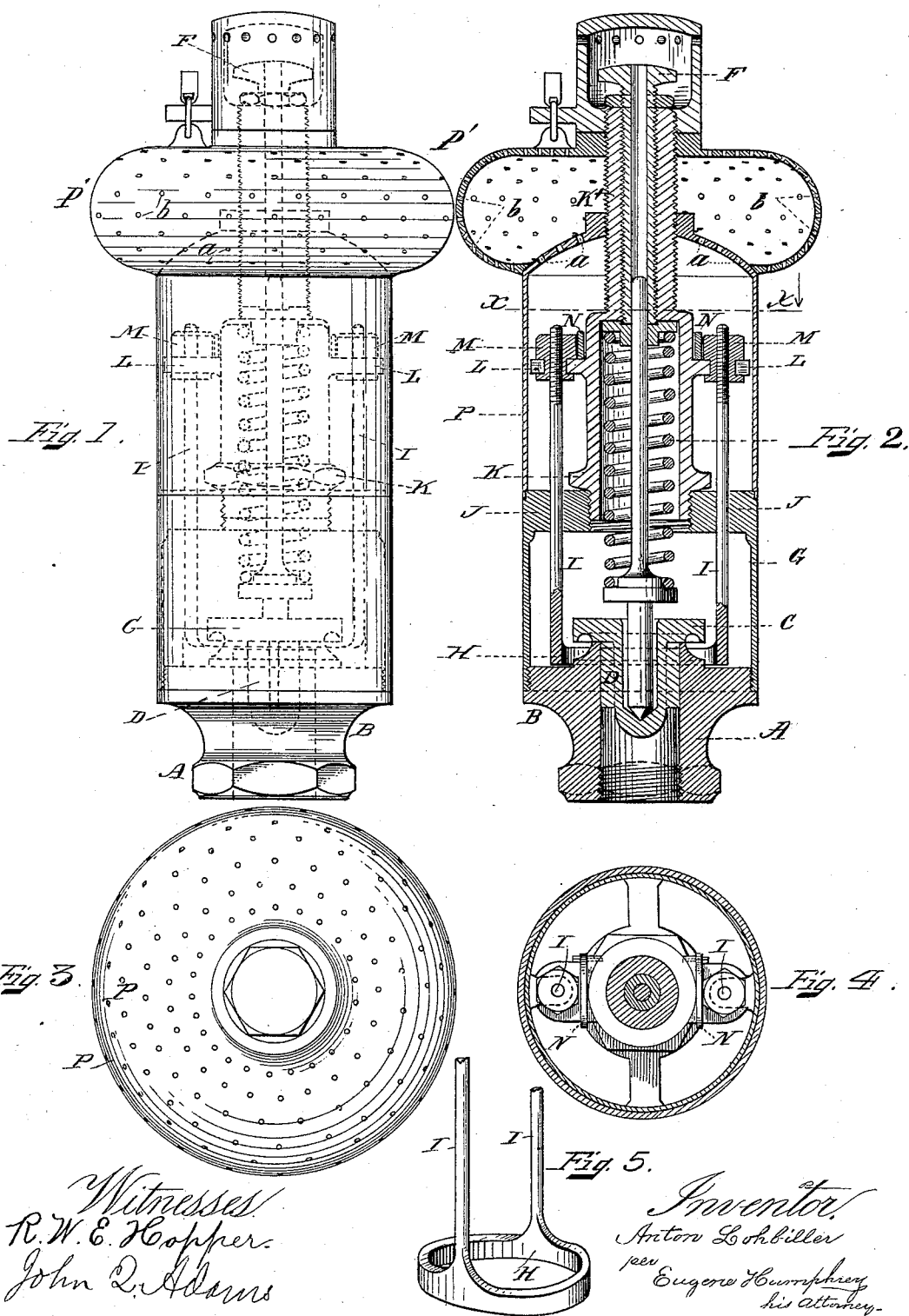


(No Model.)

A. LOHBILLER.
SAFETY VALVE AND MUFFLER.

No. 488,020.

Patented Dec. 13, 1892.



Witnesses
R. W. E. Hopper.
John D. Adams

Inventor
Anton Lohbiller
per
Eugene Humphrey
his Attorney.

UNITED STATES PATENT OFFICE.

ANTON LOHBILLER, OF BOSTON, MASSACHUSETTS.

SAFETY-VALVE AND MUFFLER.

SPECIFICATION forming part of Letters Patent No. 488,020, dated December 13, 1892.

Application filed July 29, 1892. Serial No. 441,618. (No model.)

To all whom it may concern:

Be it known that I, ANTON LOHBILLER, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Safety-Valves and Mufflers, which will, in connection with the accompanying drawings, be hereinafter fully described, and specifically defined in the appended claims.

