

(No Model.)

A. LOHBILLER.
SAFETY VALVE.

No. 496,058.

Patented Apr. 25, 1893.

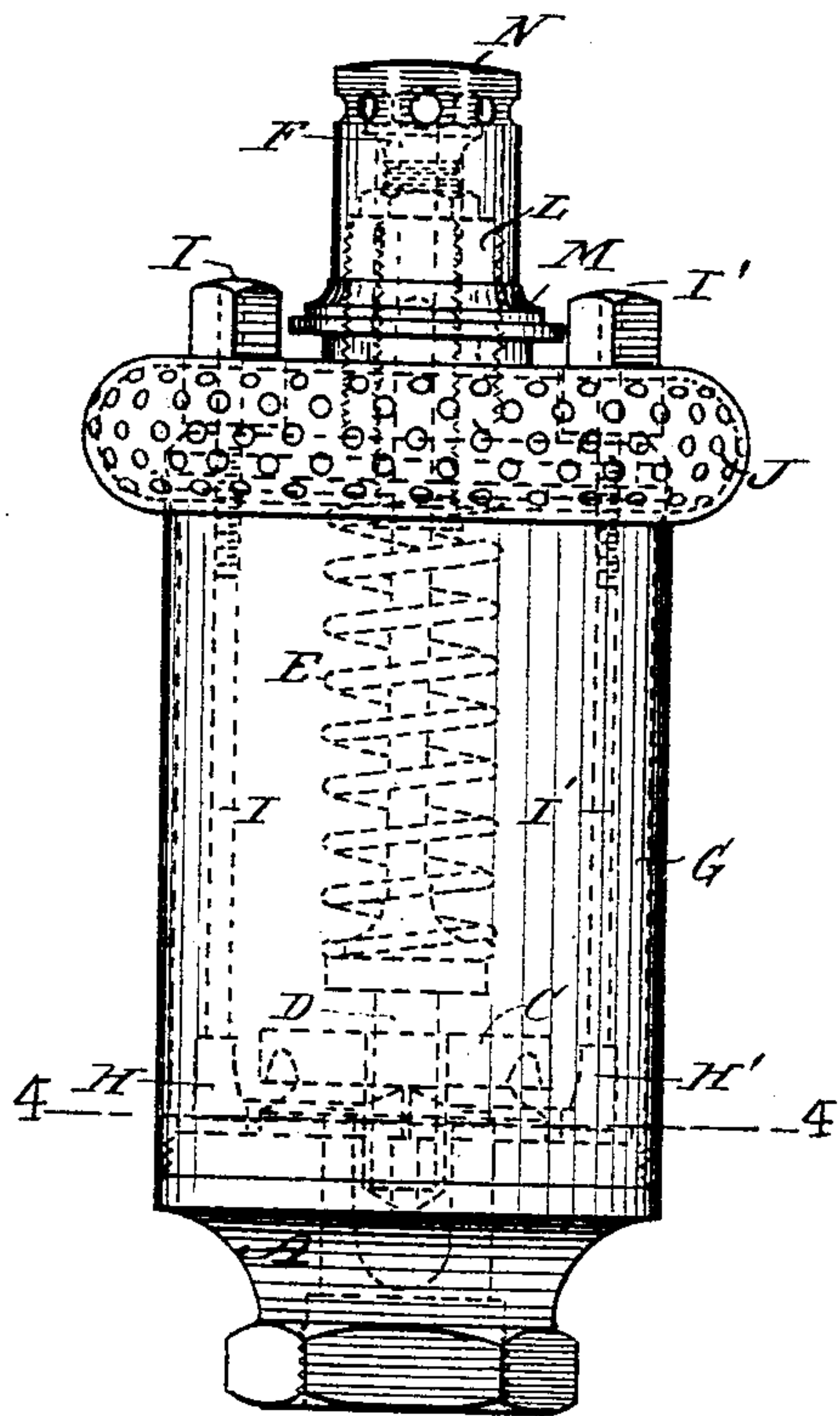


Fig. 1.

