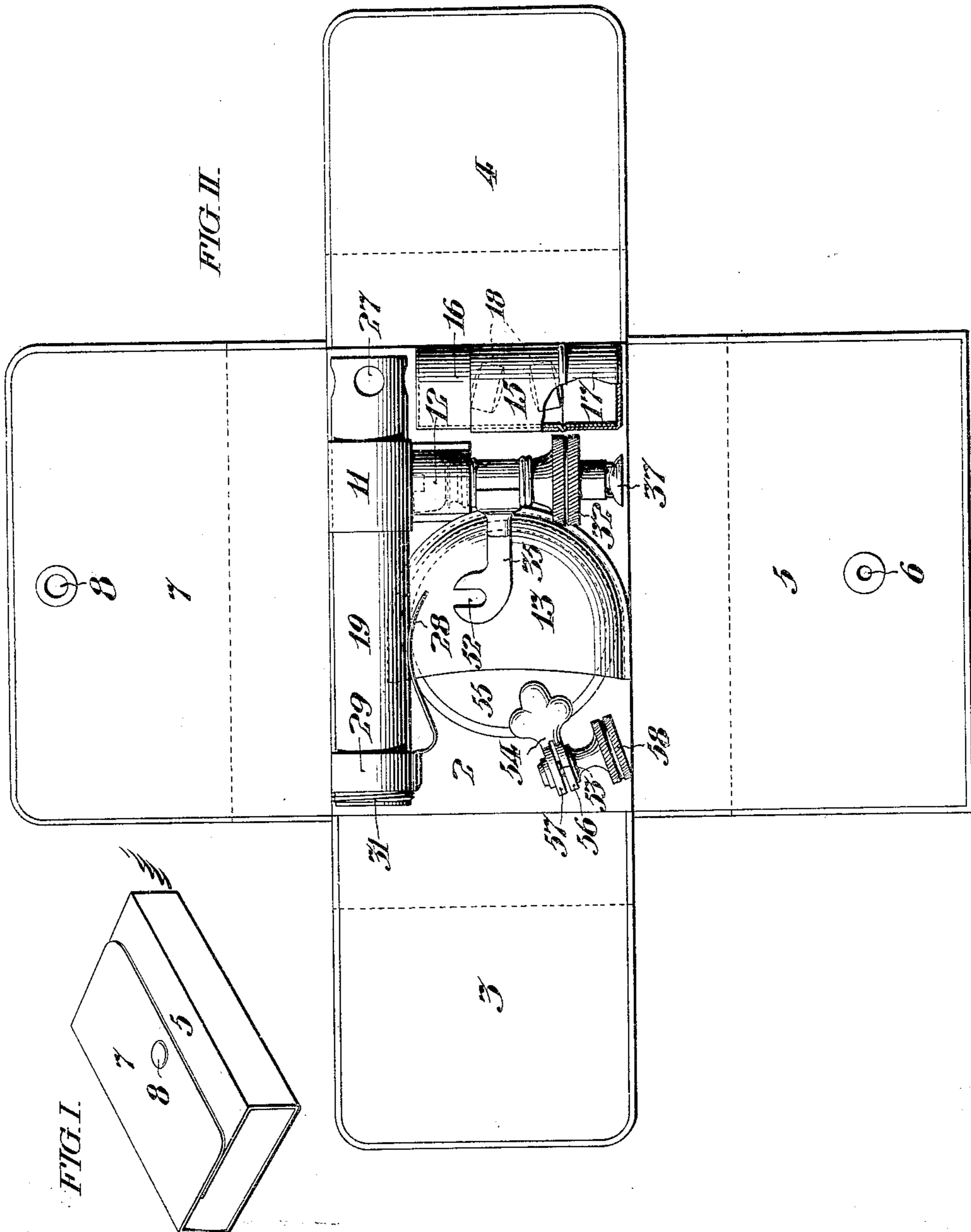


E. M. ROSENBLUTH.  
ACETYLENE GAS GENERATING LAMP.

APPLICATION FILED OCT. 21, 1903.

