

*J. Larkin,*

*Balanced Valve.*

*No. 102410.*

*Patented Apr. 26. 1870.*

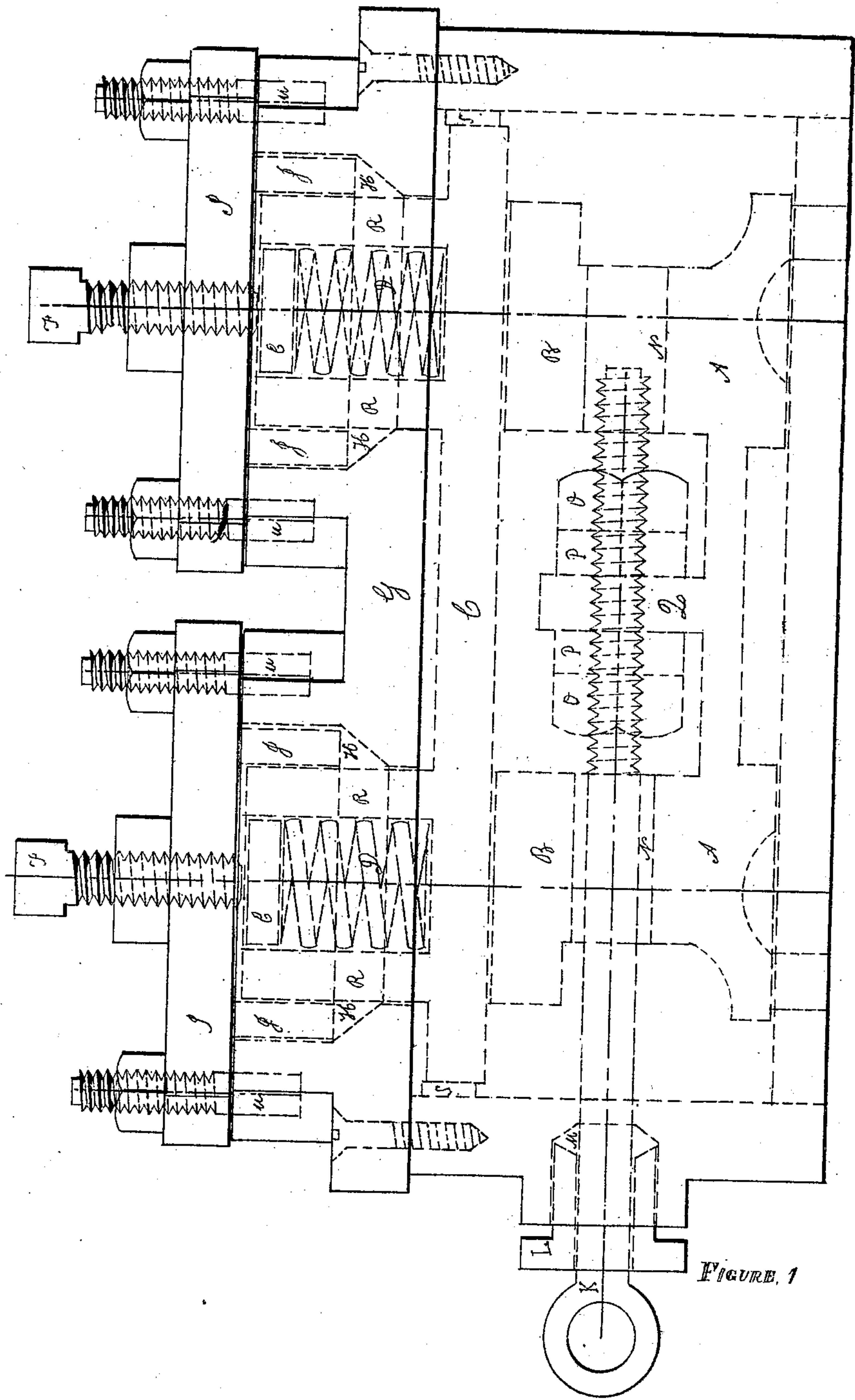


FIGURE 1

*Witnesses*  
*Charles Foley*  
*Denis O'Brien*

*Inventor*  
*James Larkin*

# UNITED STATES PATENT OFFICE.

JAMES LARKIN, OF DETROIT, MICHIGAN.

