Oct. 23, 1934. J. F. LUTENBACHER 1,977,947

GAS BURNER

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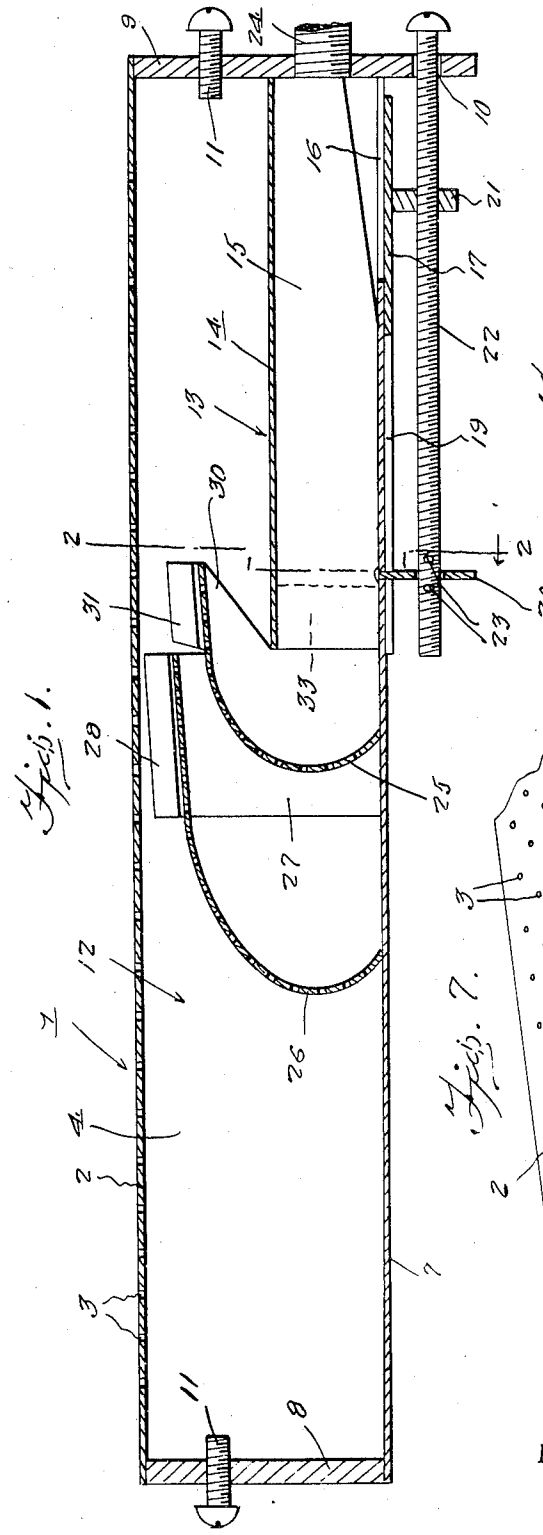


Fig. 1.

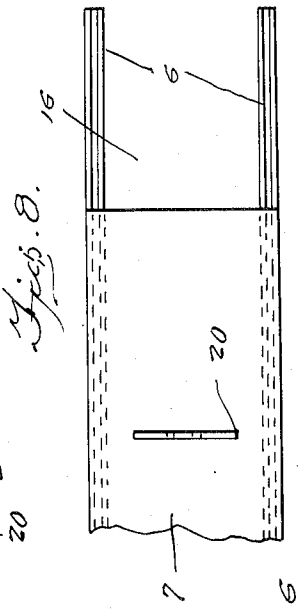


Fig. 8.

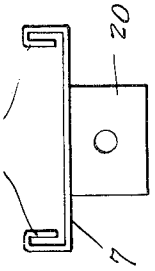


Fig. 9.

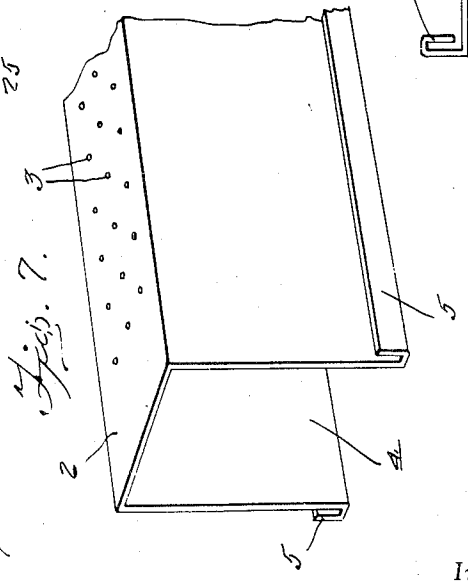


Fig. 7.

