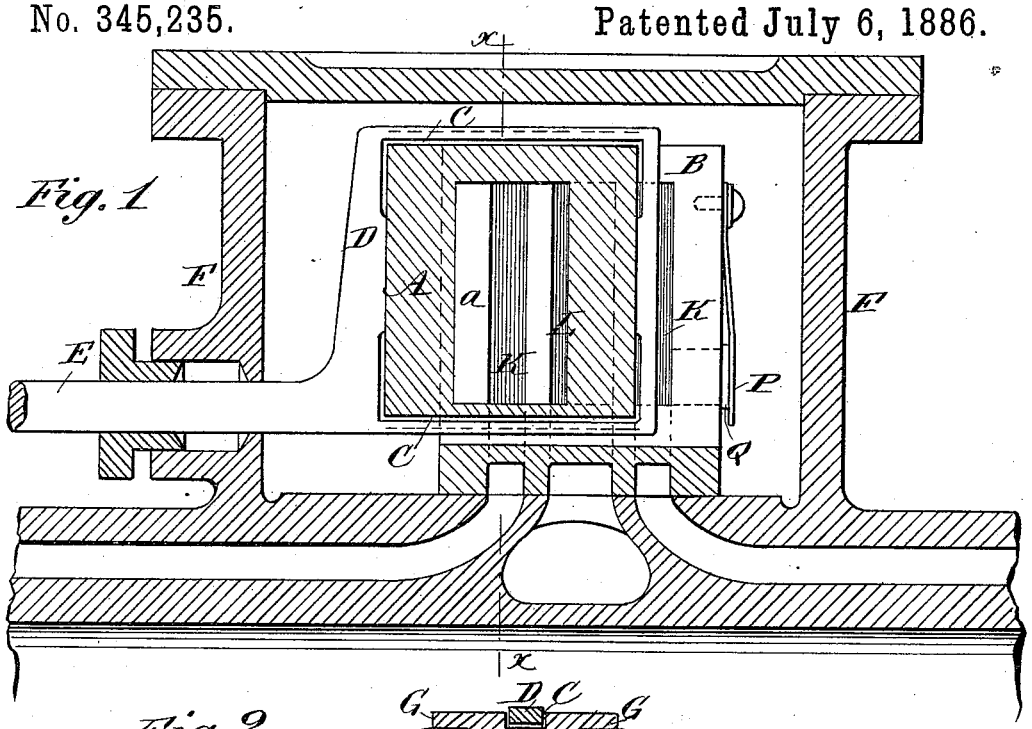


Fig. 2

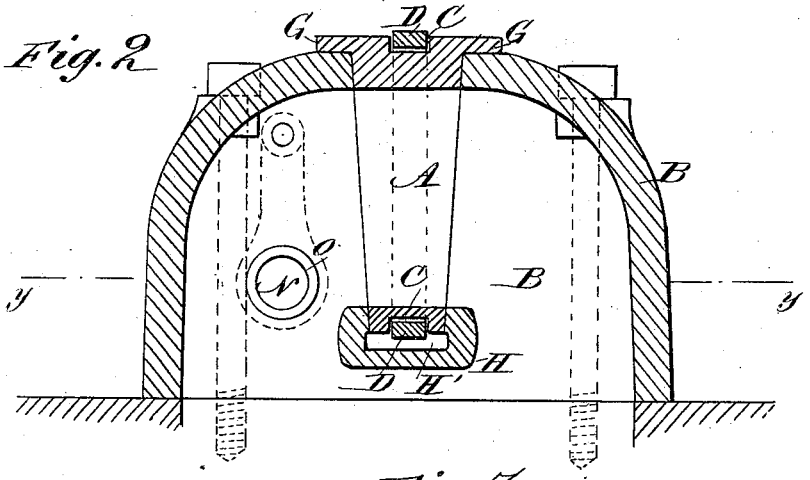
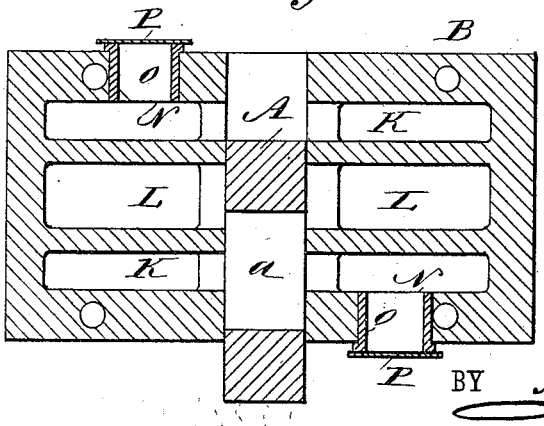


Fig. 3



WITNESSES:

C. Neveux

C. Sedgwick

INVENTOR:

W. Jackson

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM JACKSON, OF ALLEGHENY CITY, PENNSYLVANIA.

BALANCED SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 345,235, dated July 6, 1886.

Application filed October 20, 1885. Serial No. 180,427. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JACKSON, of Allegheny City, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Balanced Slide-Valve, of which the following is a full, clear, and exact description.

The object of my invention is to provide certain new and useful improvements in the slide-valve for which United States Letters Patent No. 187,014 were issued to me on the 6th day of February, 1877.

The invention consists in the construction and combination of parts and details, as will be fully described and set forth hereinafter, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal sectional elevation of my improved balanced slide-valve. Fig. 2 is a cross-sectional elevation of the same on the line *x x*, Fig. 1. Fig. 3 is a sectional plan view of the same on the line *y y*, Fig. 2.

The valve A is made in the form of a block or plug having the sides tapered down and toward each other from the top edge, and the said block is provided with the exhaust-port *a*, extending from one side face to the other. A groove, C, is formed in the top and bottom edges of the said valve, and through the said groove a band or loop, D, passes, which extends around the valve, and is connected with the valve-rod E, passed through a stuffing-box in the steam-chest F. The said valve A also has the top flanges, G, which project from its sides and over the top of the seat-piece B, and form a support for the valve. The lower part of the valve slides in a grooved piece, H, extending the entire length of the seat-piece, and serving to receive and guide the lower part of the valve, and is provided with a space, H′, for receiving steam to balance the valve. The recess in the seat-piece B is of such size and shape as to receive the valve snugly.

The seat-piece is provided with the live-steam channels K, and with the exhaust-channel L between them.

In each end of the seat-piece B an aperture, N, is provided, in which a tube, O, is placed, which is closed by a spring-valve, P, secured to the end of the seat-piece and held closed by the spring tension in the arm or strip of said spring-valve, and by the pressure of the steam. In case there is any back-pressure from the cylinder, which is very likely to occur when the engine is reversed, the valve is not lifted from its seat, but the valves P are pressed outward, and the steam escapes through the apertures N and the pipes O in the same. The valve is thus balanced perfectly, works easily, always fits snugly in its seat, even when it wears down, and is not disturbed by the back-pressure.

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

1. In a balanced slide-valve, a seat having apertures on opposite sides, communicating with the live-steam passages, and spring-valves for closing said apertures, in combination with a slide-valve in the said seat, substantially as herein shown and described.

2. In a balanced slide-valve, the combination, with the seat B, provided with grooved piece H, the steam-channels K L, and apertures N on opposite sides and communicating with the live-steam channels, of the valve A, having the exhaust-port *a* and flanges G, and the spring-valves P, for closing said apertures, substantially as herein shown and described.

WILLIAM JACKSON.

Witnesses:
THOS. H. DICKSON,
W. H. WHITE.