

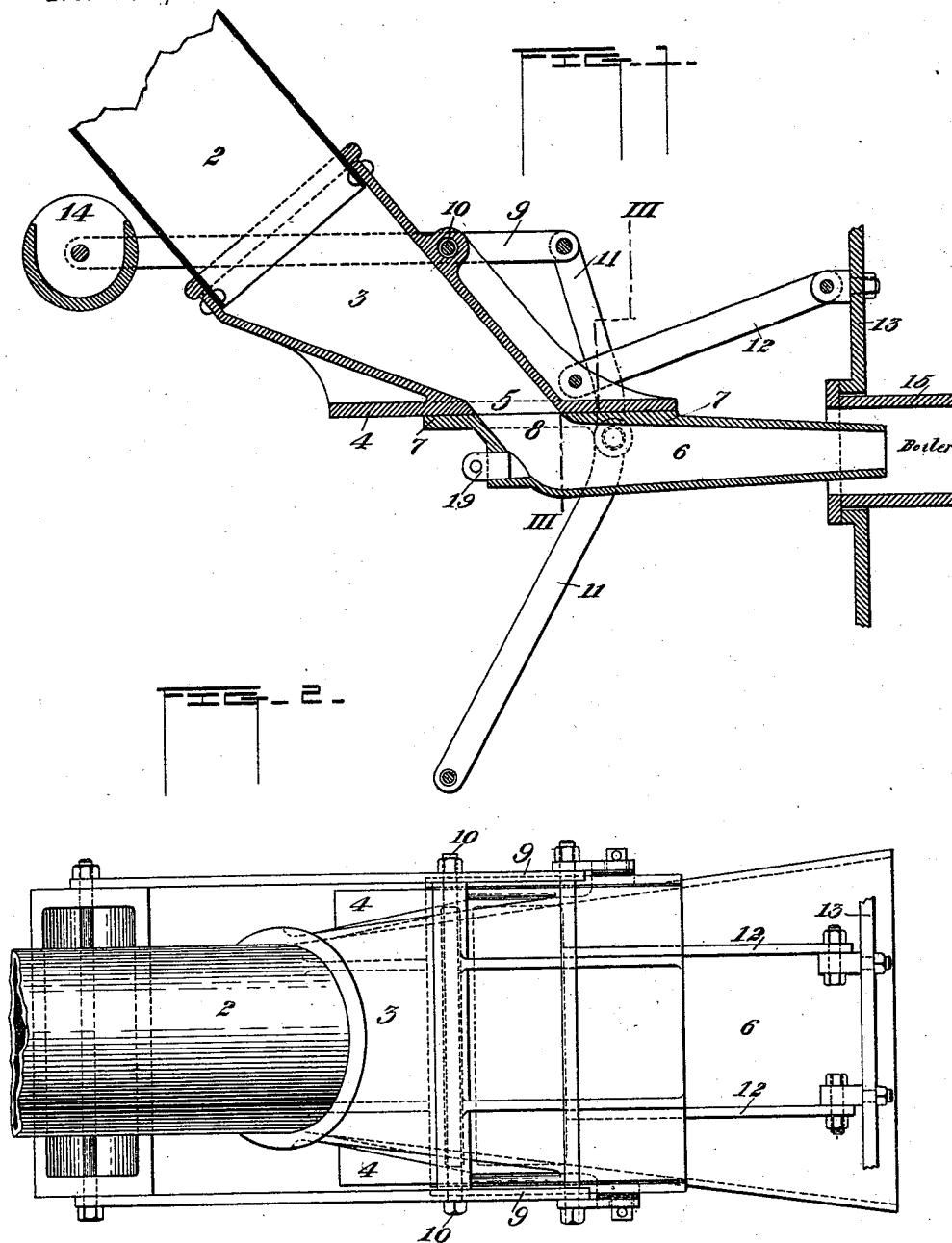
(No Model.)

4 Sheets—Sheet 1.

J. KENNEDY.
GAS BURNER.

No. 455,214.

Patented June 30, 1891.



