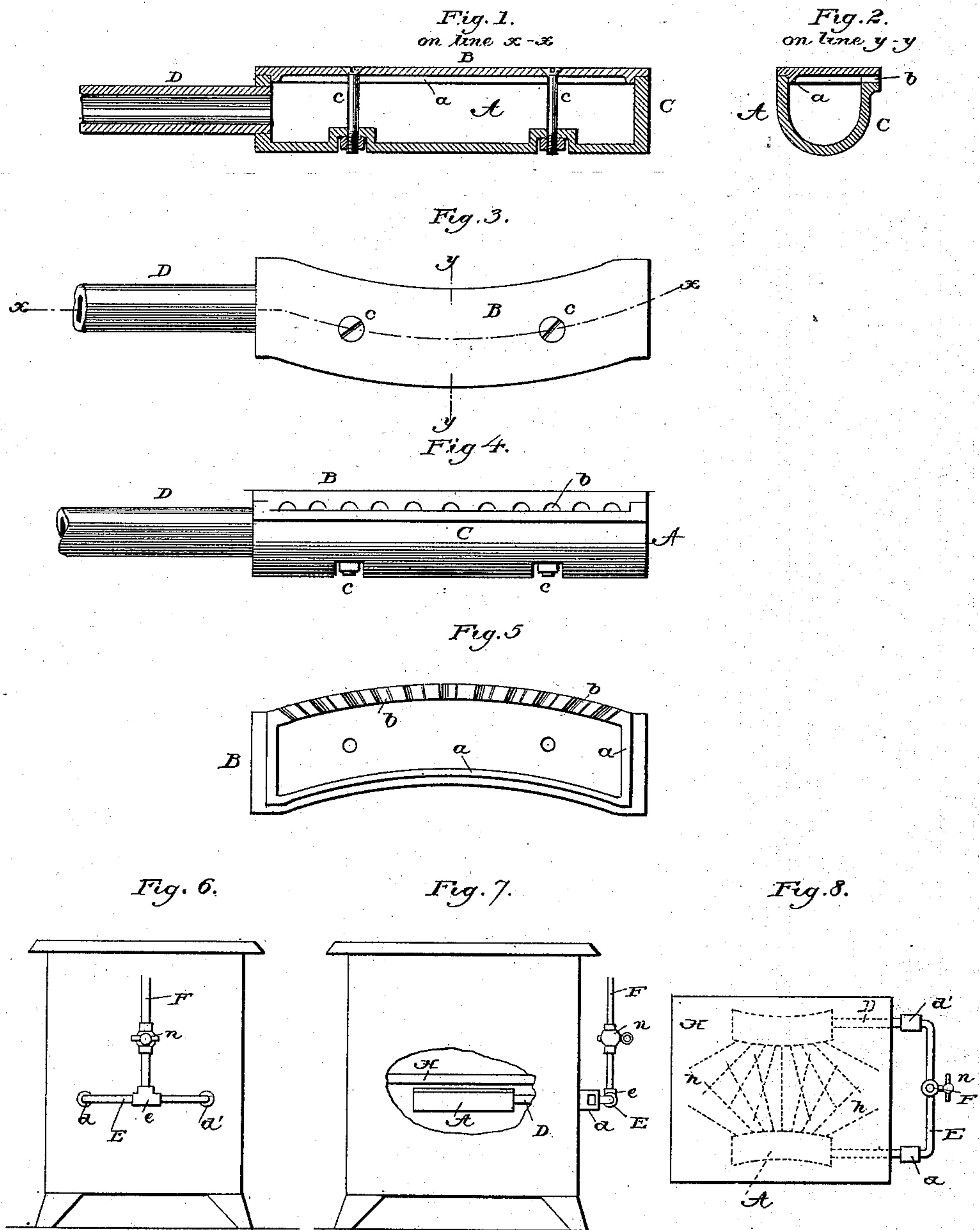


(No Model.)

H. R. GUMMER.
BURNER FOR GAS STOVES.

No. 410,092.

Patented Aug. 27 1889.



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UNITED STATES PATENT OFFICE.

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BURNER FOR GAS-STOVES.

SPECIFICATION forming part of Letters Patent No. 410,092, dated August 27, 1889.

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To all whom it may concern:

Be it known that I, HENRY R. GUMMER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Burners for Gas-Stoves, of which the following is a specification.

My invention relates to burners for gas-stoves; and its objects are to provide a burner in which the gas (having been first properly mixed with air for the purpose of combustion) shall be discharged therefrom through a series of adjacent radiating apertures in such a manner that the tongues of flame proceeding from such apertures interlace, so as to result in a more complete combustion than can otherwise be effected, and so that, by reason of the flare of such apertures, the volume of flame from each burner is divided and directed equally toward the several flues of the stove in which the same are placed, for the purposes hereinafter set forth, and also in certain details of construction, adapting the same for use in the manner hereinafter described.

