

No. 786,830.

PATENTED APR. 11, 1905.

W. McLAUGHLIN.  
GAS BURNER.

APPLICATION FILED APR. 25, 1904.

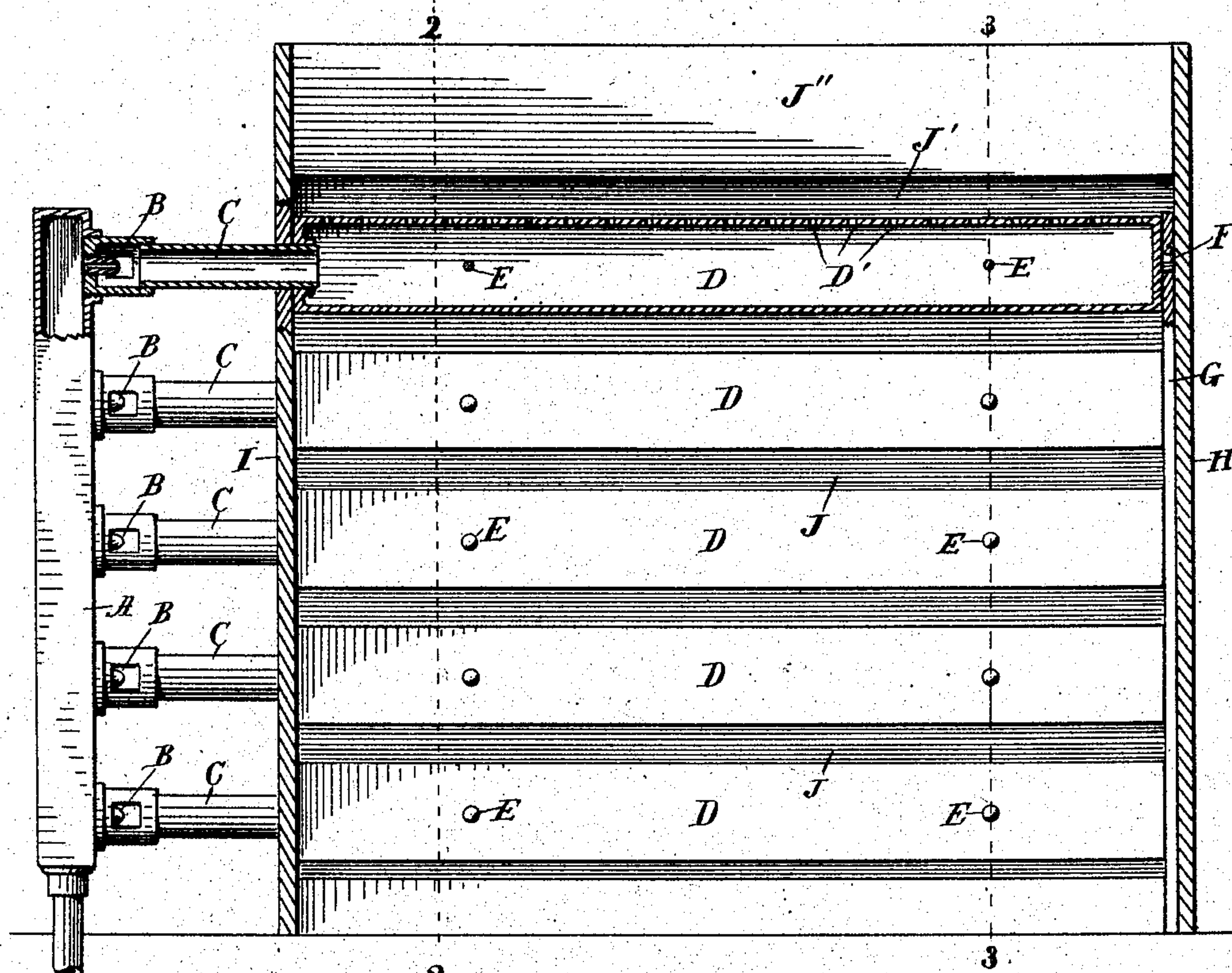


Fig. 1.

