

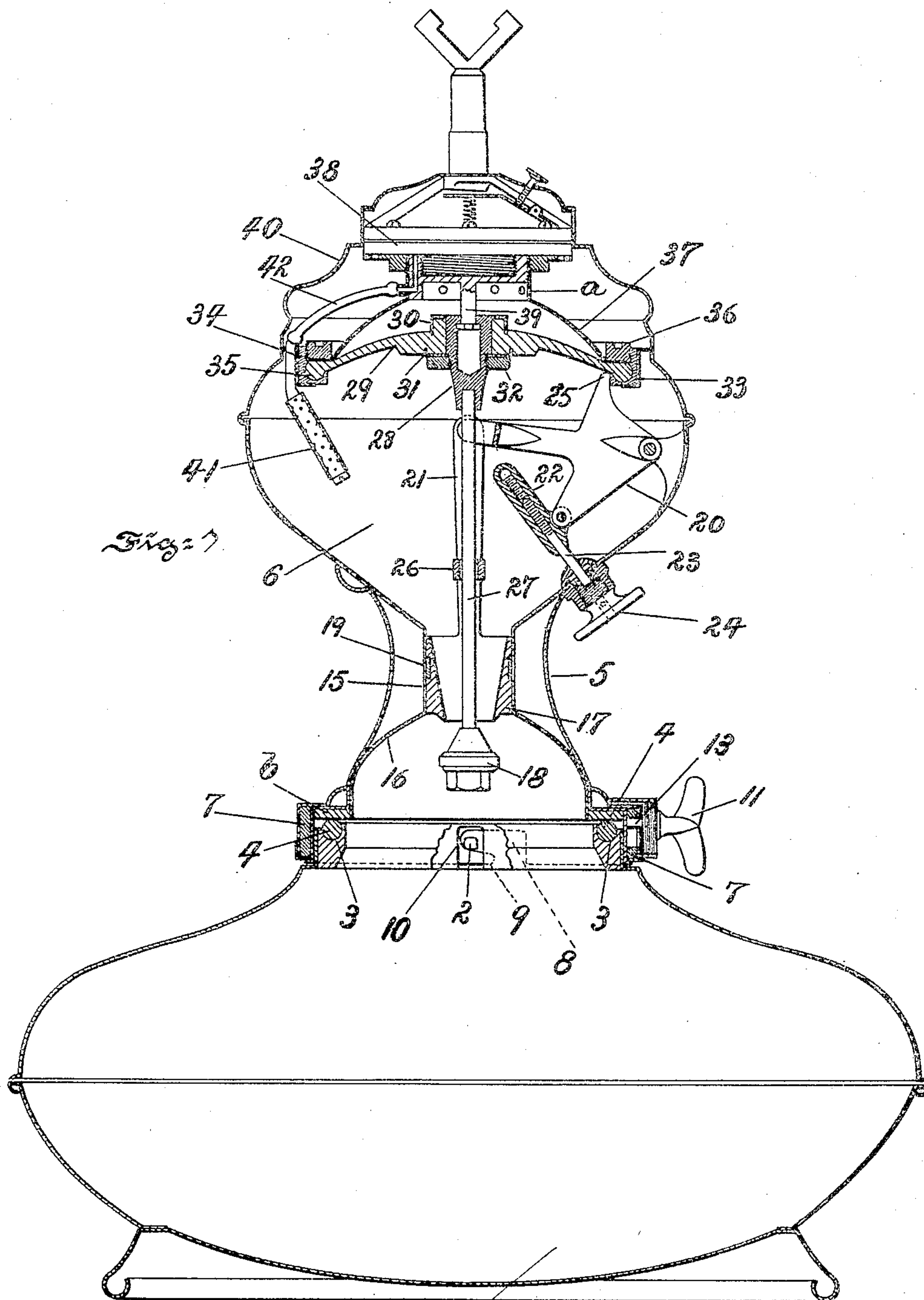
No. 778,596.

PATENTED DEC. 27, 1904.

E. MOREAU.  
ACETYLENE LAMP OR GENERATOR.

APPLICATION FILED JULY 12, 1902.

