

(No Model.)

2 Sheets—Sheet 1.

J. E. BAKER.

BALANCED SLIDE VALVE.

No. 286,573.

Patented Oct. 16, 1883.

FIG. 1.

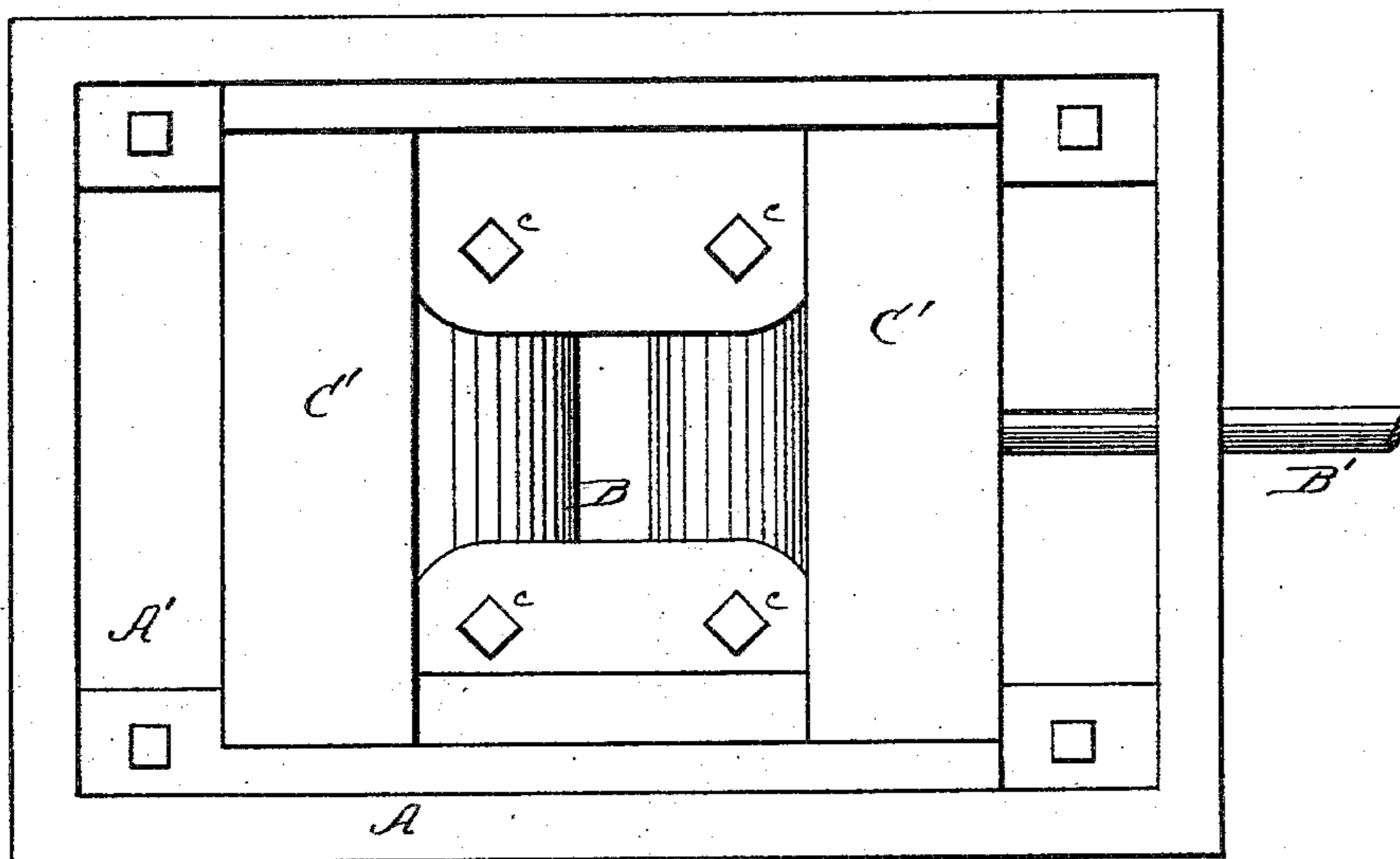
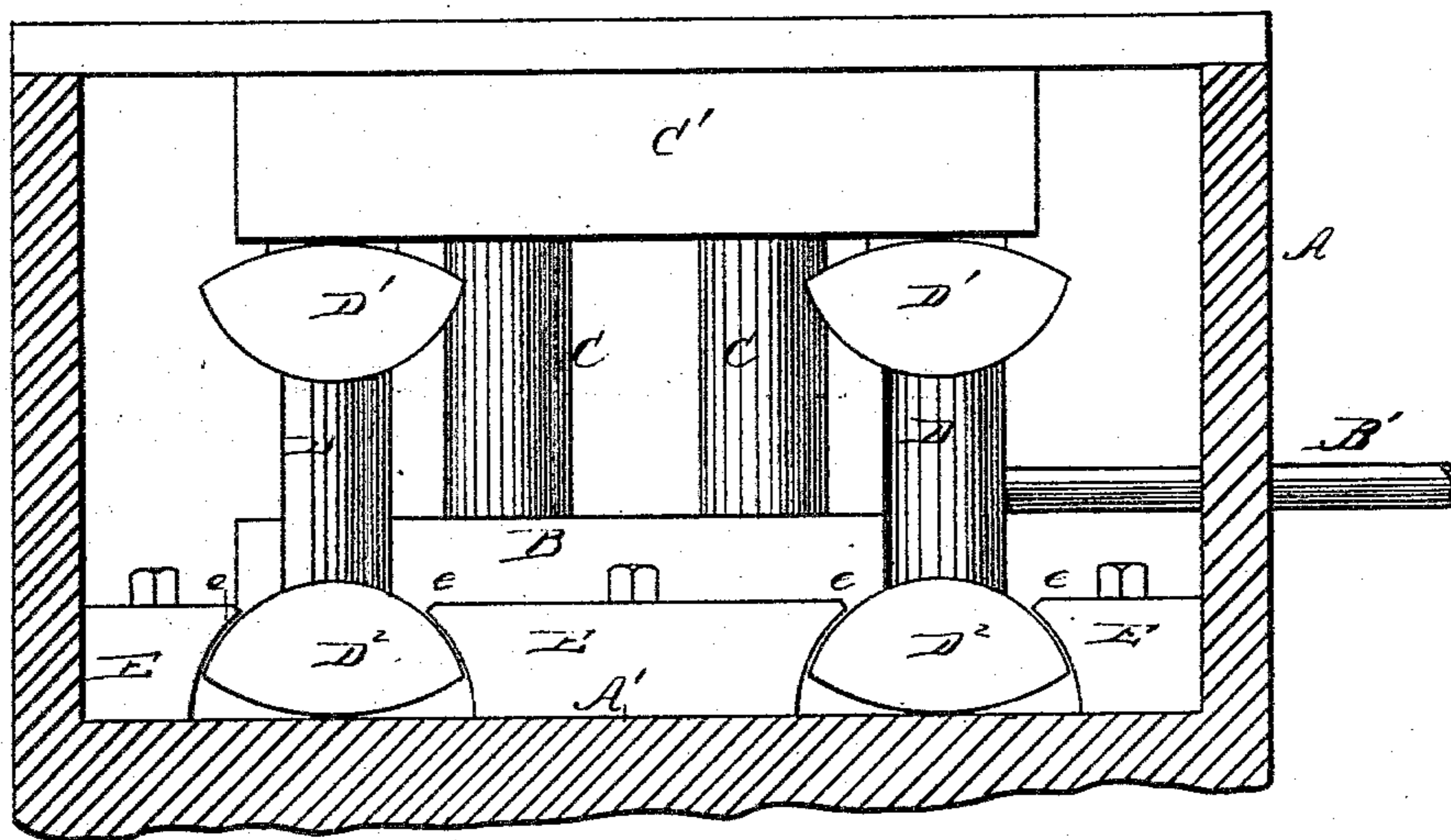


FIG. 2.



