J. KENNEDY.

GAS BURNER.

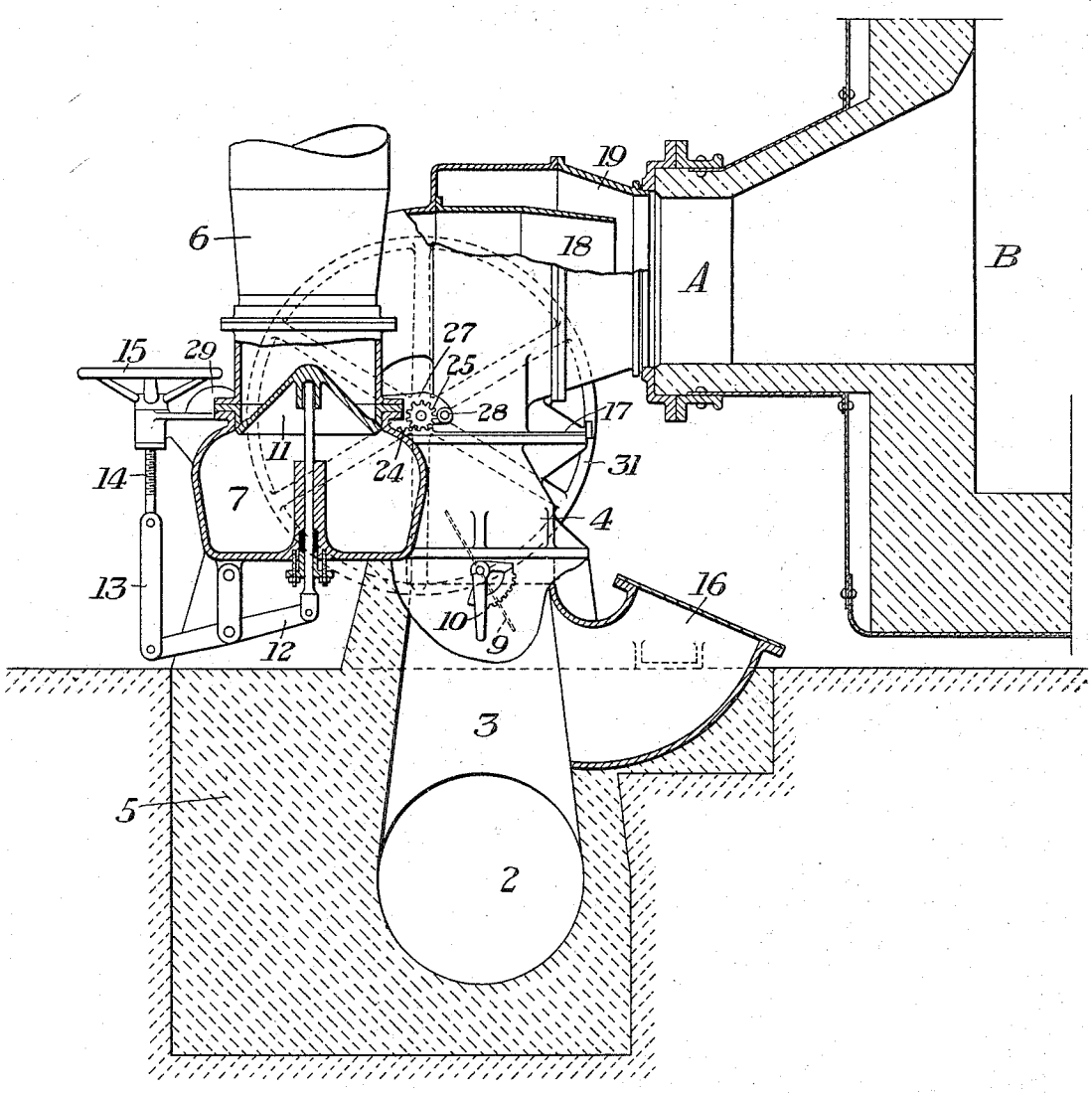
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Patented May 9, 1916.

3 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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3 SHEETS—SHEET 2.

Fig.2.

