No. 711,298. Patented Oct. 14, 1902.

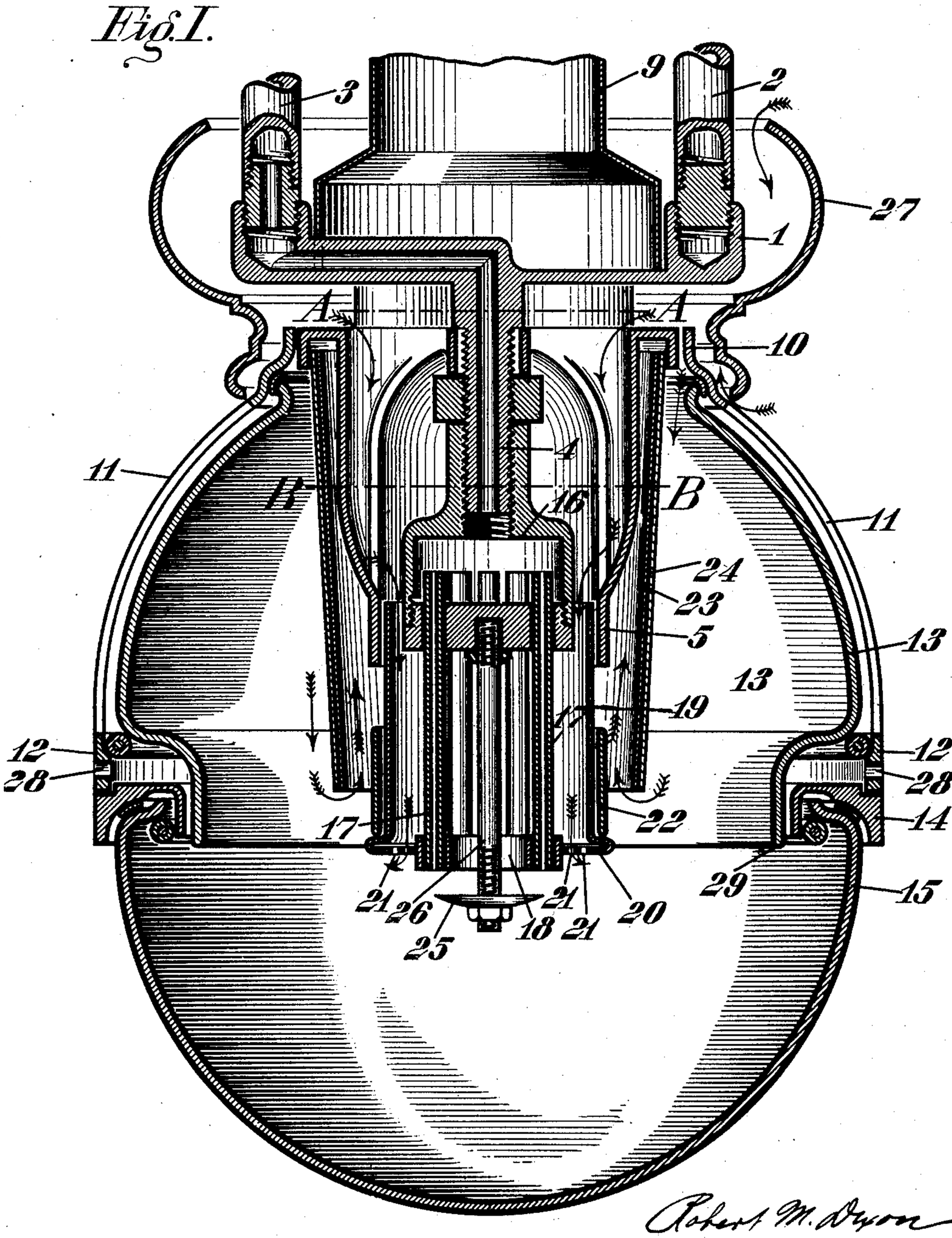
R. M. DIXON.

LAMP.