Witnesses

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A. M. Corwin

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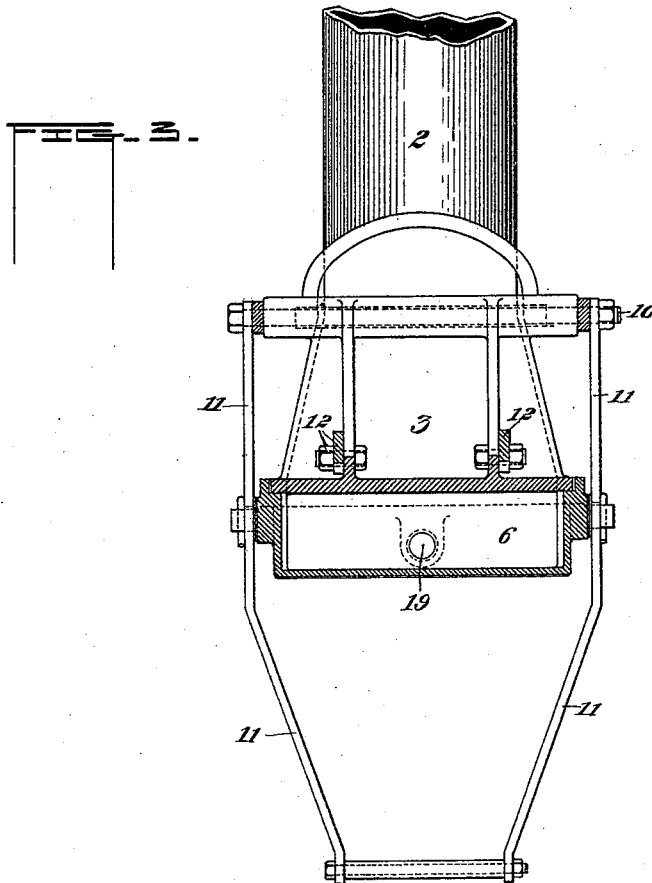
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4 Sheets—Sheet 2.

