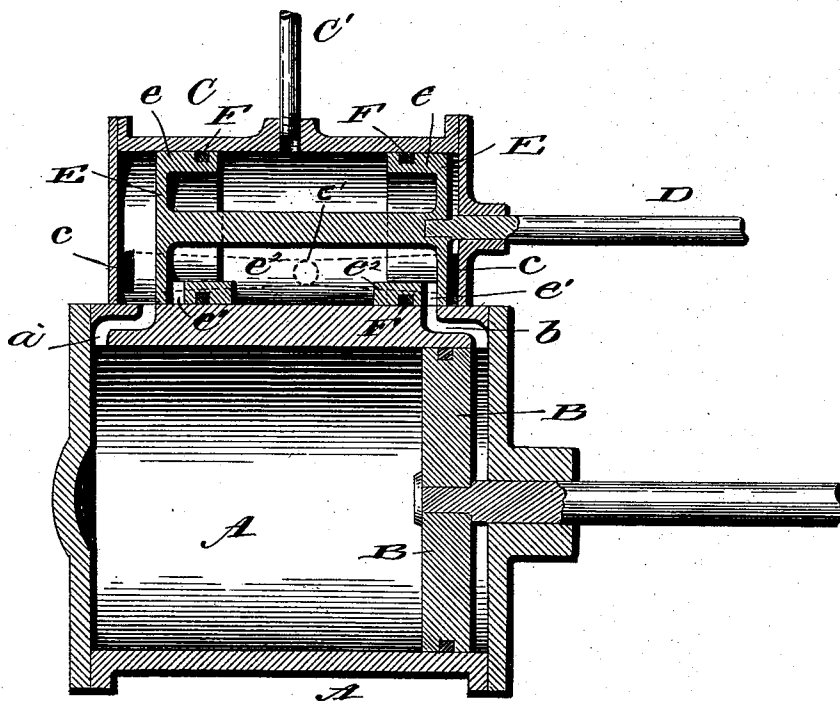


(No Model.)

C. R. McGAHEY.
BALANCED SLIDE VALVE.

No. 508,964.

Patented Nov. 21, 1893.



Witnesses

L. C. Hills.
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Inventor

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UNITED STATES PATENT OFFICE.

CALVERT R. MCGAHEY, OF ELKTON, VIRGINIA, ASSIGNOR OF ONE-HALF TO
JAMES B. MCGAHEY, OF SAME PLACE.

BALANCED SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 508,964, dated November 21, 1893.

Application filed December 13, 1892. Serial No. 455,060. (No model.)

To all whom it may concern:

Be it known that I, CALVERT R. MCGAHEY, a citizen of the United States, residing at Elkton, in the county of Rockingham, State of Virginia, have invented certain new and useful Improvements in Balanced Slide-Valves, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in balanced slide valves, and it has for its objects among others to provide an improved slide valve having its ends or heads provided with inwardly-extending flanges in those of which adjacent to the steam cylinder are formed ports and between the ports and the inner faces of the flanges are provided annular grooves in which are seated packing rings, the packing rings being so located with relation to the ports that they never cross the ports in the steam cylinder. The flanges which are adjacent to the steam cylinder are extended inward a distance equal to the width of the ports so as to maintain the equilibrium or balance of pressure; the space included between the heads or flanges thereof is filled with live steam at boiler pressure.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawing, which, with the letters of reference marked thereon, forms a part of this specification and which represents a longitudinal section of the steam cylinder and steam chest and valve constructed in accordance with my invention.

Referring now to the details of the drawing by letter, A designates the steam cylinder and B its piston; *a* and *b* are the ports of the said cylinder and C is the steam chest provided with the exhaust passages or ports *c c* which are formed in the back side of the steam chest and communicate with the exhaust port *c'* as shown.

C' is the steam pipe leading into the steam chest and through which live steam is supplied at boiler pressure.

D is the piston rod of the slide valve which works through a stuffing box in the end of the steam chest in the usual manner, and E are heads or disks secured to the said rod or stem within the steam chest and forming the ends of the slide valves; these ends or heads have each an annular flange *e* which extends inward toward the center or toward each other and in the flanges adjacent to the steam cylinder are formed the ports *e'* which are located adjacent to the heads or disks as shown, the flanges at these points being extended inward as seen at *e²* a distance equal to the space occupied or taken up by the said ports so as to maintain the same amount of surface to equalize the pressure and balance the valve.

F are packing rings of any suitable material seated in annular grooves formed in the flanges of the heads as shown and these grooves and rings are so arranged relatively to the ports that they are never caused to traverse the ports in the movement of the valve so that they are never brought into direct contact with the steam through the said ports as will be readily seen from the drawing.

The operation will be readily understood from the foregoing description when taken in connection with the annexed drawing, and a detailed description thereof is not deemed necessary.

What I claim as new is—

1. A balanced slide valve provided with inwardly-extending flanges formed with ports adjacent to the heads thereof and extensions opposite the ports to compensate for the area taken up by said ports, as set forth.

2. A slide valve having inwardly-extending flanges formed with ports adjacent to the ends at the side adjacent to the steam cylinder and with extensions equal to the areas of the ports with packing rings in the flanges between the said ports and extensions, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

CALVERT R. MCGAHEY.

Witnesses:

THOS. K. HAMSBUGER,
S. P. H. MILLER.