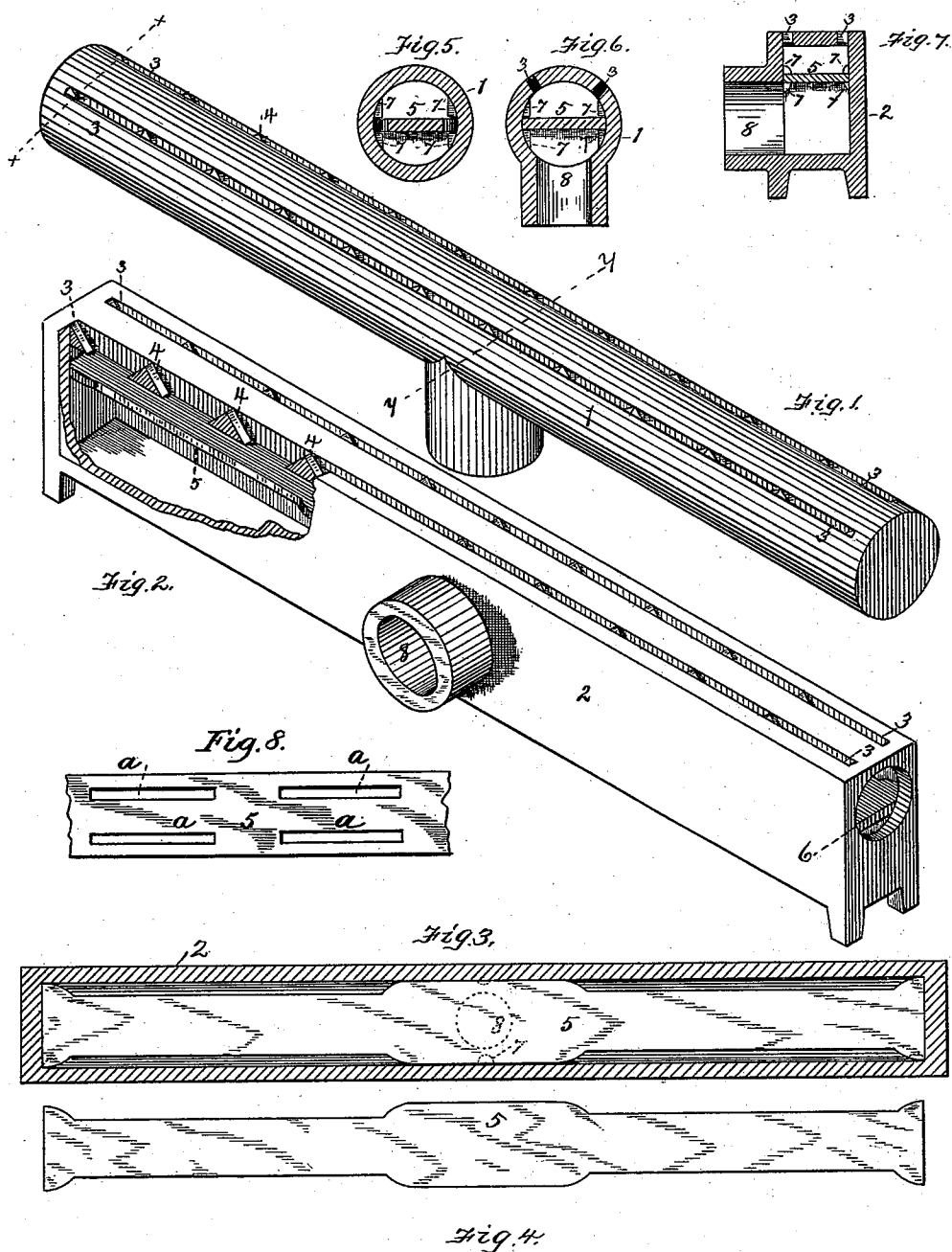


(No Model.)

J. N. PEW.
GAS BURNER.

No. 393,077.

Patented Nov. 20, 1888.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOSEPH N. PEW, OF PITTSBURG, PENNSYLVANIA.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 393,077, dated November 20, 1888.

