

W. K. Cavett,

Slide Valve.

No. 90635.

Patented June 1. 1869.

Fig. 1.

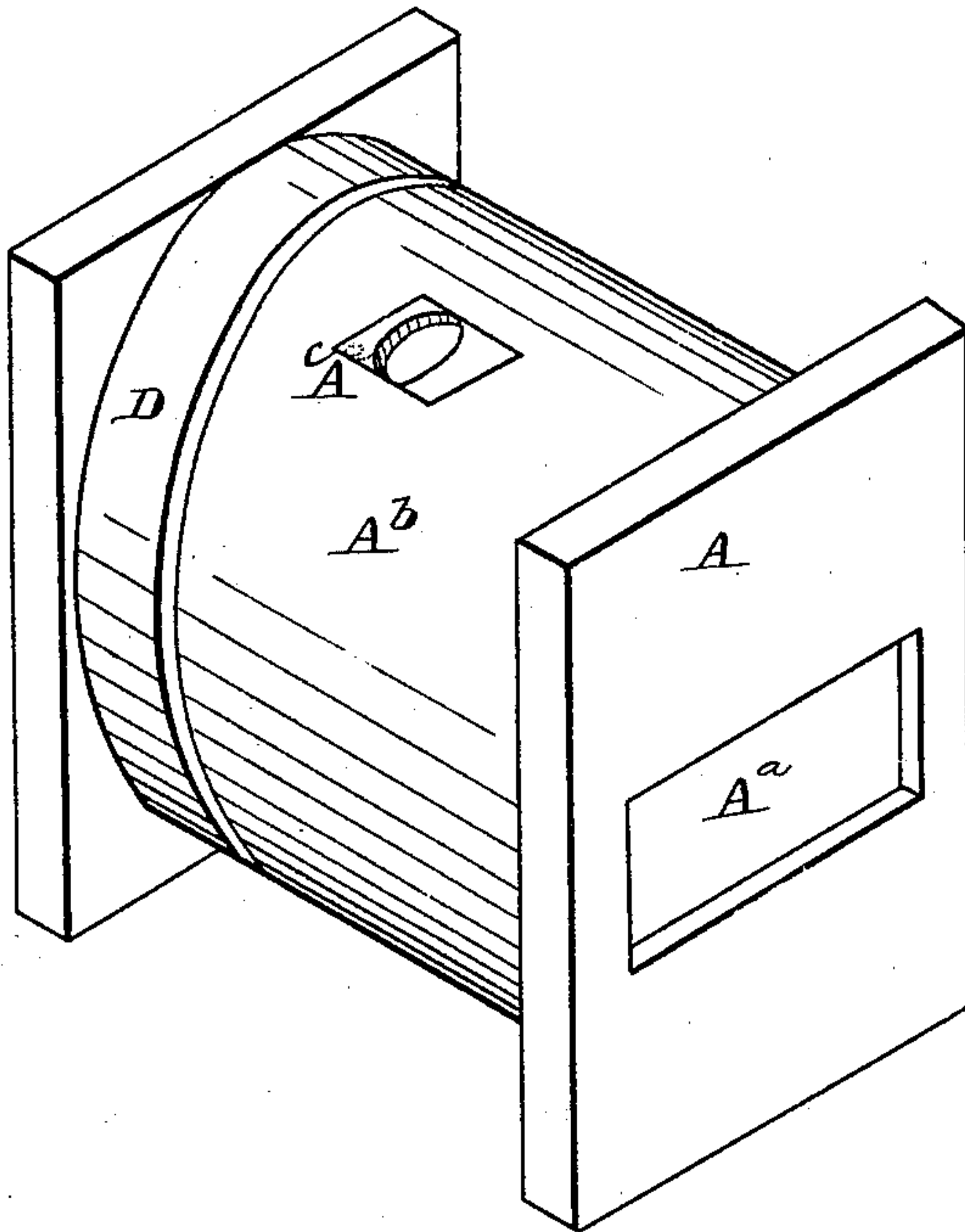
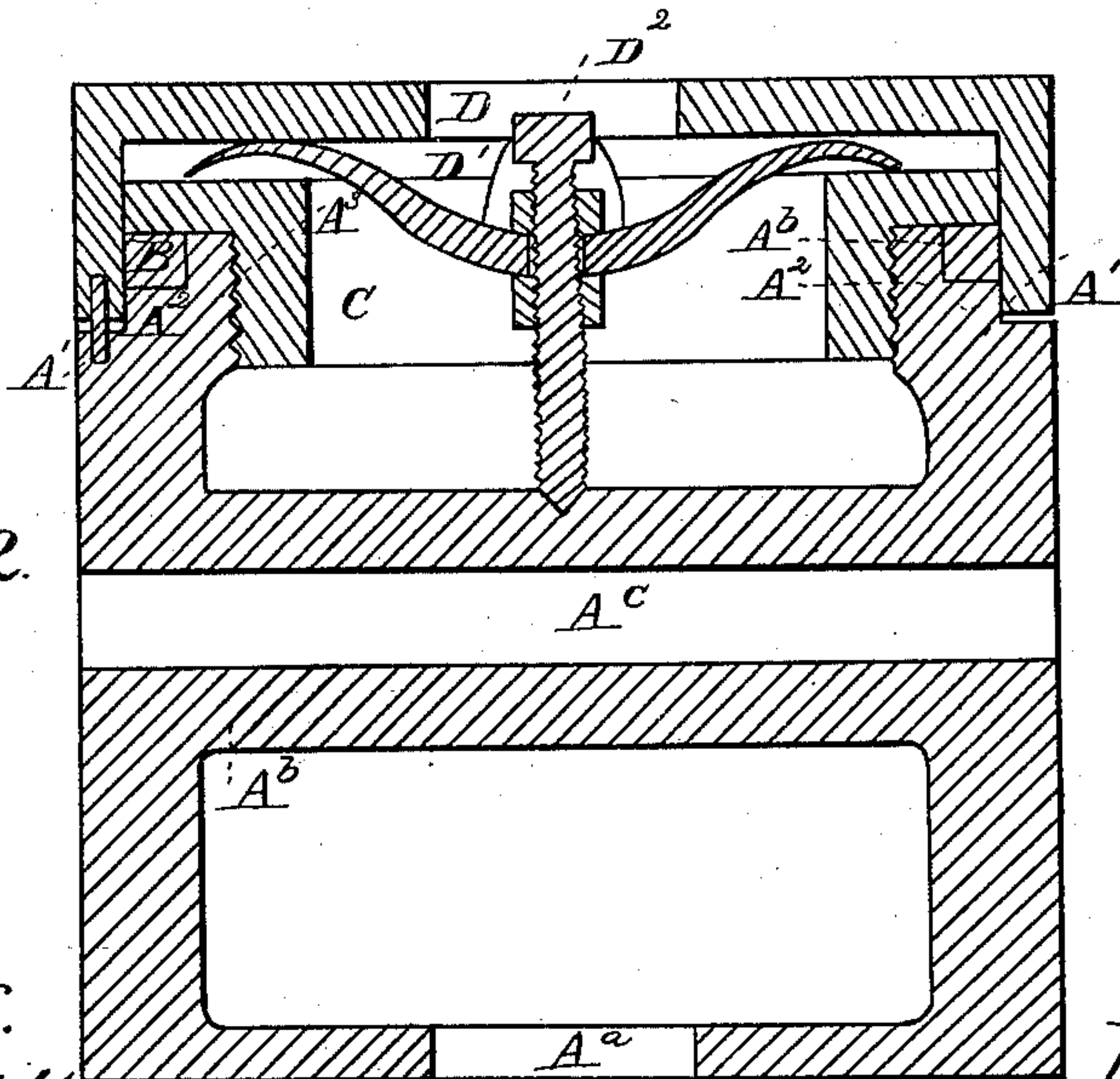