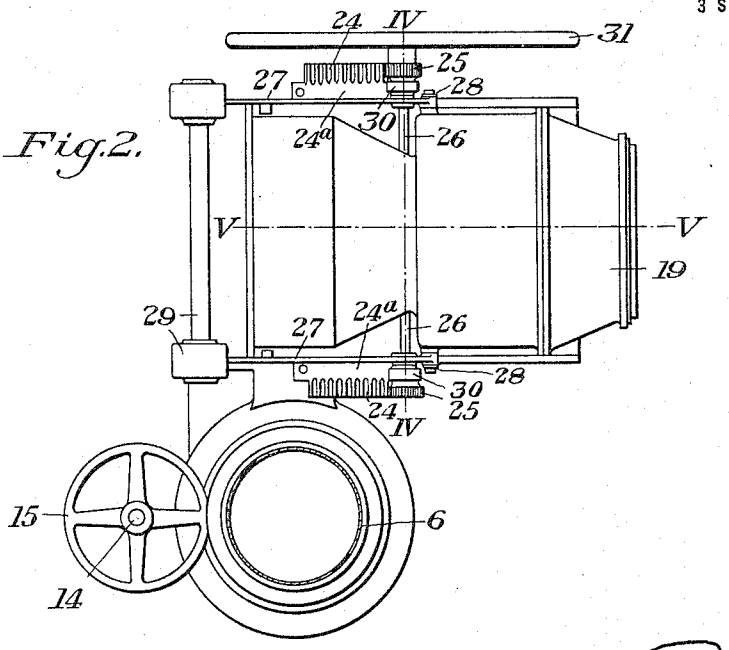
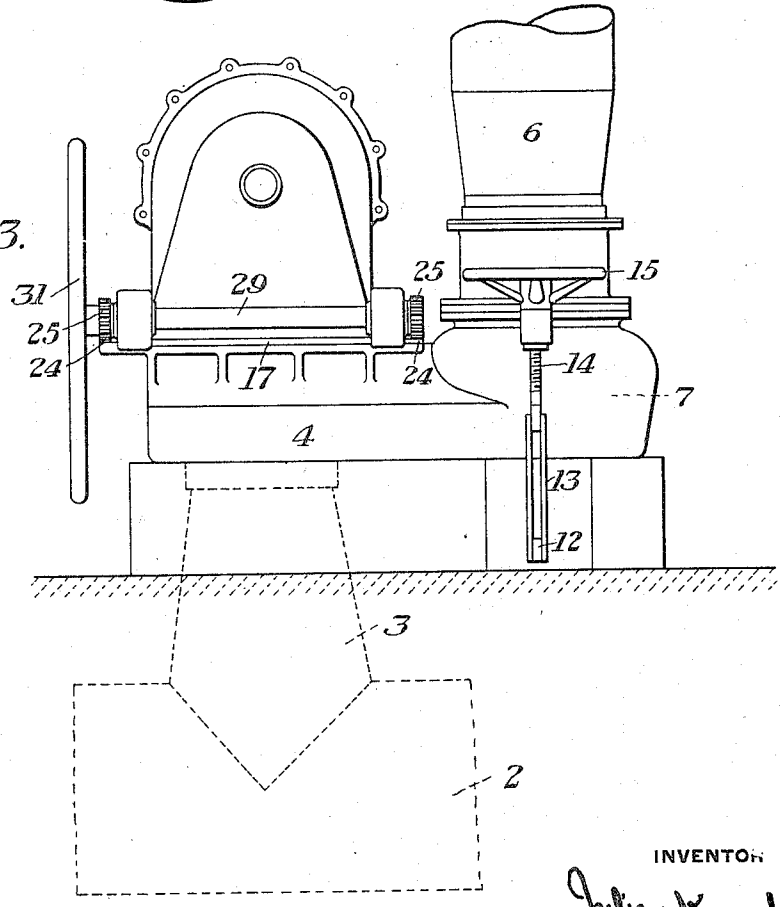


Fig.3.



WITNESSES

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3 SHEETS—SHEET 3.

Fig. 4.