(Application filed June 12, 1901.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



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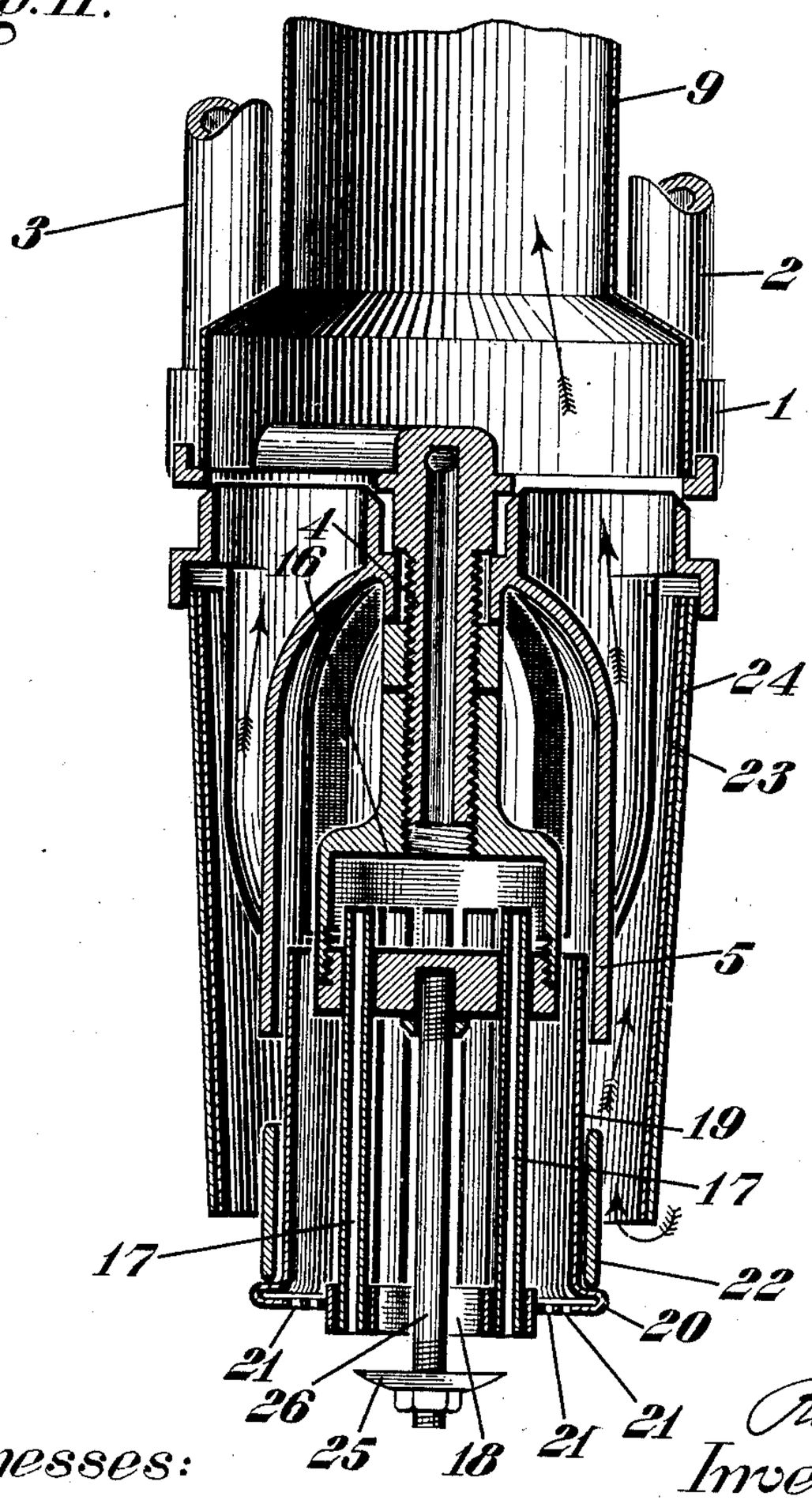
3 Sheets—Sheet 2.

Fig. II.



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(No Model.) 3 Sheets—Sheet 3.

Fig. III.