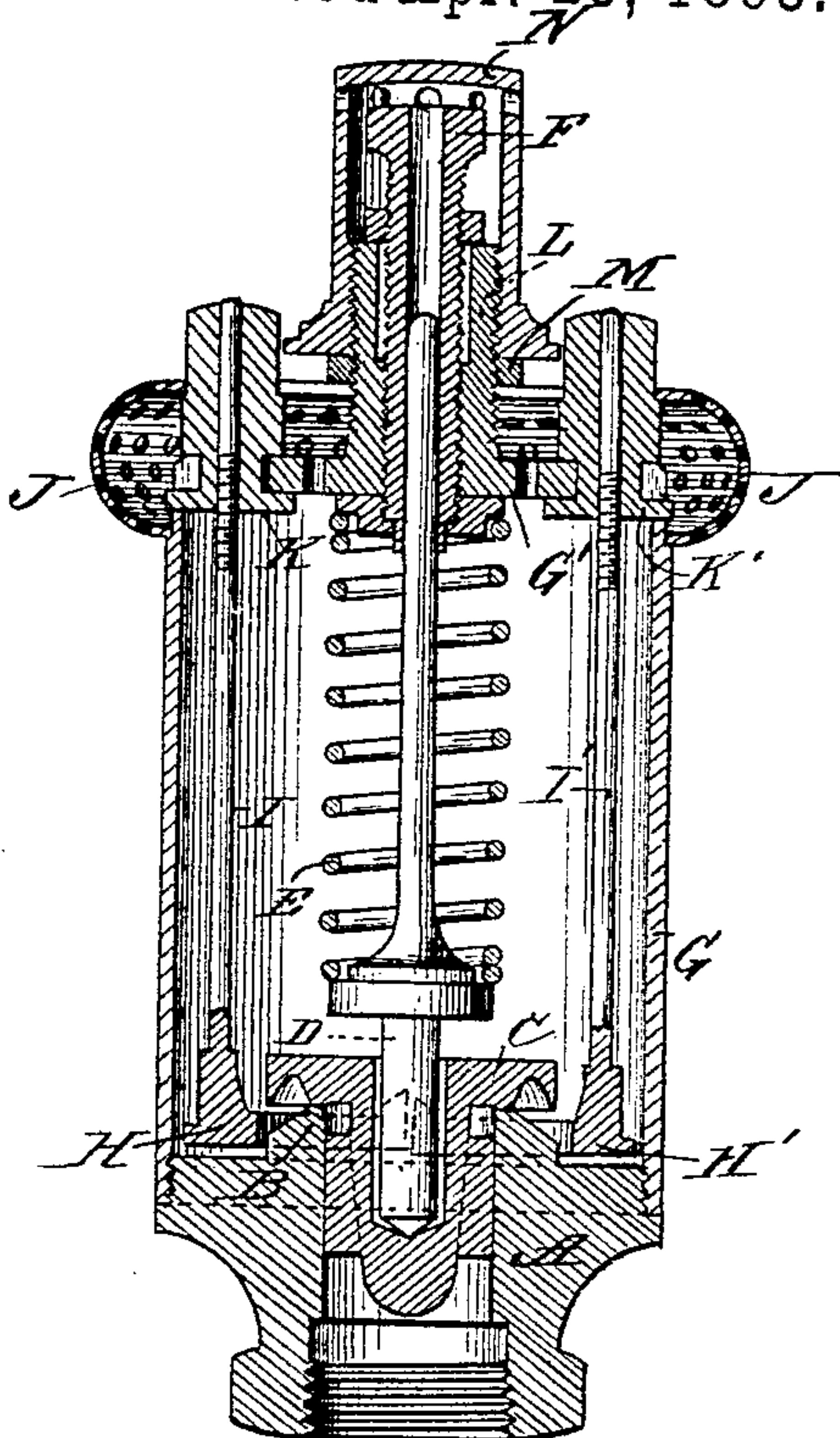


Fig. 2.