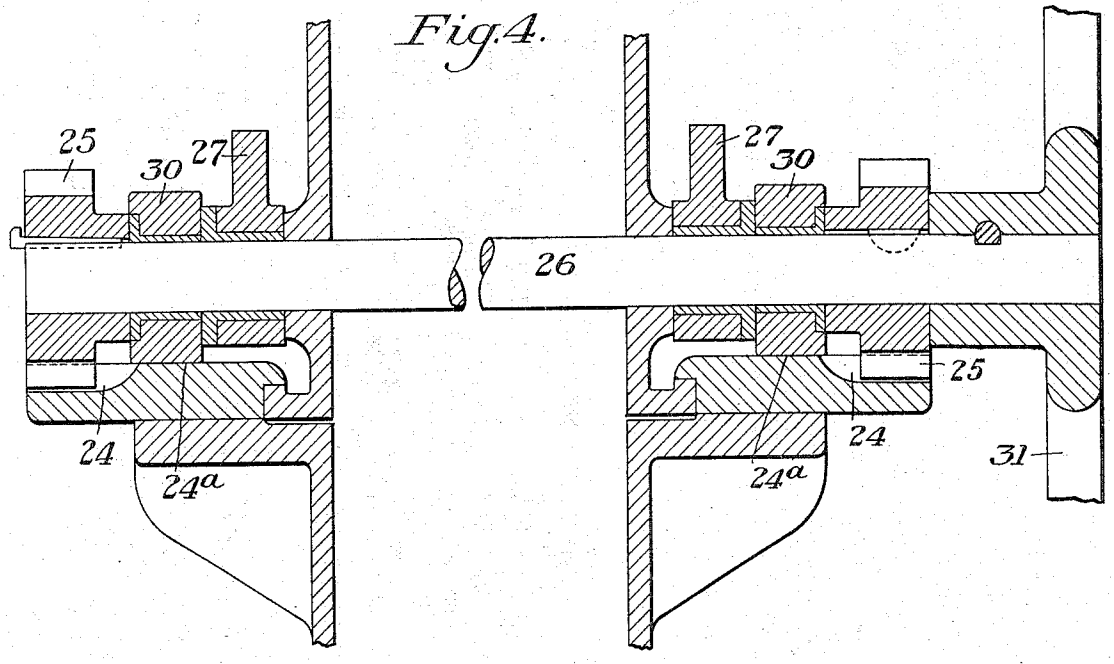
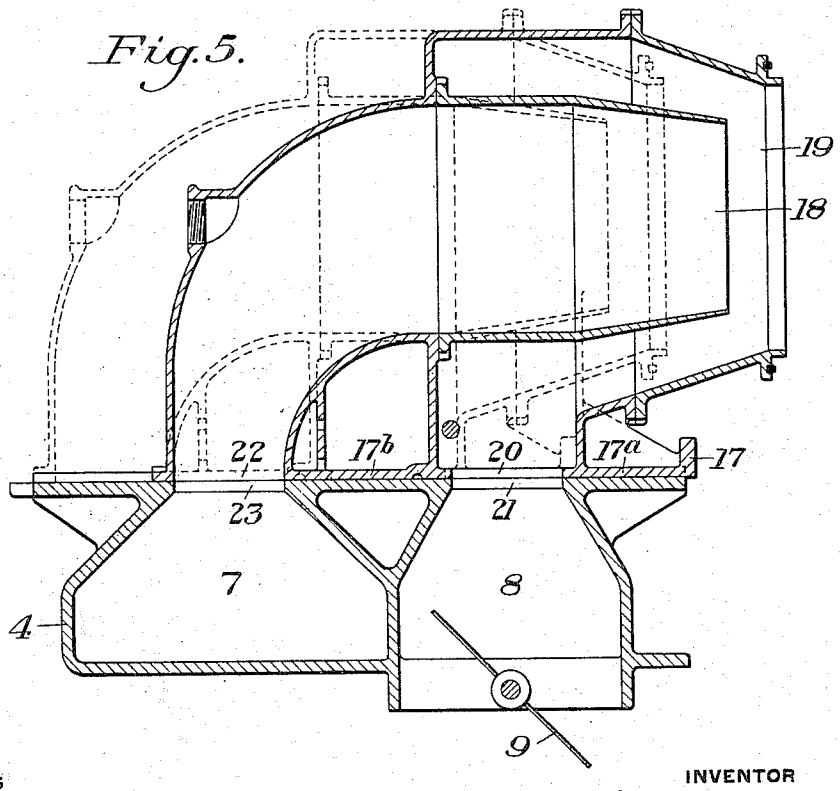


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

JULIAN KENNEDY, OF PITTSBURGH, PENNSYLVANIA.

GAS-BURNER.

1,182,016. Specification of Letters Patent. Patented May 9, 1916.

Application filed February 4, 1916. Serial No. 76,138.

To all whom it may concern:

Be it known that I, JULIAN KENNEDY, a citizen of the United States, residing at Pittsburgh, Allegheny county, 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:

Figure 1 is a sectional elevation showing a gas burner embodying my invention, and its application to a furnace. Fig. 2 is a plan view of the burner with the gas supply pipe in section. Fig. 3 is a rear elevation. Fig. 4 is a section on the line IV—IV of Fig. 2, and Fig. 5 is a section on the line V—V of Fig. 2.

My invention has relation to gas burners for furnaces; and is designed to provide a burner capable of being moved into and out of operative relation to a furnace, and having means whereby such movement opens and shuts off the gas and air supply connections to the burner nozzles.