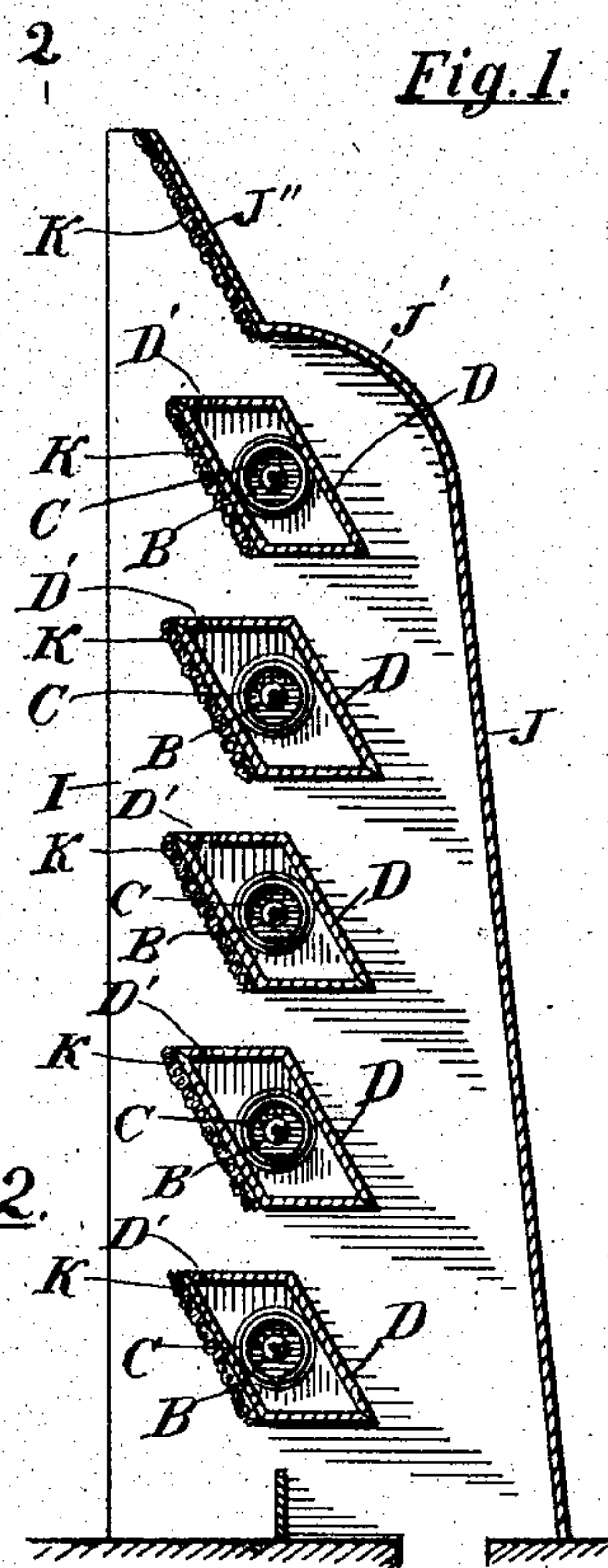


Fig. 2.

