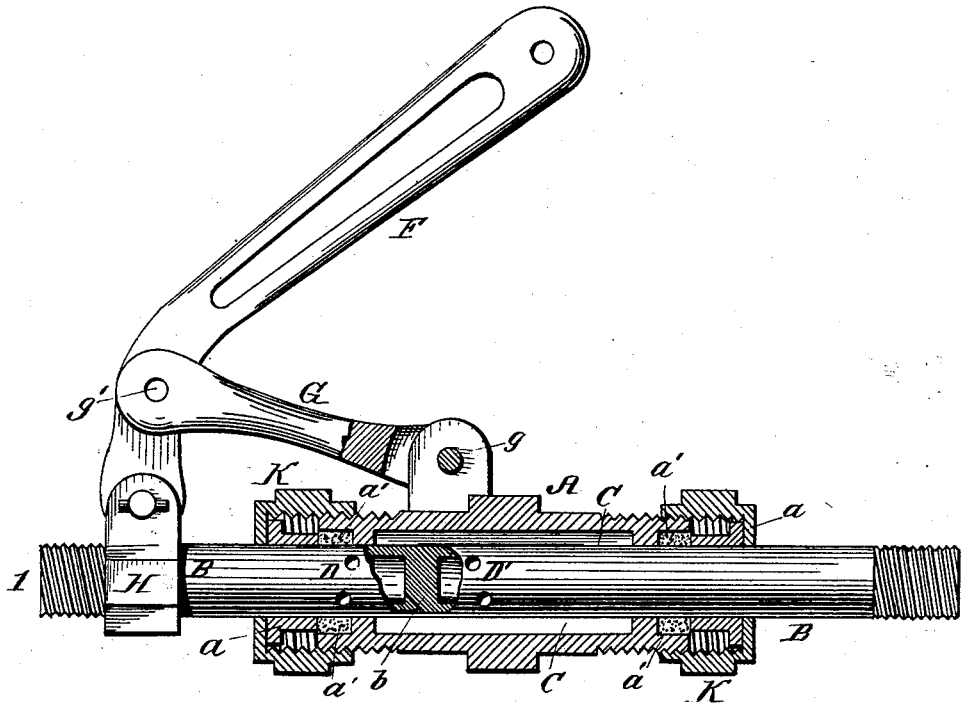
(No Model.)

M. D. L. SWANK & J. T. THORNLEY.

BALANCED THROTTLE VALVE.

No. 265,991. Patented Oct. 17, 1882.



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UNITED STATES PATENT OFFICE.

MARQUIS D. L. SWANK AND JASPER T. THORNLEY, OF ANDERSON, IND.

BALANCED THROTTLE-VALVE.

SPECIFICATION forming part of Letters Patent No. 265,991, dated October 17, 1882.

Application filed May 12, 1882. (No model.)

To all whom it may concern:

Be it known that we, MARQUIS D. L. SWANK and JASPER T. THORNLEY, citizens of the United States, residing at Anderson, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Balanced Throttle-Valves; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the letters and figures of reference marked thereon, which forms a part of this specification.

The nature of our invention relates to balanced throttle-valves adapted to be secured to steam-boilers and to serve the general purpose of shifting gage-valves; and the novelty consists in the construction and arrangement of parts, as will be more fully hereinafter set forth.

The object of the invention is to provide a cheaper, simpler, and more efficient means for guiding and modifying the exhaust of steam in a steam-boiler than has been heretofore known.

The invention is fully illustrated in the accompanying drawing, in which the figure is a vertical longitudinal section.

A indicates a cylinder which reciprocates upon a shaft or stem, B, said stem being adapted to be secured by its screw-threaded end into the steam-boiler, the other extremity being secured to any proper device requiring steam-pressure, or adapted to serve as a simple exhaust. The stem B is divided by a partition, *b*, and is provided with a series of apertures, D and D′. The cylinder is provided with packing-rings *a a*, packing-chambers and packings *a′ a′*, and with a steam-chamber C, which is fed from the steam-boiler through the apertures D in the stem, which connect with the said steam-chamber C. The apertures D and D′ are so arranged in relation to the partition *b* that the valve is open when the holes D and D′ communicate with the steam-chamber C and is closed when the holes D enter the packing-chamber and are covered by the packing, which action is caused when the lever F, through the link G, is operated to force the cylinder in an outward direction, as shown in the figure. The link G is pivoted at *g* to the cylinder A and at *g′* to the operating-lever F, which is pivoted to a strap, H, secured to the stem B.

K K are the ordinary threaded heads employed in steam-cylinders.

The steam enters the valve at 1, at its point of connection with the steam-boiler, then passes through the hollow stem B, out at the holes D, into the steam-chamber C, in the cylinder A, thence out of the said steam-chamber through the apertures D′, again into the hollow stem, and then into the open air or other machine, as is fully shown.

Any ordinary end connections and packing-chambers may be employed without departing from the principle or sacrificing the advantages of our invention, the essential features of which are clearly illustrated in the drawing which forms a part of this specification.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

The combination of the reciprocating cylinder A, packing-rings *a*, packing-spaces *a′*, heads K, link G, lever F, steam-space C, with the hollow cylindrical threaded stem B, and a steam-boiler, the whole adapted to serve for the purposes herein set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

MARQUIS D. L. SWANK.
JASPER T. THORNLEY.

Witnesses:
THOMAS B. ORR,
C. M. BICKHAM.