2 SHEETS—SHEET 1.



WITNESSES:

*Clifton C. Hallowell*  
*John C. Bergner*

INVENTOR:

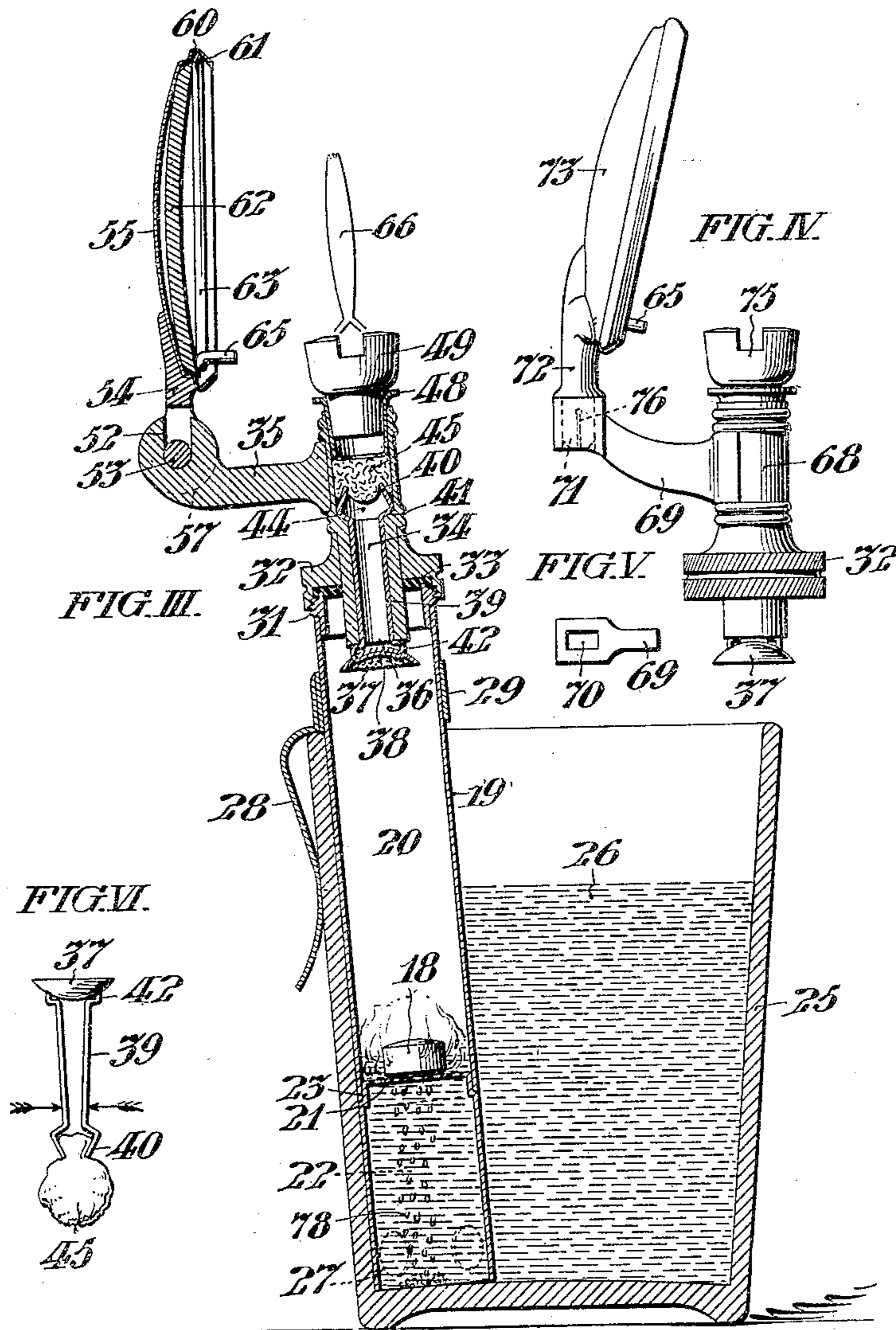
EDWIN M. ROSENBLUTH,

*By Arthur E. Paige*  
*Atty.*

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# UNITED STATES PATENT OFFICE.

EDWIN M. ROSENBLUTH, OF PHILADELPHIA, PENNSYLVANIA.

## ACETYLENE-GAS-GENERATING LAMP.

No. 897,155.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed October 21, 1903. Serial No. 177,923.