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FIG. 3.

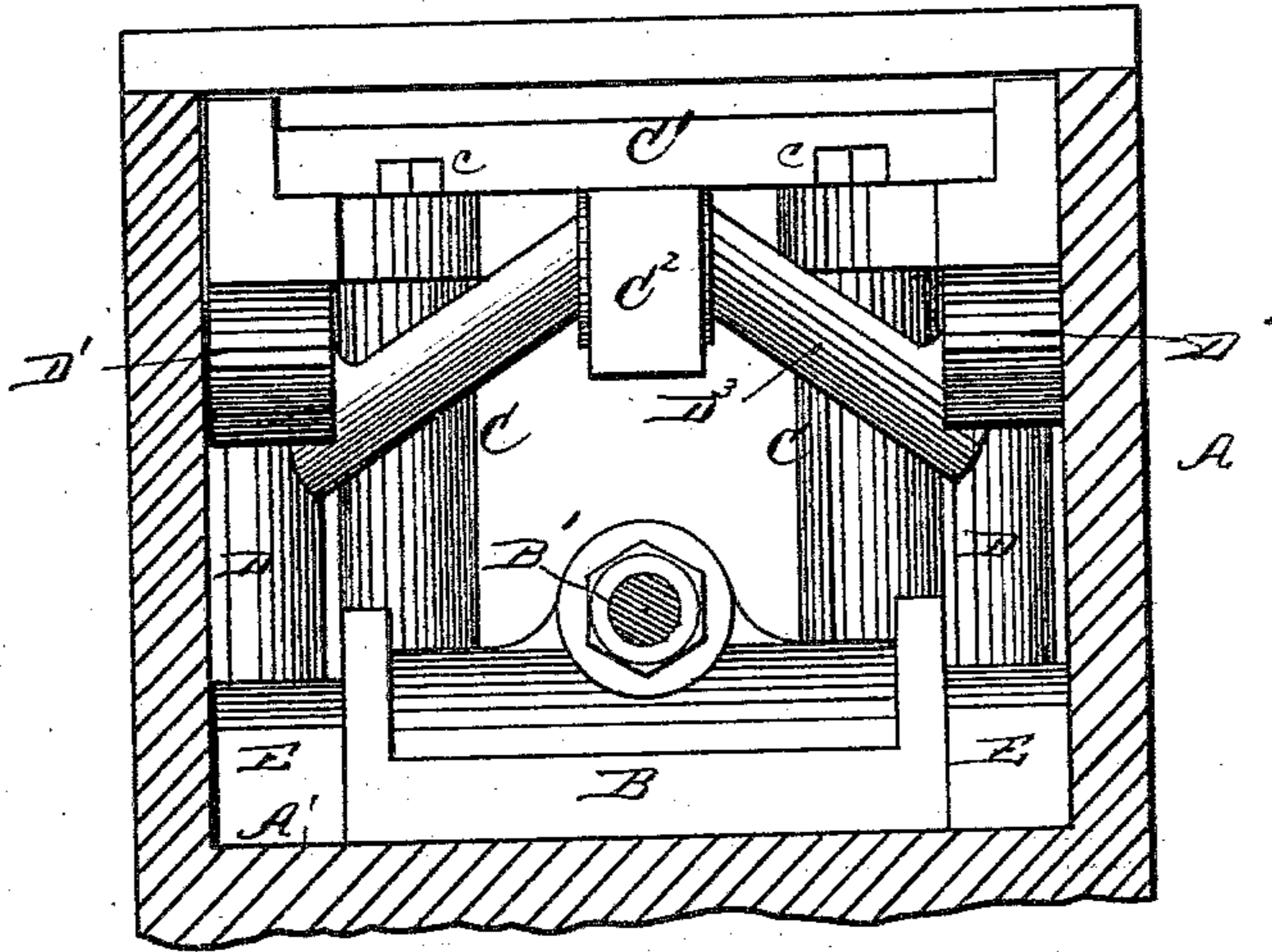
