

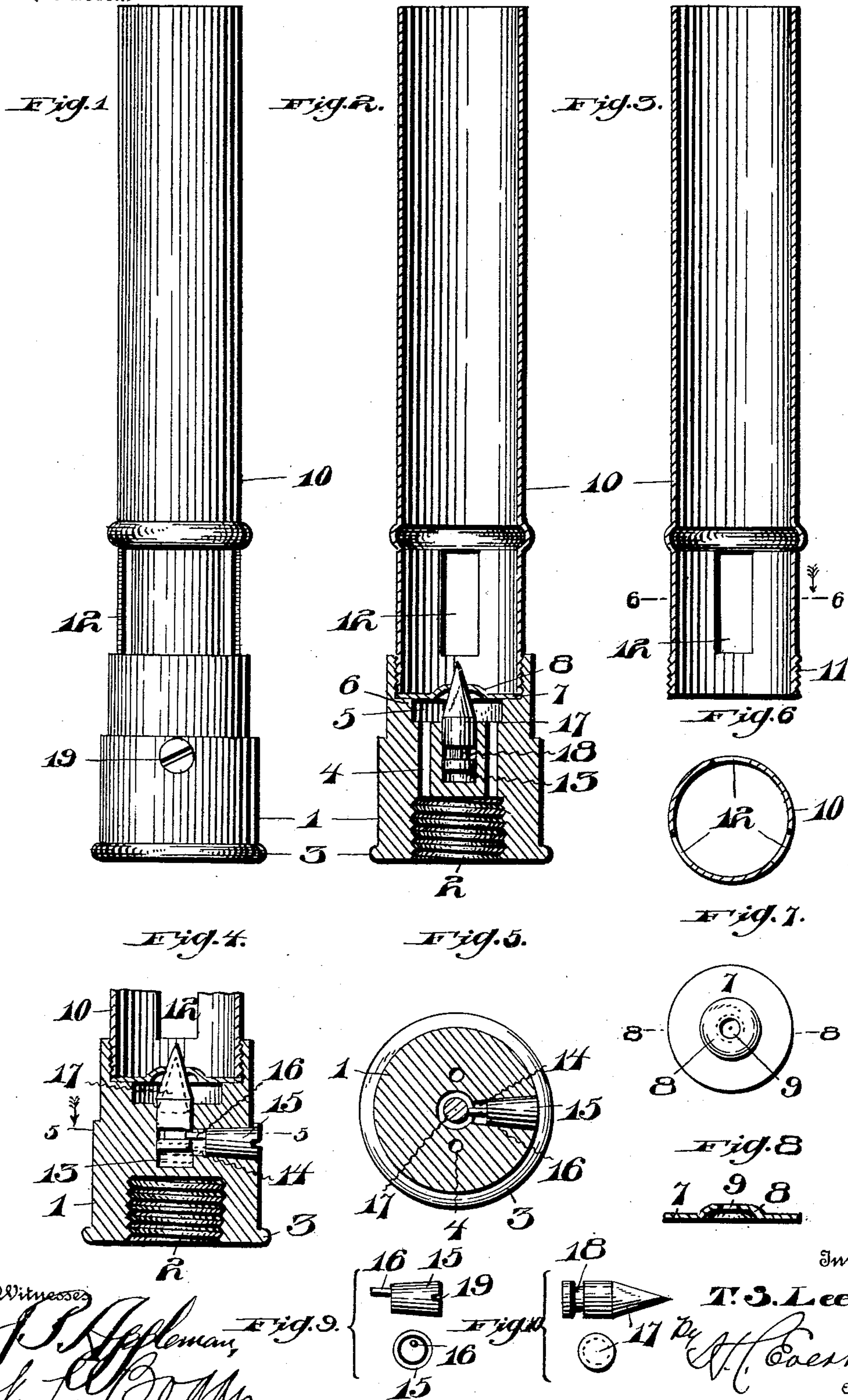
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Patented Dec. 25, 1900.

T. S. LEESE.  
ADJUSTABLE GAS CHECK.

(Application filed Apr. 28, 1900.)

(No Model.)



Witnesses  
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*Fig. 9.*  
*Fig. 10.*

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# UNITED STATES PATENT OFFICE.

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## ADJUSTABLE GAS-CHECK.

SPECIFICATION forming part of Letters Patent No. 664,656, dated December 25, 1900.

Application filed April 28, 1900. Serial No. 14,680. (No model.)

*To all whom it may concern:*

Be it known that I, THADDEUS S. LEESE, a citizen of the United States of America, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Adjustable Gas-Checks, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in adjustable gas-checks, and is particularly adapted for use in connection with Bunsen burners for illuminating purposes, although it is applicable for various other uses, such as regulating the flow of steam, water, or other fluid under pressure.

The invention particularly aims to construct an adjustable gas-check which shall be extremely simple in construction, strong, durable, efficient in its use, and comparatively inexpensive to manufacture.

Briefly described, the invention consists of a base connected to a source of supply and provided with a partition having a pair of inlet-ports extending therethrough, a diaphragm arranged within said base and provided with a valve-seat, a needle-valve operating through said diaphragm, a gas-chamber arranged between the diaphragm and partition, and means for adjusting the position of said valve.

