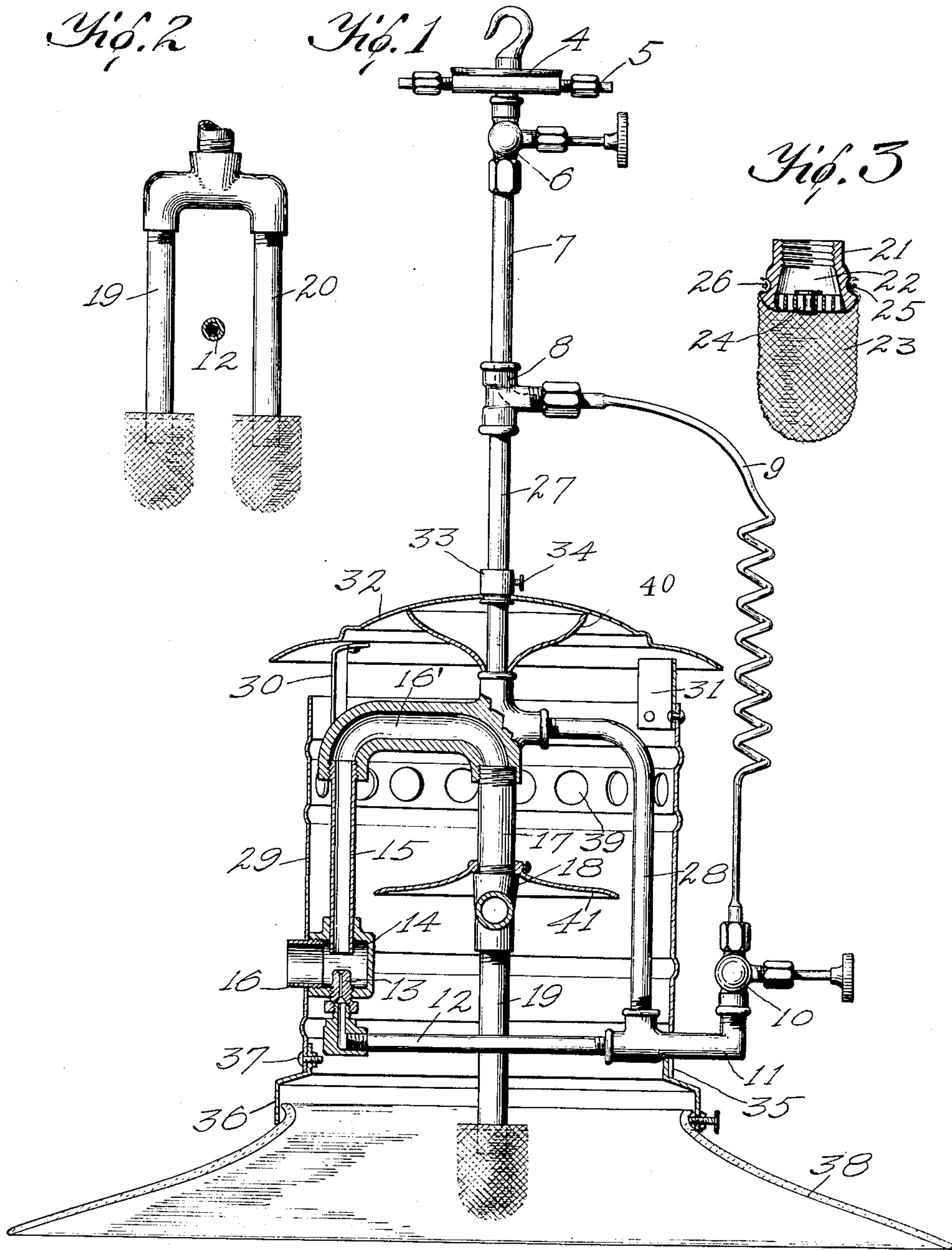


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GASOLENE OR VAPOR LAMP.  
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# UNITED STATES PATENT OFFICE.

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## GASOLENE OR VAPOR LAMP.

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Specification of Letters Patent.

Patented Aug. 3, 1909.

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*To all whom it may concern:*

Be it known that I, OSCAR A. ARNESON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gasolene or Vapor Lamps, of which the following is a specification.

This invention relates to improvements in the construction and arrangement of parts in lamps commonly known as gasolene or vapor lamps and is more particularly adapted to that type of lamps in which inverted mantles are used for generating the light, although certain features are also applicable to other types of such lamps. Its objects are to provide a new form of lamp which will be more efficient and satisfactory in operation than those heretofore used, which will be neat and attractive in appearance, and which will produce an even and steady light of great brilliancy.

I attain these advantages in my improved lamp, a preferred form of which is shown in the accompanying drawings, in which—

Figure 1 is a vertical section, parts being broken away or shown in full for convenience in illustration; Fig. 2 is a detail showing the arrangement of the double burners; and Fig. 3 is a sectional detail showing the burner construction.

