

D. Dorman,
Balance Valve.
No. 96,560. Patented Nov. 9. 1869.

Fig 1

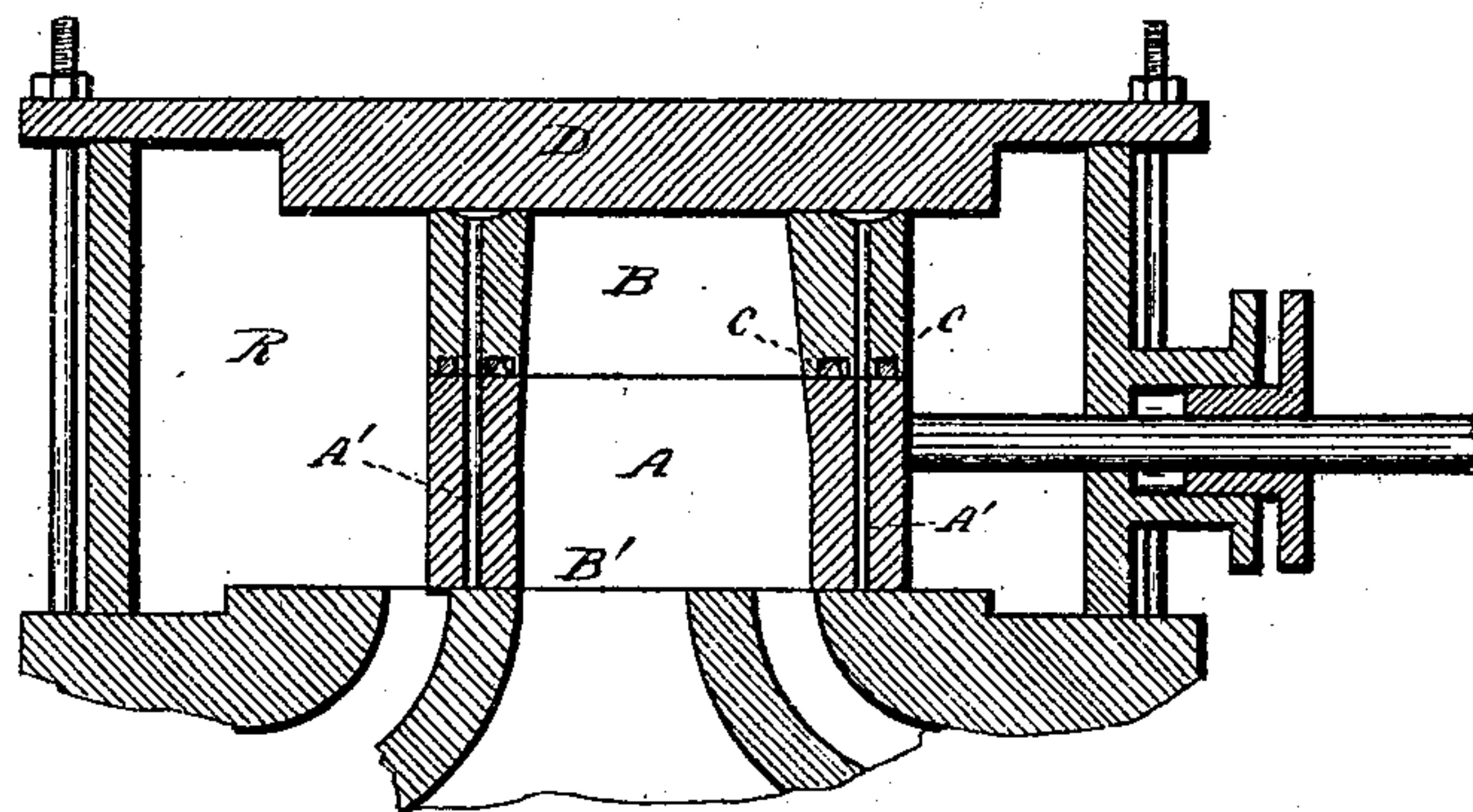


