

No. 724,526.

PATENTED APR. 7, 1903.

J. F. VAN TUYL.
VALVE FOR STEAM ENGINES.
APPLICATION FILED MAR. 28, 1902.

NO MODEL.

Fig. 1.

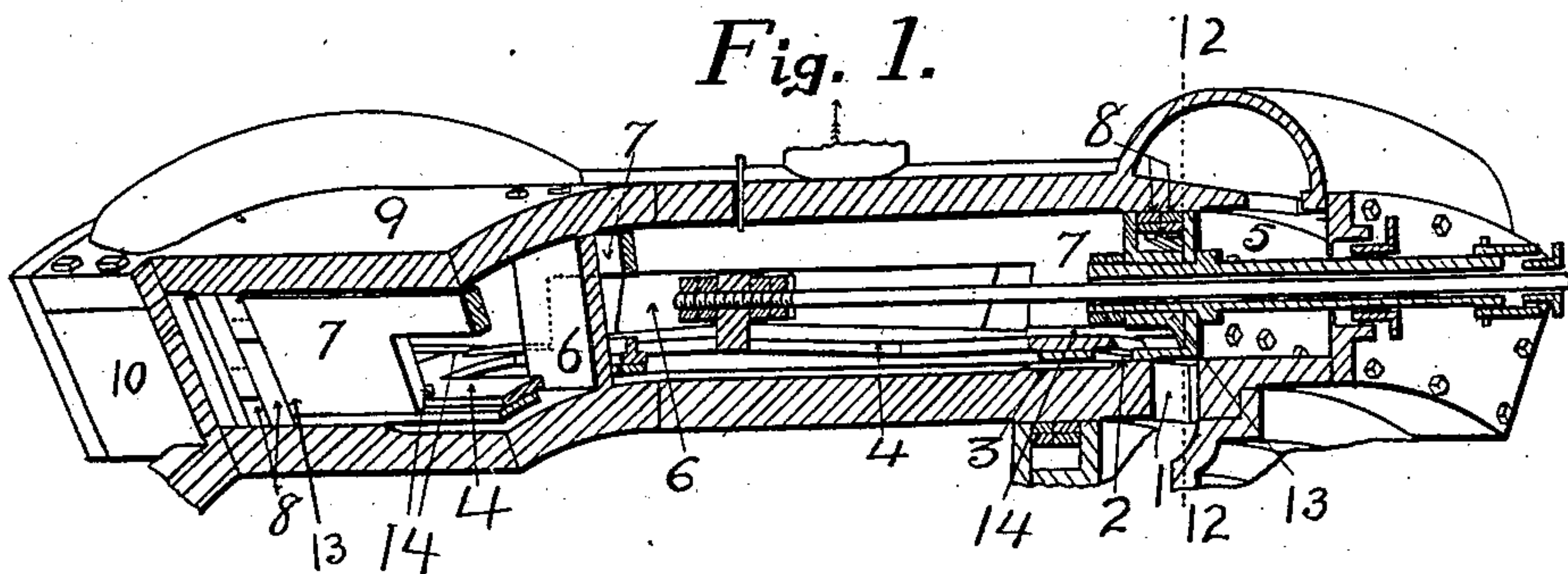


Fig. 2.