As shown in these drawings, 4 designates any suitable form of hanger which is provided with one or more pipe connections 5—5 for connection with the main supply pipes. A valve 6 is connected with the hanger 4 and with a depending pipe 7 which carries at its opposite end a tee 8, this tee having only one passage way through the same to allow the supply to pass through the coiled pipe 9 which leads down to a valve 10, making connection with a horizontal pipe 11 at the bottom of the lamp. This horizontal pipe or fitting 11 leads to a generator tube 12 running diametrically across the bottom of the lamp and connected at its opposite end with an upwardly extending perforated nipple 13 leading into an air chamber 14 and directed toward the open mouth of a vertical pipe 15 leading upward from said air chamber. The air chamber is entirely closed except for a short inlet pipe 16 leading out through the side of the lamp. The mixing pipe 15 is connected at the top with a horizontal fitting 16' having a passage way there-

through leading to a vertical pipe 17 at about the center of the lamp, which carries the mixed air and gas down to a forked fitting 18 which in turn connects with two downwardly projecting tubes 19 and 20 having burners 21—21 at the lower ends thereof. The burners 21 are threaded to screw on the ends of the pipes 19 and 20 and are provided with flaring outlets 22 to direct the gas out toward the surface of the mantles 23. The mouth of the burner 22 is provided with a screen 24 which is held in position by spinning the end of the burner 21 in to engage with the lower outer edge of said screen. The outer surface of the lower end of the burner is provided with a groove 25, so that a string 26 may be passed around the upper end of the mantle 23 and tied around said mantle to hold the same in position on the burner. The frame construction of the lamp is completed by a pipe or rod 27 connecting between the lower end of the tee 8 and an upwardly projecting stem on the fitting 16', thereby serving to hold said fitting and its connected parts. A rod 28 also connects with a lateral projection on said fitting 16 and with the pipe or fitting 11 heretofore described.

Around the centrally disposed portions of the lamp frame is a shell or casing 29 connected by means of strips 30 and a shield plate 31 with a cover portion 32 which is connected by means of a thimble or sleeve 33 and a set-screw 34, with the pipe 27, and serves to hold the casing in adjusted position. The casing 29 is slotted at the bottom to receive the pipe 11 and is provided with a downwardly and outwardly projecting shade support 36 which is held in position by means of screws 37 passing through said casing 29. This support 36 serves to hold the shade or globe 38 which may be made in any desired style. The casing 29 is provided with a hole to receive the air inlet 16, heretofore described, and with a series of holes 39 near the top to allow for the exit of the heated gases or for the inlet of air to cool the upper portion of the burner pipes, there being also an outlet for the gas formed between the upper end of the casing 29 and the cover 32. A deflector 40 is inserted below the cover 32 in order to direct the gases out through the opening underneath said cover. The shield plate 31, which extends some little distance on either



side of the pipe 9, protects said pipe from contact with the heated gases.

In order to assist in keeping the heat adjacent to the generating pipe 12, I provide a deflector 41 which is secured to the pipe 17 adjacent to the branch fitting 18, so that the heat will, in a measure, be directed downward around said pipe 12 as well as deflected out around the sides of the casing 29, so that it will not cause the upper portions of the mixing pipe to become heated to too great an extent.

The gasolene or equivalent fuel enters through the pipe 5 and the hanger 4, passes down through the valve 6 which may be used particularly in case of emergency when it is desired to remove the lamp, then through the pipe 7, the tee 8 and down through the pipe 9 to the regulating valve 10 which serves for the ordinary control of the lamp. It will be particularly noted that the supply pipes down to this point are protected so that the oil will not be heated or generated into gas prior to passing through the valve 10 and into the generating tube 12. When the gasolene passes through the valve 10 and pipe 11, to the generating tube 12, it becomes heated and is generated into gas which passes up through the nipple 13; and, as it is forcibly ejected, the jet carries with it a certain amount of air into the mixing tube 15. The mixed air and fuel gas then pass through the connected pipes and fittings, down to the burners 21 where the flame will heat the mantles 23 to an incandescent heat. As the heated gases of combustion and the heated air tend to rise in the casing 29, they will be deflected, to a certain extent, back to heat the tube 12, and will then pass out through the openings at the top of the casing. The arrangement of the air inlet is of particular importance, as the air is only allowed to pass in through a large opening at one side of the mixing chamber, which tends to prevent flickering of the lamp and reduce the noise of the intruding air to a minimum. It will be noted that the arrangement whereby the supply is prevented from being heated and what is commonly termed double generation is prevented, is an important feature in connection with this improved lamp, as it insures a steady light without flickering.

The arrangement of the casing is such that by removing the air inlet tube and the shade holder, it may be easily shoved up on the rod 27, so that all of the operating parts of the burner are readily exposed for cleaning or inspection.

Having thus described my invention, what

I claim and desire to secure by Letters Patent is:

1. In a device of the character set forth, the combination of a gasolene supply pipe, a gasolene lamp depending from and supported by said supply pipe, said lamp being provided with means for generating gas, a casing surrounding said generating means, a pipe for conducting the gasolene from said supply pipe to the generator tube, said pipe being connected with the supply pipe at a point above the casing and extending down outside of said casing, and means for protecting said last-named pipe against the heat of the lamp.

2. In a gasolene lamp, the combination with a pipe leading from a source of supply, of a generator tube, an upwardly projecting jet at the end of said tube, an air chamber, a pipe leading upwardly from said chamber, having its open end arranged above said jet, connections from said pipe leading down to burners arranged on either side of said generator, a casing inclosing said devices, and a deflector arranged in said casing for deflecting the heated gases down toward said generator and protecting the upper portions of said lamp.

3. In a gasolene burning device of the character set forth, the combination of a hanger having means for connection with pipes leading from a source of supply, a valve below said hanger, a pipe leading from said valve to a tee fitting, a connection from said tee fitting for supporting the lamp, a second connection leading from said tee fitting to carry the fuel supply out and down around the body of said lamp, a generator tube, a valve interposed between said last-named supply and said generator tube, a perforated discharge nipple in said generator tube, an air chamber into which said nipple is directed, a mixing pipe leading upwardly from said chamber, an air inlet pipe leading to said chamber, a connection from said mixing pipe leading to a pipe at the center of said lamp, one or more pipes leading from said last-named pipe to the burners which are arranged below said generating tube, a casing inclosing said generating tube and last-mentioned parts, means for directing the heated gases out at the top of said casing below the cover thereof, and a shade holder secured to the bottom of said casing.

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Witnesses:

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