*To all whom it may concern:*

Be it known that I, EDWIN M. ROSENBLUTH, of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Acetylene-Gas-Generating Lamps, whereof the following is a specification, reference being had to the accompanying drawings.

Physicians, surgeons, oculists, etc., frequently require a brilliant light which may be concentrated upon an affected region of the body, for the purpose of diagnosis, or operation. Ordinarily, such work must be attempted with a candle light if the patient is confined to a bed, and, any ordinary light is so inadequate for the purpose contemplated as to render it possible, for instance, to mistake diphtheretic growths for other forms of disease.

It is the object of my invention to provide an acetylene gas generating lamp especially adapted for the purpose above contemplated in that its several members may be dissembled and packed in a wallet shaped to fit an ordinary pocket; said members comprising every element essential to the production and combustion of the gas, except a water receptacle, and being so constructed and arranged as to be used in connection with an ordinary drinking glass or cup in which the water may be presented to the carbid. As hereinafter described, said wallet contains a magazine of peculiar construction adapted to contain a supply of carbid in the form of solid tablets of predetermined gas producing capacity which the lamp is especially adapted to employ; so that said lamp may be charged with an accurately predetermined quantity of carbid precisely sufficient to provide a light for the limited time (one, two or more minutes) required for a given diagnosis, and predetermined at the will of the operator. At the expiration of which time, the carbid will be completely exhausted, and, the residue being precipitated from the carbid chamber into the water in the drinking vessel aforesaid, the lamp members may be removed from the water and repacked in the wallet, free from odor.

My invention includes the various novel features of construction and arrangement hereinafter more definitely described and claimed.

In the drawings, Figure I, is a perspective view of a wallet inclosing a lamp kit conveniently embodying my improvements. Fig. II, is a plan view of said wallet in opened position, showing the dissembled lamp members arranged therein in position for transportation. Fig. III, is a vertical sectional view showing the lamp members assembled in operative relation in an ordinary glass tumbler. Fig. IV, is a side elevation of a cap for the lamp-casing comprising a bracket having modified means for supporting the mirror. Fig. V, is a fragmentary plan view of the free end of the bracket shown in Fig. IV. Fig. VI, is a side view of a moisture deflecting plate detached from its normal position shown in Fig. III.

Referring to Figs. I, and II; the wallet inclosing the kit is conveniently formed of flexible leather comprising the back 2; the end flaps 3, 4; the side flap 5, provided with the fastening stud 6, and the cover flap 7, provided with a socket 8, to engage said stud 6. Said wallet comprises the retaining bands or pockets 11, 12, and 13, which respectively retain the separable lamp members in collapsed or dissembled position as shown in Fig. II, and said wallet also comprises the pocket 15, inclosing the magazine 16, provided with the removable cover 17, to inclose a supply of solid tablets 18, of compressed calcium carbid, each of said tablets being of predetermined gas producing capacity and especially adapted for employment in the lamp, as hereinafter described.

As shown in Fig. III, the lamp member retained by the band 11, is a tubular casing comprising the section 19, inclosing the chamber 20, in which the carbid tablet 18, is conveniently supported upon the foraminous diaphragm 21, and, the section 22, comprising said diaphragm 21, and having the neck 23, secured within said section 19. Said casing 19, 22, is arranged to cooperate with an ordinary glass tumbler 25, or similar drinking vessel, in which a supply of water 26, may be presented to the carbid; said casing section 22, being not only open at the end but provided with lateral openings 27, to insure free access of the water to and through the foraminous diaphragm 21. Said casing is maintained in proper relation to such a vessel, by the spring finger 28, which is car-