2 SHEETS—SHEET 1.



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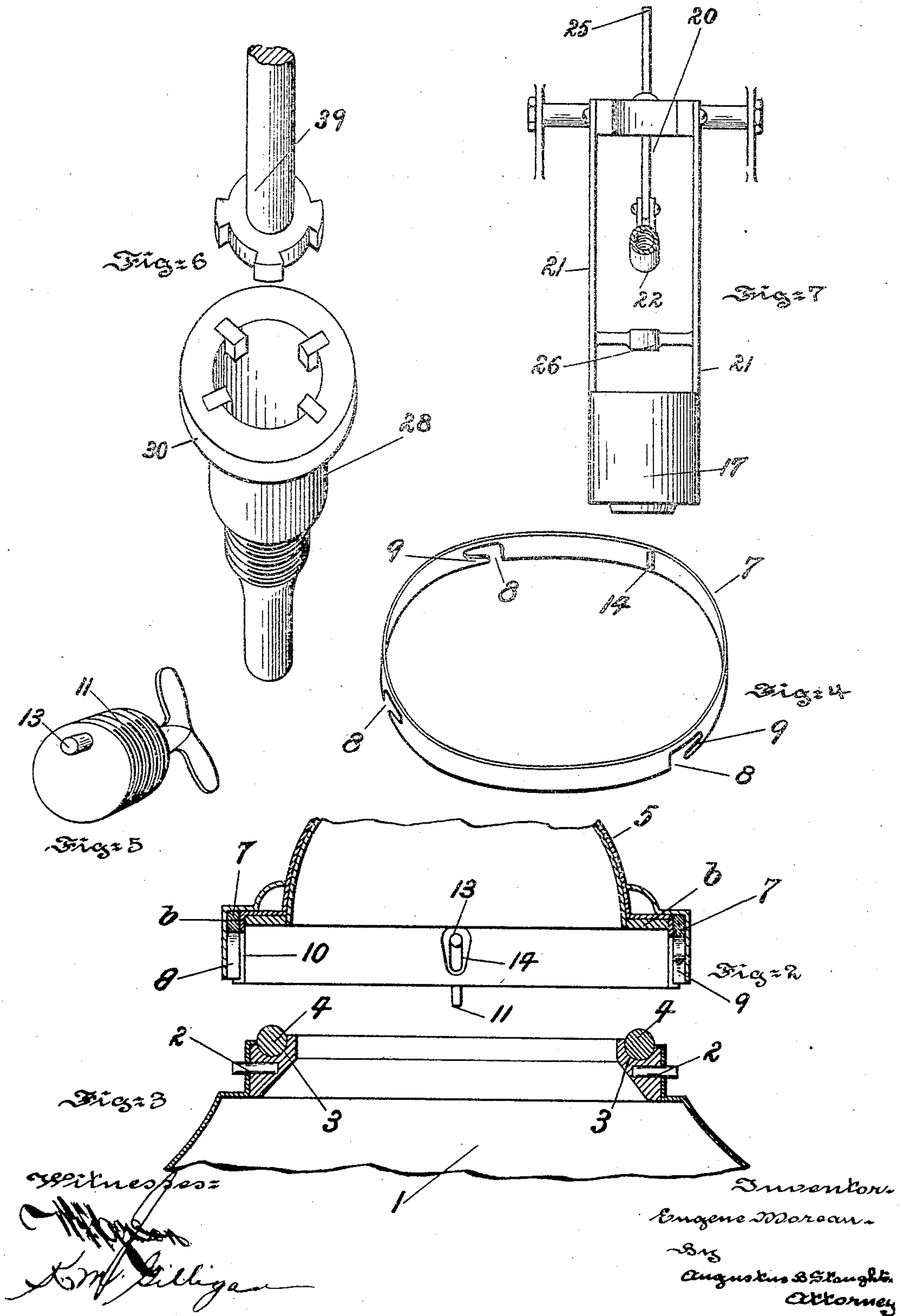
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# UNITED STATES PATENT OFFICE.

EUGÈNE MOREAU, OF NEW YORK, N. Y., ASSIGNOR TO BRITELITE LAMP COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## ACETYLENE LAMP OR GENERATOR.

SPECIFICATION forming part of Letters Patent No. 778,596, dated December 27, 1904.

Application filed July 12, 1902. Serial No. 115,250.

*To all whom it may concern:*

Be it known that I, EUGÈNE MOREAU, a citizen of the Republic of France, residing at New York city, in the county and State of New York, have invented certain new and useful Improvements in Acetylene Lamps or Generators, of which the following is a specification.