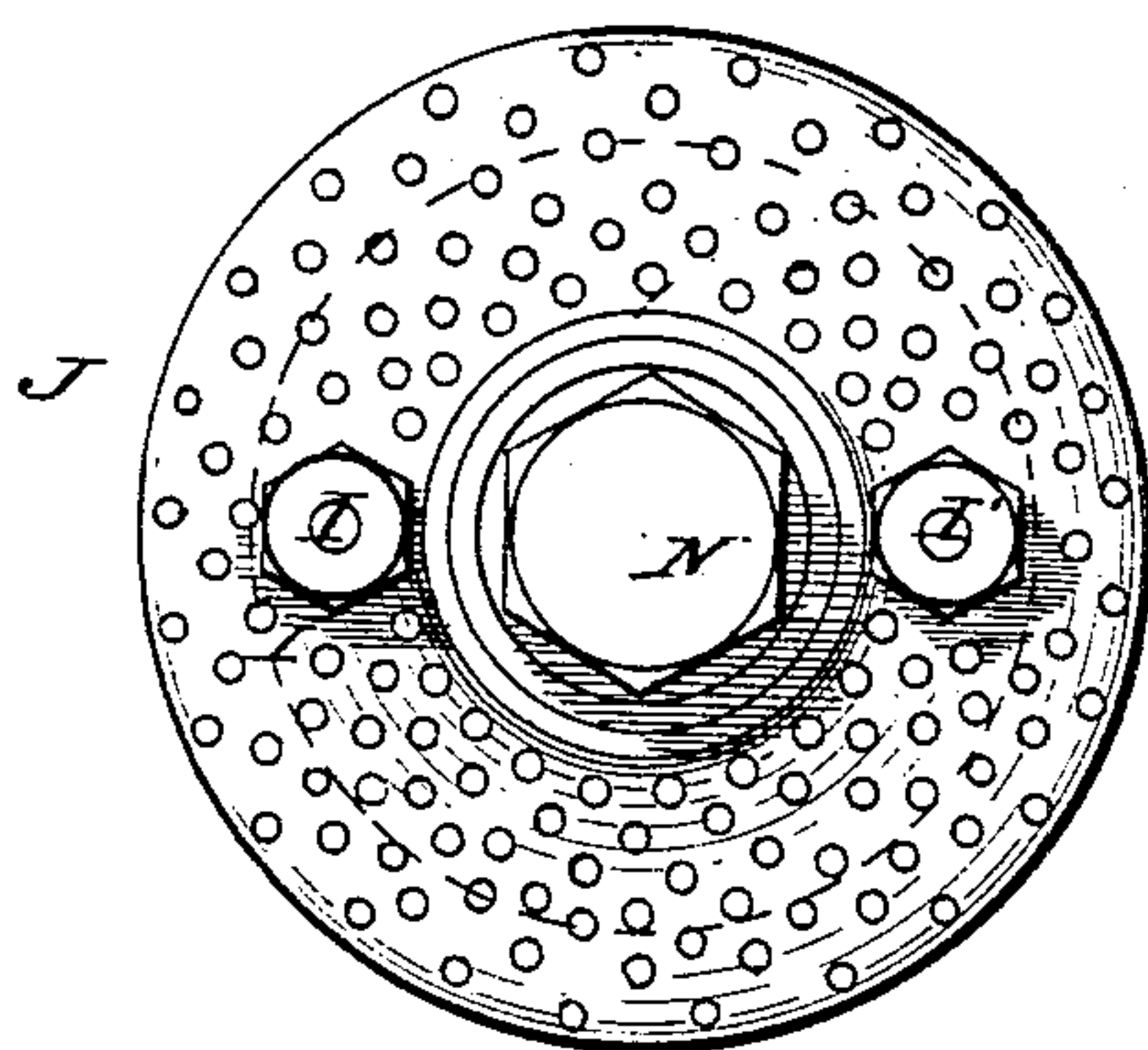


Fig. 3.