A further object of my invention is to provide a burner of this character which is simple and compact in construction, and which may be conveniently operated and controlled.

Referring to the accompanying drawings, in which I have shown a preferred embodiment of my invention, the numeral 2 designates an air supply conduit extending below the burner and having an uptake 3 leading into the base portion 4 of the burner. This base portion may be secured to a suitable bed or foundation 5.

6 designates a downwardly extending gas supply connection which enters the base portion 4 at one side thereof, as best shown in Figs. 2 and 3. This base portion has a gas inlet chamber 7 which communicates with the gas supply connection 6, and a separate air inlet chamber 8 which communicates with the uptake 3. The supply of air may be regulated by means of a suitable valve, such as the butterfly valve 9 controlled by the lever 10.

11 designates a valve for controlling the entrance of gas from the pipe 6 to the chamber 7, and which is shown as having its stem connected to a lever 12 to which is connected, in turn, an actuating link 13 and shaft 14, provided with a hand wheel 15.

16 designates a lateral opening which is provided for the purpose of giving access to the interior of the parts.

Mounted upon the upper surface of the base 4 is a slide 17 upon which is supported a gas nozzle 18 and an air nozzle 19, the latter surrounding the nozzle 18. The chamber of the nozzle 19 has an opening 20 which is adapted to communicate with a similar opening 21 in the top wall of the chamber 8. The nozzle 18 has an inlet opening 22 which is arranged to register with an opening 23 in the top wall of the chamber 7.

The slide 17 is adapted to be reciprocated on the base portion 4 from the position shown in full lines in Fig. 5, to the position shown in dotted lines in said figure, and reversely. For this purpose the base portion 4 is provided with the toothed racks 24 at opposite sides which are engaged by toothed pinions 25 carried on a transverse shaft 26. This shaft 26 is supported in bearings in two lever arms 27 which are pivoted at one end at the points 28 and whose opposite ends have a weighted connection 29. The weight of this connection is sufficient to maintain the proper engagement of the pinions and racks. For the purpose of taking the weight of the slide and its nozzles off from the gears, the shaft 26 is preferably provided with the wheels or rollers 30, which travel on the smooth surface portions 24^a of the rack bars 24. By this construction and arrangement, proper meshing of the pinions is at all times insured, while relieving them of the weight of the slide and the parts carried thereby.

The operation is as follows: When the burner is in use it is moved to a position in which the delivery end of the air nozzle 19 fits the burner opening A of the furnace B. In this position the ports or openings 20 and 21, and 22 and 23, are respectively in register, as shown in full lines in Fig. 5. The gas delivered from the nozzle 18 is thoroughly mixed with the air delivered by the nozzle 19 prior to combustion. When it is desired to move the burner away from the furnace, this is done by actuating the shaft 26 which is preferably provided with a hand wheel 31 for this purpose. When this wheel is actuated, the nozzle slide 17 is moved to the position shown in dotted lines in Fig. 5, bringing the solid portion 17^a of said slide into position to close the opening 21, and the solid portion 17^b in

position to close the opening 23. Both air and gas are thus cut off from the burner by the movement of the slide itself.

My invention provides a burner which is especially well adapted for use with blast or other combustible furnace gases. It is simple and compact in its construction, and may be readily installed and conveniently operated.

I do not desire to limit myself to the particular construction and arrangement of the parts which are herein shown and described, as these may be varied in detail without departing from the spirit and scope of my invention as defined in the appended claims.

What I claim is:

1. A gas burner comprising a base portion having an air chamber and a gas chamber, each of said chambers having an outlet port or opening in its top wall, and a slide mounted for reciprocation on said base portion, said slide having an air nozzle and a gas nozzle, said nozzles having inlet openings adapted to register respectively with the ports or openings in the top wall of said air and gas chambers, and the slide having valve portions adapted to close the said openings in the base portion, substantially as described.

2. In a gas burner the combination with a base portion having gas and air chambers provided with top outlet openings, of a slide mounted to reciprocate on said base portion and having gas and air nozzles adapted to communicate with said openings, and shifting means for said slide comprising a shaft having pinions thereon, rack members on the base portion engaged by said pinions, and roller supports for said shaft, substantially as described.

3. In a gas burner the combination with a base portion, of a slide mounted to reciprocate on said base portion and having gas and air nozzles, a shaft carried by said slide and having gear members, toothed racks on said base portion engaged by said gear members, supporting rollers carried by said shaft and adapted to take the weight from the gears, and weighted lever arms in which said shaft is journaled, substantially as described.

In testimony whereof, I have hereunto set my hand.

JULIAN KENNEDY.

Witnesses:
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