(No Model.)

T. McSWEENEY.

GAS BURNER FOR STOVES OR FIRE PLACES.

No. 402,177. Patented Apr. 30, 1889.

FIG. 1.

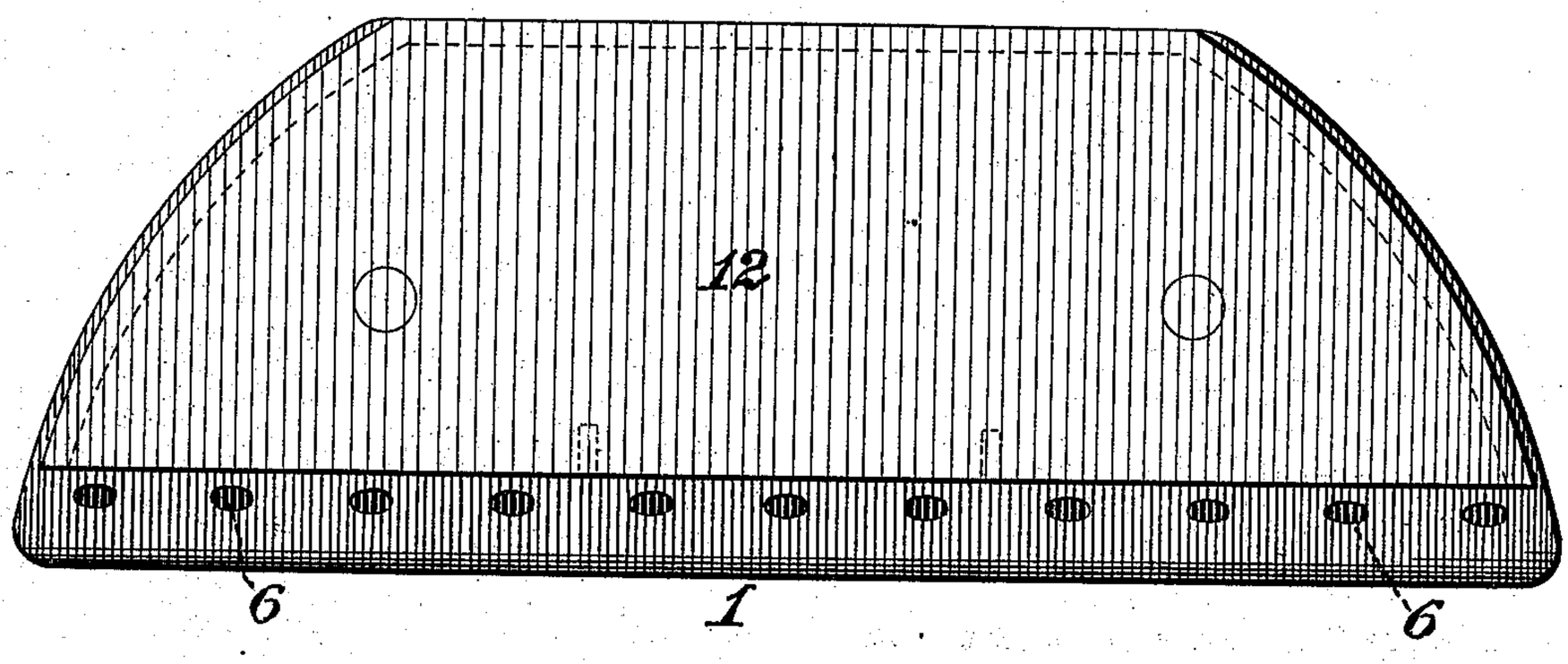


FIG. 2.