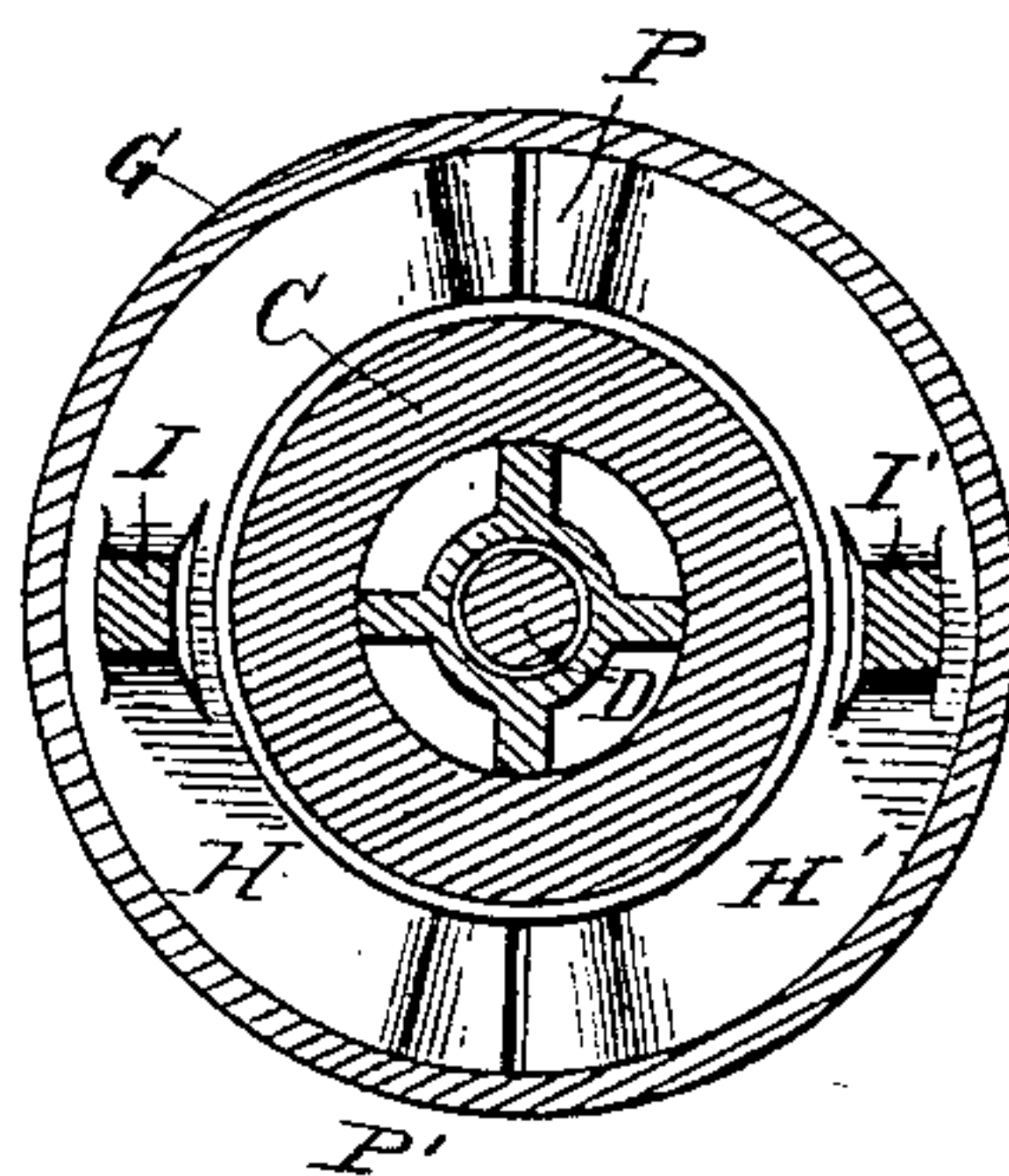


Fig. 4.