Application filed June 12, 1888. Serial No. 276,833. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH N. PEW, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered a certain new and useful Improvement in Gas-Burners, of which improvement the following is a specification.

The purposes of my invention are to secure a proper admixture of air and gas for combustion in the burner, a continuous flame from end to end of the burner, and to prevent the gas from lighting in the mixer. My burner accomplishes these objects and is so constructed that it will not warp when exposed to the heat.

In the accompanying drawings, which make part of this specification, Figure 1 is a perspective view of the burner cast in cylindrical form; Fig. 2, a similar view of a rectangular burner with one end broken away, revealing the interior. Fig. 3 is a plan view showing the plate 5 in position in the rectangular burner. Fig. 4 is a plan view of the plate 5 detached. Fig. 5 is a cross-section of Fig. 1 on the line XX. Fig. 6 is a central cross-section of Fig. 1, and Fig. 7, a like view of Fig. 2. Fig. 8 is a plan view of a modified division-plate.

The burner is cast in any desired shape in cross-section and length, Fig. 1 showing a cylindrical one, A, and Fig. 2 a rectangular one, B. Two longitudinal rows of slots, 3 3, are then cut in the upper side of the burner with a wheel which, being alternately raised and depressed, will not make a continuous opening, but a series of slots alternating with V-shaped bridges 4 4 4, as clearly seen in Fig. 2. A plate, 5, is then inserted in the burner through the open end 6, as shown in Fig. 2, which is afterward plugged, as well as the corresponding opening at the other end of the burner. This plate 5 is held in position between pairs of shoulders 7 7 at the ends and middle of the burner, as shown in Figs. 5, 6, and 7.

The plate 5 is of the general shape shown in Fig. 4—i. e., so as to make a close fit at its centre with the walls of the burner, but recessed on both sides from its ends nearly to its center, leaving narrow slots for the passage of the gas. These slots may be made in the body

of the plate 5, if desired, in place of recessing the sides, as seen at *a a* in Fig. 8.

Obviously the plate 5 must be placed above the entrance-point of the gas into the burner and below the longitudinal slots 3 3. This plate 5 is adapted for use in any burner, requiring only the addition of the shoulders 7 7 to the usual shell of the burner.

My form of burners may be used with any mixer, do not require any filling, and are peculiarly desirable for low-down grates.

The operation of the burner is as follows: The mingled gas and air entering through the neck 8 of the burner will strike the plate 5 and pass along its lower side until it reaches the recessed portion of the plate 5, when it will pass up into the upper part of the burner and out through the slots 3 3. These slots 3 3 on their upper edge are practically continuous, as the apex of the V-shaped bridges 4 4 4 will not divide the flame, and the blaze will be uninterrupted; also, the passage of the gas through the several narrow slots will give a better mixture of air and gas; as the volume of the gas will be divided into jets, permitting it to mingle more freely with the air. As a consequence of this more thorough mixture a high or low degree of heat can be obtained without waste of gas. If one or more continuous slots were cut in the burner from end to end, it would curl up in a hot blaze. By my use of the V-shaped bridges I will obtain a substantially continuous slot without the attendant disadvantages. By the position and shape of the plate 5 I avoid all burning in the mixer, as there is no direct passage from the flame to the mixer. The ignited gas, to find its way back to the mixer, must first strike the plate 5, then pass between the edge of this plate and the sides of the burner, and then along the under side of the plate to the neck 8, and thence downward. Before it could reach the mixer it would be extinguished.

Having fully described my invention, I claim—

1. The combination of a gas-burner having openings on its upper side alternating with V-shaped bridges, and a division-plate supported within said burner above the inlet and below the outlet for gas, said plate being cut

away (except at its central point) to permit of the passage of gas, all substantially as and for the purposes set forth.

5 2. The combination of a gas-burner and a division-plate supported within said burner above the inlet and below the outlet for gas, said plate being cut away (except at its central point) to permit of the passage of gas, all substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand.

JOSEPH N. PEW.

Witnesses:

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