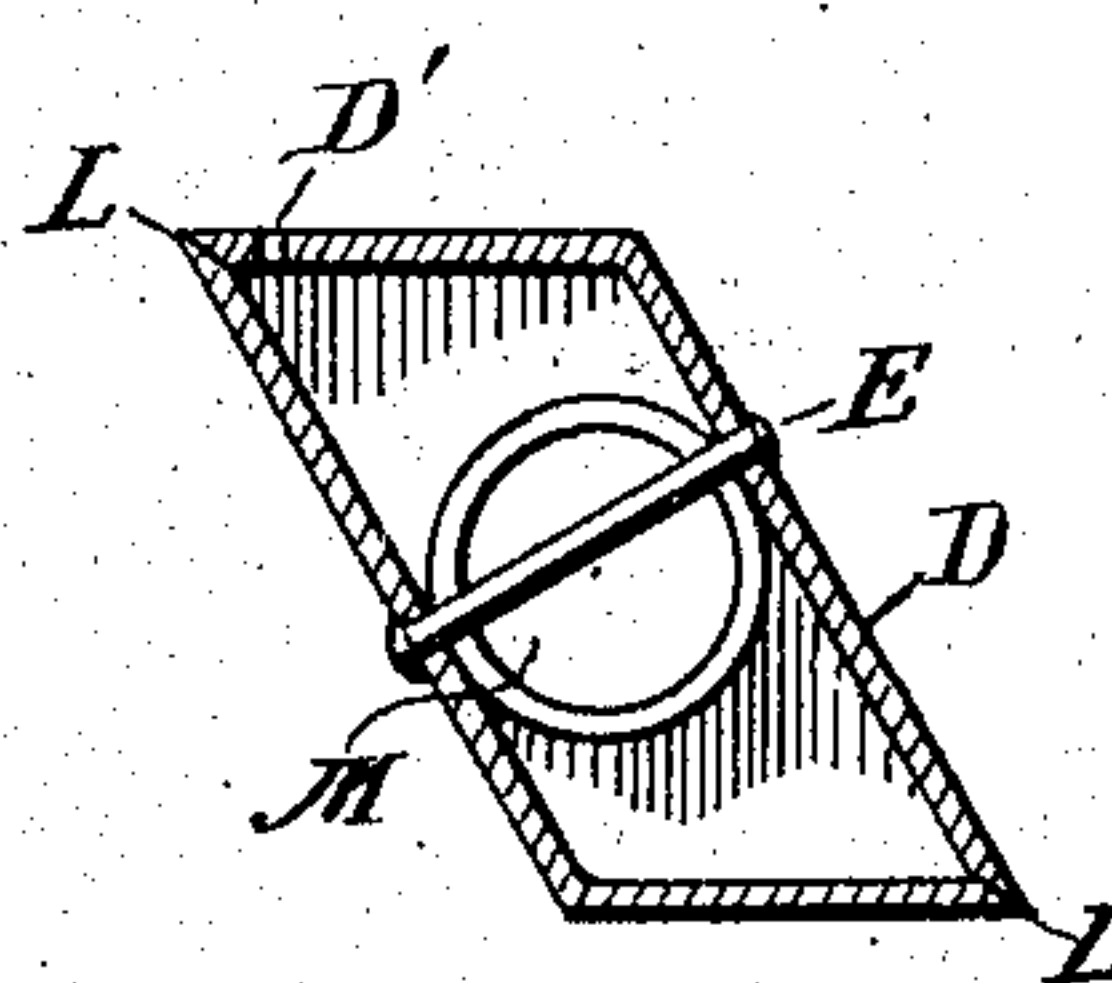


Fig. 3.

Witnesses  
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# UNITED STATES PATENT OFFICE.

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## GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 786,830, dated April 11, 1905.

Application filed April 25, 1904. Serial No. 204,746.

*To all whom it may concern:*

Be it known that I, WILLIAM McLAUGHLIN, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in 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 improvements in gas-burners, and more particularly to such burners adapted for heating purposes; and its object is to provide means for simultaneously adjusting the direction of the flame-jets and the air-openings between the chambers to provide uniform combustion throughout, and to provide the device with various new and useful features hereinafter more fully described, and particularly pointed out in the claims.

My invention consists, essentially, of a series of horizontal chambers mounted to rotate on their horizontal axes and provided with suitable jet-openings and also arranged in series one above the other, together with a case in which the same are mounted, a stand-pipe to supply gas under pressure to separate nozzles, a nozzle and a mixing-tube for each distributing-chamber, and in various features of combination and arrangement of parts, as will more fully appear by reference to the accompanying drawings, in which—

Figure 1 is a front elevation of a device embodying my invention with parts broken away to show the construction; Fig. 2, a vertical section of the same on the line 2 2 of Fig. 1, and Fig. 3 an enlarged transverse section of one of the distributing-chambers.

