

United States Patent Office.

GEORGE LECKENBY, OF WESTERN, MISSOURI.

Letters Patent No. 104,746, dated June 28, 1870.

ROTARY STEAM-VALVE.

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, GEORGE LECKENBY, of Western, in the county of Platte and State of Missouri, have invented a new and useful Improvement in Steam-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to valves for steam-engines; and consists in certain improvements thereon, which will be specified hereinafter.

The said improved valve consists of a circular case with valve-seat for attachment to the steam-cylinder, having the ordinary live-steam ports, in which case is a hollow cylindrical valve, receiving the live steam around the shaft, which is hollow, and supplying it through the rim to the live-steam ports, and receiving the exhaust therefrom into a passage leading from the rim to the hollow shaft, by which it is discharged, all as hereinafter more fully specified.

Figure 1 represents a sectional elevation of my improved valve, taken on the line *x x* of fig. 2, and

Figure 2 represents a section taken on the line *y y* of fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the cylindrical case, having a concave valve-seat, with steam-ports *a*.

B represents a hollow cylindrical valve fitting the said case, and having a hollow shaft, C, live-steam passages D D', and an exhaust passage, E, leading from the rim to the hollow shaft.

F represents the steam-pipe by which the steam is admitted to the jacket G, and from that into the valves B.

H represents a crank attached to the shaft C, for working it back and forth by the eccentric-rod, to be attached to the wrist-pin thereof.

The live-steam passages D D' and exhaust E are so arranged, relatively to each other and the ports *a a'*, that, when the passage D coincides with its ports *a* for the admission of steam thereto, the passage D' will be cut off from its port, and the exhaust-passage E will open the communication with it.

The shaft C is provided with suitable stuffing-boxes at each side of the case.

The upward pressure on the valve due to the reaction at the passages D D' is borne by the journals of the shaft C, whereby that friction is greatly reduced, and the valve in a measure balanced.

The mode of operation is as follows:

The steam first enters the pipe F, passes through the hollow sleeve G, and fills the chamber formed by cylinder B. When this cylinder B presents the passage D to one port, *a*, as shown in drawing, fig. 1, steam is admitted to one side of the piston, while port *a'* is placed in coincidence with the opening which leads to the hollow shaft or exhaust, and the steam is thereby exhausted from the other side of the piston simultaneously. When B oscillates back, the reverse takes place.

Having thus described my invention,

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

1. The oscillating valve and steam-chamber B, having three apertures in its periphery, in combination with a hollow shaft, C, moving with it, and connected with the central aperture thereof, so as to alternately exhaust the steam from each end of the piston, as shown and described.

2. The combination of the steam-inlet F, sleeve G, case A, and valve-chamber B, with a hollow shaft, C, discharging the exhaust steam at the side in the manner set forth.

Witnesses: GEORGE LECKENBY.

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