Fig 2

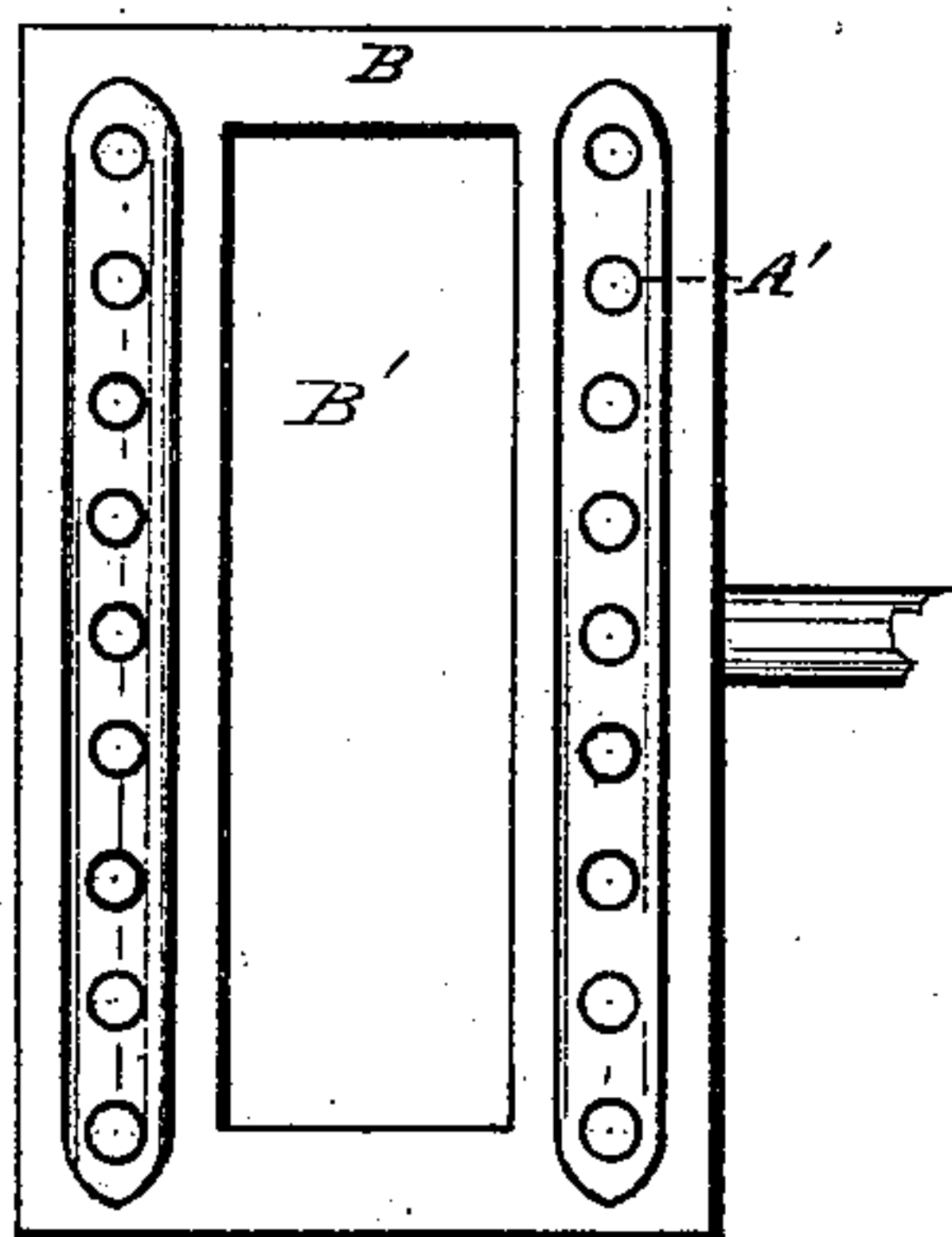
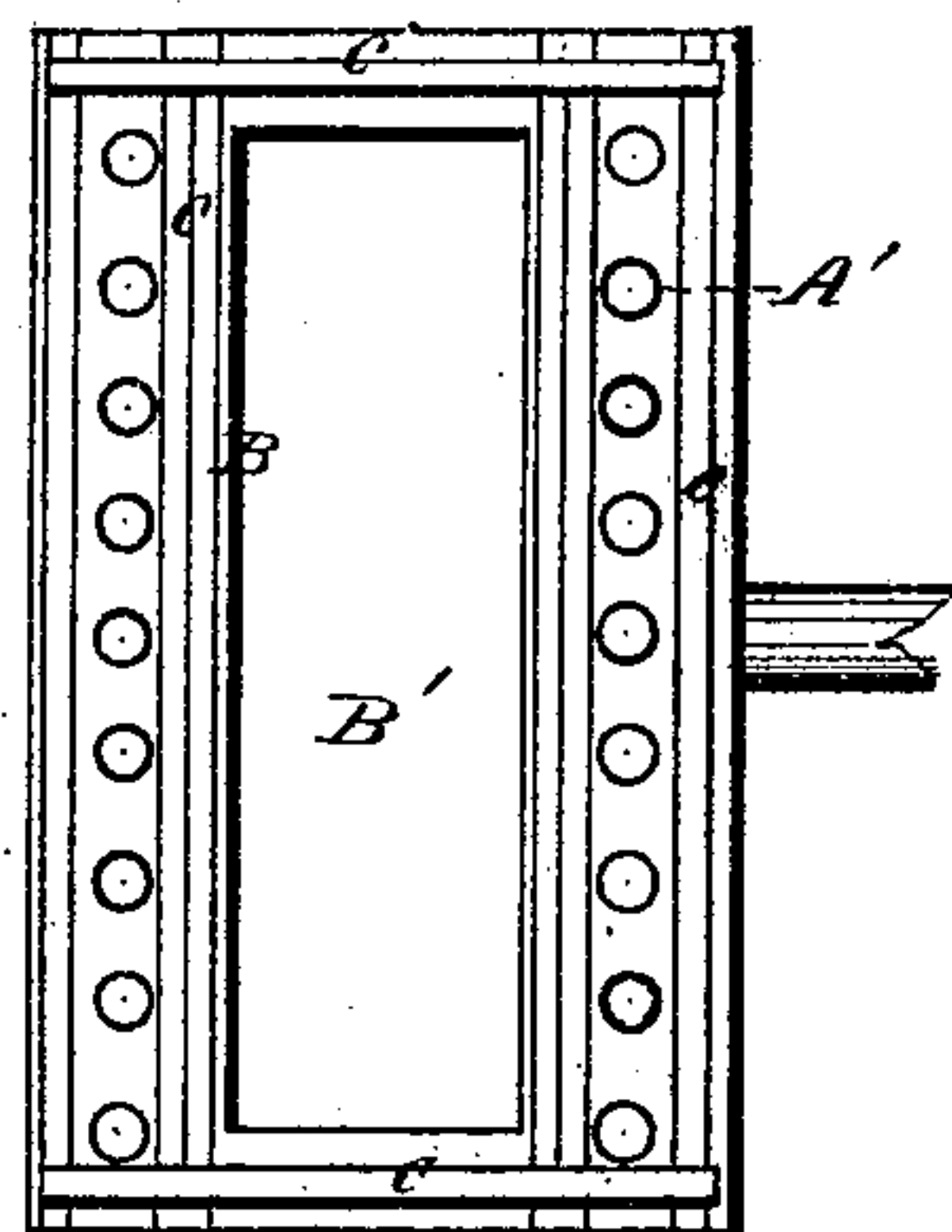