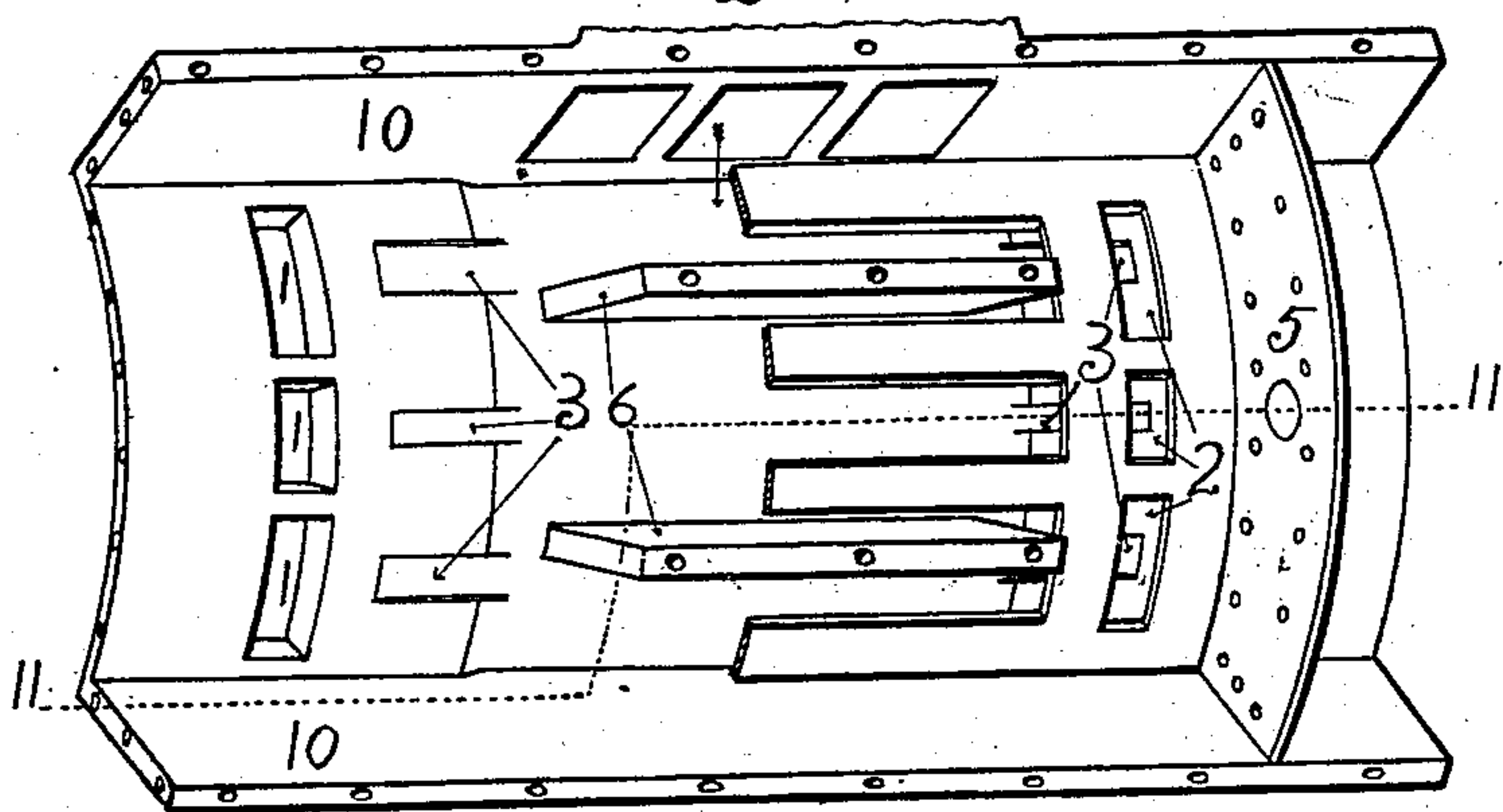


Fig. 3.

