

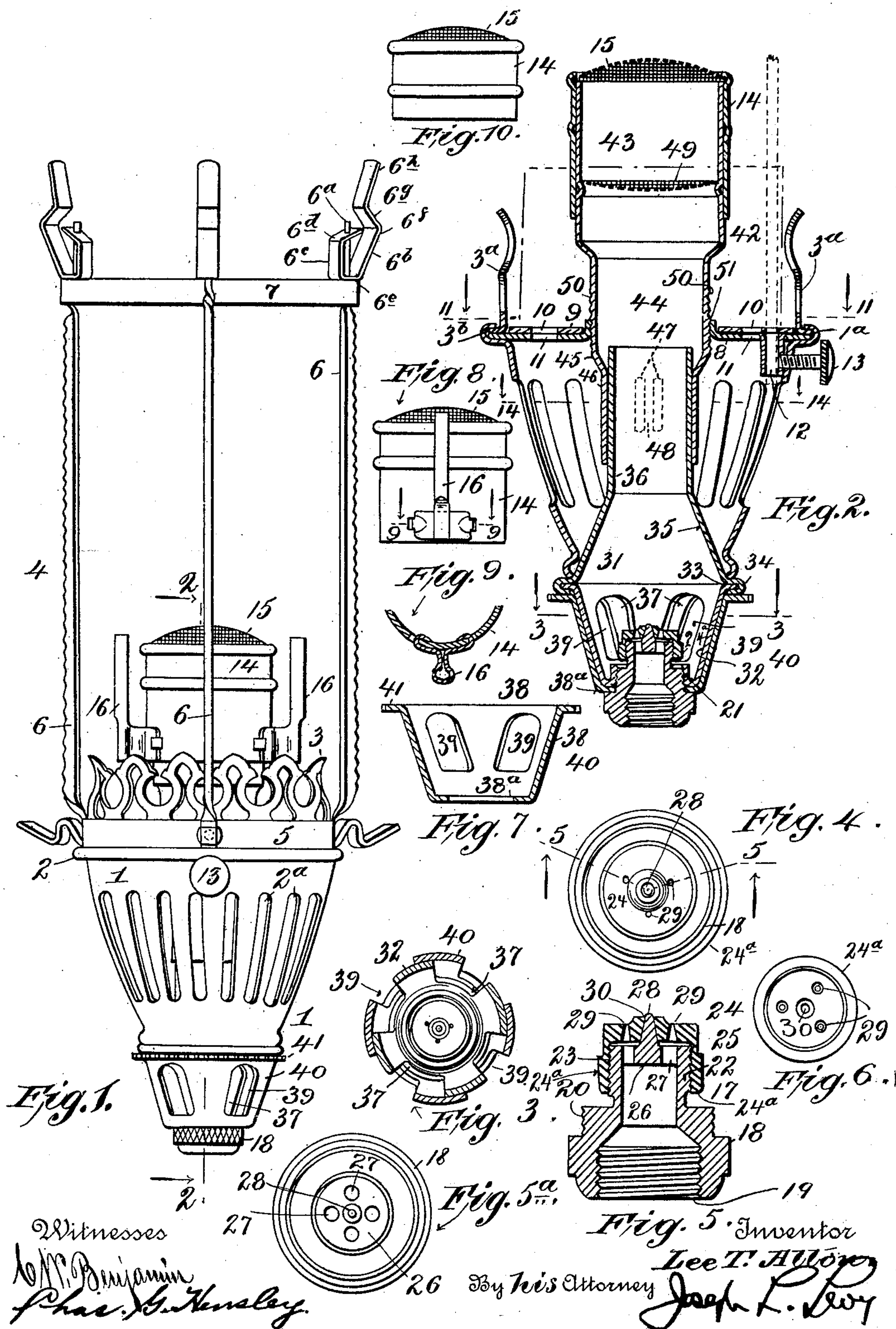
No. 763,587.

PATENTED JUNE 28, 1904.

