

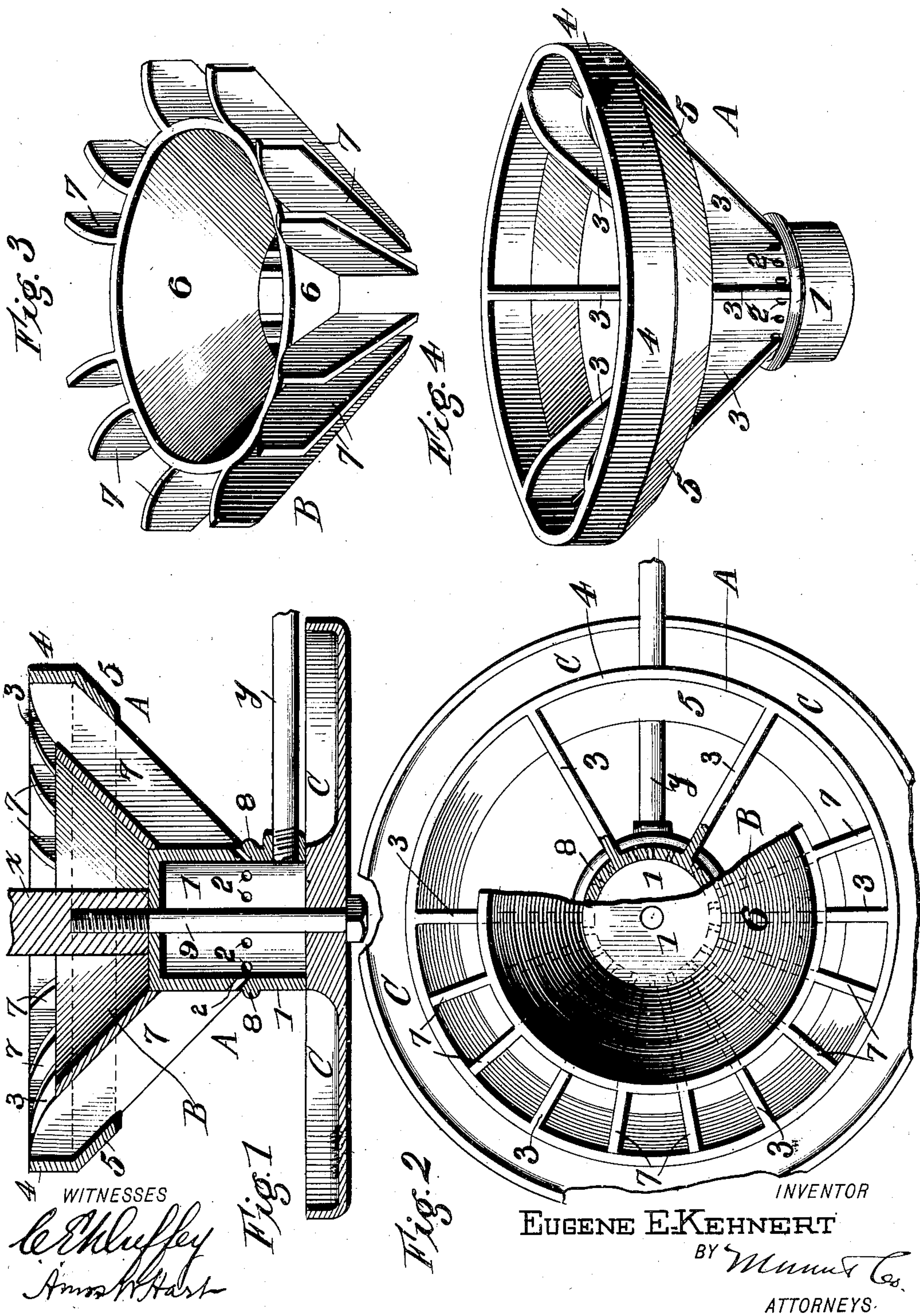
No. 879,823.

PATENTED FEB. 18, 1908.

E. E. KEHNERT.

## GAS BURNER.

APPLICATION FILED MAY 9, 1907.





# UNITED STATES PATENT OFFICE.

EUGENE E. KEHNERT, OF LORAIN, OHIO, ASSIGNOR TO WILLIAM E. KAY, OF AMHERST, OHIO.

## GAS-BURNER.

No. 879,823.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed May 9, 1907. Serial No. 372,649

*To all whom it may concern:*

Be it known that I, EUGENE E. KEHNERT, a citizen of the United States, and a resident of Lorain, in the county of Lorain and State of Ohio, have invented an Improvement in Gas-Burners, of which the following is a specification.

My invention is an improvement in burners for gas or easily vaporized hydrocarbon oils, the same having certain features of novelty as hereinafter described, whereby a superior result is obtained in respect to combustion and calorific effect.