ried by the collar 29, mounted to slide upon said casing. Said section 19, is provided at its extremity opposite to the diaphragm 21, with an annular screw threaded flange 31, adapted to detachably engage the annular screw threaded flange 32, of the cap, which serves to compress the gasket 33, upon said flange 31, and seal that end of the carbid chamber 20. To facilitate its manufacture, said cap is made of three primarily separate pieces, to wit, the flange 32, the central tube 34, and the bracket arm 35; said tube being provided with circumferential beads which precisely determine the position of the other pieces, so that they may be assembled and soldered in proper relation to each other without skilled labor. The lower end of said tube 34, is provided with the deflecting plate 37, upon which the moisture entrained by the gas is deposited and collects in globules 38, as the gas rises from the chamber 20, through the passage 36. Said plate 37, is retained in operative position to said passage 36, by its shanks 39, whose free ends 40, are bent to detachably engage the shoulder 41, in the cap, and, said shanks 39, are provided with shoulders 42, adjacent to the deflecting plate 37, to prevent the latter from entirely closing the mouth of the passage 36. The free ends 40, of said shanks 39, projecting within the filter chamber 44, uphold the filtering material 45, (conveniently absorbent cotton,) which otherwise might settle and close the upper end of said passage 36, when charged with the impurities filtered from the gas. Said filter chamber 44, is closed and said filtering material retained in proper position therein, by the ferrule 48, in which the burner 49, may be conveniently cemented. Said filter chamber 44, may be opened, to renew the filtering material 45, by removing the burner ferrule 48, together with the burner 49, and, the filtering material may be conveniently removed by using the deflecting plate shanks 39, as a pair of tweezers, as indicated in Fig. VI.

As shown in Figs. II, and III, the outer end of the bracket 35, is provided with the notch 52, to receive the pivot screw 53, which is mounted in the bifurcated arm 54; on the back of the mirror 55. Said screw 53, is entered freely through the bifurcation 56, but is in screw threaded engagement with the bifurcation 57, so that by rotation of its milled head 58, said two bifurcations may be drawn together to clamp the end of said bracket 35, and retain the mirror 55, in any desired position of angular adjustment with respect to the burner 49.

As shown in section in Fig. III, the mirror 55, comprises an annular recess 60, and a flange 61, the former serving to receive the transparent cover 62, and the latter serving to retain the spring ring 63, which latter as

shown in said figure, overlaps the edge of said cover and normally retains the same in position. Said spring ring 63, is not a complete circle, its free ends 65, being separated and turned outwardly so that when drawn together, the ring is of such diameter that it may be withdrawn from the flange 61, to free the cover 62, and permit the withdrawal of the latter. It may be noted that the intensity of the light reflected from the burner flame 66, is dependent upon the precise position of said mirror with respect to said flame, and such position may be variably determined at the will of the operator, with the arrangement above described. However, in the form of my invention shown in Figs. IV, and V, the cap 68, is provided with the bracket 69, whose outer end has the rectangular socket 70, to receive the similarly shaped shank 71, in the arm 72, which is secured upon the back of the mirror 73, to retain the latter in invariable position with respect to the burner 75. Said shank 71, may be split as indicated at 76, in Fig. IV, and be set so as to frictionally engage the socket 70, to prevent its accidental displacement therefrom.

The device above described is utilized as follows:—A supply of carbid tablets 18, of predetermined gas producing capacity, is maintained in the magazine 16, shown in Fig. II, and the lamp members are normally retained in disassembled position as shown in said figure. When, however, it is desired to produce a light, an ordinary drinking vessel 25, such as is shown in section in Fig. III, is provided with a supply of water 26; the lamp casing 19, is removed from its pocket 11, in the wallet and the chamber 20, charged with one or more of the tablets 18, corresponding to the precise length of time the light will be required. The cap 32 is then removed from its pocket 12, in the wallet and connected with the upper end of the lamp casing 19, so as to seal the carbid chamber 20; the mirror is then removed from its pocket 13, in the wallet and adjusted in connection with the bracket 35, projecting from the lamp cap. The lamp casing 19, is then inserted in proper relation with the water receptacle 25, as shown in Fig. III, whereupon, the water 26, rises in the chamber 20, attacks the carbid tablet 18, and liberates acetylene gas, which rises through the passage 36, after being separated from its entrained moisture by the deflecting plate 37, percolates through the filtering material 45, and rises through the burner 49, where it may be ignited to form the flame 66.

The tablets 18, being preferably made of carbid which is comminuted, uniformly mixed with a material having no affinity for moisture, and then solidly compressed; decompose less rapidly and more uniformly

than crude carbid, and, the lamp constructed and arranged as above described is capable of using them without backward ebullition of gas through the water exterior to the lamp casing; the back pressure of gas merely lowering the water level within the chamber 20, until just sufficient water is admitted to continuously evolve gas at the rate at which it is being discharged at the burner 49; with the result that a steady flame is produced for a definitely limited time and is then extinguished, practically instantaneously, owing to the exhaustion of the carbid. Moreover, said tablets 18, are of such nature that their residue 78, precipitates through the diaphragm 21, and the open lower end of the casing 19, to the bottom of the vessel 25; so that at the completion of the operation there is nothing remaining in the lamp casing except dirty water, which may be eliminated by raising and lowering said casing a few times in the water 26, in said vessel; whereupon, the lamp members may be removed, wiped dry and restored to their normal dissembled position in the wallet as indicated in Fig. II.