L. T. ALTON.
INCANDESCENT GAS BURNER.
APPLICATION FILED JULY 30, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



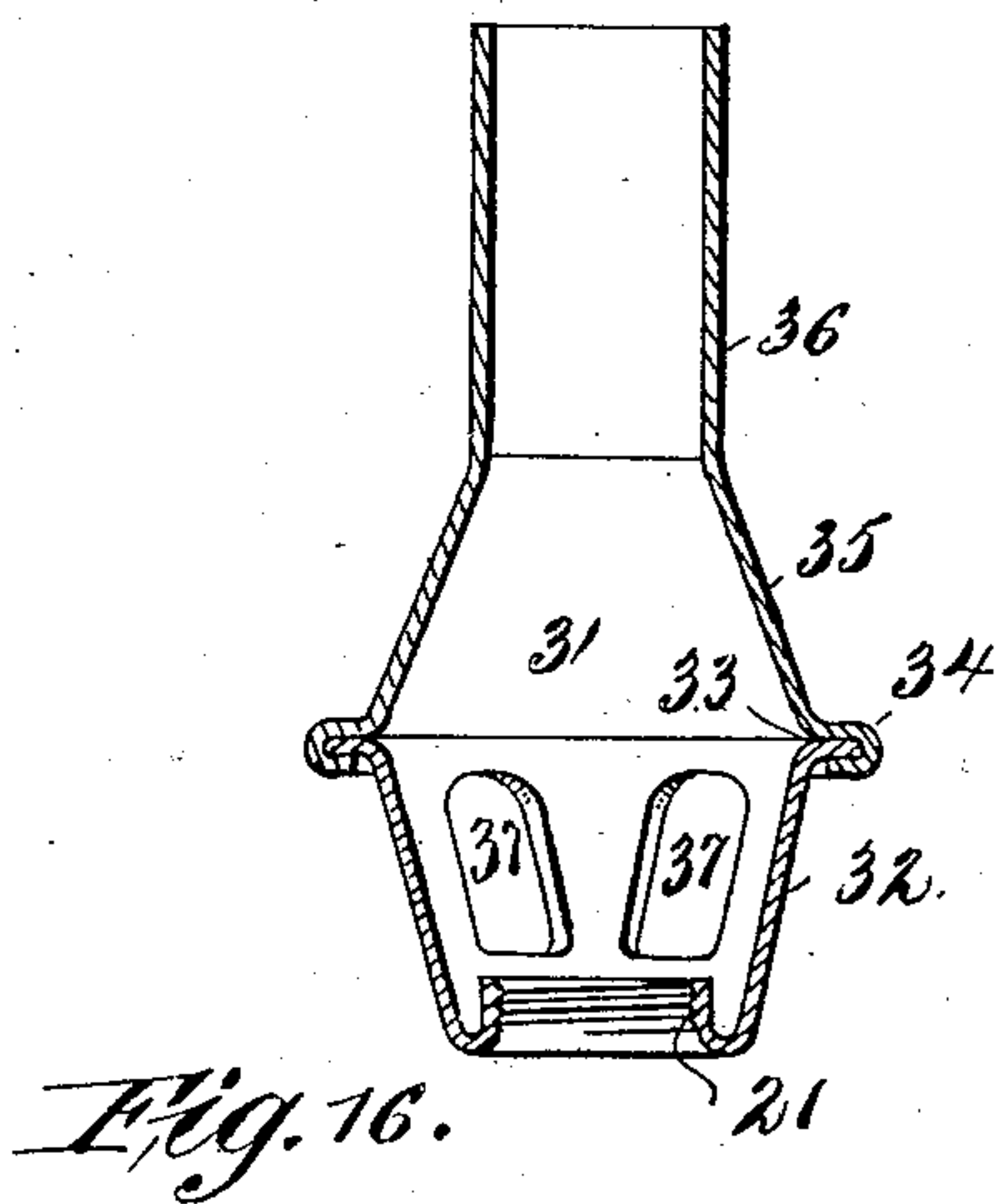
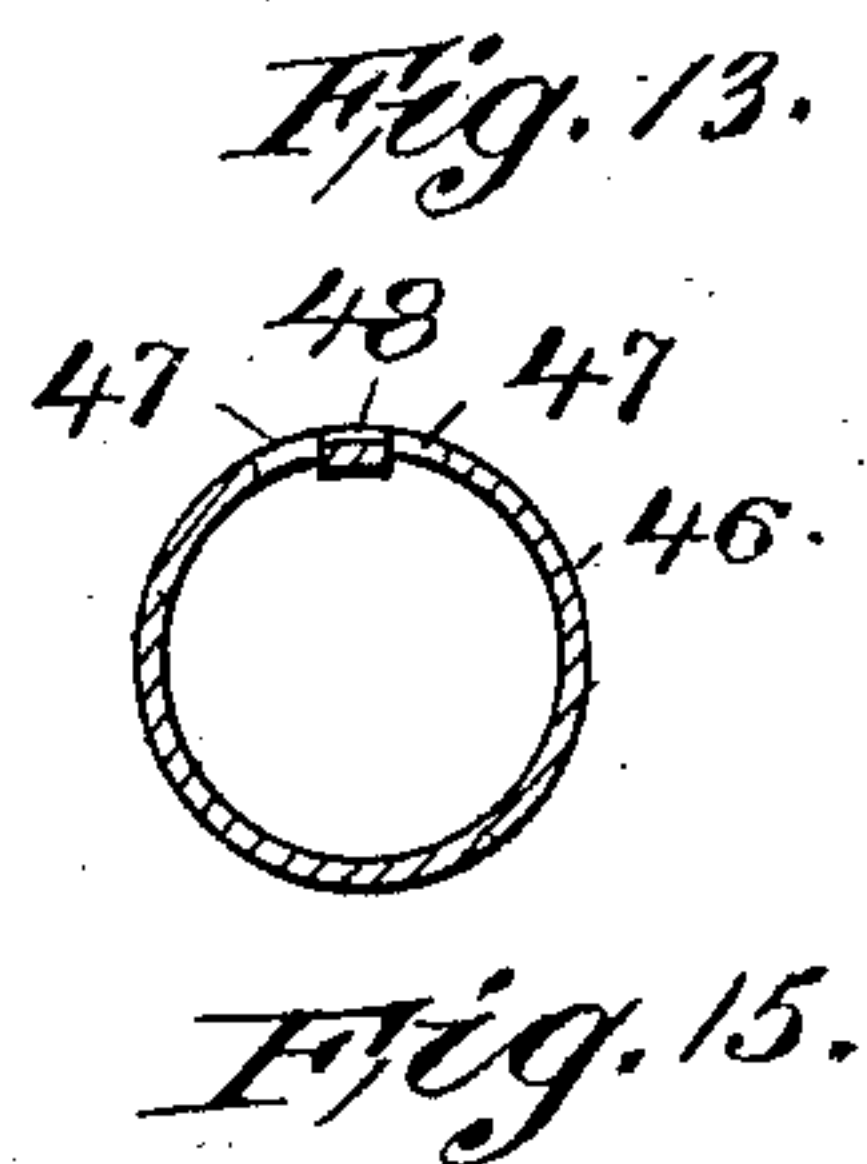
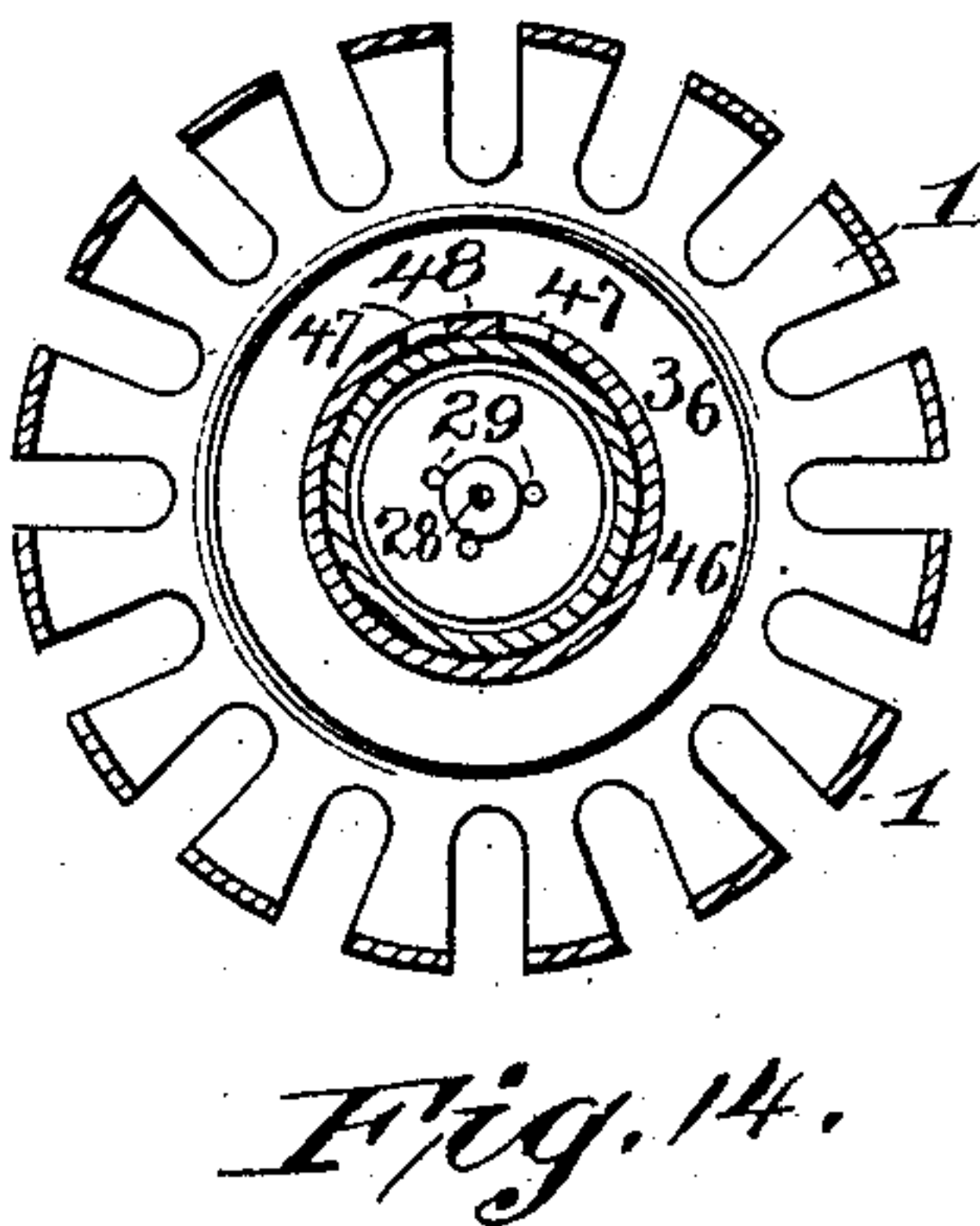