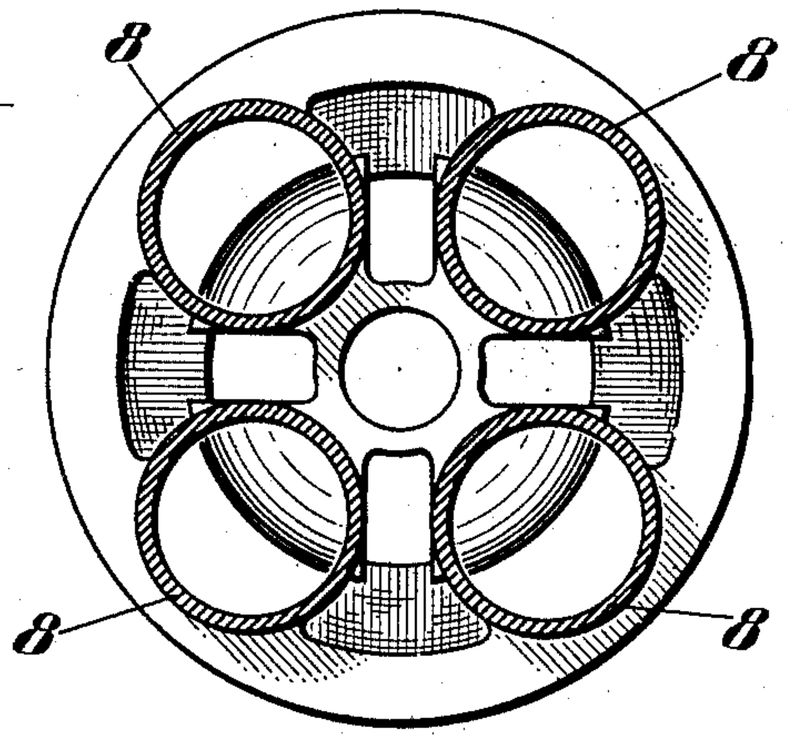


Fig. V.

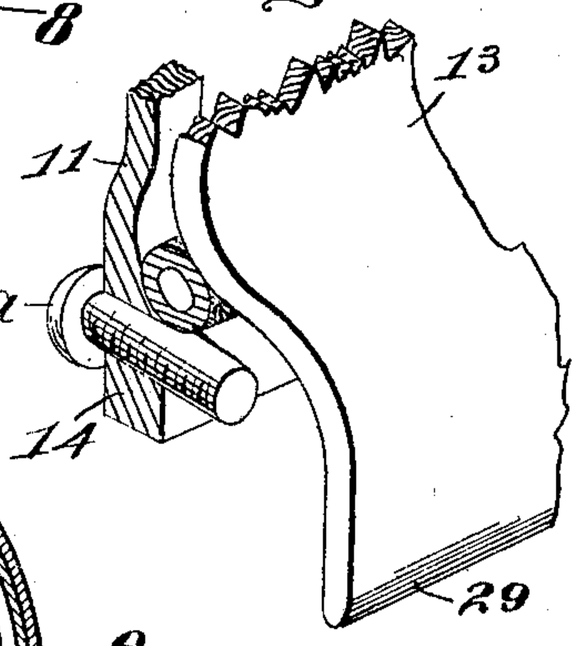


Fig. IV.

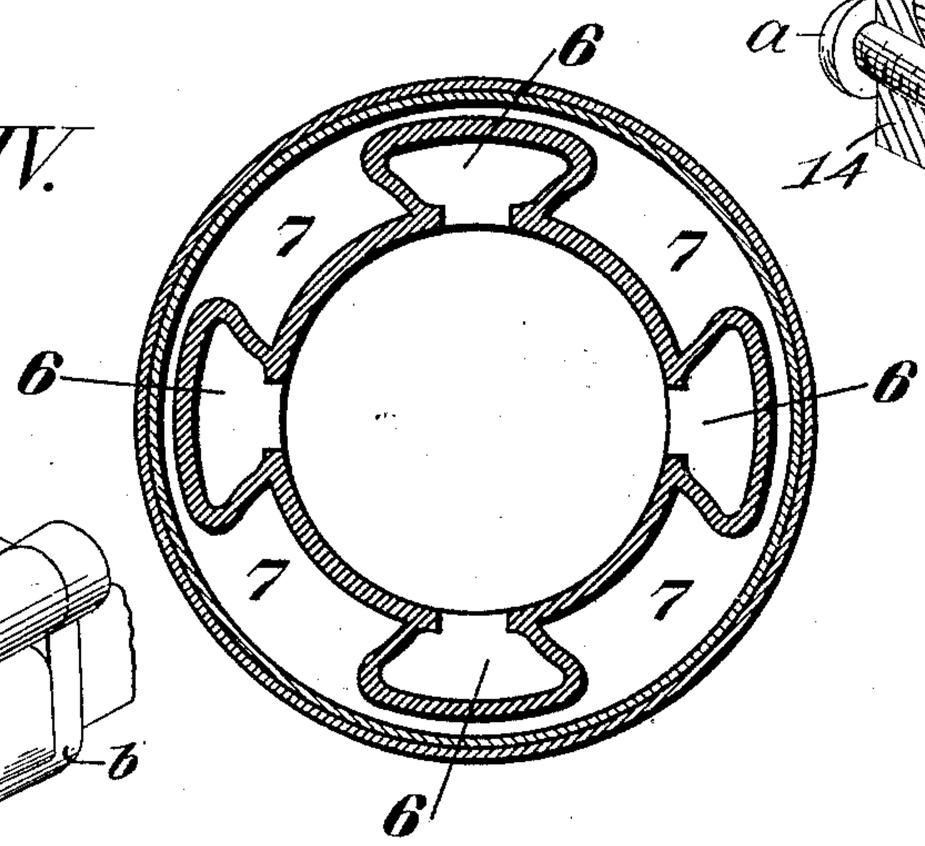
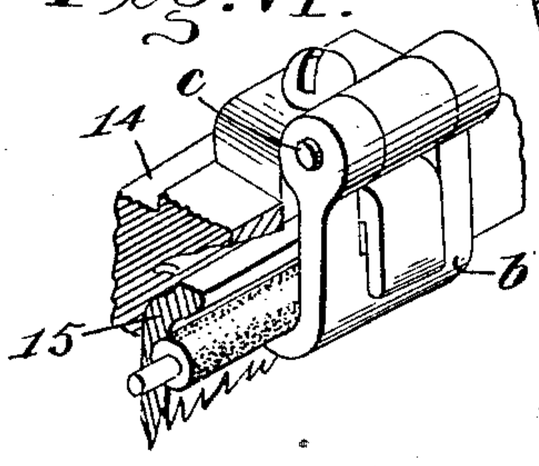


