

J. BAILEY.
Steam Cut-Off Valves.

No. 157,671.

Patented Dec. 15, 1874.

Fig 1.

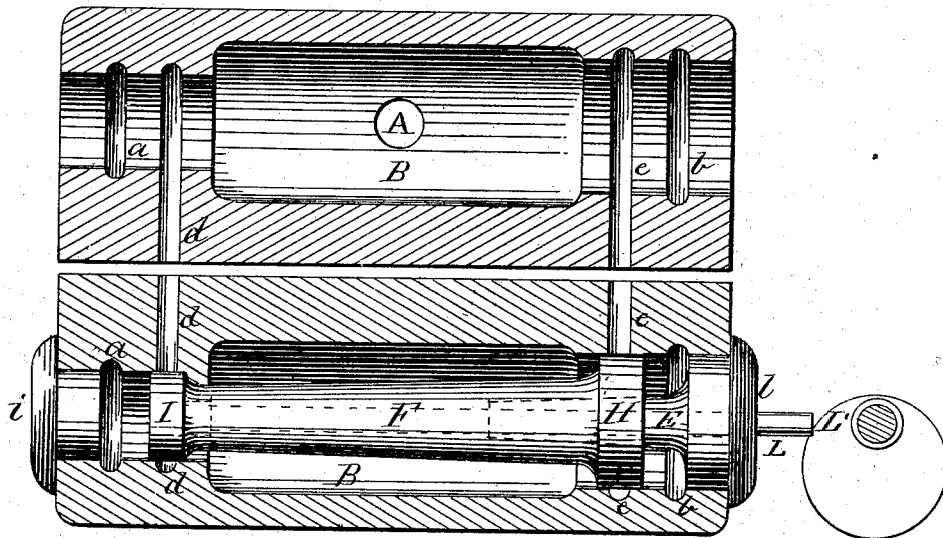


Fig 2.

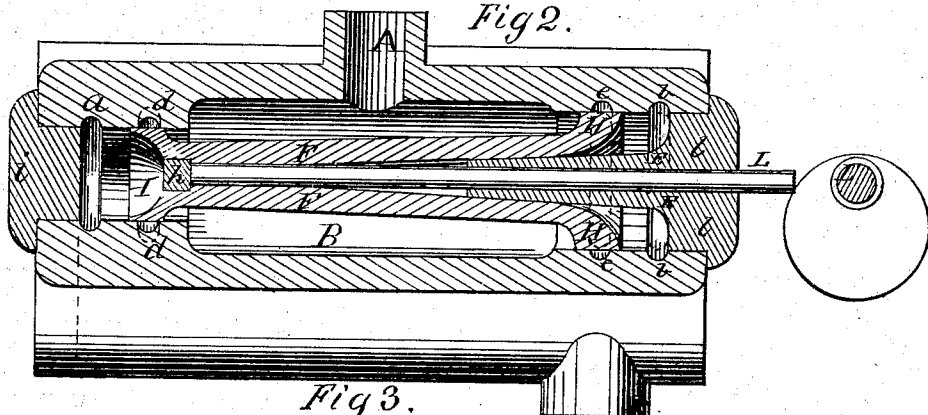
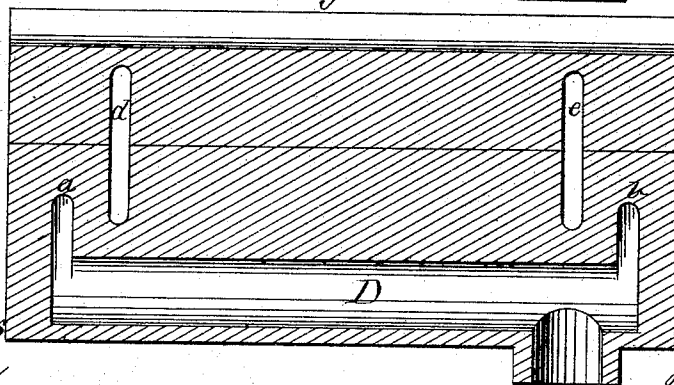


Fig 3.



Witnesses

D. R. Cowl
W. C. Chaffin

Inventor:

John Bailey
by his attys.
Cox & Cox

UNITED STATES PATENT OFFICE.

JOHN BAILEY, OF WARSAW, ILLINOIS.

IMPROVEMENT IN STEAM CUT-OFF VALVES.

Specification forming part of Letters Patent No. **157,671**, dated December 15, 1874; application filed August 15, 1874.

To all whom it may concern:

Be it known that I, JOHN BAILEY, of Warsaw, Illinois, have invented certain new and useful Improvements in Steam Cut-Off Valves, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to a steam cut-off valve for steam-engines; and consists of a valve-chamber wherein is provided a valve having heads of different diameters, and working upon bearings at each end, where steam ports and exits are properly provided, the base of the valve fitting over a conical stripper, through which passes a disconnected valve-stem, the upper end of which impinges upon the interior of the smaller head of the valve, its lower end being in contact with an eccentric.

The object of the invention is to secure a true connection, and avoid all loss of motion between the valve and eccentric of a steam-engine by the employment of a valve having heads of varying diameters, operating in conjunction with a disconnected valve-rod impinging upon an eccentric cam.

Figure 1 is a group of vertical longitudinal sections of a device embodying the elements of the invention. Fig. 2 is a similar section of same assembled. Fig. 3 is a section of same, showing exhaust-conduit D.

A in the accompanying drawings is the port through which steam is admitted to the valve-chamber B, provided with the exhaust-exits *a* and *b*, leading to the exhaust-conduit D, and the ports *d* and *e*, leading to the cylinder of the engine. One end of the valve-chamber is closed properly by the head *i*, the other by the head *l*, at the center of the latter there being provided the conical hollow stripper E, over which fits one end of the hollow valve F, adjacent which parts thereof is formed the

head H, which is of greater diameter than the head I at the other end of the valve. The disconnected valve-stem L impinges, on its lower end, upon an eccentric cam, L', its upper portions passing through the stripper E in a steam-tight manner, whence it extends upward, its upper extremity impinging against the bar *h* inside the head I of the valve F.

The rotation of the eccentric moves the valve toward the head *i*, opening the port *d*, the steam exhausting through the exit *a*. This movement continues until the head I comes in proper proximity to the head *i*. The steam, entering the cylinder as aforesaid, forces the piston-head toward the plane of the head *l*, and, at the same time, drives the valve F toward the head *l*, the steam exhausting through the exit *b* until the descent of the head H closes the port *e*, when the port *d* is thrown open, and the operation of raising the valve repeated. Thus the valve bears constantly upon the stem L, holding it in contact with the eccentric, which should have a driving power equal to the difference of steam-pressure acting upon the heads H and I. The head H will cushion upon the stripper E. The valve F is left open above, so as to permit the descent of condensed steam.

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

A valve having heads of different diameters, in combination with a disconnected valve-stem and eccentric cam, substantially as set forth.

In testimony that I claim the foregoing improvements in steam cut-off valves, as above described, I have hereunto set my hand and seal.

JOHN BAILEY. [L. S.]

Witnesses:

JOHN H. FINLAY,
EDWARD E. LAW.