## IMPROVEMENT IN SLIDE-VALVES.

Specification forming part of Letters Patent No. 102,410, dated April 26, 1870.

*To all whom it may concern:*

Be it known that I, JAMES LARKIN, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements on the Steam-Engine.

The nature of my invention consists in the construction of a steam slide-valve, valve-cover, and steam-chest cover so that the pressure of steam can be kept from the slide-valve as may be desired; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawing, making a part of this specification, in which—

Figure 1 is a side elevation of the steam-chest.

I construct my steam slide-valve (as shown on the drawing, lettered A A) of any suitable dimensions, with two extra or back faces, as shown at B B, enough smaller, according to discretion, than the steam-faces A A to allow steam-pressure enough on them to balance the pressure of the atmosphere and of the steam which escapes under them from the cylinder.

I construct what I term a "valve-cover" (as shown on the drawing, lettered C) with a planed face to rest steam-tight on the back faces, B B, and to fit between two chipping-pieces, as shown at S S, so that the sliding of the valve cannot cramp it, with two top parts to it, as shown at R R, and about the size of the faces B B, having chambers in them for the spiral springs, as shown at D D, for the purpose of getting a spring-pressure on the valve and valve-cover.

I construct my steam-chest cover, as shown at G, with two stuffing-boxes (shown at H H,) in or on it suitable for the parts of the valve-cover C (shown at R R) for the purpose of having stuffing packed around them to prevent the steam from getting into the stuffing-boxes, and by that means the pressure of the steam is kept from the valve equal to the superficial area of the parts R R of the valve-cover, which passes through the stuffing-boxes.

I construct two cover-glands, I I, as shown, with parts J J, suitable to fit into the stuffing-boxes H H, and likewise to fit over the parts R R of the valve-cover C, in order to press the stuffing all around them. I screw my steam-chest cover on by any suitable means, like other steam-chest covers. I screw my cover-

glands into the described stuffing, and over the parts R R of the valve-cover, by means of four stud-bolts, (shown at u,) which I fasten into the steam-chest cover. I put two flat pieces, E E, into the top of the chambers over the spiral springs in the parts R R of the valve-cover, and press them down, as may be necessary, by means of two set-screws, F F, which I screw into the cover-glands. I have holes N N through my valve, between the faces A A and B B, for the valve-stem K to pass through, and, passing through the gland L and the stuffing-box M, as shown, I connect the valve-stem to the valve A A by means of four nuts, O O and P P, as shown, which I screw on the end of it on both sides of a piece, Q, shown on the back of the valve, for the purpose of adjusting the valve and working it, leaving it ready for connection and operation.

I consider one view and description of this invention sufficient, as variations in constructing the proportions or shapes are optional, but the principle must remain the same.

I wish to note that I can use the described valve singly, as shown, or for cutting off the steam at any part of the stroke; that I can use it over another valve and still be the same.

I wish to mention that I intend to round off and fillet the sharp corners of the parts R of the valve-cover, the stuffing-boxes H, and the parts J of the cover-glands when constructing them, for the reason that they mold better, and I consider it easier to pack the stuffing steam-tight around them when the sharp corners are thus filleted and taken off.

I intend also to have a screw-plug or oil-cup in the cover-glands, in order to oil them and to let out any water which may accumulate from condensed steam.

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

A double-seated valve, A B, and balance-plate C, provided with two boxes, R, springs D, caps E, and set-screws F, in combination with a steam-chest cover G, provided with openings H, and glands I J, when constructed and arranged in the manner substantially as herein described and set forth.

JAMES LARKIN.

Witnesses:

DENIS O'BRIEN,  
CHARLES FOLEY.