Fig. VI.



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UNITED STATES PATENT OFFICE.

ROBERT M. DIXON, OF EAST ORANGE, NEW JERSEY.

LAMP.

SPECIFICATION forming part of Letters Patent No. 711,298, dated October 14, 1902.

Application filed June 12, 1901. Serial No. 64,203. (No model.)

To all whom it may concern:

Be it known that I, ROBERT M. DIXON, a citizen of the United States, residing at East Orange, Essex county, New Jersey, have invented certain new and useful Improvements in Lamps, of which the following is a specification.

My invention relates to lamps, and will be described more particularly with reference to car-lamps, to which it is particularly applicable.

The principal objects of my invention are to improve the construction of lamp-burners and to produce a lamp in which the light radiation will be to a very large extent unobstructed by opaque parts.

In the accompanying drawings I have shown by way of illustration a structure in which one form of my invention is embodied, which structure is shown as a suspended car-lamp of the inverted regenerative Argand-burner type.

In the drawings, Figure I is a vertical transverse section through the lamp. Fig. II is a similar section through the lamp, the section being taken at an angle to the section shown in Fig. I. Fig. III is a section through the draft-chimneys of the center casting on the line A A of Fig. I, and Fig. IV is a section through the center casting on the line B B of Fig. I. Fig. V is a detail view showing one of the supporting means for the dome, and Fig. VI is a detail view showing one of the globe-supporting means.

In the drawings, 1 indicates the support-casting of the lamp, which is shown as suspended by suspension devices 2 3, the suspension device 3 being a gas-pipe for conducting gas to the lamp. The support-casting 1 is provided with an externally-threaded nipple or pipe 4, from which the parts of the burner are supported, as will be hereinafter explained.

Supported from the support-casting is a "center casting" 5. The function of this center casting is to form a double conduit or set of conduits, one for the descending air-current, which feeds the flame, and the other for the ascending products of combustion.

Referring for the moment particularly to Figs. III and IV, 6 represents the channels through which the descending current of air passes, and 7 the passages through which the ascending products of combustion pass. The passages 7 deliver into tubular chimneys 8, which deliver into the draft-tube 9. Supported from the support-casting 1 is a suitable top ring 10, from which depend narrow arms 11, of which there may be several, which arms bear a support-ring 12, from which the dome 13 of the lamp is supported from beneath. Secured to the support-ring 12, preferably by hinges and catches, (not shown,) is a bezel 14, which supports a globe or bowl 15. The globe and dome protect the flame from disturbing air-currents.

In Fig. V, I have shown one of the dome-supporting means as a screw *a*, passing through the support-ring 12, and in Fig. VI, I have shown one of the globe-supporting means as a latch *b*, pivoted to the bezel 14 at *c* and projecting beneath the inturned edge of the globe 15.