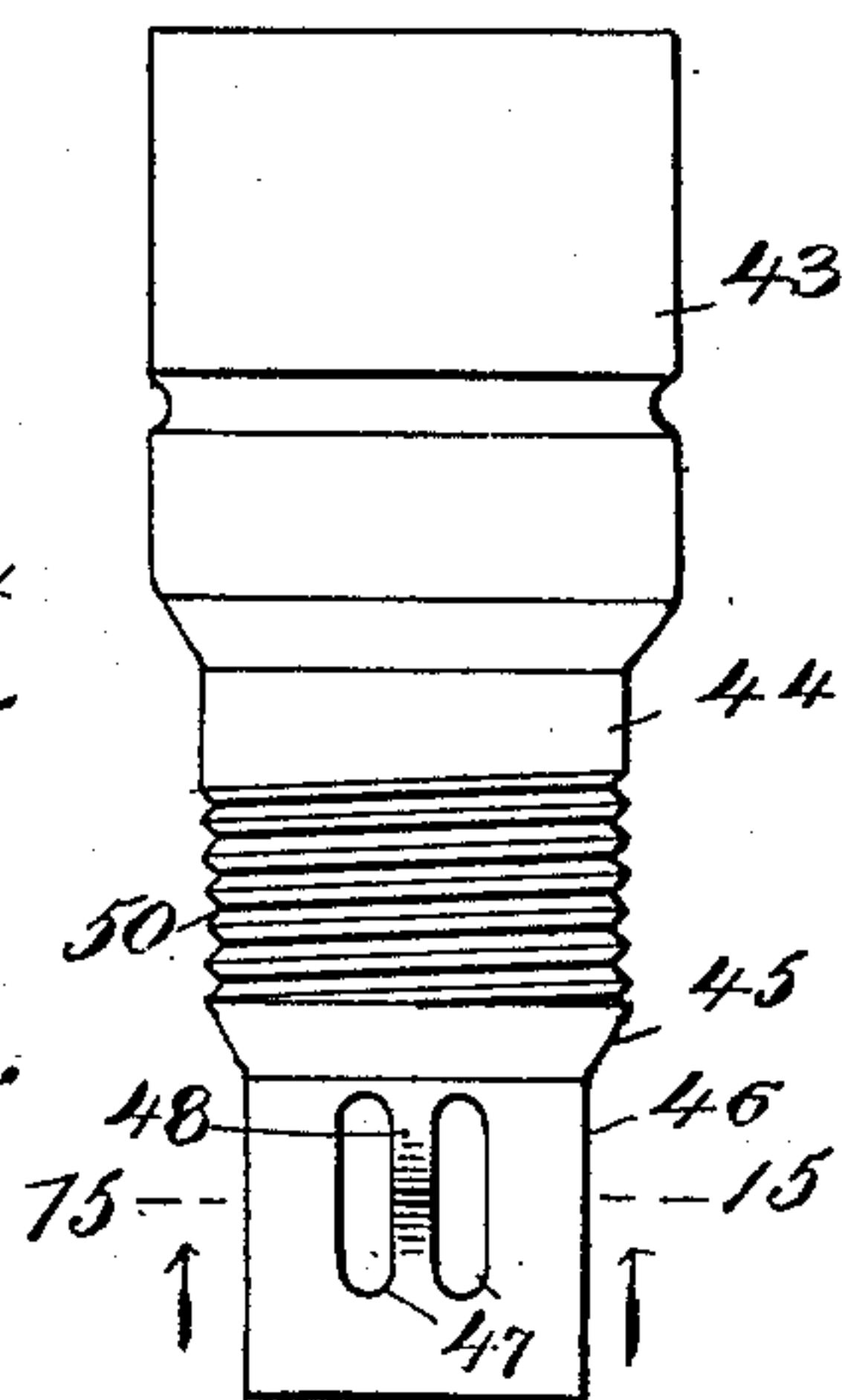
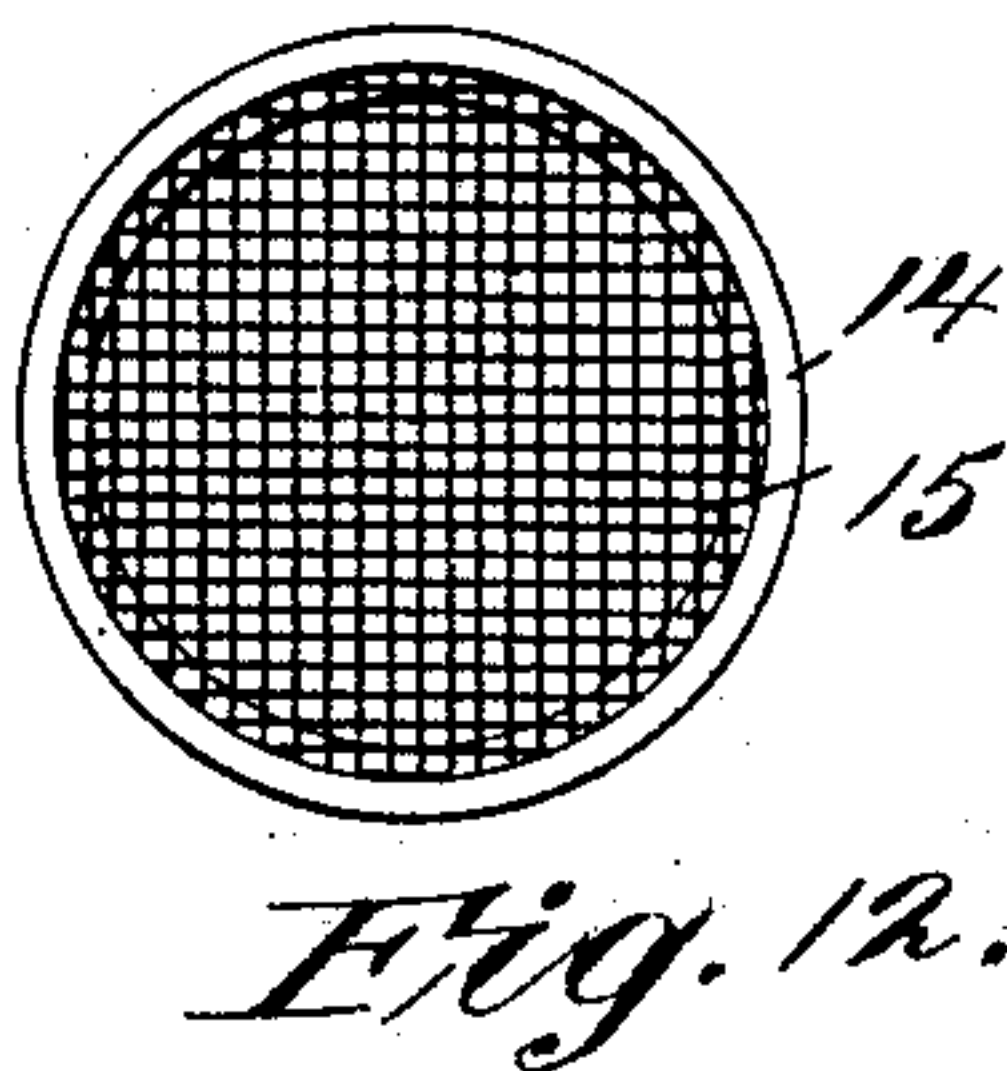
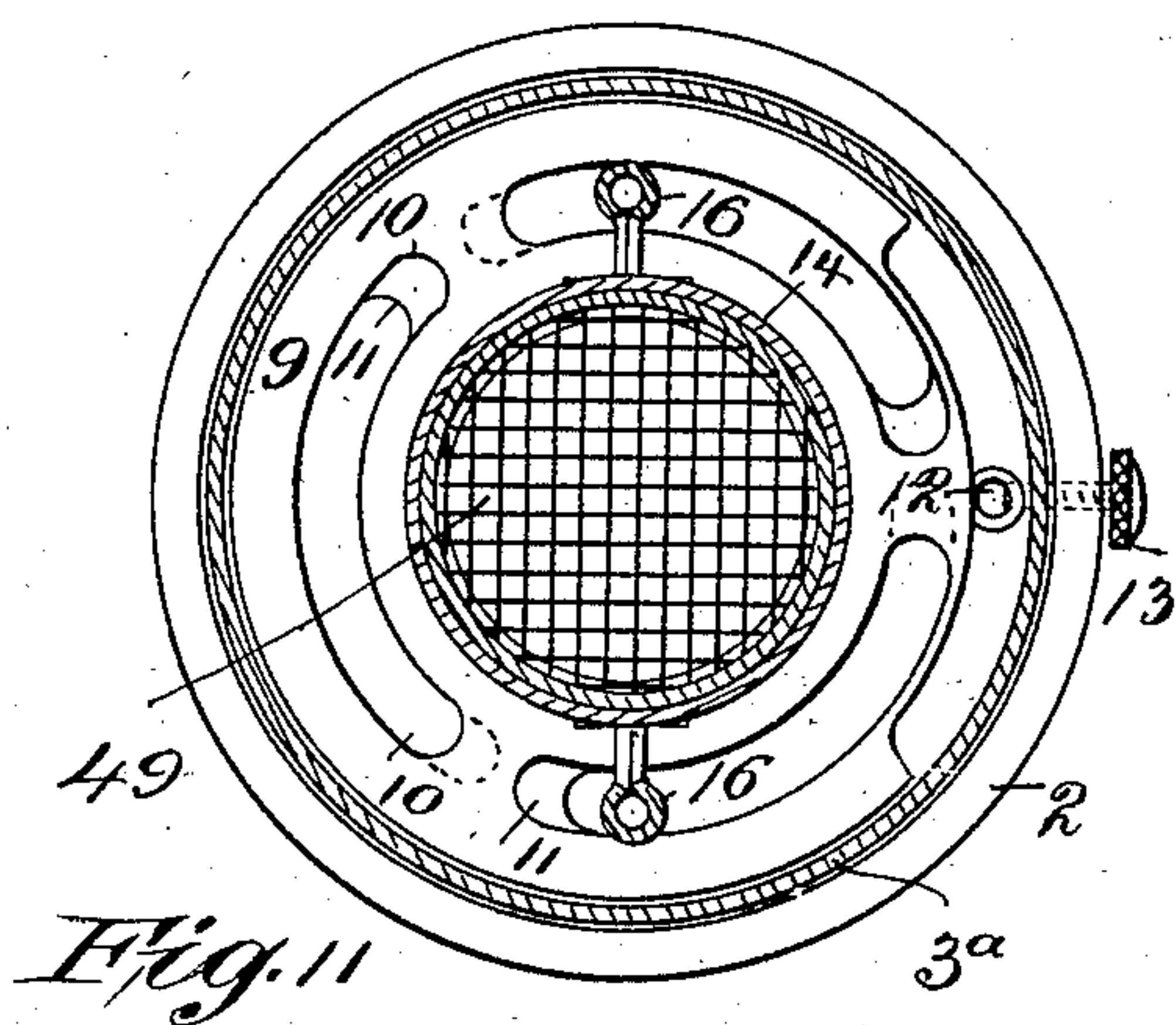
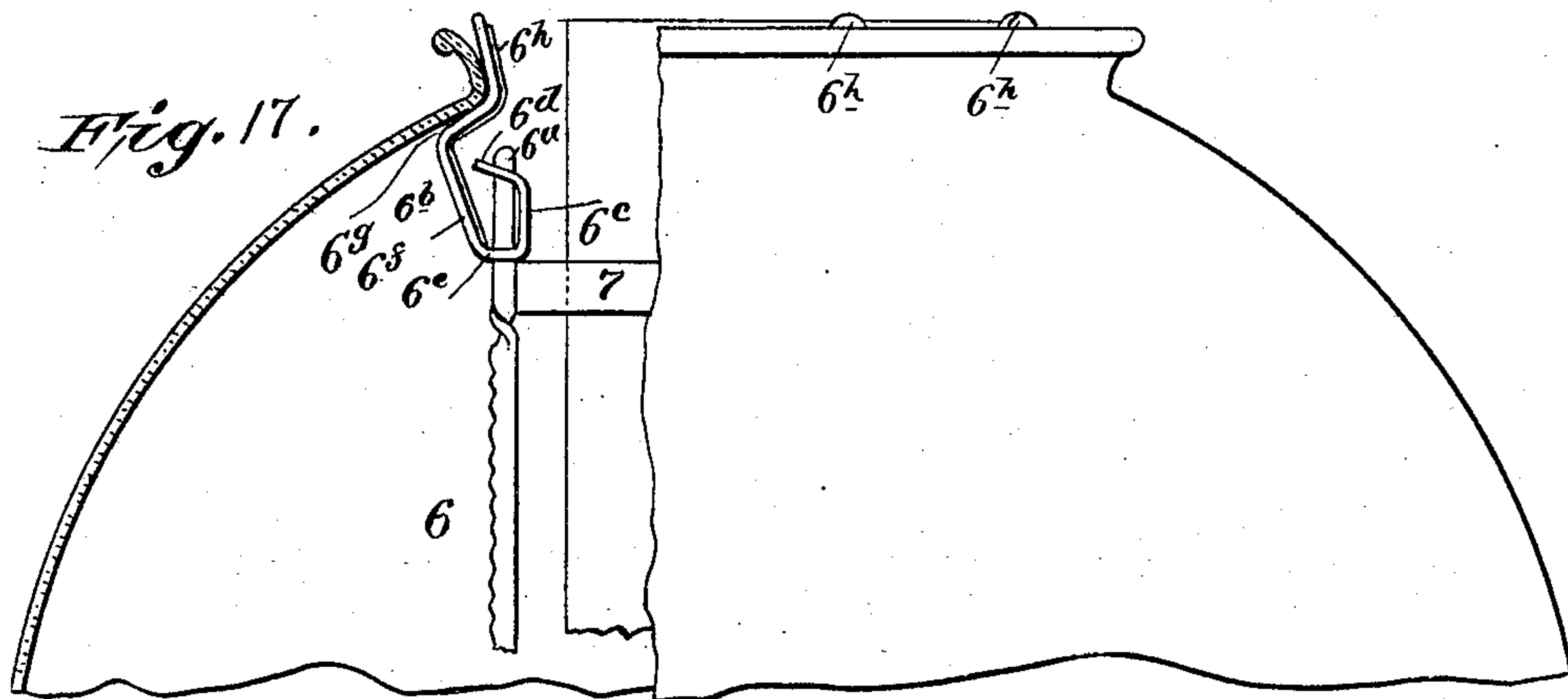
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2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

