

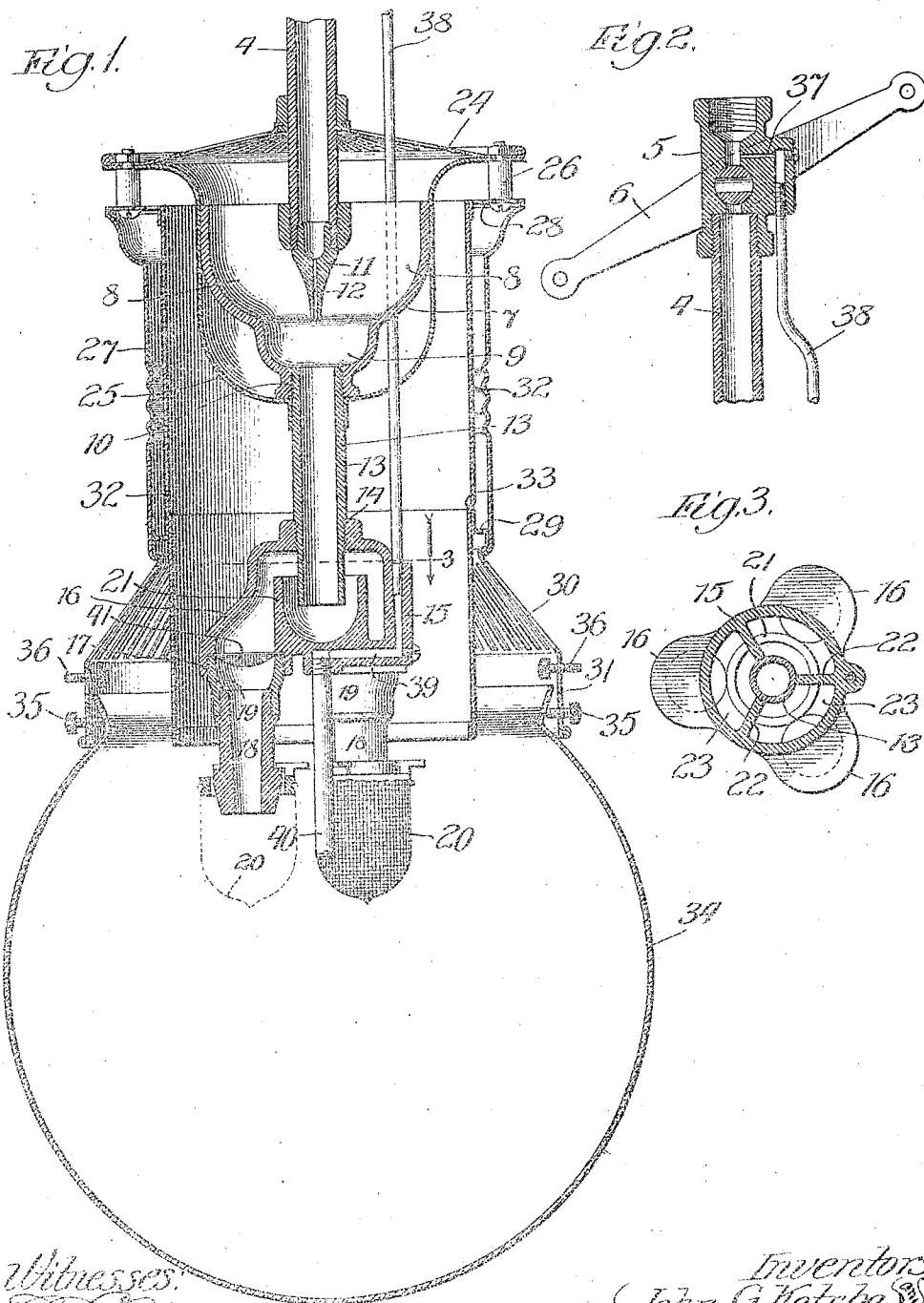
J. G. KOTRBA & H. W. FREESE.

GAS LAMP.

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934,737.



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UNITED STATES PATENT OFFICE.

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GAS-LAMP.

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To all whom it may concern:

Be it known that we, JOHN G. KOTRBA and HERMAN W. FREESE, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Gas-Lamps, of which the following is a specification.

Our object is to provide a gas arc lamp of the type employing a cluster of inverted incandescent mantles, and of improved construction which renders it particularly simple, durable and economical to manufacture, as well as highly efficient and desirable for its purpose.

In the accompanying drawings.—Figure 1 shows a vertical section of our improved gas lamp; Fig. 2, a sectional view of a rotary valve in the gas-supply pipe; and Fig. 3, a section taken on line 3 in Fig. 1.

The lamp is secured to the lower end-portion of a depending gas-supply pipe 4 in which is interposed a valve 5 of a common type provided with an operating lever 6. Upon the lower end of the pipe 4 is a casting 7 formed with two passages 8, 8 terminating in a central chamber-portion 9, and provided with a centrally threaded opening 10. In the lower end of the pipe 4 is a downward-extending gas injector nozzle 11 having a small supply opening 12. Fastened at its upper end in the opening 10 is a vertical mixing-tube 13 provided with a circumferential thread 14.