In the drawings, Figure 1 is a longitudinal section of one of my burners. Fig. 2 is a transverse section of the same in the line *y y* of Fig. 3. Fig. 3 is a plan view of burner. Fig. 4 is a front elevation of same. Fig. 5 is a bottom view of cap of burner, showing radiating outlet-passages. Figs. 6 and 7 are respectively a side and rear view of a gas-stove, showing the position of the burner when in use and the arrangement of pipes by which gas is supplied to same. Fig. 8 is a plan of the oven-plate in a gas-stove, showing the burners in position under the plate, the radiating lines indicating the flames from the burners.

Similar letters refer to similar parts throughout the several views.

A is the body of the burner. This is made, preferably, of cast metal, and consists of two parts—the curved cup C, which forms the bottom and ends, and the cap B, which forms its top, the latter being provided with the flange *a a*, fitting snugly within the cup C to hold it in position, and having at its convex side a thickened edge fitting into a recess in the edge of said cup. When fitted together, the two parts form a hollow cavity or cham-

ber, in which the gas and air are mixed. They are cast of such a shape that in a plan view of the burner, as at Fig. 3, the side of the burner away from the outlets is concave and the side having the outlets is convex.

The gas-outlets *b b* consist of a series of adjacent radiating indentations in the lower surface of the thickened edge of the cap B at its convex side, where it comes in contact with the convex side of the curved cup or bottom C when placed in position over the same, such indentations being so constructed that when the cap is so placed in position they form a line or series of apertures or outlets *b*, as shown in Fig. 4, through which the gas mixed with air is emitted. They are arranged so as to radiate, as shown in Fig. 5, and so that the flare or angle formed by their sides with the line *y y* in Fig. 3 continually increases toward the several ends of the burner, the sides of the apertures nearest the ends being almost at right angles thereto. This causes the flames emitted from these apertures to spread out from each burner in a fan-shaped manner, and when two burners are placed opposite each other to interlace, as shown in Fig. 8, with the result already stated, and at the same time operates to direct the whole volume of flame in two distinct portions toward the two separate ends of the burners.

When in use, the burners are fastened against the lower surface of the oven-plate H in the position shown in Figs. 7 and 8, the top surface of the cap B being placed directly against the lower surface of such plate (not detached, as shown in Fig. 7) and securely fastened thereto, preferably by extending through the same the bolts *c c*. (Shown in Figs. 1, 3, and 4.)

The gas-supply pipe D, which is provided with an aperture *d* for the entrance of external air, enters one end of the burner, conveying the gas and air so admitted into the hollow chamber or cavity of the burner, where the same are mixed before being emitted at the outlets at which the same is ignited.

The burners are arranged for use preferably in pairs and are placed at the front and back of the oven-plate, with their outlets facing each other, as shown in Fig. 8, thus causing the radiating series of flames *h h* from

both burners to meet and interlace between the two against the oven-plate H, thereby effecting the most complete combustion of the gas and obtaining the greatest possible degree of heat over the entire surface of the plate.

5 The compact shape of my burners enables me to place them at the front and rear of the oven-plate, as stated, instead of at the sides (as is done with other burners) without obstructing the oven, as such other burners, on account of their shape and construction, would do if similarly placed.

10 The flues in the gas-stoves commonly in use are located at the sides adjacent to the oven, so that the flame and heat may warm the same as they ascend.

15 The shape, construction, and arrangement of my burners thus described, by causing the volume of flames emitted therefrom to spread out equally toward these flues on either side, and to pass into the same free from the obstruction which burners of the kind in use constitute, greatly promotes the heating of the oven by bringing a steady and unobstructed volume of flame in contact with the sides of the same. From the same causes it results that the combustion and the draft obtained are so complete and perfect that annoyance from smoke and offensive odors is entirely prevented.

30 For the purpose of supplying gas to my

burners I use the arrangement of pipes shown in Figs. 6 and 7. In the gas-stoves now in use the gas is supplied to each burner by a separate pipe, the supply of each being regulated by a separate cock. I, on the other hand, connect the supply-pipes D D, attached to each burner, by a cross-pipe E, which is in turn, by means of a T, connected with the upright supply-pipe F, upon which is the cock n, by which the flow of gas to both burners is controlled at the same time. I thus prevent the inequality in the flow of gas attendant upon the use of separate supply-pipes and secure a steady and equal flow to both burners.

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

In a burner for gas-stoves, the arc-shaped hollow base C, provided at one end with the air and gas inlet and on its convex side with the recess, in combination with the arc-shaped covering-plate B, the flange thereon formed to fit in the recess in the base C and having the series of radiating openings or notches b formed therein.

HENRY R. GUMMER.

Witnesses:

SAMUEL D. CONOVER,
GEO. R. YOUNG.