LEE T. ALTON, OF NEW YORK, N. Y.

INCANDESCENT GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 763,587, dated June 28, 1904.

Application filed July 30, 1903. Serial No. 167,528. (No model.)

To all whom it may concern:

Be it known that I, LEE T. ALTON, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Incandescent Gas-Burners, of which the following is a specification.

My object is to produce a burner for an incandescent gas-lamp which is simple in construction without increasing the cost of manufacture over burners in common use and which will produce new and improved results and giving increased light without increasing the amount of gas employed.

One of the objects of my invention is to produce a lamp the parts of which may be readily assembled and disassembled, the parts being interchangeable, and by the use of a double mixing-chamber, a longitudinally-adjustable tube, and a conical air-inlet chamber I am enabled to accomplish results which make the lamp a decided advance in the art.

A further detail of my invention is the construction of the gas-check, comprising a plug and a cap, wherein a series of holes are formed in a cap and plug, and a needle-valve passing through a circular opening in the cap, which may be used to regulate the supply of gas without affecting the supply passing through the first-mentioned holes in the cap.

Another object of my invention is to provide an air-inlet chamber with a shutter for regulating the introduction of air into the Bunsen tube, which may be easily adjusted and which will produce an elongated air-opening when adjusted—that is, the air-admitting opening at all periods of its open condition. I have also produced in my burner a novel construction of shade-holder wherein I am enabled to use a chimney of greater diameter and the shade of regulation size without altering the general construction of the frame, the holder also preventing the shifting of the shade.