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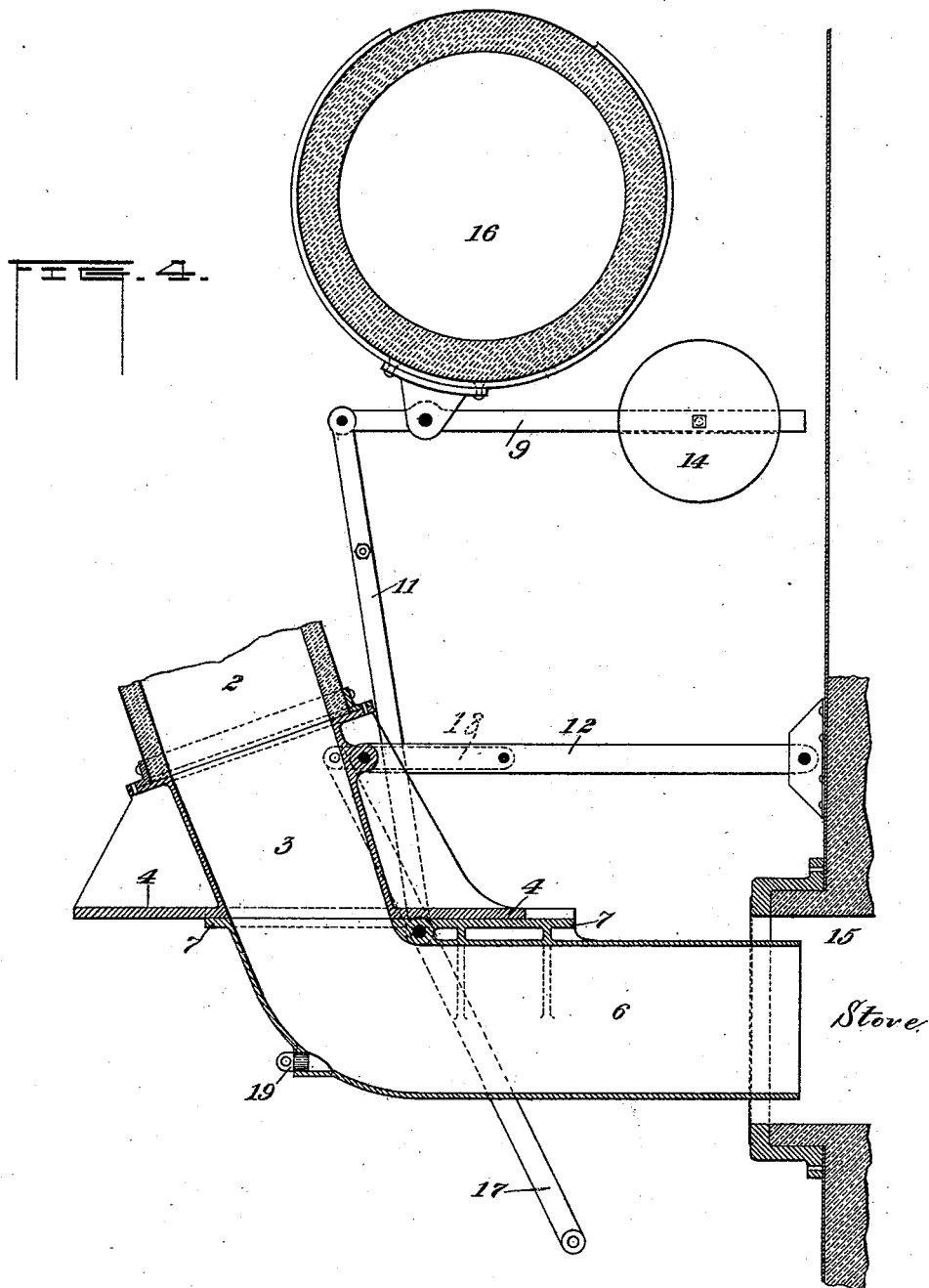
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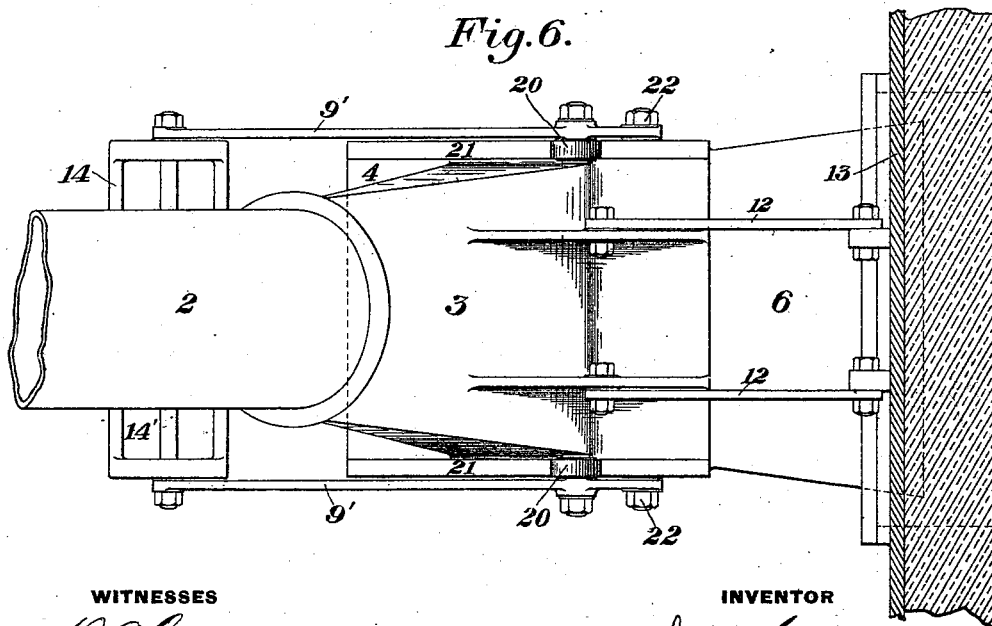
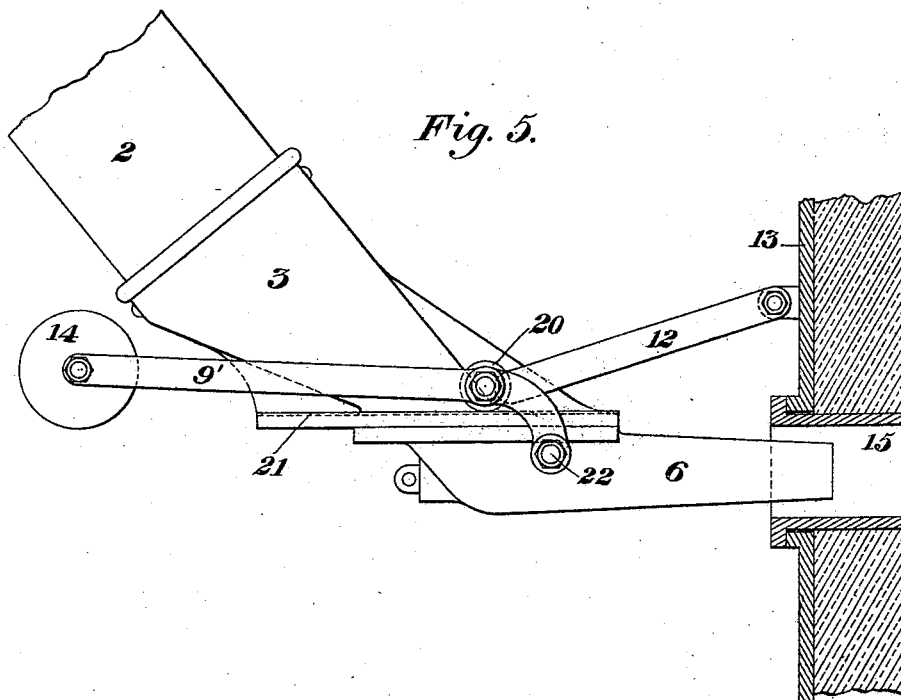
INVENTOR