The invention finally consists in the novel construction, combination, and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

Figure 1 is a side view of a Bunsen burner provided with my improved adjustable gas-check. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a vertical sectional view of a Bunsen tube. Fig. 4 is a transverse vertical sectional view, the tube being broken away and showing the position of the needle-valve in full and dotted lines. Fig. 5 is a cross-sectional view taken on the line 5 5 of Fig. 4. Fig. 6 is a cross-sectional view taken on the

line 6 6, Fig. 3. Fig. 7 is a top plan view of a diaphragm provided with a valve-seat. Fig. 8 is a cross-sectional view taken on the line 8 8 of Fig. 7. Fig. 9 is a side and end view of the adjusting-plug for the needle-valve. Fig. 10 is a side and end view of the needle-valve.

Referring to the drawings by reference-numerals, 1 indicates a cylindrical base provided at its lower end with an annular screw-threaded opening 2 to permit of connecting the base to a source of supply and further provided with a partition 3, formed with a pair of upwardly-extending diametrically-arranged inlet-ports 4. Above the partition 3 is a gas-chamber 5 and a screw-threaded opening of greater diameter than the said gas-chamber, forming thereby a shoulder or ridge 6, upon which is mounted the diaphragm 7, consisting of a concentric disk of any desirable material having the center thereof stamped upwardly substantially dome-shaped, as at 8, and is provided with a centrally-arranged opening 9, forming a valve-seat. Mounted upon the diaphragm 7 and secured in the screw-threaded opening at the upper portion of the base is a tube or sleeve 10, having its lower end formed with exterior screw-threads and above the latter formed with a series of air-ports 12. The partition 3 is further provided, between the inlet-ports 4, with a vertically-arranged recess 13, registering at one side with a horizontally-extending opening 14, in which is mounted an adjusting-plug 15, carrying on its inner end an eccentrically-arranged pin or stud 16. Loosely mounted within the recess 13 is a needle-valve 17, the needle-point thereof operating through the opening 9 of the dome-shaped portion of the diaphragm, and the lower end of the needle-valve 13 is formed with an annular groove 18, which is engaged by the pin or stud 16 for adjusting the former.

The diaphragm when arranged in the base forms the upper wall of the gas-chamber 5. The dome-shaped portion 8 of the diaphragm extends within the tube, as shown.

The adjusting-plug is provided on its outer face with a groove 19 to receive a suitable instrument for adjusting the same, or the former may have a suitable thumb-key carried thereby for that purpose.



It is thought the operation of the check can be understood, as it will be evident that upon turning the adjusting-plug the pin or stud engaging within the groove of the needle-valve will either elevate or lower the same, as is indicated in Fig. 4 of the drawings. By this construction the regulation of the gas can be fixed—that is to say, that in the majority of gas-checks used to-day the same have to be constantly looked after, as they get out of order and the operator has to readjust the same. In the construction set forth when the plug is turned the needle-valve is in a fixed position and a further adjustment is entirely unnecessary.

It is thought the many advantages of my improved gas-check can be readily understood from the foregoing description taken in connection with the accompanying drawings, and it will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device of the character described, a base, a check carried thereby and provided with a dome-shaped portion having a centrally-arranged opening, a needle-valve loosely mounted upon said base and provided with an annular groove near its lower end, said valve adapted to operate through the said opening, and means carried by said base and engaging in said groove for adjusting the position of said valve.

2. In a device of the character described, a base, a diaphragm carried thereby and provided with a dome-shaped portion having a centrally-arranged opening, a needle-valve loosely mounted upon said base and provided with an annular groove near its lower end, said valve adapted to operate through the said opening, and eccentrically-mounted means carried by said base and adapted to engage in said groove for adjusting the position of said valve.

3. In a gas-check, a hollow base, a partition arranged therein and provided with suitable inlet-passages, a diaphragm mounted within said base and provided with a dome-shaped portion having a centrally-arranged opening, a gas-chamber formed by said diaphragm and partition, a needle-valve loosely mounted within said partition and operating through

said opening of the diaphragm, an adjusting-plug mounted in said base, and eccentrically-arranged means carried by said plug and adapted to engage said valve for adjusting the position thereof.

4. In a gas-check, a hollow base, a partition arranged therein and provided with suitable inlet-passages, a diaphragm mounted within said base and provided with a suitable valve-seat, a needle-valve loosely mounted within said partition and adapted to engage said seat, an adjusting-plug mounted in said base, and an eccentrically-connected pin carried by said plug for adjusting the position of said valve.

5. In a device of the character described, a base provided with a pair of diametrically-arranged inlet-passages, a vertically-adjustable needle-valve loosely mounted in said base and between said inlet-passages, a diaphragm provided with a centrally-arranged opening mounted within said base and above said valve, an adjusting-plug arranged in a longitudinal manner within said base, and a pin eccentrically connected to said plug and adapted to engage said valve for adjusting the same.

6. In a device of the character described, a base, a partition formed in said base, a pair of diametrically-arranged inlet-passages formed in said partition, a diaphragm provided with a valve-seat arranged within said base above said partition, a gas-chamber formed between the said partition and said diaphragm and in communication with said inlet-passages, a vertically-adjustable needle-valve loosely mounted in said partition and operating through said gas-chamber and engaging said seat, an adjusting-plug mounted in a longitudinal manner within said base, and a pin eccentrically connected to said plug and adapted to engage said valve for adjusting the same.

7. In a device of the character described, a base, a needle-valve loosely mounted therein, and provided on its lower end with an annular groove, and eccentrically-mounted means adapted to engage the said groove for adjusting the position of said valve.

In testimony whereof I affix my signature in the presence of two witnesses.

THADDEUS S. LEESE.

Witnesses:

JOHN NOLAND,  
N. L. BOGAN.