It is to be understood that I do not claim the mere use of an acetylene generating lamp for the specific purpose herein contemplated. It may be noted that the charging and recharging of ordinary acetylene lamps is not only troublesome but, such lamps are not constructed or arranged to insure their operation for the definitely limited predetermined time required, and the contemporaneous discharge of the carbid residue; and therefore must retain a partly decomposed charge of carbid, which emits an offensive odor. Moreover, such acetylene lamps as are known to the prior art include in permanent relation with their other elements, a casing for a supply of water, and are not only so constructed and arranged that they cannot be carried in an ordinary pocket, but are incapable of being collapsed or dissembled so as to be operated and transported in the manner characteristic of my invention above described. Therefore, my present invention is distinguished from the prior art not only by novel features of construction and arrangement, but also by its consequent novel capacity for the particular use herein contemplated.

It is obvious that various modifications may be made without departing from the essential features of my invention, and, therefore, I do not desire to limit myself to the particular construction and arrangement herein set forth.

I claim:—

1. In an acetylene lamp, the combination with a casing comprising a carbid chamber; of a burner; a passage from said gas chamber to said burner; an imperforate moisture deflecting plate operatively related to said

passage; and, means on said plate arranged to detachably engage the wall of said passage, substantially as set forth.

2. In an acetylene lamp, the combination with a burner; of a casing comprising a carbid chamber provided with a water inlet open to the atmosphere; means connecting said carbid chamber with said burner; a collar fitted to slide longitudinally on said casing; and, a resiliently movable finger extending from said collar arranged to embrace a support between said casing and said finger, substantially as set forth.

3. In a portable acetylene lamp, the combination with a casing comprising a carbid chamber; of a cap for said chamber comprising a flange arranged to detachably engage said casing, and a tube projecting above and below said flange; a burner in the upper end of said tube; and, a moisture deflecting plate carried by the lower end of said tube, substantially as set forth.

4. In a portable acetylene lamp, the combination with a casing comprising a carbid chamber; of a cap for said chamber comprising a flange arranged to detachably engage said casing; and a tube projecting above and below said flange; a burner mounted in the upper end of said tube; a moisture deflecting plate carried by the lower end of said tube; and, means to detachably connect said plate with said tube, substantially as set forth.

5. The combination with a portable water receptacle 25, open to the atmosphere at its top; of a separable cylindrical casing 19, in said receptacle containing a relatively immovable support for carbid, comprising a foraminous diaphragm coextensive with the transverse area of said casing, and an unobstructed chamber below said diaphragm, having an unrestricted water inlet at its lower end maintaining communication with said receptacle so far below said diaphragm that the water pressure in said casing below said diaphragm balances the gas pressure above the same; a removable cap at the upper end of said casing, comprising a tube 34, extending within the latter; a moisture deflecting plate at the inner end of said tube; a burner mounted in the outer end of said tube in rigid relation therewith; and, a mass of absorbent material between said plate and said burner, substantially as set forth.

6. In an acetylene lamp, the combination with a burner; of a casing comprising a carbid chamber provided with a water inlet open to the atmosphere; means connecting said carbid chamber with said burner; a collar fitted on said casing; and means carried by said collar arranged to engage a support between said casing and said means, substantially as set forth.

7. In an acetylene lamp, the combination with a burner; of a casing comprising a

carbide chamber provided with a water inlet open to the atmosphere; means connecting said carbide chamber with said burner; an adjustable collar on said casing; and means  
5 carried by said collar arranged to engage a support between said casing and said means, substantially as set forth.

In testimony whereof, I have hereunto signed my name, at Philadelphia, Pennsylvania, this 17th day of October 1903.

EDWIN M. ROSENBLUTH.

Witnesses:

ARTHUR E. PAIGE,  
E. L. FULLERTON.