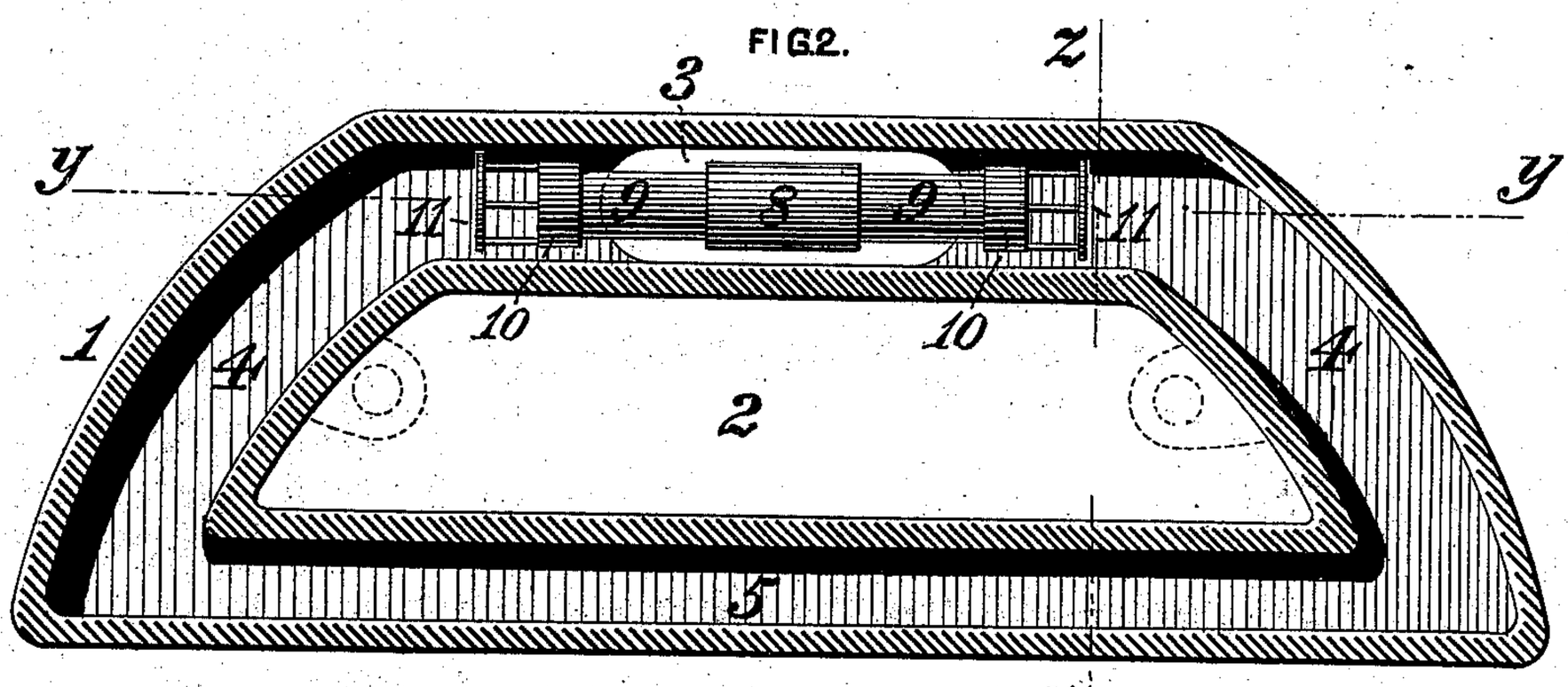


FIG. 3.