Objects of the present invention are to provide a comparatively light, reliable, and efficient lamp or generator, to insure durability of the parts, to reduce the number and improve the operation of the working parts, to make the operation of filling and reclosing the lamp more easy and certain than heretofore, to improve the operation of the parts comprising the feed, to provide for extinguishing the lamp in a satisfactory manner, and to insure proper filtering of the gas.

To these and other ends hereinafter set forth the invention comprises the improvements to be presently described and finally claimed.

The nature, characteristic features, and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a view principally in central section, illustrating a lamp embodying features of the invention. Fig. 2 is a sectional view drawn to an enlarged scale and illustrating the base of the column of the lamp. Fig. 3 is a similar view illustrating the neck of the water-receptacle. Fig. 4 is a perspective view of a locking-ring. Fig. 5 is a similar view of means for moving the locking-ring. Fig. 6 is a detail view drawn to an enlarged scale and illustrating two parts of a connection hereinafter described, and Fig. 7 is a view taken at right angles to the plane of Fig. 1 and illustrating a portion of the feed mechanism.

In the drawings, 1 is the water-receptacle, and it constitutes the base of the lamp. At its neck it is provided with projections or pins 2 and with a seat 3 for the reception of a gasket 4, as of rubber.

5 is the body of the lamp, and it contains the carbide-chamber 6. At the base of the

shell or body 5 there is a flange adapted to fit over the neck of the water-receptacle 1. This flange is fitted with a gasket 6, as of rubber, which is adapted to rest upon the gasket 4.

The purpose of using the two rubber surfaces is twofold. In the first place, both surfaces of contact being yielding and elastic, a perfectly gas-tight joint is obtained with only a moderate pressure of the two surfaces; secondly, the use of the two rubber surfaces of contact prevents effectually the cementing together of said surfaces during long periods of rest under pressure—a defect which would show itself in the case of a rubber gasket in contact with metal under the condition above mentioned. In such case a rest of a few weeks is sufficient to bring about more or less adherence of the rubber to the metal, causing sometimes the tearing and destruction of the gasket when separating it forcibly from the metal. By providing the metallic surfaces of the joint with a rubber gasket on one side and with a rubber or other non-adhesive coating on the other side the cementing of the surfaces of contact is prevented. In the case of the lamp under consideration both surfaces of contact are made of rubber, yielding, elastic, and non-adhesive; but a good result could also be obtained by using a hard, non-yielding, and non-adhesive surface on one side and the gasket on the other.

Suitably fitted in the flange at the base of the body 5 is a locking-ring 7. As shown, the flange is made double, and the locking-ring is fitted between its walls, so as to be capable of being turned. The locking-ring is provided with notches 8, which have inclined walls or tongues 9, and the inner wall of the flange is cut out, as at 10, Fig. 2, so that when the body and the base of the lamp are put together the projections 2 extend through the openings 10 into position for entering the notches 8 and for being engaged by the inclined walls 9 when the ring is turned. It will be understood that the body may be applied to the neck of the base in any position, since all of the pins 2 and notches 8 are equally distant, and this is clearly a matter of convenience. Furthermore, when the lock-



ing-ring 7 is turned the inclined walls 9, by engaging the pins 2, draw the parts firmly together, and the gaskets 4 and 6 insure a tight joint. Moreover, the inclined wall will take up or compensate for considerable wear, and thus the closure as a whole is not only very durable, but also satisfactory and reliable.

To turn the ring 7, use may be made of the part 11. (Shown in Fig. 5.) This part 11 is provided with a thumb-nut and with an eccentric-pin 13, which engages a slot 14 in the ring, so that when the thumb-nut is turned the ring is turned in one direction or the other by the pin 13 and its complementary slot 14. Of course if the part 11 is threaded, as described, the pin 13 is long enough to remain in engagement with the slot 14.

The body 5 is internally provided with a tubular guide 15, which terminates in an inverted-funnel-shaped part 16. The latter is useful in filling the carbid-chamber 6, because all that is necessary is to turn the body upside down and pour the carbid into the funnel-shaped portion 16, it being understood, of course, that the valve is open and that the valve-seat does not project beyond what would then be the outlet of the funnel, as will be hereinafter described. Clearly whenever fresh charges of granulated carbid are introduced into the carbid-chamber they serve by attrition, absorption, and the like to remove and take up limey deposits which otherwise would interfere with proper feeding.