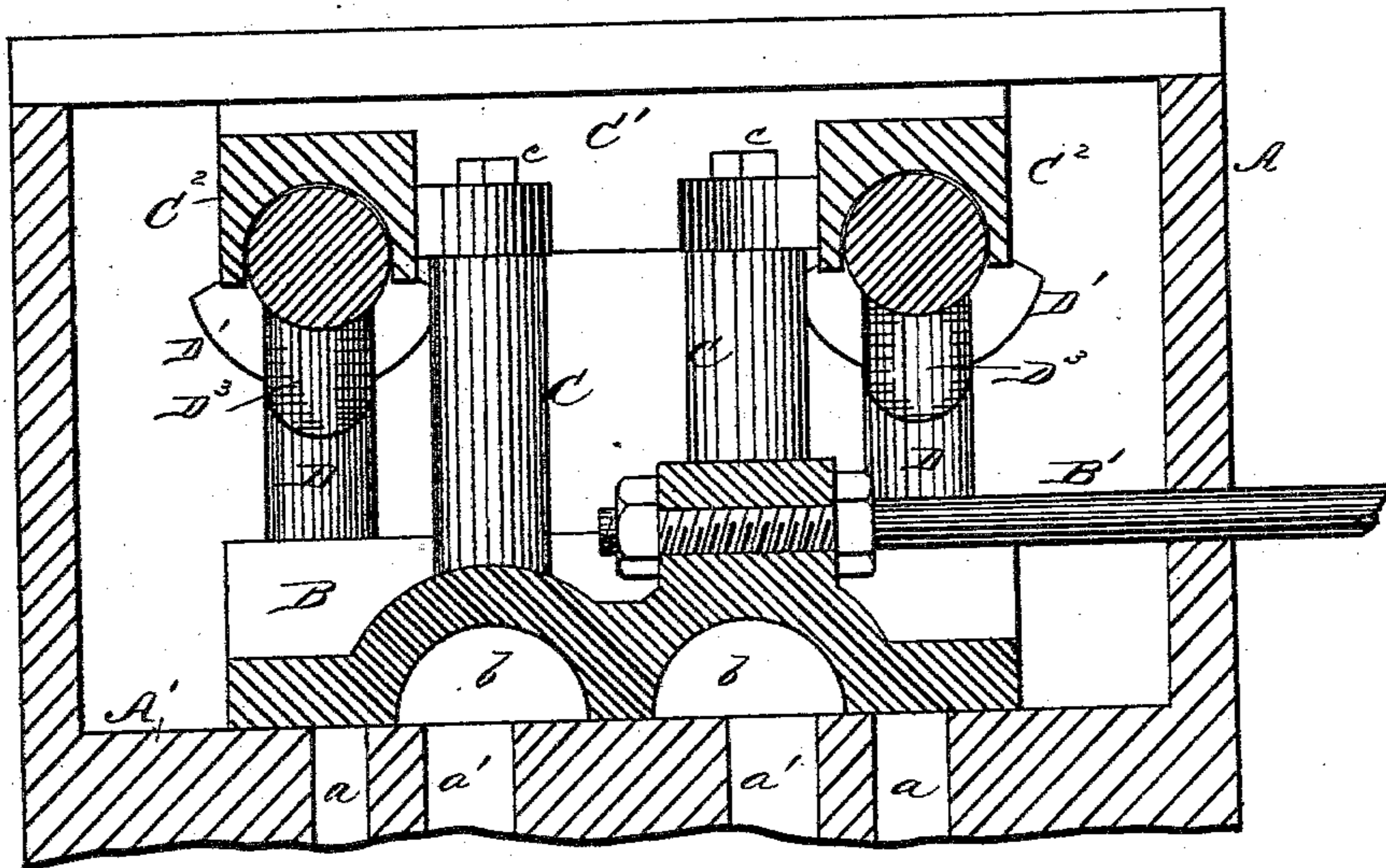


FIG. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES E. BAKER, OF MADISON, WISCONSIN.

