

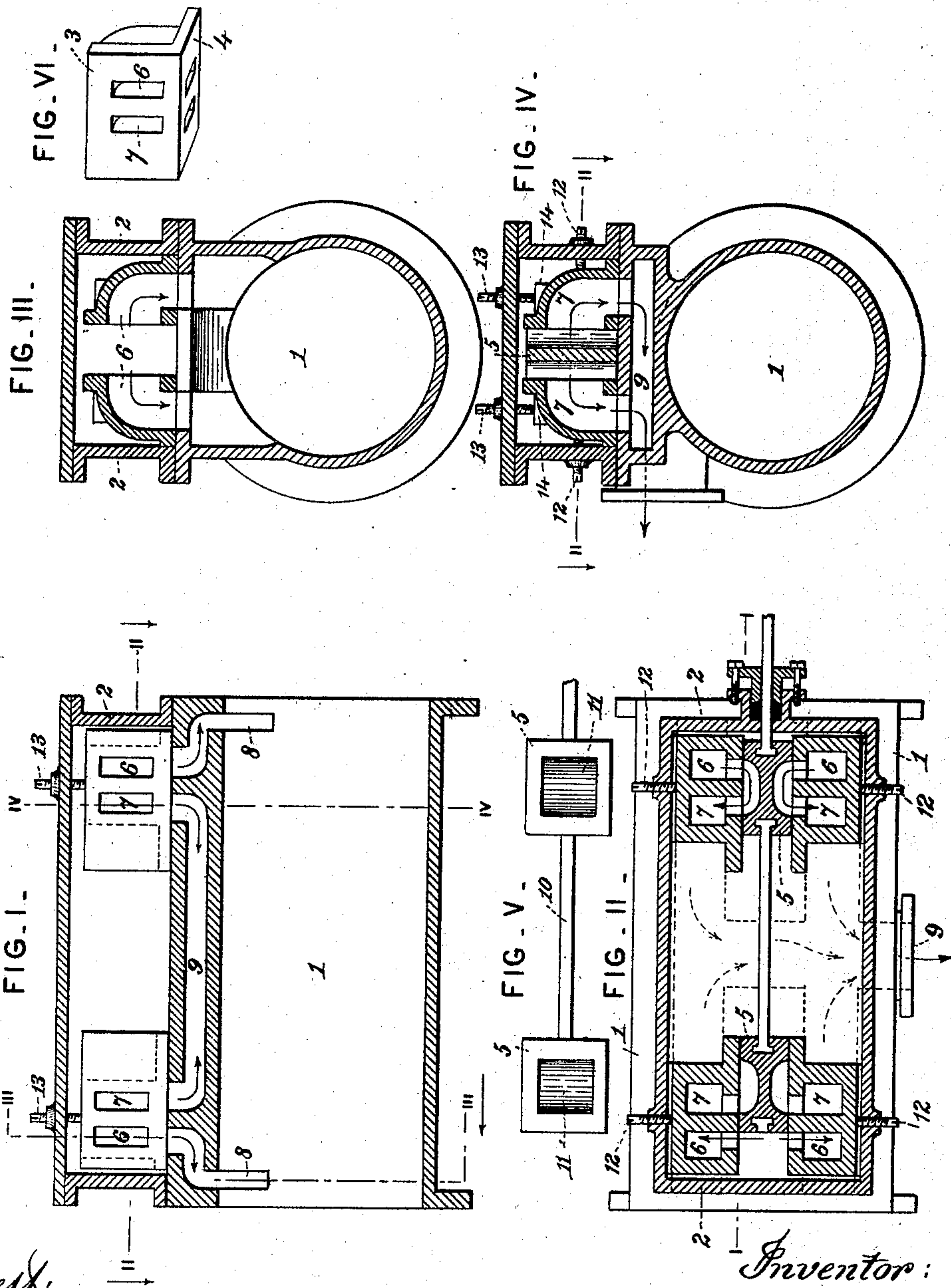
(No Model.)

W. A. ROBINSON.

SLIDE VALVE.

No. 388,374.

Patented Aug. 21, 1888.



*Attest:*  
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# UNITED STATES PATENT OFFICE.

WILLIAM A. ROBINSON, OF MEMPHIS, TENNESSEE, ASSIGNOR OF ONE-HALF  
TO JOHN E. RANDLE, OF SAME PLACE.

## SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 388,374, dated August 21, 1888.

Application filed February 18, 1888. Serial No. 264,479. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. ROBINSON, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Slide-Valves for Steam and other Engines, of which the following is a full, clear, and exact specification.

Broadly, my invention relates to that class of valves known as "balanced-slide," but specifically it has reference to steam-chambers which are designed to be placed within the steam-chest to co-operate with or form a seat for the sliding valve.

Referring to the accompanying drawings, which form an important part of this application, Figure I represents a vertical longitudinal section of the cylinder and chest with the valve removed, showing my improved steam-chambers, which is taken on the line *xx*, Fig. IV. Fig. II is a sectional plan showing the steam-passages in dotted lines, taken on the line II II, Fig. IV. Fig. III is a transverse section of the end that is admitting pressure, taken on the line III III, Fig. I. Fig. IV is a similar section of the end that is exhausting, taken on the line IV IV, Fig. I. Fig. V is a side elevation of the slide-valve. Fig. VI is a perspective view of one of the steam-chambers. 1 represents the steam-cylinder, upon the top of which is secured in any customary manner an ordinary steam-chest, 2. Situated within this steam-chest, at each end, are two steam-chambers, which are provided with vertical and longitudinal faces 3 4, respectively. The faces 4 of said chambers rest upon the floor of the steam-chest, (or upon the top of the cylinder, as the case may be,) while the vertical faces 3 form a passage-way at each end of the chest, in which the slide-valves 5 travel, the inner ends of the faces 3 being elongated, as shown, so as to form a continuous bearing for the valves. Each of these steam-chambers are provided in their vertical faces 3 with steam-ports 6 7, which communicate through their lower faces, 4, with the steam ingress and exhaust ports 8 9, respectively, in the floor of the chest leading into the cylinder. The valves 5 are formed of two solid blocks linked to-

gether by the bar 10, and which are provided with side cavities, 11, of sufficient dimensions to barely span the two ports 6 7 in the steam-chambers, whereby when the valve is drawn to the extremity of its stroke, communication with the steam in the chest will be cut off from the ports at one end by spanning both ports at each side of the valve at one end with the cavities 11, which will permit the steam to exhaust from the cylinder through the port 9 via the ports 6 7, the cavities 11, and port 8, while at the other end of the cylinder the valve is covering the exhaust-port 6 only and admitting live steam through the port 7 to the cylinder.

As a means for taking up the wear caused by the valves sliding against the vertical faces 3 of the steam-chambers, I provide the longitudinal and vertical plates of the steam-chest with set-screws 12 13, respectively. The vertical screws 13 bear upon suitable elongated bearings, 14, in the crown of the steam-chambers and hold them firmly against the floor of the chest, while the screws 12 bear in suitable cavities in the outer curved walls, 15, and serve to hold the steam-chambers snugly against the valves. The great advantage of this arrangement will be readily understood to be the immediate access afforded to the steam-chambers for taking up wear and adjusting them to the valve while the engine is in motion, and thus avoid all danger caused by expansion and contraction of the parts where the engine has to be stopped, the steam-chest opened, and the parts consequently allowed to cool, in addition to the advantage that a great amount of time and trouble is saved.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination, with the steam-chest having the ingress and exhaust ports, of the two steam-chambers located within said chest and at both ends and having vertical faces 3, elongated toward each other and arranged parallel with two ports therein communicating with the ports in the chest, respectively, and valves fitted between said elongated faces 3, connected together and having cavities 11 on



both sides adapted to cover both ports in each face.

2. The combination, with the steam chest having ports 8 9 and the valve, of the steam-chambers in said chest having ports 6 7, communicating with ports 9 8, respectively, and set-screws bearing upon the tops and sides of said steam-chambers, substantially as set forth.

3. The combination, with the steam chest having ports 8 9 and the slide-valve, of the steam-chambers in said chest, having ports 6 7, communicating with ports 9 8, respectively, and set-screws bearing upon the tops and sides of said chambers and projecting through the plates of the chest, substantially as set forth.

4. The combination, with the steam-chest having ports 8 9 and the slide-valve, of the steam-chambers in said chest, having ports 6 7, communicating with ports 9 8, respectively, elongated bearings upon the tops of said chambers, and set-screws bearing upon said elongated bearings and upon the sides of said chambers and projecting through the plates of the chest, substantially as set forth.

WILLIAM A. ROBINSON.

Witnesses:

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