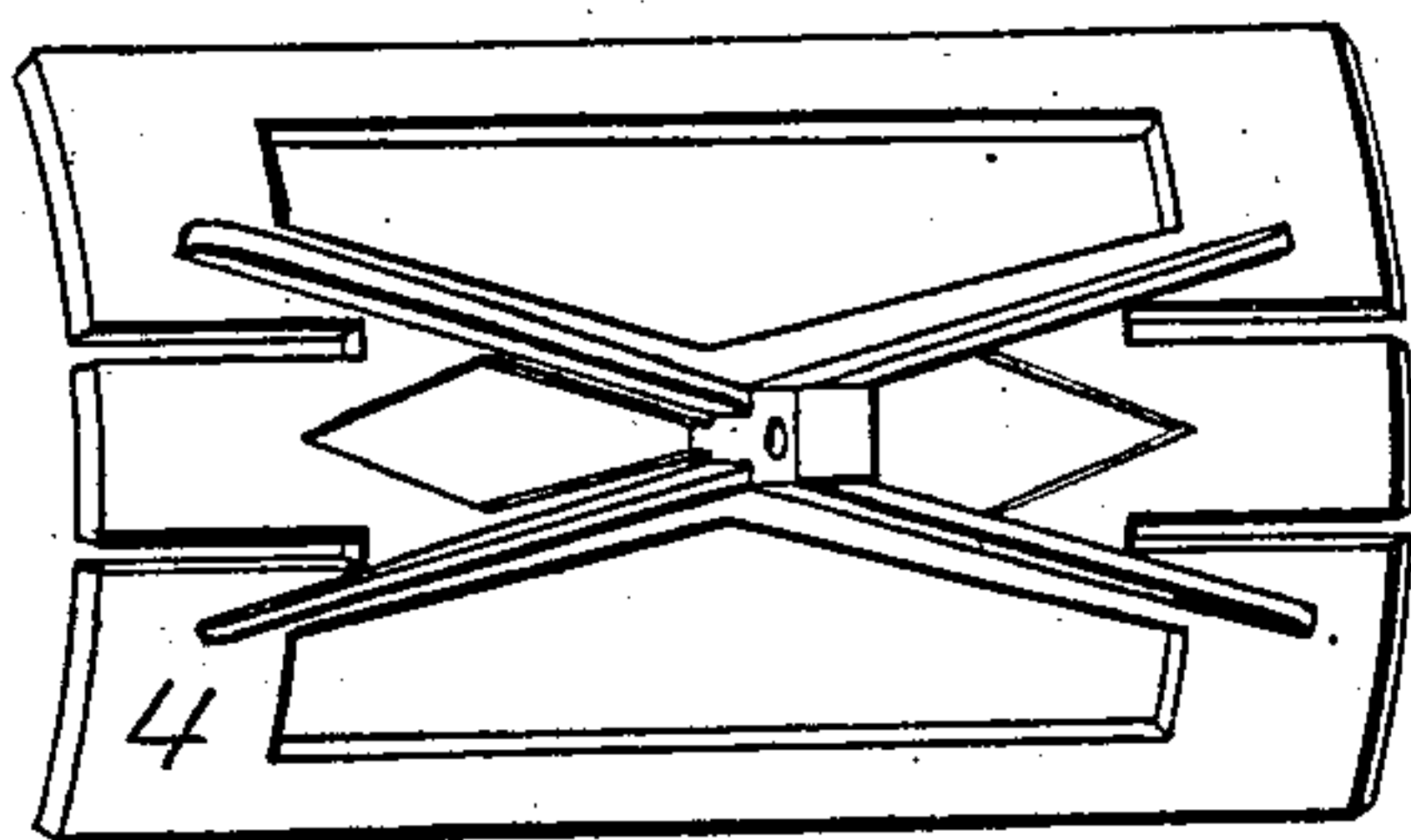
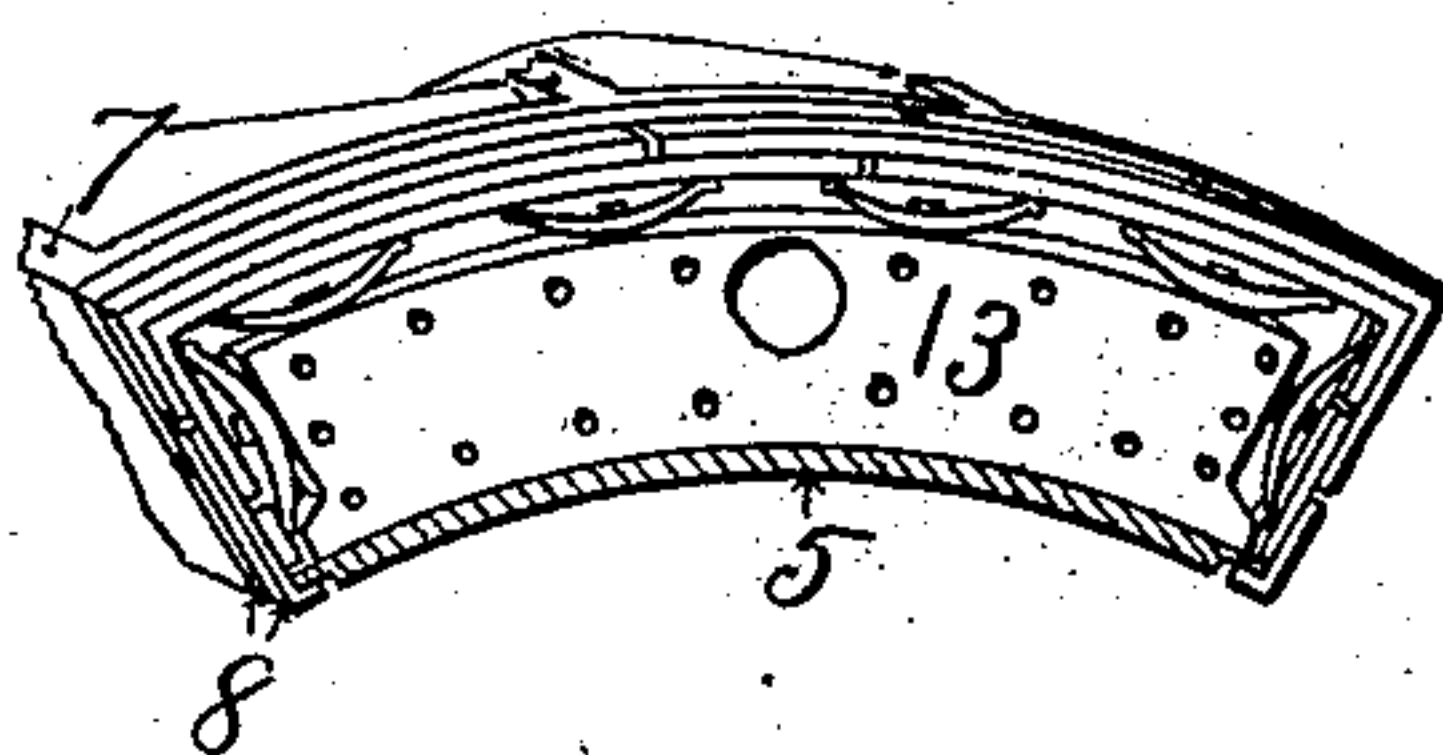