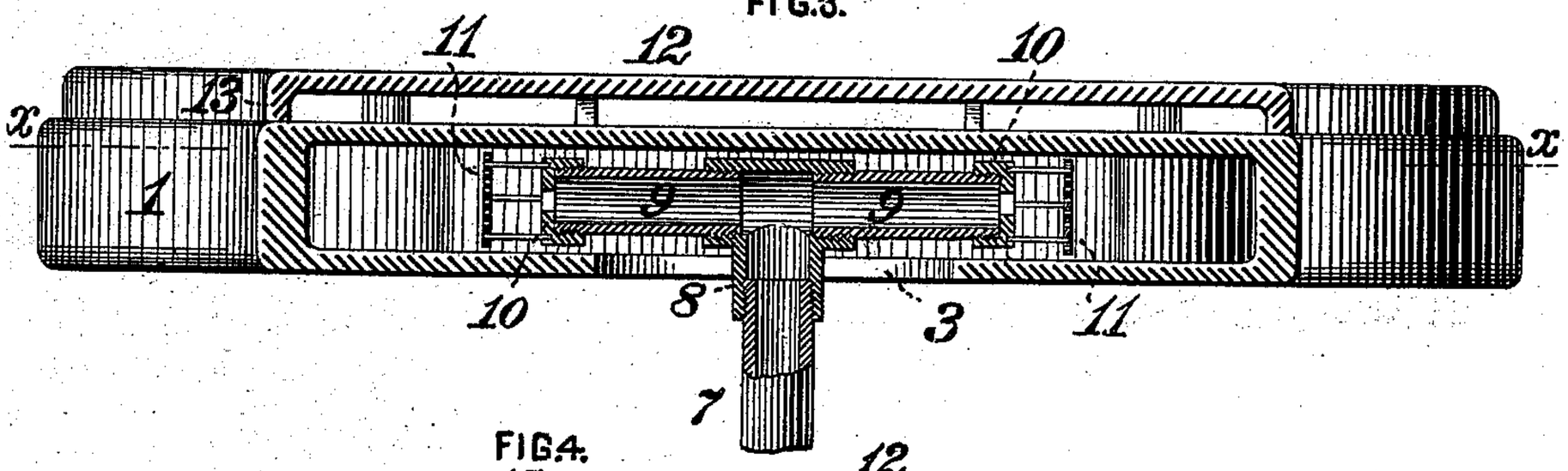
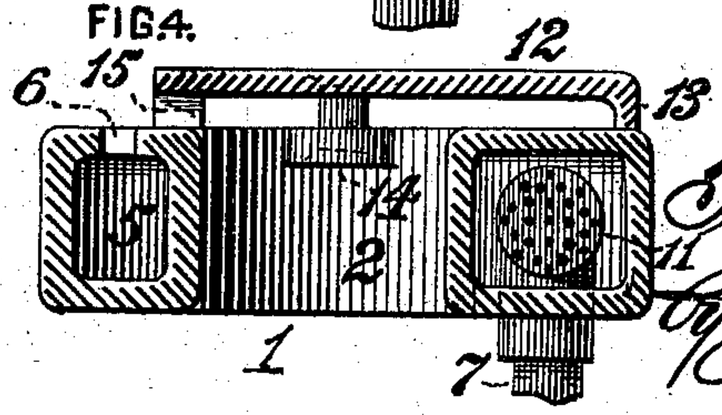


FIG. 4.



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UNITED STATES PATENT OFFICE.

TERRENCE MCSWEENEY, OF ALLEGHENY, PENNSYLVANIA.

GAS-BURNER FOR STOVES OR FIRE-PLACES.

SPECIFICATION forming part of Letters Patent No. 402,177, dated April 30, 1889.

Application filed August 24, 1888. Serial No. 283,637. (No model.)

To all whom it may concern:

Be it known that I, TERRENCE MCSWEENEY, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Gas-Burners for Stoves or Fire-Places, of which improvements the following is a specification.

The object of my invention is to provide a burner of simple and inexpensive construction, by the employment of which the thorough admixture of gas and air in proper proportions and the effective combustion thereof may be attained in stoves or other heating appliances.

To this end my invention, generally stated, consists in a burner-chamber composed of a tubular frame inclosing a central open space, and having lateral channels or passages leading in opposite directions from a gas and air supply opening to the ends of a passage, in which is formed a longitudinal series of discharge or burner openings, and in the combination of a burner-chamber, as above specified, with a gas-supply pipe communicating with the lateral channels, and a cover-plate secured to the top of the burner-chamber and closing the rear and side portions of the central space therein.