Like letters refer to like parts in all of the figures.

A represents a suitable stand-pipe to supply gas under pressure; B, a series of separate and independently-operative nozzles to discharge the gas from the stand-pipe to the mixing-tubes C, in which tubes air is mingled with the gas and the mixture projected into each distributing-chamber D, equally and in-

dependently of the other chambers. Said chambers are preferably lozenge-shaped in cross-section, as indicated, and journaled in a suitable case consisting of side plates H and I and a back plate J, connecting the plates H and I and inclined somewhat toward the front at the top, and thence curved forward, as at J', to a point above the rear part of the upper distributing-chamber, and thence extended forward and upward in a plane substantially parallel with the front surfaces of the chambers, as at J''. The mixing-tubes C project through the plate I a short distance, and the respective distributing-chambers D are journaled thereon, as shown in Fig. 1. The opposite ends of these chambers are journaled, as at F, whereby each chamber may be rotated about its longitudinal axis to adjust the direction of the flames projected from suitable openings D' in the upper side near the front angle of the said chamber. These chambers are each formed in two parts divided at opposite angles, preferably the acute angles L L, and these two parts secured by suitable bolts or rivets E, whereby the same may be readily cast without cores and readily cleaned on the inside.

The front of each distributing-chamber D and also the like inclined upper part J'' of the back plate are preferably coated with asbestos or other suitable refractory and incandescent material, as indicated at K. By adjusting the respective distributing-chambers D about their horizontal axes the direction of the flames projected from the opening G' can be varied at pleasure to impinge more directly upon the asbestos K or to be projected forward from the front of the device, as occasion may require. Air passes upward between the distributing-chambers and the back J and impinges upon the lower side of the respective chambers and is deflected forward between the same and upon the jets of flame, and thus supplies the same with additional air to insure more perfect combustion. By rotating these distributing-chambers the air-passage and the direction of the air-currents, as well as the direction of the flames, are also varied at pleasure.



The device may be utilized in a variety of ways, and more especially to insert in open fireplaces as grates and in conjunction with a mantle, or they may be made portable and  
5 attached by any suitable means to any convenient gas-supply.

By supplying each distributing-chamber with a separate jet and mixing-chamber I am also able to provide uniform distribution  
10 of the combustible mixture therein, and thus secure uniform jets of flame from the various series of openings D.

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

1. The combination of a stand-pipe, a series of separate and independently-operative nozzles and mixing-tubes attached to the stand-pipe, and a series of distributing-chambers spaced apart and journaled on the respective mixing-tubes, and also supported  
20 by said tubes, each of said chambers having a forwardly-projecting upper angle provided with jet-openings and a rearwardly-projecting lower angle adjacent to the next chamber below and adjustable relative thereto.

2. The combination of a stand-pipe, a series of separate and independently-operative nozzles and mixing-tubes attached to the stand-pipe, a series of distributing-chambers spaced apart and journaled on the respective  
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mixing-tubes, and also supported thereby, each of said chambers being lozenge-shaped in cross-section and having a forwardly-projecting upper angle provided with jet-openings and adjustable relative to the forward surface of the next chamber above, each chamber also having a rearwardly-projecting lower angle adjustable relative to the next chamber below, and a case having a back plate extending back of said chambers and thence forward and above the upper chamber and thence at an inclination forward and upward above the upper chamber, and in a plane parallel with the front side of said chamber.  
45

3. The combination of a stand-pipe, a series of nozzles and mixing-tubes attached thereto, a stove-casing, a series of longitudinally-divided distributing-chambers, each having its rear portion journaled on a respective mixing-tube at one end and supported  
50 thereby, said rear portion also being journaled in the stove-casing at the other end, the front portion being cast separately and attached to the rear portion.  
55

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

WILLIAM McLAUGHLIN.

Witnesses:

LUTHER V. MOULTON,  
GEORGIANA CHACE.