Fig. 4.



Witnesses,
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UNITED STATES PATENT OFFICE.

JOHN F. VAN TUYL, OF SAWPIT, COLORADO.

VALVE FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 724,526, dated April 7, 1903.

Application filed March 28, 1902. Serial No. 100,464. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. VAN TUYL, a citizen of the United States, residing at Sawpit, in the county of San Miguel and State of Colorado, have invented a new and useful Valve for Steam-Engines, of which the following is a specification.

My invention relates to improvements in piston-balanced and cut-off valves; and the objects of my improvement are, first, to shorten steam-passages or reduce clearance; second, to afford facility for fitting the inside of the main valve for the cut-off valve, and, third, to reduce steam load and friction of the cut-off valve.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a section on the line 11 11, Fig. 2; Fig. 2, the valve-seat with half the face-plate of the main valve; Fig. 3, the cut-off valve; and Fig. 4, a section of the valve on the line 12 12, Fig. 1.

Similar numerals refer to similar parts throughout the several views.

The main valve is composed of the two pistons 13 of angular cross-section, with their connecting-bars 7 and a removable face-plate 5. The two parts being separable, may be conveniently fitted for the cut-off valve. The bars 7 extend to and bear on the face-plate for at least as far as it travels over the ports 1, but are narrow in the middle part to allow passage of steam. The shoulders 14 on the bars 7 hold the cut-off valve 4 to its seat on the face-plate. The face-plate should extend over the outer end faces of the pistons to form follower-heads and afford continuous bearings for the bushings 8. The middle of the valve is of open construction to reduce weight and allow the passage of the stays 6. The metal-strip bushings 8 are divided to allow automatic adjustment to the faces of the casing, and at least a part of the strips are divided in each face of the piston, but are continuous past each edge thereof, the divisions of the several strips being at different points to break joints and make the entire bushing continuous. At least one strip of each bushing extends into the face of the valve to leave no opening at the basal edges of the piston, and the strip or strips so extending should ex-

actly fill the vertical dimension of the groove or notch fitted to receive them.

The steam-chest or valve casing is composed of the projecting ribs 10 on the cylinder, with the surface between them, and a removable top casing 9, bolted to the ribs. For a wide valve there may be stays 6, projecting from the valve-seat through openings in the valve to the top casing to make less thickening of the cylinder-shell necessary. The valve-seat has grooves 3, at a distance from the main ports 1 equal to the width of the cut-off ports 2, to admit steam to the cut-off ports and relieve the cut-off valve of steam load when the main ports are closed.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a steam-engine valve, the combination of the balanced pistons of angular cross-section and their connecting bars or parts with the removable face-plate, substantially as described.

2. In a piston-balanced valve of angular cross-section, the metal-strip bushings with the separate strips divided in each face of the pistons but continuous past each edge thereof, substantially as described.

3. The combination of a piston-balanced valve of angular cross-section with a casing composed of two projecting ribs on the cylinder, the space between them the valve-seat, and a removable top casing attached to the ribs; substantially as described.

4. The combination of a piston-balanced valve of open middle construction with stays extending from the valve-seat through the openings in the valve to the removable top casing, substantially as described.

5. In a valve for steam-engines, the combination of a main valve containing steam-ports, a cut-off valve controlling the said ports, and grooves in the seat of the main valve, placed substantially as described and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN F. VAN TUYL.

Witnesses:

S. S. MCDANIEL,
L. C. BARTH.