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UNITED STATES PATENT OFFICE.

JULIAN KENNEDY, OF LATROBE, PENNSYLVANIA.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 455,214, dated June 30, 1891.

Application filed September 1, 1890. Serial No. 363,655. (No model.)

To all whom it may concern:

Be it known that I, JULIAN KENNEDY, of Latrobe, in the county of Westmoreland and State of Pennsylvania, have invented a new and useful Improvement in Gas-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a vertical longitudinal section of my improved gas-burner, showing it applied to the combustion-chamber of a boiler-furnace. Fig. 2 is a plan view thereof. Fig. 3 is a vertical section on the line III III of Fig. 1. Fig. 4 is a vertical longitudinal section of a modified construction. Fig. 5 is a side elevation of another modified construction of my invention. Fig. 6 is a plan view thereof. In Figs. 5 and 6 the front of the furnace-wall is shown in section.

Like symbols of reference indicate like parts in each.

In the drawings, 2 represents a gas pipe or main by which gas is supplied to my improved burner. This pipe is attached to or terminates in a hollow casting 3, the base 4 of which is made plain, so as to be capable of serving the function of a valve-seat, and the gas opening or port 5 extends through said plain face. The gas-burner or nozzle 6, which also serves the function of a slide-valve to control the flow of gas, is situated beneath the casting 3 and is provided with a plain face adapted to fit against and to slide in contact with the base 4 of said casting. When the port 8 of the nozzle is in register with the port 5 of the casting, as shown in Fig. 1, the valve is open to its greatest extent, and it may be closed, either wholly or partially, by sliding the nozzle-valve back more or less on its seat. The end of the nozzle enters an opening 15, formed in the combustion-chamber wall and preferably made of greater area than the cross-sectional area of the nozzle end, so that a supply of air may be induced into the combustion-chamber by the entering gas. I prefer, also, to form at the rear of the nozzle a cleaning-hole, which may be stopped by a plug 19, and which affords access to the nozzle for the purpose of cleaning it. To uphold the nozzle-valve, I employ a weighted lever yoke or frame 9, which is pivoted at 10 to the casting

3 or to the gas-pipe, and is pivotally connected to the nozzle-valve by a hanger-yoke 11, which may extend below the nozzle-valve, as shown in Fig. 1, to afford an operating lever or handle.