BALANCE SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 286,573, dated October 16, 1883.

Application filed February 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. BAKER, a citizen of the United States of America, residing at Madison, in the county of Dane and State of Wisconsin, have invented a new and useful Improvement in Balanced Slide-Valves, of which the following is a specification, to wit:

My invention relates to an improvement in slide-valves; and it consists in providing the valve with peculiarly-formed supporting-rockers, substantially as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention relates to make and use the same, I will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figure 1 is a plan view, Fig. 2 a side elevation, Fig. 3 an end view, and Fig. 4 a longitudinal vertical section, of my improved valve.

A represents a valve-case having a seat, A', provided with the usual inlet and outlet ports, *a a'*.

B represents the valve, formed with the ports *b b*, adapted, as the valve slides back and forth, to connect the alternate pairs of inlet and exhaust ports. This valve is provided with the usual rod or stem, B'.

Supported by posts C, secured to the valve, is a cap, C', having at each end, in the center, a pendant lug, C², formed with a bifurcation in its lower end, as seen in Figs. 3 and 4. The posts C are secured to the cap C' by bolts and nuts *e*, and the posts may be provided with "liners" or washers, to properly seat the valve and render it steam-tight. The cap C' is supported at each end by a pair of standards, D, formed with rockers D' D² at their upper and lower ends respectively. The upper curved surfaces of the rockers D' impinge against the cap, and the lower curved surfaces of the under rockers rest upon the valve-seat A', as clearly seen in Fig. 2. The outer or bearing surfaces of these rockers are curved from a common center, or are parts of a perfect circle, while the inner surfaces are curved upon a circle struck from the center of the adjacent bearing-surface. The standards D are connected in pairs at each end of the valve, as

seen in Figs. 3 and 4, by a cross-arm, D³, which passes through the bifurcated lug C² and forms a positive connection between the valve and cap, and the supporting-rockers compelling them to move together. The lower ends of each pair of rockers or supports are prevented from slipping and held in place by pieces of metal E, bolted to the valve-seat, and having their adjacent ends concaved or curved to correspond to the curve of the inner surface of the lower rocker, and which curved ends overlap and hold the rockers in place, as seen by Fig. 2.

It will be seen that the valve, having been properly seated by means of liners upon the posts C C, is hung from or supported by the cap C', which is in turn supported by the rockers, and the valve is thus allowed to move back and forth over the seat with the least friction consistent with steam-tight fitting, and consequently with the least amount of wear. As the valve and cap are moved in one direction by the rod or stem B', the pendants C², which clasp the cross-arms D³, will move the upper part, two pairs of rockers in the same direction rolling or rocking upon the lower surface of the lower ones, D², while the cap is carried forward upon the upper curved surface of the rockers D'; and, as the two bearing-surfaces of the rockers are parts of a true circle, and their points of contact with the cap and valve-seat are always the same distance apart, the valve will be moved in a perfectly true line. At the same time, the lower rockers being held in place by the plates E, there can be no slipping or sliding of either the cap or rockers, but always a rolling movement, which yields the least friction and wear.

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

1. In a slide-valve, a pair of supports connected by a cross-arm and formed on each end with rockers, the outer or bearing surfaces of which are curved from a common center or are parts of a true circle, and their inner surfaces formed upon a curve struck from the center of their adjacent bearing-surfaces, substantially as and for the purpose set forth.

2. In a slide-valve, the cap C', having bifur-
cated lugs C² and posts C, secured to the
valve B, in combination with the supports D
D, having connecting-arm D³, and provided
5 on each end with rockers constructed substan-
tially as herein described, and the plates E,
bolted to the valve-seat, and having concaved
ends e, adapted to retain the lower ends of the

supports E in place, as and for the purpose
set forth. 10

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

JAS. E. BAKER.

Witnesses:

CHARLES E. BROSS,
E. W. KEYES.