

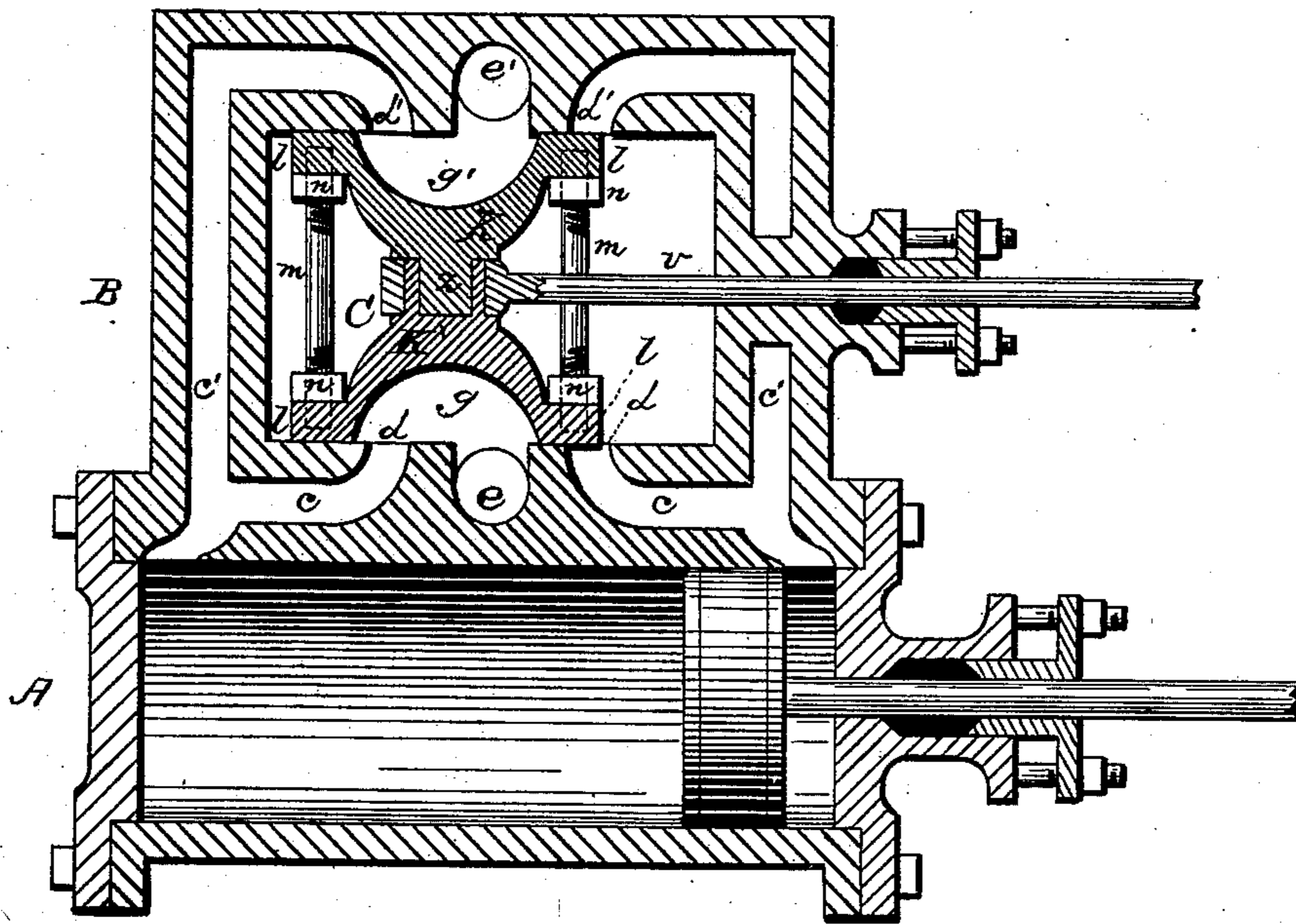
(No Model.)

J. DUTOT & H. B. ANDERSON.

STEAM BALANCED VALVE.

No. 275,610.

Patented Apr. 10, 1883.



WITNESSES  
*Emory H. Bates*  
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# UNITED STATES PATENT OFFICE.

JAMES DUTOT AND HOMER B. ANDERSON, OF NEWTON, IOWA.

## STEAM BALANCED VALVE.

SPECIFICATION forming part of Letters Patent No. 275,610, dated April 10, 1883.

Application filed August 12, 1882. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES DUTOT and HOMER B. ANDERSON, citizens of the United States, of Newton, in the county of Jasper and State of Iowa, have invented a new and valuable Improvement in Steam Balanced Valves; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters and figures of reference marked thereon.

The figure of the drawing is a vertical sectional view of my steam-valve.

This invention has relation to balanced slide-valves for steam-engines; and it consists in the construction and novel arrangement of the double set of ports—one set in the top and the other set in the bottom of the valve-chest—the double-faced valve operating in connection therewith, and the adjusting devices for setting out the faces of the valve, all as hereinafter set forth.

In the accompanying drawing, the letter A designates a portion of the cylinder, and B the valve-chest in connection therewith. In the lower wall of the valve-chest are formed the steam-passages *c*, opening at *d* on each side of the exhaust-port *e* in the bottom of said chest. Branches *c'* of said steam-passages extend through the end walls or side walls of the chest and in its upper wall or top, opening through the inner surface of said top at *d'* on each side of the upper exhaust-port, *e'*.

C indicates the valve, which is H-shaped or double, one branch of said valve having its concavity or coupling-recess *g'* upward, and being in communication with the upper ports, while the recess *g* of the lower branch is turned down to act in connection with the steam-ports of the lower wall of the chest. The action of this double valve is prompt, and it enables the steam to act with great freedom and power. The friction is small, as the valve is balanced by the pressure of the steam on its upper and lower surfaces. In order to keep the faces of the valve nicely adjusted to the faces of the valve-chest, the valve is made in two sections, K and K', which are provided with recessed shoulders *l* in their backs to receive the thread-

ed ends of column-bolts *m*, which are provided with nuts *n*, designed to be adjusted to bear against the plane-shoulders *l*, formed on the backs of the valve-sections, as shown in the drawing. By means of the bolts *m* and nuts *n* the valve-faces can be brought to bear evenly and closely against the opposite faces of the valve-chest. The middle portion of the valve may be constructed with a socket-and-tenon slide-joint between the sections, as indicated at *z*. In the construction illustrated the valve-rod *v* is connected to the valve at the joint *z*, and is slotted, as shown, in order that the sections of the slide-joint *z* may occupy the slot, thereby making a neat and serviceable connection between the valve and valve-rod.

We are aware that an H-shaped valve made in two parts, each provided with a half-recess for the reception of a nut, by which the valve-spindle is connected at its threaded end to the valve, has had its parts provided with aligned right and left threaded rods, on which is a nut threaded internally to extend or retract said rods, and thereby adjust the valve to its valve-seat. We are also aware that the double sets of ports herein described are not new; and we do not therefore claim, broadly, either of these constructions herein.

Having described this invention, what we claim, and desire to secure by Letters Patent, is—

The combination, with the valve-chest having a double set of ports, one set in its top and the other set in its bottom, of the double or H-shaped valve consisting of two vertically-adjustable sections, K K', connected by a slide-joint, *z*, and having the recessed shoulders *l* in their backs to receive the threaded ends of the column-bolts *m*, provided near each end with an adjusting-nut, *n*, substantially as specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

JAMES DUTOT.  
HOMER B. ANDERSON.

Witnesses:

AUGUST JOHNSON,  
A. G. MILLER.