Fig 3



WITNESS
Peraval Beckett
Benjamin Fallows

INVENTOR.
David Dorman.
per his Attorney
P. Beckett

UNITED STATES PATENT OFFICE.

DAVID DORMAN, OF WHEATLAND FURNACE, OF PENNSYLVANIA, ASSIGNOR
TO HIMSELF AND THOMAS JOHNSTON.

IMPROVEMENT IN BALANCE SLIDE-VALVES.

Specification forming part of Letters Patent No. **96,560**, dated November 9, 1869.

To all whom it may concern:

Be it known that I, DAVID DORMAN, of Wheatland Furnace, in the county of Mercer and State of Pennsylvania, have invented certain new and useful Improvements in Balance Slide-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of slide-valves whereby the steam-pressure is removed from the upper surface of the valve, keeping the same evenly balanced.

In the accompanying drawings, Figure 1 is a longitudinal section of my invention; Fig. 2, a top plan of the valve; Fig. 3, a detail plan thereof.

Letters of reference denote parts.

The valve is of quadrangular shape, and constructed in two sections, A and B, the divisional line being at or near the center thereof, the valve having an opening, B', to facilitate the exhaust. The ends or lap of said valve are perforated with a series of holes, A', of any suitable shape. Packing-strips C, either in one or more rows, are placed around either in the base A or cap B, which is grooved to receive them, said strips C being of such construction and shape as will admit of a passage underneath the same, as shown in the accompanying drawings. They are of triangular shape, said strips being so relatively arranged that they will bear against each other and the end strips form a joint against the side strips. The face of said packing-strips C bear against the face of the corresponding section of the valve, as the case may be, being acted upon laterally and vertically by the steam contained in the ordinary steam-chest, R, which steam, passing along the groove or passage underneath said strips C, forces upward the same, or downward, as the case may be, pressing the cap B against the lower portion of the ordinary steam-chest lid D, thus preventing a downward pressure of steam from acting on the upper surface of

the valve. As the lap of the valve travels over a steam-port steam will pass through the perforations A' and impinge against the steam-chest lid D, thus preventing the upward pressure of steam from the cylinder from raising the valve from its seat, and prevents the ingress of dirt or grit thereon, and as the top of the valve bears against the steam-chest lid the pressure of steam is relieved from that point, and, providing the upper part of the valve wears, the continual action of steam on the packing-strips C forces upward the cap B, taking up all lost motion and preventing leakage, thus removing unnecessary friction and enabling the engine to perform more work, with a saving of fuel.

I am aware that quadrangular valves using packing-strips and having a bearing against the steam-chest lid have been heretofore constructed; but the packing-strips are located on the upper face of the valve, and in their reciprocating motion they cut grooves in the lid, thus requiring oftentimes labor to adjust and repair the same. My valve having the packing-strips at or near its center and having an even bearing on its upper face obviates that difficulty.

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

The arrangement of a series of packing-strips between the upper and lower portions of a quadrangular divisional slide-valve, said strips being of such construction and shape as will admit of a passage or steamway underneath the same, and being so relatively arranged that they will form a perfect joint with each other, substantially as described and set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

DAVID DORMAN.

Witnesses:

ABNER APPLGATE,
THOS. JOHNSTON.