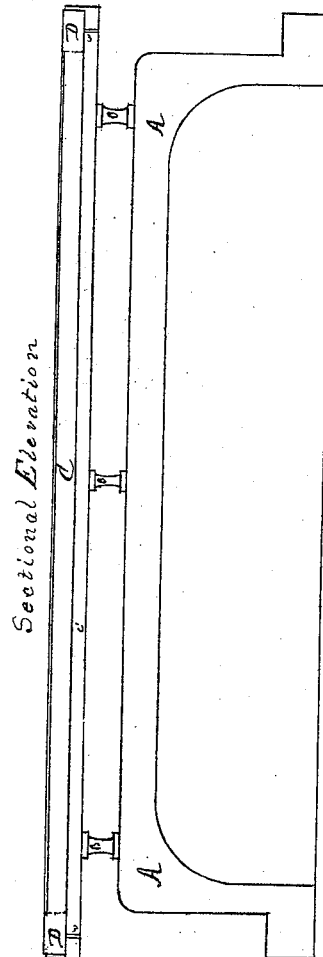
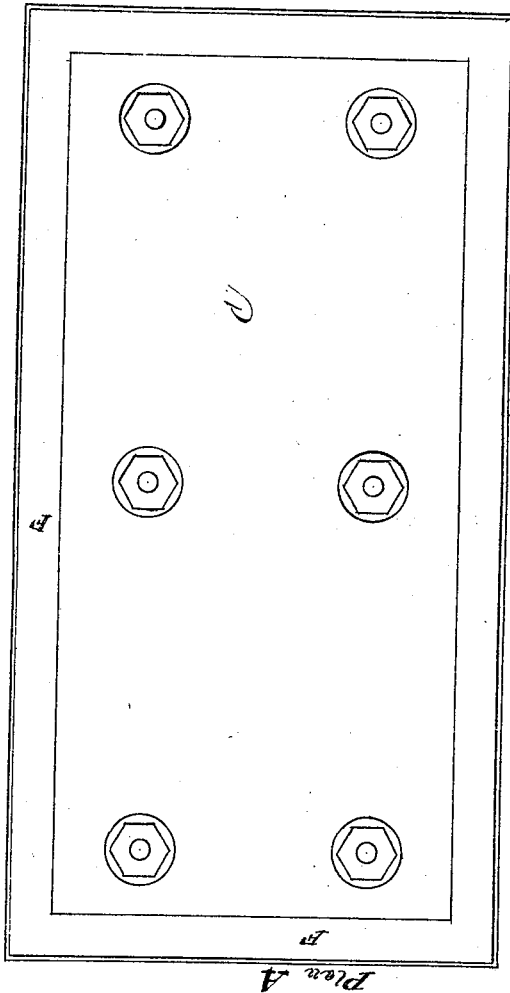


*Hamer & Walls,*

*Balanced Valve.*

*No. 108,704.*

*Patented Oct. 25. 1870.*



*Witnesses*  
*Wm M Hendricks*  
*A. M. Wolantson*

*Inventors*  
*T. J. Hamer*  
*M. Walls,*

# UNITED STATES PATENT OFFICE.

THOMAS J. HAMER AND MARTIN WALLS, OF SUNBURY, PENNSYLVANIA.

## IMPROVEMENT IN BALANCE SLIDE-VALVES.

Specification forming part of Letters Patent No. **108,704**, dated October 25, 1870.

*To all whom it may concern:*

Be it known that we, THOMAS J. HAMER and MARTIN WALLS, of the borough of Sunbury, county of Northumberland, and State of Pennsylvania, have invented a new Balance Slide-Valve, by which the pressure of the steam is equalized; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference thereon.

The nature of our invention consists in providing an ordinary slide-valve with a plate fastened, at such a distance above the valve as necessity may require to adapt it to the steam-chest used, by means of a sufficient number of studs or bolts securely fastened in the top of the valve.

In the top of this plate there is a groove or recess, into which is fitted a ring with steam-tight joints. In the recess between the plate and valve beneath this ring are perforations sufficient in number and size to admit a sufficient quantity of steam while working under pressure to sustain the ring against the steam-chest lid, and, forming a steam-tight joint between the ring and lid, preventing the passage

of steam between the plate and steam-chest lid, the plate to be of sufficient area to relieve the downward pressure on the valve, forming altogether a complete balance-valve.

*Description of the Accompanying Drawing.*

Plan A shows the top surface of the plate with ring adjusted. A A is the valve. B B are studs or bolts, by which the grooved plate C C is secured to the valve. D D is the ring or joint. E E are the perforations. F F on Plan A show the surface view of the ring or joint forming a perfect balance slide-valve.

What we claim as our invention, and desire to secure by Letters Patent, is—

The combination of the perforated grooved plate C with packing ring or joint D F, of any shape, supported above the valve A by the studs or bolts B B, all substantially as and for the purposes set forth.

T. J. HAMER.  
MARTIN WALLS.

Witnesses:

WM. M. HENDRICKS,  
S. P. WOLVERTON.