Centrally suspended in the lamp by means of the threaded tube or nipple 4 is a regenerative gas-burner of the inverted Argand type, which is shown as consisting of a suitable chamber 16, from which depend gas-conducting burner-tubes 17, which are socketed or otherwise secured in a ring 18. Surrounding the burner-tubes and extending to within a short distance above their delivery ends is an air-conducting casing 19, having an inturned edge 20, pierced at 21 for the downward passage of air to feed the top of the flame. The air-conducting casing 19 is surrounded by a suitable reflector 22, which reflector is preferably in the form of a porcelain ring. Surrounding the center casting and burner is a suitable draft tube or chimney 23, which is preferably covered by a draft-casing 24, conforming in shape thereto. The chimney 23 is adapted to remove the products of combustion from the immediate vicinity of the flame and to deliver them to the passages 7, extending through the center casting 5, and the outer surface of the draft-casing is also adapted to act as a reflector, as its outer surface is a reflecting-surface. A suitable spreader is provided, which is shown in the present instance as a porcelain-coated button 25, mounted adjustably upon a supporting-rod 26. The lamp is surmounted by a crown-piece 27, and provision is made for a

globe-wash. For this purpose apertures 28 are provided in the ring 12, through which apertures air enters and passes between the flange 29 of the dome and a ring 14, passing over the inner surface of the globe, and serves to cool the same.

It will be observed that the radiation of the light from the flame is to a great extent unobstructed and that the flame will radiate light in substantially all directions. It will also be observed that the dependent flange 29 of the dome protects the rings 12 and 14 to a considerable extent from the intense radiation of the flame and in addition serves as a reflector to reflect the light.

The operation of the lamp is as follows: Air enters at the top and around the lower edge of the crown-piece 27 and passes downward through the conduits 6 to the air-conducting casing 19, part of the air passing between the burner-tubes to the middle of the flame and part of the air passing through the apertures 21 to the top of the flame. The spreader 25 serves to spread the flame, so that the flame will be practically a continuous annular flame with an upturned outer edge, although the flame itself is constituted by a series of independent jets. The products of combustion pass upward over the air-conducting casing into the space between the air-conducting casing and the draft-casing 24, passes through the channels or ducts 7 to the chimneys 8, and thence to the draft-tube 9. It will thus be seen that a powerful regenerative effect is produced and that the burner will be highly efficient in operation.

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

1. In a lamp, the combination of a globe and a dome, constituting a substantially closed chamber, a suspended burner and a draft-casing, located within the said closed chamber, coöperating with the burner, the space around the said draft-casing and burner being entirely unobstructed throughout the entire extent of the inclosing chamber.

2. In a lamp the combination of a burner of the inverted Argand type, a center casting provided with passages for directing the downward flow of air, and with passages for directing the upward flow of products of combustion, a casing 19 surrounding the said burner and adapted to conduct air to the top of the flame and a casing 24 suspended by its upper portion, surrounding the last-mentioned casing and the center casting and forming one of the walls of the passages through the center casting for directing the upward flow of products of combustion.

3. In a lamp, the combination of a burner of the inverted Argand type including burner-tubes 17 and a spreader-button below the tubes, a casing 19 surrounding the said burner and adapted to conduct air downwardly thereto and a draft-casing 23 surrounding the said last-mentioned casing and suspended by its upper portion and adapted to conduct products of combustion upward away from the burner.

4. In a lamp, the combination of a substantially closed chamber constituted by translucent material of a substantially globular shape so as to permit the radiation of light in substantially all directions, a suspended burner having its gas-delivery point at substantially the center of the globular inclosing chamber, and a draft-casing 23 suspended by its upper portion surrounding the said burner, and having its lower end terminating in close proximity to and above the gas-delivery point of the burner so that the said casing serves as a draft-casing for directing the flame within its periphery and as a reflector for the light, the space within the globular inclosing chamber around the draft-casing and burner being entirely unobstructed throughout the entire extent of the said inclosing chamber.

5. In a lamp, the combination of a substantially closed chamber constituted by translucent material of a substantially globular shape so as to permit the radiation of light in substantially all directions; an inverted Argand burner located within the said closed chamber and a draft-casing supported from the end thereof at or near the periphery of the globular chamber, and surrounding the said burner, the space between the globular inclosing chamber around the draft-casing and burner being entirely unobstructed throughout the entire extent of the said inclosing chamber.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 8th day of June, 1901.

ROBT. M. DIXON.

Witnesses:
H. C. HUNTER,
GEO. E. MORSE.