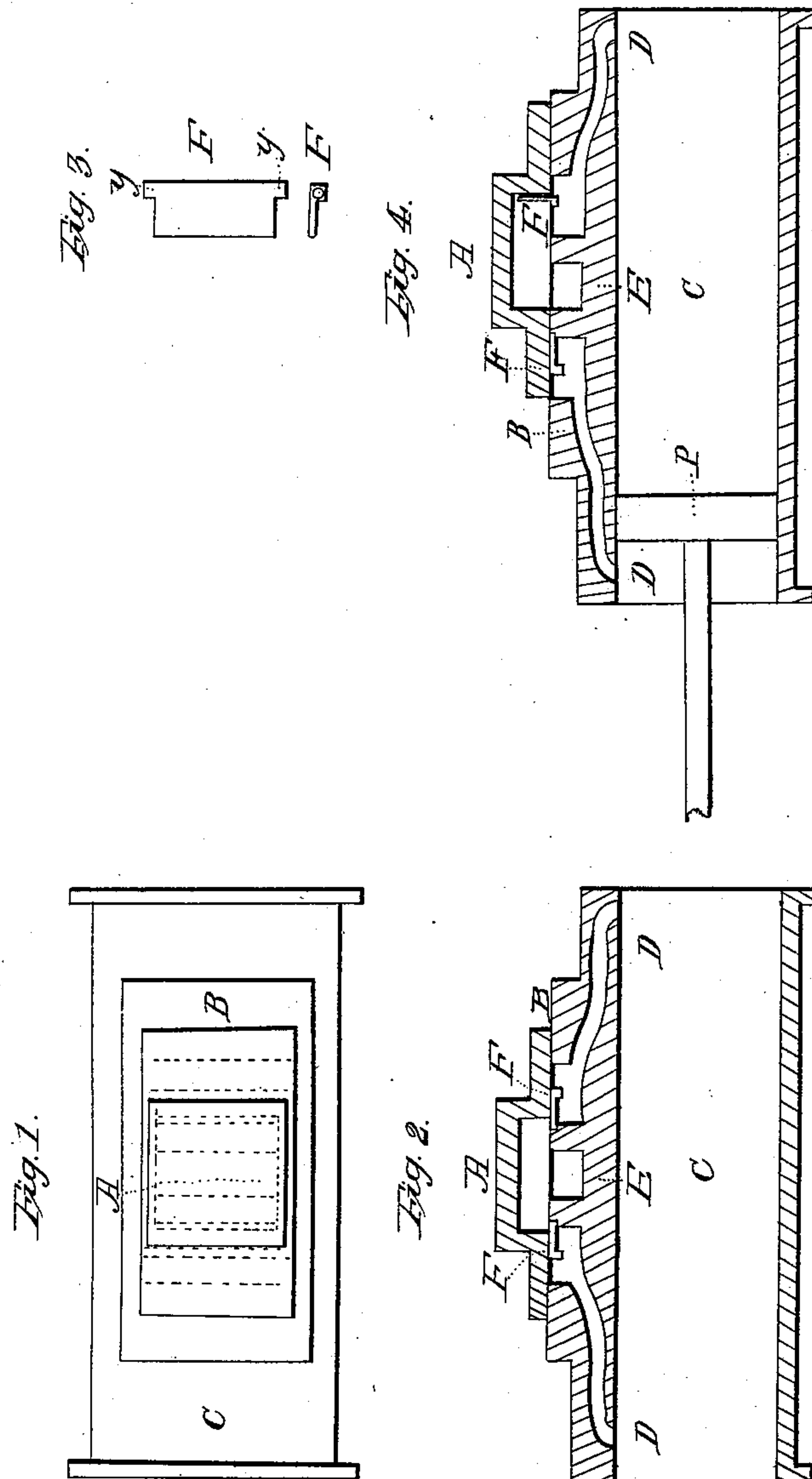


H. R. Camfield,
Steam Slide Valve.

N^o 85,278.

Patented Dec. 29, 1868.



Witnesses:
John H. Pitt Simmons.
Geo. W. Boyd.

Inventor:
Hampton R. Camfield

United States Patent Office.

HAMPTON R. CAMFIELD, OF SUSQUEHANNA DEPOT, PENNSYLVANIA, ASSIGNOR TO HIMSELF, JOHN H. FITZ SIMMONS, AND GEORGE BOYD, OF SAME PLACE.

Letters Patent No. 85,278, dated December 29, 1868.

IMPROVEMENT IN STEAM-PORTS OF STEAM-ENGINES.

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, HAMPTON R. CAMFIELD, of Susquehanna Depot, in the county of Susquehanna, and State of Pennsylvania, have invented a new and useful Improvement on the Valve-Seats of the Cylinder of Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description of the construction of the same, with its operation also, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a top view of an ordinary steam-cylinder.

Figure 2, a sectional view of the same, with the valve in place.

Figure 3 represents the auxiliary or liberating-valve, which suddenly and promptly releases the exhausted steam from the cylinder C, after having performed its office of moving the piston P to the extremity of the cylinder.

This releasing-valve consists of a plate of metal, shown at F. Each end of said plate, on one side, is extended to form pins, upon which it moves or oscillates in appropriate bearing, properly secured within the ports on steam-passages D.

E is the exhaust-port, leading to the open air.

A is the ordinary slide-valve, traversing the valve-seat B.

The auxiliary valves F F, vibrating or moving upon their bearings y y, fall or lie toward the exhaust-port E, upon a ledge or step, shown in the drawing, and which prevents them from dropping into the port D, also affording a comparatively steam-tight joint when in a state of inaction.

The operation of this improvement is as follows:

When the piston has neared the end of its stroke,

(the steam following expansively,) the valve A is rapidly moving in the opposite direction, to release the spent steam, and thus prepare the cylinder for the return-stroke. This release takes place when the exhaust-cavity has reached a point over the hinge of the valve F. The weight of the valve A being removed, the steam in the cylinder throws up the valve F in its passage to the outer air.

By properly proportioning the lap ("inside and outside") of the common slide-valve A, the exhaust takes place at or near the end of the stroke of the piston P, and before the ingress of the steam for the return-stroke. The valve A still moves on to effect the opening of the other steam-port, D, the auxiliary valve still remaining open, at an angle of, say, ninety degrees, or a right angle, the other auxiliary valve remaining down by the weight of valve A.

When this last-mentioned valve is returning, to release the end of the cylinder now filled with steam, the exhaust-cavity strikes the valve F, forcing it easily and naturally down to its first position against the ledge.

The advantage gained by the use of the auxiliary valves, is prompt and thorough release of the steam at the exact moment when it is no longer required.

What I claim as my invention, is—

1. The construction of releasing-devices F, having two or more bearings or hinges, substantially as described.
2. The combination of the device F with the seat B and valve A, as set forth.

HAMPTON R. CAMFIELD.

Witnesses:

JOHN H. FITZ SIMMONS,
G. W. BOYD.