15 is a casting formed, in the present instance, with three hollow bosses 16 equidistant apart and having threaded mouths 17 to which are secured the three depending burner-tubes 18, the connection between the burner-tube, in each instance, and the boss 16 being through the medium of a reducer 19. The burner-tubes 18 carry the inverted mantles 20 in a common manner. Internally the casting 15 is formed with a central bowl-shaped baffle, or cup 21, and the pipe 13 extends at its lower end down into the cup short of the base thereof. In the chamber formed by the casting 16 are radial partitions 22 extending from the pipe 13 to the wall of the chamber, thereby separating the interior of the casting into three passages 23 communicating at their upper ends with the top of the cup or baffle and at their lower ends with the hollow bosses 16.

At the top of the lamp and secured about the pipe 4 is a perforated cap 24, and ex-

tending downward from the cap and about the casting 7 is an annular shield or partition 25, shaped as shown, and fitting at its lower end around the pipe 13. Depending from the rim-portion of the cap 24 and partition 25 are spacers 26 against the lower ends of which are secured an annular casing 27. Formed integral with the top of the casing is a perforated inwardly extending ring 28. The lower edge of the casing 27 is curved inwardly, as indicated, and surrounds and holds an inwardly-projecting spacer-ring 29 integral with which is a flaring, perforated skirt or hood-portion 30 terminating at its lower edge in an annular rim-portion 31.

32 is a chimney fitting at its upper end in the ring 28 and formed between its ends with an annular shoulder 33 where it fits upon the spacer-ring 29. From the point 33 the chimney is slightly reduced in diameter and at its lower end extends to about the plane of the lower edge of the rim 31 concentric with the latter. The usual transparent globe 34 is held to the rim by screws 35, and the rim also carries screws 36 for holding a shade, if desired.

The valve-casing 5 has a pilot-light passage 37 from which depends a pilot-light tube 38 to a cored passage 39 in the casting 15 communicating with a centrally depending pilot-light tube 40. As is usual in lamps of this type, the pilot-light burns all the time, the passage through 37, 38, 39 and 40 being open.

In operation the opening of the valve 5 causes gas, under pressure, to pass through the pipe 4 and small outlet 12 and be projected centrally downward through the tube 13. Air to mix with the gas enters from the top of the lamp through the perforated cap 24 and is carried downward by the gas current into the cup, or baffle, 21. The impingement of the gas and air against the base of the cup insures an intimate mixture thereof, and the partitions 22 cause the mixture to be equally divided as it passes to the burner-tubes 18. As the mantles 20 fill, the gas-mixture escaping therefrom is ignited by the pilot-light. Air to support combustion passes through the perforations in the hood, or skirt, portion 30, and the products of combustion rise through the chimney 32 and escape through the opening at the spacers 26.

Interposed in the hollow bosses 16 are

strainers 41, which effectively prevent back-firing from the mantles.

What we claim as new and desire to secure by Letters Patent is—

- 5 1. In a gas lamp, the combination of a vertically-disposed gas-supply pipe, a casting secured to the lower end of the pipe and forming a chamber, a cap surrounding the pipe over said chamber and formed with air-inlet openings, a mixing-tube depending from said chamber, a gas-supply injector-nozzle on the lower end of said pipe centrally above said tube, a baffle-cup supported by said tube and into which said tube projects at its lower end, and a plurality of inverted mantle-supporting burners depending from said cup, and communicating with the interior thereof, above the lower end of said tube.
- 20 2. In a gas lamp, the combination of a vertically-disposed gas-supply pipe, a casting secured to the lower end of the pipe and forming a chamber, a cap surrounding the pipe over said chamber and formed with air-inlet-openings, a mixing-tube depending from said chamber, a gas-supply injector-nozzle on the lower end of said pipe centrally above said tube, a hollow casting secured to the lower end of said tube formed internally with a baffle-cup, into which said tube projects, and having a plurality of outlet pas-

sages extending to its lower side from above said baffle-cup, and inverted mantle-supporting burners with which said passages communicate.

- 35 3. In a gas-lamp, the combination of a vertically-disposed gas-supply pipe, an upper casting secured to the lower end of the pipe and forming a chamber, a cap surrounding the pipe over said chamber and formed with air-inlet openings, a mixing-tube depending from said chamber, a gas-supply injector-nozzle on the lower end of said pipe centrally above said tube, a lower casting at the bottom of said tube formed internally with a baffle-cup, into which said tube projects, and having a plurality of outlet-passages extending to its lower side from above said baffle-cup, inverted mantle-supporting burners with which said passages communicate, a chimney surrounding said mixing-tube and upper and lower castings and extending short of said cap, a chimney-supporting-casing depending from said cap and forming an air-jacket for the chimney, and a perforated hood at the lower end of said casing forming a globe support.
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In the presence of—
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