17 is a valve-seat, and it is movable in the guide 15, so that it can be made to approach the valve 18 in whatever position the latter might be for the purpose of interrupting the feed and extinguishing the lamp, and, similarly, it can be moved away from the valve for the purpose of starting the feed and permitting of the lighting of the lamp. The valve-seat is shown as having interposed between it and its guide a packing 19. The valve 18 consists of a central yielding and elastic washer, as rubber, held between two nuts or the like, and the washer abuts upon the lower end of the valve-seat to interrupt the feed and clears the lower end of the valve-seat to permit of the feed.

A variety of means may be employed for shifting the valve-seat 17. As shown, the means employed comprise a bell-crank lever 20, pivoted to suitable brackets projecting inward from the wall of the body and provided with a bifurcated end, to the forks of which arms 21, connected with the seat 17, are pivoted. Pivoted to the bell-crank lever is a nut 22, which is engaged by a screw 23, provided with a handle 24, and mounted in a gland in which it may turn but not move endwise. The bell-crank lever is provided with a wing 25, arranged to collide with a suitable part of the body and which acts as a back-stop and positions the movable valve-seat flush with the walls of the funnel part 16. The yoke 26 is provided with an opening through which the

valve-stem 27 passes. In its turn the valve-stem is provided with a head 28, to which is secured a diaphragm 29. As shown, the diaphragm 29 is circular and is provided with an enlarged rim or marginal bead and a thickened hub or center. The head 28 penetrates the center of the diaphragm and is provided with a downwardly-extending rim 30, which takes into the diaphragm, as shown. Beneath the diaphragm there is a washer provided with an upwardly-extending flange 31, which also takes into the diaphragm, and the nut 32, threaded onto the head, serves to bring these flanges toward each other, so as to nip the hub of the diaphragm between them, and thus constitute a firm joint and prevent the diaphragm from creeping, as it would tend to do, since it is of rubber. At the top of the body 5 there is an inwardly-extending flange 33, in which is seated a fixed ring 34, grooved for the reception of the bead 35 on the rim of the diaphragm, and there is a screw-ring 36, fitted to the ring 34 and adapted to clamp the rim 35. This construction makes a tight joint at the rim of the diaphragm and one which does not tend to creep.

There is a support 37 for the diaphragm, and it is of generally dome shape, so as to conform to its contour, and it is provided with air-vents, as at *a*. Upon the dome or support 37 is mounted a burner and its usual accessories, such as the pressure-regulator 38.

39 is a stop for limiting the downward travel of the diaphragm and for holding it in such position, as shown, that it is under some initial tension. This stop 39 works in an opening in the head 28.

Referring to Fig. 6, it will be seen that there is between the stop 39 and head 28 a bayonet-joint, and when this is present the rim of the diaphragm may be first clamped between the rings 34 and 36 while the diaphragm is under no strain, and the head may then be coupled to the stop 39, as shown in Fig. 1, by turning the head sufficiently for this purpose, which turning is made possible by the elasticity of the rubber of the diaphragm. In this way the rim of the diaphragm is clamped while the latter is not under tension. The crown-piece 40 may be removed to afford access to the interior, so that the parts can be readily assembled.

41 is a filter interposed between the carbid-chamber and the gas-pipe 42, which leads to the burner by way of the pressure-regulator. By reason of this construction only the gas which is to be consumed at the burner is filtered.

Assuming that gas is being generated, carbid falls through the valve-seat 17, past the valve 18, and reaches the water-chamber in the base, in consequence of which gas is generated and reaches the carbid-chamber 6. From this chamber it passes by way of 42 to the burner, and the pressure of the gas in this



chamber lifts the diaphragm 29 and thus shifts the valve 18 in respect to its seat and controls the feed. The diaphragm under the influence of gaseous pressure lays itself gradually upon its support 37, which prevents it from traveling too far or being unduly distended or ruptured and also relieves it from withstanding excessive pressure. The support also permits the valve 18 to be closed tight upon its seat by the diaphragm, but prevents it from being jammed. As the gas is consumed the pressure in the chamber 6 falls, and thus the diaphragm descends within the limits of its stop 39 and lowers the valve 18, thus permitting of the feed of additional carbid, and the effect of the varying pressure in the chamber 6 is to thus automatically control the feed of carbid. It will of course be understood that during the described operation of the lamp the valve-seat 17 is at rest, and in order to interrupt the generation of gas the valve-seat 17 is shifted, as by means of the hand-screw 24, into contact with its valve 18, thus checking the feed of carbid. Since the valve-seat is moved, it follows that it can be caused to readily engage its valve whatever may be the position of the latter at the time the light is extinguished.

