

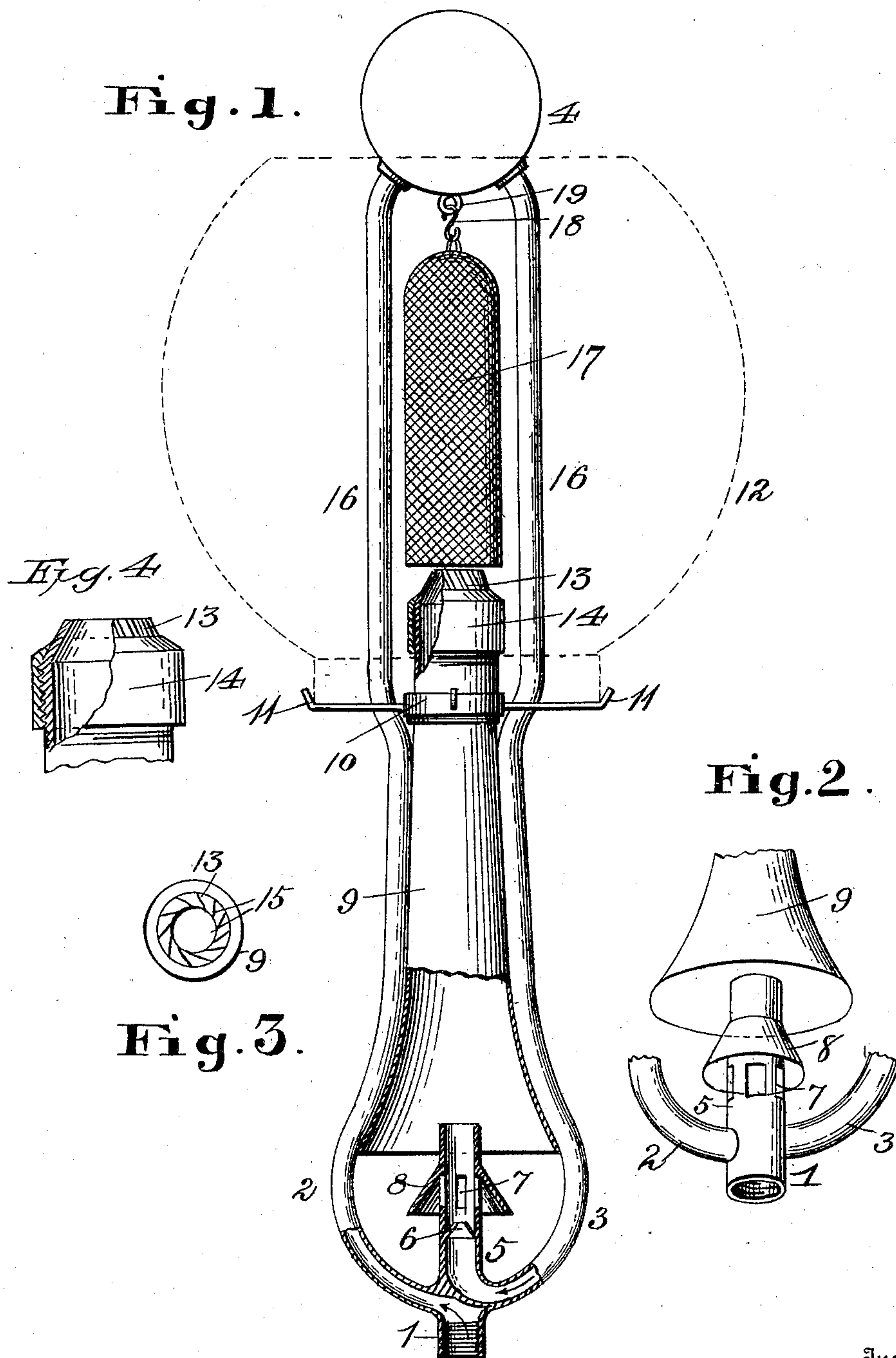
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Patented Aug. 12, 1902.