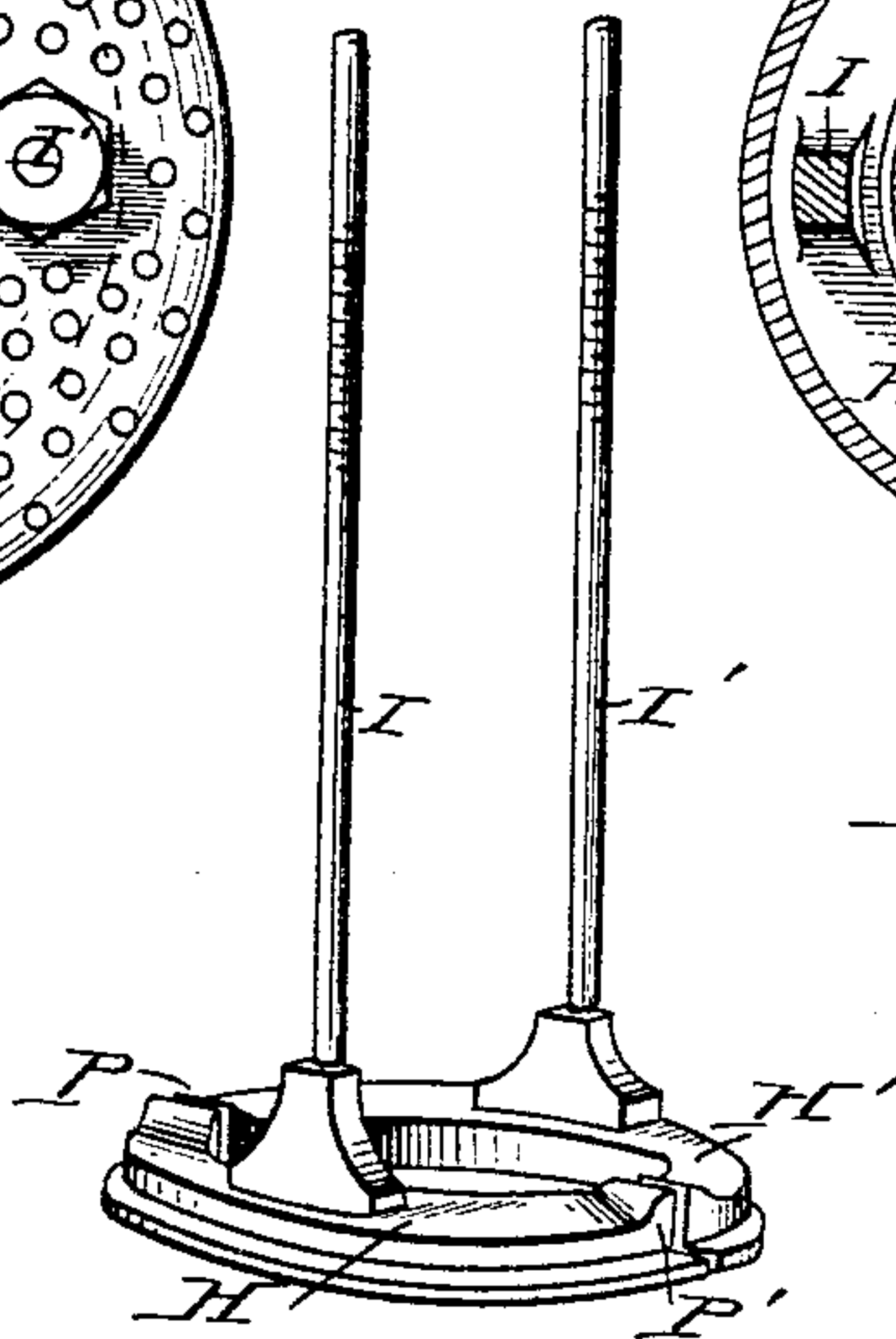


Fig. 5.

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UNITED STATES PATENT OFFICE.

ANTON LOHBILLER, OF BOSTON, MASSACHUSETTS.

SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 496,058, dated April 25, 1893.

Application filed January 13, 1893. Serial No. 458,231. (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, 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 particularly to that part of the valve by which the escape of steam is regulated after the valve is lifted thereby, and prompt reaction of the same is secured thus avoiding undue waste of steam in relieving the pressure on the boiler; and is an improvement upon the invention described in Letters Patent of the United States issued to me December 13, 1892, and numbered 488,020, and has for its principal object to prevent the "fluttering" of the valve and consequent disagreeable humming noise which is a very objectionable action common to such valves, and which also tends to wear them out more rapidly; and a further object is to conveniently arrange the means for adjusting such regulating device above the muffler, so that it may be handily adjusted from the outside without removing any part of the valve casing or the muffler.

In the accompanying drawings, Figure 1 is a side elevation of a valve and muffler embodying my invention. Fig. 2 is a central longitudinal section through the same. Fig. 3 is a top view or plan of the same. Fig. 4 is a cross section taken as on line 4, 4, Fig. 1, and as viewed from above said line. Fig. 5 is a perspective view of the detached divided ring which forms one of the chief features of my present invention.

It is not deemed necessary to more than simply refer to the main parts of the valve which are well known and not in and of themselves a part of my present invention, but which are substantially the same as in my said former patent and are shown in the present drawings, together with my improvements, in their proper operative relations to each other.

A is the base of the valve; B the valve-seat; C the valve; D the depressing spindle; E the depressing spring which forces the spindle down upon the valve; F the hollow screw by which the pressure on spring E is adjusted.

G is the outer casing of the valve; G' the perforated top of the same.