The improvements claimed are hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a plan or top view of a gas-burner embodying my invention; Fig. 2, a horizontal section through the same at the line *x x* of Fig. 3; Fig. 3, a longitudinal section at the line *y y* of Fig. 2, and Fig. 4 a transverse section at the line *z z* of Fig. 2.

In the practice of my invention I provide a burner-chamber, 1, which is cast substantially in the form shown in the drawings—that is to say, a flattened D-shaped tubular frame, which incloses a central open space, 2. A longitudinal air-supply opening, 3, through which the gas-supply pipe also enters the burner-chamber, is formed in the bottom of its rear portion, from the ends of which curved lateral channels or passages 4, formed in the side portions, extend to and communicate with the ends of a longitudinal passage, 5, of smaller transverse sectional area, which is inclosed by the front portion of the chamber, in the upper wall of which is formed a series of discharge or burner openings, 6. The gas-supply pipe 7 is connected to a T-piece, 8, passing through the air-supply opening 3, and having its horizontal arms or short extensions 9 secured thereto, extending longitudinally in the rear portion of the chamber in the direction of the adjacent ends of the two lateral channels 4. A cap, 10, perforated by a central opening, is secured upon the outer end of each of the extensions 9, and a diffusing-plate, 11, which is perforated throughout, is connected to each of the caps 10 by pins, which hold the diffusing-plate at a short distance from the outer face of the cap. A cover-plate, 12, having a shallow peripheral flange, 13, upon its rear and sides, is secured to the top of the burner-chamber by bolts or rivets passing through lugs 14, formed on the chamber, and projecting into the central open space, 2, the bottom of the flange 13 fitting against the top of the chamber and closing the space 2 at top, except at its front, at which and immediately in rear of the burner-opening 6 there is presented an air-discharge passage, 15, by reason of the absence of the flange from the front of the cover-plate. Fragments of fire-brick or other suitable refractory material may, if desired, be placed upon the top of the cover-plate.

In the operation of the burner the gas supplied to the chamber by the pipe 7 is discharged in opposite directions into the channels 4, drawing in with it a proper supply of air through the opening 3. The gas is subdivided by the perforated diffusing-plates 11, and after being thoroughly commingled with the air in the channels 4 is delivered into the opposite ends of the front longitudinal passage, 5, from which the mixture of gas and air escapes, and is ignited at the discharge or burner openings 6. The greater transverse sectional area of the rear and side channels of the burner-chamber affords the requisite volume for the admixture of the gas and air prior to their discharge, and the delivery to the front passage at both ends thereof effects a more uniform combustion throughout the series of burner-openings than under the ordinary method of supply. The cover-plate 12,

which becomes highly heated by the combustion at the burner-openings, imparts heat to the air supplied for supporting combustion through the central space, 2, the same being discharged in a heated condition through the passage 14, immediately above the burner-openings, and acting effectively to promote combustion thereat.

I claim as my invention and desire to secure by Letters Patent--

1. The combination of a tubular-frame burner-chamber inclosing a central space and having lateral channels leading from opposite sides of a rear gas and air supply opening to opposite ends of a front passage perforated with burner-openings, and a cover-plate which closes the top of the central space at its rear and sides and presents a front discharge-passage for air adjoining the burner-openings, substantially as set forth.

2. The combination of a tubular-frame burner-chamber inclosing a central space and having lateral channels leading from opposite sides of a rear opening to opposite ends of a front passage perforated with burner-openings, a gas-supply pipe leading into the chamber through its rear opening and having branches provided with perforated end caps and extending in the direction of each of the lateral channels, and perforated diffusing-plates connected to the branches of the gas-supply pipe beyond their ends, substantially as set forth.

In testimony whereof I have hereunto set my hand.

TERRENCE McSWEENEY.

Witnesses:
J. SNOWDEN BELL,
R. H. WHITTLESEY.