Further details of improvement are shown and described herein and finally pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of the burner and shade-holder. Fig. 2 is a cross-

section of the same on the line 2 2 of Fig. 1. Fig. 3 is a transverse cross-section of the air-admitting chamber on the line 3 3 of Fig. 2. Fig. 4 is an enlarged plan view of the gas-check. Fig. 5 is a vertical cross-section of the check and its cap on the line 5 5, Fig. 4. Fig. 5^a is a plan view of the check-plug with the cap removed. Fig. 6 is an inverted plan view of the cap removed. Fig. 7 is a vertical cross-section of the air regulator or shutter. Fig. 8 is a side elevation of an ordinary cap which covers the top of the mixing-chamber. Fig. 9 is a partial sectional view on the line 9 9 of Fig. 8. Fig. 10 is a side elevation of the cap of usual construction. Fig. 11 is a sectional plan view, on the line 11 11 of Fig. 2, of the burner with the cap and top frame removed. Fig. 12 is a plan view of the caps, showing the difference in size of gauze from that used inside the mixing-chamber. Fig. 13 is a side elevation of the tube comprising the double mixing-chamber. Fig. 14 is a cross-section on the line 14 14 of Fig. 2. Fig. 15 is a cross-section on the line 15 15 of Fig. 13. Fig. 16 is a vertical section of the tube containing the air-admitting chamber. Fig. 17 is a perspective view, partly in section, of the shade-support.

Fig. 1 shows the lamp assembled and ready for use, with the omission of the chimney and globe, also the mantle.

1 represents the basket or lower framework of the lamp, having an outwardly-extending flange 2, openings 2^a, and upwardly-curved fingers 3, in which the chimney is inserted in the usual way similar to various lamp constructions. Over the fingers 3 is passed the upper framework 4. This consists of the circular band 5, from which extends upwardly vertical rods 6, and having a top band 7 secured near the ends thereof. On the top 6^a of the rod 6 are placed arms 6^b, consisting of a flat piece of metal having the vertical part 6^c, two outwardly-extending portions 6^d and 6^e, and outwardly and upwardly extending portions 6^f, then turned inwardly and upwardly at 6^g to form a shoulder on which the shade is adapted to rest, and finally terminating in the vertical arms 6^h. By placing the globe on the shoulders 6^g the arms 6^h serve

to hold it from shifting from side to side. By thus constructing the shade-holder I am enabled to use a lamp-chimney larger than can ordinarily be used with the ordinary-size shade.

The band 5 of the top frame is adapted to pass over the fingers 3, forming a tight fit and resting on the flange 2 of the basket. I prefer to use this construction, as the top frame-work is readily removable from the lower part.

The band 3^a, on which the fingers 3 are formed, may be constructed with a flange 3^b extending outwardly, pressed into and secured by a rim 1^a on the basket. I also provide a disk 8, which is likewise held by the rim 1^a, the latter being pressed about the flange 3^b and disk 8. I prefer to provide an air-shutter 9, which is formed in circular disk shape, having openings 10, adapted to register with the openings 11 in the disk 8.

The shutter 9 and disk 8, with their openings 11 and 10, respectively, form a damper.

The shutter 9 may be laid or secured in the disk 8, so as to be turned by the fingers and assembled, so that when the gas requires air to be admitted within the chimney the shutter 9 may be turned until the holes 10 register with the holes 11 of the disk 8, thereby increasing or decreasing the amount admitted into the chimney.

The ordinary aperture 12 is provided in the disk 8 and the screw 13, the former to receive the wire holder for the mantle where a single rod is used, the screw being to hold the rod.

Where it is desired to use a double rod for holding the mantle, a cap for the top of the mixing-chamber, such as is shown in Fig. 8, may be provided instead of that shown in Fig. 10, which is made in the usual manner, consisting of a cylindrical portion 14, having a sieve 15 on top and provided with arms 16 on either side to receive a double rod.

17 represents the gas-check, comprising the plug 18, having internal threads 19 to correspond with the threads on the end of the ordinary gas-pipe and external threads 20 to correspond with the internal threads 21 of the air-chamber.

Above the threads 20 is provided a neck 22, having exterior threads 23 and on which is screwed a cap 24 by means of the threads 25. The cap is provided with a flange 24^a, so that the cap may be readily adjusted through the apertures 37 and 39. The neck 22 is also provided with a top disk 26, having circular apertures 27, and a centrally-vertical needle 28. The cap 24 is provided also with circular openings 29 and the central conical opening 30 to receive the needle 28. The apertures 29 are adapted to be free for the admission of gas at all times, and it may allow what may be called the "normal" supply of gas. The cap 24 is unscrewed, access being had through the open-

ings 37 and 39 to the cap until the cap rises and the needle recedes from the aperture 30 and allows the increased supply to pass through aperture 30. I have found this a very novel and desirable way of constructing the gas-check, as it answers all purposes for which it is desired. The gas is always admitted through circular openings, which is very desirable.

Over the threads 20 is screwed an air-chamber 31, which has the conical wall 32 and a lateral flange 33, about which is bent the flange 34 of the upper portion 35 of the air-chamber. The upper portion of the air-chamber is made conical by the walls 35, the conical portion being the reverse of the lower half of the air-chamber and terminating in a cylindrical neck 36. The lower wall 32 is provided with elongated openings 37, which are made longitudinally of the walls and preferably extend substantially the full length of the lower half of the air-chamber.