H and H' constitute a divided ring which surrounds the valve-seat, and together they perform the same office as the solid ring H does in my said former invention with respect to regulating the escape of steam; while they also serve the additional purpose, by reason of their capability of separate adjustment, of preventing the "fluttering" of the valve, as will be explained. The semi-circular parts H and H' are each provided with threaded rods I and I' which extend upward through the perforated top G' and through the foraminated muffler J, as shown, and are threaded into nuts K and K' which have circumferential grooves in the lower portions thereof by which they are suspended in interlocking slots in the edge of the top G', as shown, while the upper portions of the nuts are hexagonal in form and extend above the top of the muffler so that they may be turned by using a suitable wrench thereon.

When the parts H and H' are in place around the valve and so connected through rods I and I' with nuts K and K' suspended in their slots in top G', they are capable of independent vertical adjustment and arrangement of one slightly higher than the other through the turning of their respective nuts. And when so adjusted they may be locked or secured in adjustment as follows:—When muffler J, which has three larger holes through it to allow it to be placed on top of the valve case over the nuts K and K' and over the threaded neck L of the valve, is so placed, then a nut M is threaded on to said neck and turned down against the top of the muffler thus securing the same in position; then a cap N is also threaded on to said neck and turned down against nut M and serves as a check against the accidental turning of the nut; and at the same time the peripheral edge of the circular bottom of cap N passes closely down between the flat sides of nuts K and K' which are adjacent thereto, and thereby securely locks them against accidental turning; thus very simply and effectually securing the parts in the positions in which they are so adjusted. By retracting cap N a few turns, nuts K and K' are released therefrom and may then be freely turned to raise or lower rods I and I'

and give such vertical adjustment of the semi-circular parts H and H' as may be desired, relatively to the valve-lip and to each other for the purposes stated. When thus
 5 separately adjusted vertically the half rings H and H' move up and down in contact with each other, each supporting and steadying the other laterally, and to insure such contact throughout the proper range of such vertical
 10 movement of the parts, they are formed thicker at their ends and points of contact P and P' as shown clearly in Figs. 2 and 5. In Fig. 2, one is shown adjusted slightly higher than the other, and in such relative arrangement
 15 of the two parts around the valve-seat, I have discovered, by practical experiment, the remedy for a "fluttering" valve, and have thereby prevented such wearing vibrations and the consequent disagreeable humming noise.
 20 And by arranging my means of adjustment above the top of the muffler, I have overcome the necessity and inconvenience which has hitherto existed, of removing the muffler in order to get at and adjust the steam regu-
 25 lator. These are the two essential features of my present invention, and I thereby accomplish in a satisfactory manner the regulation of the steam pressure on the boiler and secure the proper and steady action of the valve.
 30 The two halves of the regulating ring being thus adjusted at different elevations, or arranged in different horizontal planes around the valve, serve to break up the tendency of the valve to so vibrate or "flutter." This
 35 might be accomplished if the two segments or halves of the rings were permanently united under such arrangement of the parts as to leave one side slightly higher than the other, substantially as I adjust them, but I prefer

to have them separately adjustable with my 40 described device for adjusting the same.

I claim—

1. The combination in a safety-valve, of a valve-seat; valve; a ring regulator surrounding the valve-seat and having one part there- 45 of arranged or adjustable in a different horizontal plane from the other, substantially as described; and means for adjusting said ring relatively to the valve-lip; all substantially as and for the purposes specified. 50

2. The combination of valve-seat B; valve C; divided ring H, H', having rods I, I' secured thereto; casing G; nuts K, K', suspended in slots in the top of said casing so as to rotate freely therein, and into which nuts 55 said rods are threaded; all substantially as and for the purposes specified.

3. The combination in a safety-valve and muffler, of a valve-seat; valve; and a steam-regulating device encircling the valve-seat 60 and extending upward within, and through the top of the valve case, and above the muffler, whereby the regulating device may be operated without removing the muffler or any part of the valve case; all substantially as 65 specified.

4. The locking device consisting of the combination of case G; nuts K, K', suspended in the top thereof and arranged to receive and operate the regulator rods; neck L; and cap 70 N, threaded on to said neck and arranged to screw down thereon between the flat sides of said nuts so as to prevent the turning of the nuts; substantially as specified.

ANTON LOHBILLER.

Witnesses:

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