My invention relates to safety-valves and mufflers for the same, and is an improvement upon my former invention described in Letters Patent of the United States issued to me November 17, 1891, and numbered 463,261; and it consists in certain novel features in the valve and muffler which will be hereinafter fully described, and pointed out in the appended claims.

In the accompanying drawings, Figure 1 represents in elevation a safety-valve and muffler embodying my invention. Fig. 2 is a vertical section through the center of the valve and muffler. Fig. 3 is a top view of the same. Fig. 4 is a horizontal section taken as on line *xx* in Fig. 2 and viewed from above said line. Fig. 5 is a perspective view of the detached device for regulating the escape of steam when the valve opens, and showing the same with the threaded ends of its upright arms or rods broken off to economize space in the drawings.

The base A of the valve upon which the valve is seated at B, the valve C, the depressing-spindle D, seated in the valve, its operative spring, E and the hollow adjusting-screw F are substantially the same as the like parts in my said former invention; but the annular base H, employed to regulate the escape of steam when the valve is lifted by the steam, pressure and which surrounds the valve-lip, while performing the same function as a like part in my former patent, is constructed and arranged to be adjusted by different means relatively to the valve-lip to regulate the escape of steam, and this difference in its construction and arrangement and mode of adjustment constitutes the chief novelty in this part of my present invention. In adjusting a similar ring H in my said former invention I rotated the same about the valve-seat, and by means of attachments thereto, operating in connection with screw-threads cut in the

interior wall of the case, thereby raised and lowered it in relation to the lip of the valve to secure the proper regulation of the escaping steam and the desired consequent effect upon the boiler-pressure.

In my present invention the ring H is constructed with two upright rods or arms I I, having screw-threads cut upon their upper portions. In the top of case G is screwed the smaller spring-case K, in which the depressing-spring E and the spindle D are held, and extending upward from this case is the internally and externally threaded neck K', which forms a part thereof. Upon the exterior wall of case K are formed or secured two diametrically-opposite brackets LL, upon the two arms of each of which is suspended a threaded hexagonal block or nut M. In the body of each of these nuts an annular groove is cut, and by the grooves the nuts are suspended in the arms of the brackets so as to be capable of rotation therein and of affording vertical supports to parts connected with them. When the valve is complete, the arms I extend upward from base H within the case G and through the top thereof until their threaded upper ends enter the nuts M, by the rotation of which the arms and ring are raised and lowered, and thereby the position of the ring H, relative to the valve-lip, is adjusted as desired. By this arrangement of the parts the construction is simplified and a saving in the cost effected, and the adjusting-arms are conveniently carried up within the case of the valve and made adjustable above the same as is desirable. When the ring H has been adjusted by turning the nuts M, as described, the latches N N, pivoted to case K adjacent to brackets I, serve as locks to keep the nuts from being turned accidentally, and thus disturbing the adjustment, said latches being then turned on their pivots into position between the faces of the nuts and the adjacent portions of the body of case K, as shown clearly in Fig. 4. This adjustment, by means of two hexagonal nuts so turned and locked, serves as a convenient gage or index by which the degree of "blow-back" or "relief" is regulated as the same is increased or diminished accordingly as the nuts are turned to raise or lower ring H, and one-sixth of a turn is found to make a change of about one pound in the relief.

Another part of my present invention consists of an improved muffler. This is comprised of the usual muffler P, composed of a cylindrical case fitted onto the top of case G, 5 as shown, and covering the case K, and the parts attached thereto, and secured in position on case G by being threaded onto neck K', as shown, and thereby screwed down firmly upon case G, and being provided with 10 the usual openings *a a* in the top for the escape of the steam, and having an additional auxiliary muffler P', overhanging muffler P and forming part thereof, and provided with a series of openings *b b* in the body and over- 15 hanging sides thereof, said openings being so constructed and arranged as to size and number as to afford the necessary exit for the steam without causing undue back-pressure and at the same time affording expanding 20 space for and subdividing and more thoroughly muffling the steam and deadening the sound produced by its escape into the atmosphere. This additional chamber of the double muffler also facilitates the escape and 25 clearance of the steam condensation to the outside of the valve-casing by passage through

the openings in the under side of the overhanging portion of muffler P', through which it naturally flows.

I claim—

1. A safety-valve embodying the combination of an inclosed valve, valve-seat, depressing-spring, and adjustable ring H, surrounding the valve and having arms I, extending upward therefrom within the valve-case and 30 threaded into suspended nuts M, arranged above the valve-case to be turned to raise and lower the ring through its arms, as and for the purposes specified. 35

2. In a safety-valve, the combination, with 40 the valve of the adjustable ring H, provided with arms I, extending upward within the valve-case and threaded into suspended nuts arranged above the case to be turned to raise and lower the ring, and latches N, arranged 45 to be turned into position to lock the nuts, all as and for the purposes specified.

ANTON LOHBILLER.

Witnesses:

EUGENE HUMPHREY,
RALPH W. E. HOPPER.