The details of construction, arrangement, and combination of parts are as hereinafter described, and illustrated in the accompanying drawing, in which—

Figure 1 is a central vertical section of the burner, including a vertical bar to which it is attached. Fig. 2 is a plan view of the burner, a portion being broken away. Fig. 3 is a perspective view of the detachable inner portion, or section, of the burner. Fig. 4 is a perspective view of the body, or outer portion, of the burner.

A indicates the body, or outer portion, of the burner, B the detachable interior portion, and C a drip-pan, which is attached to the part A. The latter comprises a central cylindrical portion 1, which is open at the bottom, as shown in Fig. 1, and provided with a series of gas or vapor orifices 2, the same being directed upward at an angle of about 45°.

From the upper half of the cylindrical part 1 a series of arms 3 project upward and outward at an angle of about 45°. They are in the nature of elongated flat plates and are arranged equidistantly, their outer ends being connected with a rim comprising a vertical part 4 and a lower, inwardly beveled part 5. The inclination of the beveled part 5 corresponds to the inclination of the arms or plates 3.

The inner detachable portion of the burner B shown separately in Fig. 3 comprises a hollow inverted truncated cone 6 whose outer side is provided with a series of arms or plates 7 arranged at an angle of about 45° and arranged in groups, or series, of two, the members of each group or series being arranged equidistantly and a wider space being provided between the several groups or series as indicated, so that when the part B is put in place within the part A, as shown in Figs. 1

and 2, the arms 3 of part A occupy the spaces between the groups or series of plates 7, thus dividing the space around the cylindrical body 1 of the burner into equal spaces, into each of which a gas orifice 2 opens, as will be readily understood. The opening in the lower end of the inverted cone 6 is just large enough to receive the upper end of the cylindrical body 1 of part A, and the arms or projections 3 of the inner part B rest upon a circumferential rib 8 formed on the cylindrical part 1. Thus the inner detachable part B is supported in due position but may be readily detached when required.

It will be seen that the several arms or plates 3 and 7 of the respective parts A, B, constitute practically so many partitions, or divergent guides, forming passages into which the gas discharges and where it is freely mingled with air so as to effect a thorough combustion. The flame and heated gases of combustion impinge on the adjacent parts, to wit, the cone, the rim 4, 5, and the partitions 3, 7, while passing upward and escaping from the open spaces at the top of the burner.

The pan C is provided with a central raised portion or boss upon which the cylindrical body 1 of part A rests when the parts of the burner are secured together and attached to a support as indicated in Fig. 1. The means of attachment and support is a screw-bolt 9 which passes through the drip-pan and through the top of the cylindrical body 1, and enters a bar *x* which depends from some suitable support. In practice such bar may be an attachment of a water-heater such as forms the subject of my allowed application No. 317,487. It is to be understood, however, that my improved burner is designed and adapted for use in connection with various parts requiring to be heated. The function of the pan C is to receive the drip, or water of condensation, from the pipe coil or other portion of a water- or other heater which may be arranged above it. The drip is evaporated in the pan and the vapor therefrom ascends, and hence no drain pipe or other means for receiving and discharging water of condensation is required.

The gas to support combustion is received through a lateral pipe *y* into the hollow cylindrical body 1, as will be readily understood; but a volatile hydrocarbon oil may be



employed, since the same will be vaporized in the cylinder 1 and the vapor escape from the orifices 2.

It will be seen that by removal of the bolt 5 9, the burner as a whole may be detached from the support  $x$  and the drip-pan also removed from the part A; and then the parts A, B, may be easily separated. Thus the burner may be easily assembled and at- 10 tached to the support, or removed and dismembered when required, for cleaning, or other purpose.

This application is a division in part of my application No. 317,487.

15 What I claim is—

1. The improved burner comprising a body portion formed of a hollow cylinder having lateral discharge openings for a com- 20 bustible medium and a series of upwardly and outwardly projecting plates separated from each other, a ring joining the outer ends of the same, and a superposed part comprising an inverted hollow cone arranged within the body part and having a series of

upwardly and outwardly inclined plates 25 adapted to fit between the corresponding plates of the body part as shown and described.

2. The combination, with the body part A, comprising a hollow central portion hav- 30 ing gas discharge orifices and a series of upwardly and outwardly diverging plates constituting partitions, a cylindrical and a beveled ring surrounding and connected with the outer ends of such partitions, the inner 35 part B formed of a hollow inverted truncated cone and a series of upwardly and outwardly divergent plates constituting partitions, the same being adapted to pass be- 40 tween the partitions of the part A and thus divide the spaces surrounding the gas receiver and discharger into numerous chambers or passages wherein combustion is effected in the manner described.

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Witnesses:

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