12 12 are brace-rods, by which the casting 3 may be held to the wall 13 of the combustion-chamber of the furnace. By reason of this construction it is apparent that as the nozzle-valve is moved on its seat the weight 14, acting on the valve through its jointed connection, will hold the latter nearly to its seat whatever be its position thereon, and that because of the yielding nature of the support thus afforded the free sliding of the valve is not obstructed. It is in this yielding support for the valve that my invention consists. Its advantages will be appreciated by those skilled in the art. The valve is easy to move, and, being held snugly to its seat, the gas is effectually prevented from leaking. It also enables me to extend the gas main or pipe from above instead of bringing it from below, as has heretofore been customary. This results in economy and convenience of construction and in other apparent advantages. The form and arrangement of the parts may be varied in many ways. For example, I may use springs or weighted levers with rollers for upholding the valve. This is shown in Figs. 5 and 6, hereinafter described.

In Figs. 1, 2, and 3 I show the valve supported from the gas main or pipe, the apparatus thus being self-contained and self-supporting, and in these figures I also show the nozzle formed with a wide end adapted to distribute the gas beneath the boilers.

In Fig. 4 I show a modified construction, which differs from that shown in the other figures principally in respect of the fact that the nozzle-valve is supported not from the casting 3 but from an independent support, in this case a main gas-supply pipe 16, to which the weighted lever 9 is pivoted. In this figure I show also another modification, viz., that instead of extending the hanger-yoke 11 downwardly to form an actuating-lever, I employ a separate yoke 17, which is pivotally connected to the valve, and is also connected by links 18 to the braces 12. This pivotal connection between the yoke and the links serves as a fulcrum on which the yoke turns

in moving the valve back and forth on its seat. It should be understood that other places for the suspension of the valve may be utilized, according to the convenience afforded by the nature of the furnace structure. In this figure I show the end of the valve-nozzle of circular cross-section, adapted to be used for supplying gas to a hot-blast or regenerative stove.

10 In the modification shown in Figs. 5 and 6 the valve-nozzle is upheld to its seat against the under side of the casting 3 by weighted levers 9', which are pivotally connected with the nozzle at points 22, and are provided with 15 rollers 20, suitably journaled to the levers and set upon tracks 21 on the base of the casting 3. The weight 14 on said levers exerts on the valve-nozzle a constantly-acting lifting force, which holds it to its seat, while the 20 nozzle may be moved longitudinally to and from the furnace without affecting this lifting action, since the wheels 20 will travel upon their tracks with the valve-nozzle and will maintain constant relation of position 25 thereto. The valve-nozzle may be moved by pulling or pushing directly upon it or upon the levers 9', as may be convenient.

Without intending to limit the broad claim of this application to the specific constructions herein set forth, I claim—

30 1. In a gas-burner, the combination, with

a gas-supply pipe and valve-seat, of a valve having a gas-nozzle situate on the under side of the seat and a yielding support for the valve and nozzle, substantially as and for the 35 purposes described.

2. In a gas-burner, the combination, with a gas-supply pipe and valve-seat, of a valve having a gas-nozzle situate on the under side of the seat and a weighted upholding-lever 40 connected with the valve, substantially as and for the purposes described.

3. In a gas-burner, the combination, with a gas-supply pipe and valve-seat, of a valve having a gas-nozzle situate on the under side 45 of the seat and a weighted upholding-lever connected with the valve by a swinging connection, substantially as and for the purposes described.

4. In a gas-burner, the combination, with 50 a gas-supply pipe and valve-seat, of a valve on the under side of the seat, a lever or frame 9, pivoted to the gas-supply pipe, and a yoke 11, pivotally connecting the lever or frame with the valve, substantially as and for the 55 purposes described.

In testimony whereof I have hereunto set my hand this 29th day of August, A. D. 1890.

JULIAN KENNEDY.

Witnesses:

THOMAS W. BAKEWELL,
W. B. CORWIN.