Fig. 2.



Witnesses.
Perceval Beckett
John P. Clark

Inventor:
W. K. Cavett

United States Patent Office.

WILLIAM K. CAVETT, OF ALLEGHENY CITY, PENNSYLVANIA; ASSIGNS ONE-HALF TO
JAMES L. ANDERSON, OF SAME PLACE.

Letters Patent No. 90,635, dated June 1, 1869.

IMPROVEMENT IN STEAM-ENGINE SLIDE-VALVES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, WILLIAM K. CAVETT, of Allegheny City, in the county of Allegheny, and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Engine Slide-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to the construction of steam-engine slide-valves, whereby it is relieved from the downward pressure of steam, still leaving sufficient, however, to overcome the exhaust steam from the cylinder.

As heretofore constructed, the full pressure of steam bears upon the upper part of the valve, causing it to be pressed tightly against the seat, and considerable power being required to reciprocate it, thereby diminishing the effective force of the engine.

Slide-valves have been also constructed, whereby the downward pressure is relieved, but they are complicated, cumbersome, and costly, and require considerable skilled labor to adjust them.

To enable others skilled in the art to make and use my invention, I will describe its construction and adaptation.

In the accompanying drawings—

Figure 1 is a perspective view of my improved steam-engine slide-valve.

Figure 2, a vertical section thereof.

Letters of reference denote parts.

The base and main body of the valve consist of a flat disk, A, with a rectangular opening, A^a, corresponding in shape and size to the exhaust and steam-ports, above which is an annular chamber, A^b, having an ordinary valve-rod opening through tube A^c. The upper portion of this chamber A^b consists of three alternate seats, A¹ A² A³, on the seat A², and encircling the chamber A^b, is a metallic packing-ring, B,

of suitable construction, its upper face being at, or near the upper face A³ of the chamber A^b, in which is affixed, by means of a screw, a follower, C, in such a manner as to bear on the upper face of the ring B, and also on the face of the seat A³. A cap, D, consisting of a flat disk and an annular flange, covers the follower C, and encircling the top of the chamber A^b, and near the seat A³.

A spring, consisting of one or more points, D¹, bears against the under part of the cap D, said spring being held in tension by a set-screw, D², bearing on the before-mentioned tube A^c, and arranged in such a manner as it will, when the valve is placed in an ordinary steam-chest, keep the cap D tight against the under part of the ordinary steam-chest cover.

Fibrous packing, if required, can be used in lieu of the metallic ring B.

The valve is operated upon in the usual manner, and as the cap D bears against the steam-chest cover, the top of the valve is relieved from the pressure of steam, thereby requiring but little exertion to reciprocate it, and hence, as long as the spring D¹ retains its elasticity, the cap D will bear against the chest-cover. The valve requires no adjustment, thus saving manual labor and expense of breaking joints, besides increasing the effective power of the steam-engine.

Having thus described the nature and construction of my invention,

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

The cap D, with the spring D¹, set-screw D², in combination with the chamber A^b and base A, metallic ring B, follower C, and tube A^c, when constructed and arranged substantially as herein described and set forth.

In testimony that I claim the foregoing as my own, I affix my signature, in presence of two witnesses.

Witnesses:

W. K. CAVETT.

PERCEVAL BECKETT,
JOHN P. CLARK.