I do not claim herein the movable ring interposed between the base and body and notched for coöperation with pins or studs nor the combination of the same with the elastic gasket, since these matters are claimed in my divisional application, serially numbered 139,556.

It will be obvious to those skilled in the art to which the invention appertains that modifications may be made in details without departing from the spirit thereof. Hence I do not limit myself to the precise construction and arrangement of parts hereinabove set forth and illustrated in the accompanying drawings; but,

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

1. In combination a gas-outlet, superposed carbid and water chambers having a valve-seat between them, a feed-valve, a diaphragm in the wall of the carbid-chamber rigidly connected with said valve, and a support adapted to serve as a back-stop for the diaphragm, substantially as described.

2. In combination a gas-outlet, superposed carbid and water chambers having a valve-seat between them, a feed-valve, a diaphragm in the wall of the carbid-chamber rigidly connected with said valve, and a support adapted to serve as a back-stop for the diaphragm, and a stop for limiting the downward motion of the diaphragm, substantially as described.

3. In combination a gas-outlet, superposed carbid and water chambers having a valve-seat between them, a feed-valve, a diaphragm in the wall of the carbid-chamber rigidly con-

nected with said valve, a support adapted to serve as a back-stop for the diaphragm, and a valve-rod guide, substantially as described.

4. In combination a carbid-receptacle having at its exit a valve, an elastic diaphragm located in the wall in said receptacle and provided at its center with a thickened hub adapted to oppose distortion at the center of the diaphragm, a coupling, flanges arranged between and engaging the top and bottom of the hub and the parts of the coupling, and a connection between the coupling and the valve, substantially as described.

5. In combination a carbid-chamber having at its exit a valve and in one of its walls a rubber diaphragm, and a valve-stem having a flanged head which takes into the diaphragm, substantially as described.

6. In combination carbid and water chambers, a movable valve and a movable-valve seat interposed between the two, means for operating the valve automatically to regulate the generation of gas, and means for manually shifting the valve-seat to start and stop the generation of gas substantially as described.

7. The combination of a carbid-chamber, a movable valve and a movable-valve seat at the exit of said chamber, means for automatically shifting the valve, a bell-crank lever connected with the seat, and manual means for positioning the bell-crank lever, substantially as described.

8. In combination a carbid-chamber provided with a funnel-shaped opening having a guide for a valve-seat, a movable seat, and means for positioning the latter substantially flush with the walls of the funnel to facilitate filling, substantially as described.

9. A carbid-chamber having permanently attached at its base a valve-seat and having an integral funnel-shaped portion extending beyond and having its walls substantially flush with the outer part of the valve-seat to facilitate filling and insure cleaning by the incoming material, substantially as described.

10. In combination a carbid-chamber having at its exit a valve and at its top a seat, a diaphragm operatively connected with the valve and provided with a rim fitted to said seat, clamping means for clamping said rim, and a diaphragm-support of which the edge is clamped between the rim and said clamping means, substantially as described.

11. In combination a carbid-chamber having an opening provided with a seat and clamping means, a diaphragm having its rim clamped by said seat and means, a diaphragm-support provided with a stop, a head at the center of the diaphragm and an interlocking connection between the support and head, substantially as described.

12. In combination carbid and water chambers, a movable valve and a movable seat interposed between the two, and means for shift-



ing each of the last-mentioned parts in respect to the other for automatic regulation and for starting and stopping from the outside of said chambers, substantially as described. 5

13. In combination superposed carbid and water chambers having a valve-seat between them, a diaphragm in the wall of the carbid-chamber, a puppet-valve, connections for rigidly connecting the valve and diaphragm, and 10 manual means independent of the diaphragm for changing the relation of valve and seat for stopping the generator, substantially as described.

14. The combination of a carbid-chamber 15 having in its wall a diaphragm, and a dome-like support having its edges in contact with the diaphragm whereby upon distention the

diaphragm assumes a dome-like shape and rests throughout upon the support, substantially 20 as described.

15. In combination a carbid-chamber provided at its exit with a valve, a diaphragm forming a part of the wall of said chamber and connected with the valve, a burner centrally above said chamber, a telescoping guide 25 beneath the burner for the diaphragm, and a stop for limiting downward motions of the diaphragm, substantially as described.

In testimony whereof I have hereunto signed 30 my name.

EUGÈNE MOREAU.

Witnesses:

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