E. H. KELLY.
REGENERATIVE GAS BURNER.

(Application filed May 16, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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REGENERATIVE GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 706,831, dated August 12, 1902.

Application filed May 16, 1902. Serial No. 107,643. (No model.)

To all whom it may concern:

Be it known that I, EUGENE H. KELLY, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Regenerative Gas-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to gas-burners, has especial reference to that class of burners known as "regenerative" burners, in which the gas is highly heated, and consists in certain improvements in construction which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a side elevation, partly in section; Fig. 2, an enlarged detail of the lower portion of the structure, showing the parts in perspective; Fig. 3, a top plan view of the upper end of the combining-tube which constitutes the burner; Fig. 4, an enlarged sectional detail of the upper end of the mixing-chamber.

Reference being had to the drawings and the numerals thereon, 1 indicates the head, adapted to be attached to the usual gas-fitting, is provided with lateral branches 2 and 3, which extend upward and connect with a regenerative chamber 4, the branch 2 serving to conduct gas to said chamber and the branch 3 serving to conduct heated gas from the chamber and deliver it to the vertical branch 5, provided with a reducer 6 for limiting the discharge or flow of gas, perforations or slots 7 for admitting atmospheric air to supply the necessary oxygen to the gas to render it combustible, and a hood 8, conical in transverse section, to confine the air around the slots 7. The size or area of the openings 7 is made to supply the necessary quantity of air to insure perfect combustion of the gas.

9 indicates a tapering gas and air mixing or combining chamber or tube supported between the branches 2 and 3 and the air and gas therein heated by the hot gas flowing through the tube 3 on its way to the discharge branch 5. The branches 2 and 3 embrace the tube 9 on opposite sides and secure the

tube in position over the hood 8, and the hot gas and air in said tube produce the initial heating of the gas flowing through branch 2 on its way to the regenerator 4.

On the tube 9 is a collar 10, having lateral arms 11 to support a globe 12, (shown in dotted lines,) and the conical upper end of said tube is slotted at 13 and provided with a nut 14 for regulating the discharge of the gas and air by adjusting said nut to contract the overlapping members 15 or to allow the same to expand.

The branches 2 and 3 are bent outward at 16 16 to afford space to receive the mantle 17, which is suspended from the lower part of the regenerator 4 by a hook 18 or similar device engaging an eye 19 on the regenerator.

By inclosing the upper ends of the branches 2 and 3 within the globe 12 and by placing the regenerator 4 directly above the mantle 17 in direct line with the ascending heat from the burning gas the gas in the branches and in the regenerator becomes highly heated and rarefied and when commingled with the air, which is also heated in the tube 9, burns with great intensity and renders the mantle perfectly incandescent.

Having thus fully described my invention, what I claim is—

1. A regenerative gas-burner having a head provided with gas-conducting branches, a regenerator connected to and supported by said branches, a gas-discharge branch provided with means for admitting air thereto, and a tapering gas and air mixing and heating chamber having a contractible and expansible discharge end.

2. A regenerative gas-burner having a head provided with gas-conducting branches, a regenerator connected to and supported by said branches, a gas-discharge branch provided with means for admitting air thereto and a conical hood surrounding the branch, and a tapering gas and air mixing and heating chamber engaged by the gas-conducting branches and provided with an adjustable discharge end.

3. A regenerative gas-burner having a head provided with gas-conducting branches, a regenerator connected to and supported by said branches, a gas-discharge branch provided with means for admitting air thereto, a taper-

ing gas and air mixing and heating chamber engaged by the gas-conducting branches, a collar on said tube, a globe supported by said collar, and a mantle suspended from the re-
5 generator.

4. A regenerative gas-burner provided with gas-conducting branches, a regenerator connected to and supported by said branches, a gas-discharge branch, a tapering gas and air
10 mixing and heating chamber engaged and

supported by the gas-conducting branches, means for controlling the discharge end of said mixing and heating chamber, and a mantle suspended from the regenerator.

In testimony whereof I affix my signature 15
in presence of two witnesses.

EUGENE H. KELLY.

Witnesses:

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