About the lower half of the air-chamber I provide a shutter 40, corresponding to the walls 32, having a lateral flange 41 and openings 39 to register with the openings 37. This shutter is held in place by the plug 17, which secures it against the air-chamber 32 at 38^a. By loosening the plug 17 the shutter 38 may be turned so that the openings 39 register with the openings 37 in the wall 32, thereby increasing or decreasing the quantity of air admitted into the chamber. I prefer that these openings in the slots be made elongated in the shape herein illustrated, so that as the shutter is turned to close the openings the openings will remain elongated.

The mixing-chamber 42 is composed of a large upper chamber 43 and a smaller mixing-chamber 44 beneath. The chamber is reduced at 45 and terminates in the cylindrical tube 46, the latter being adapted to surround the neck 36 of the air-chamber and slide up and down over it.

By means of the slots 47 in the tube 46 the spring 48 is formed, which serves to hold the necks 46 and 36 tightly together. By making the lower cylindrical chamber 44 one diameter and the other mixing-chamber, 43, of a greater diameter I have secured improved results. This differs from all other forms of mixing-chambers, as it allows the gas to expand as it reaches the intense heat of the mantle. When the gas and air enters the chamber 44, it expands sufficiently to fill that chamber, commingles, and again expands, when it enters the chamber 43, passing to the point of combustion.

Above the center of the upper mixing-chamber I provide a sieve 49, of gauze, of larger mesh than in the gauze on the cap 14. Exterior of the chamber 44 are provided threads 50, which correspond with the threads 51 of the plate 8. By turning the mixing-chamber the latter may be secured, through the plate

8, at any desired height, so that the length of the chamber 44 may be increased or decreased by telescoping the two cylindrical parts 46 and 36 to suit the peculiar requirements of the gas-supply. By making the lower air-chamber in the double conical shape I have here shown I secure a much better draft through the apertures 37 and 39, as there is a suction created not only from the sides, but from the bottom, and as the air and gas pass upwardly it strikes the conical wall 35 and is then forced through the tube 36, which gives the lamp a very strong draft.

From the illustration and description it will be readily seen how simple the various parts are and how easily the lamp may be disassembled, the lower chamber being removed from the basket and the mixing-chamber unscrewed from the plate 8 very quickly. The upper frame 4 may be removed from the basket by lifting upwardly and over the fingers.

Having described my invention, what I claim is—

1. A gas-burner comprising a Bunsen tube having a conical lower part, apertures in said conical portion, a shutter, a gas-check, said shutter being secured to the bunsen by said gas-check, and the shutter being provided with apertures to register with the apertures in the Bunsen tube.

2. A gas-burner having a tube, a shutter therefor, a gas-check having a neck, said check being adapted to enter said tube, the shutter rotating on said neck, and a shoulder on the check adapted to adjustably secure the shutter against the said tube.

3. A gas-burner having a basket, a tube passing upwardly through said basket, a plate across the upper portion of said basket having apertures therein, a plurality of mixing-chambers of different diameters secured through said plate and connecting with said tube, and a shutter on said plate, with apertures adapted to register with the apertures in said plate.

4. A gas-burner having a basket, a top frame secured thereon, having upright arms, means for supporting a shade comprising arms bent upwardly, thence inwardly and again upwardly.

5. A gas-burner having a basket, a top frame having upright arms, shade-holders

thereon comprising arms bent to form an outwardly-extending shoulder for the shade; and an upright arm above said shoulder.

6. In an incandescent gas-lamp, a basket, a Bunsen burner in the said basket, and a damper connecting the top of said basket with said burner.

7. In an incandescent gas-lamp, a basket, a Bunsen burner-tube comprising two telescoping parts, and means connecting said basket with one of said parts so that by revolving the basket, the tube will be lengthened or shortened.

8. In an incandescent gas-lamp, a Bunsen burner, a basket, surrounding the same, a damper connecting said burner and basket at the top of the basket.

9. In an incandescent gas-lamp or similar device, a Bunsen burner comprising a plurality of telescoping parts, a basket surrounding said burner, and a damper connecting one of said telescoping parts with the top of said basket so that the length of the Bunsen tube may be changed by revolving the basket.

10. In an incandescent gas-lamp or similar device, a Bunsen burner comprising a tube with parts adapted to telescope on each other, and means for preventing said parts from revolving independently of each other.

11. In an incandescent gas-lamp or similar device, a Bunsen burner comprising a tube with a plurality of telescoping parts, means on some of said parts for preventing one part from rotating independently of an adjacent part, a basket surrounding a portion of said tube and means connecting said basket and tube so that its length may be changed by revolving said basket.

12. In an incandescent gas-lamp or similar article, a Bunsen burner comprising a tube with telescoping parts, a check to which said parts are secured, a lower mixing-chamber adjacent to said check, a basket resting on said mixing-chamber, and means connecting said basket and tube so that by revolving said basket, the length of the tube may be changed.

Signed in the city, county, and State of New York this 29th day of July, 1903.

LEE T. ALTON.

Witnesses:

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SOPHIE SEKOSKY.