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Fig. 2.

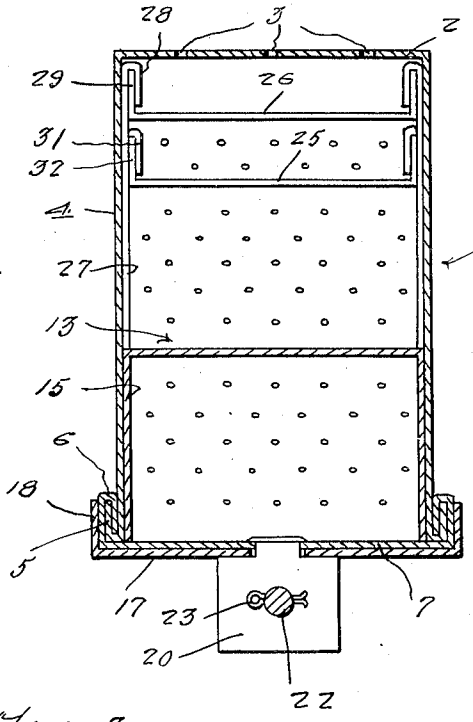


Fig. 3.

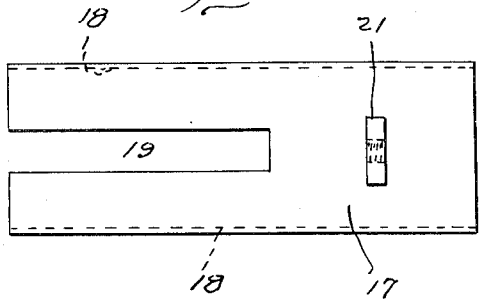


Fig. 5.

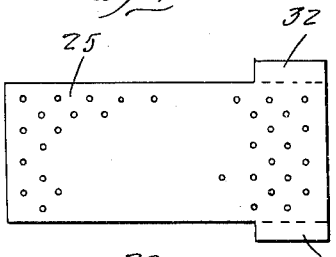


Fig. 4.

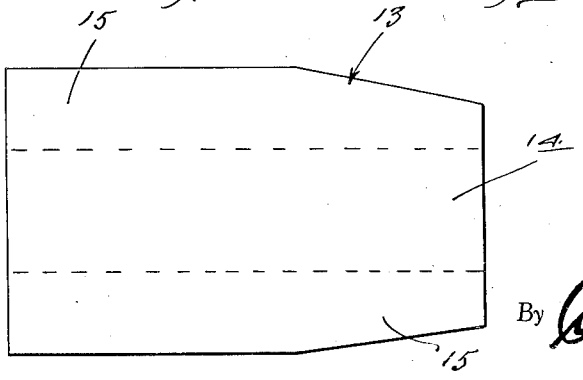
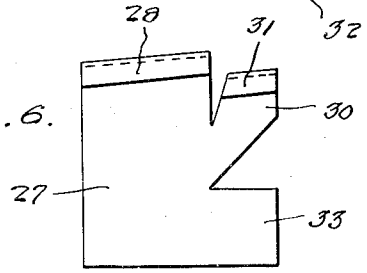


Fig. 6.



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UNITED STATES PATENT OFFICE

1,977,947

GAS BURNER

John Felix Lutenbacher, New Orleans, La.

Application October 18, 1933, Serial No. 694,174

4 Claims. (Cl. 158—99)

The present invention relates to new and useful improvements in gas burners, and has for one of its important objects to provide, in a manner as hereinafter set forth, a gas burner embodying a novel construction and arrangement of draft control means through the medium of which any desired adjustment may be expeditiously and conveniently secured for assuring efficient operation.

Other objects of the invention are to provide a gas burner which will be comparatively simple in construction, strong, durable, reliable, compact and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:—

Figure 1 is a view in vertical longitudinal section through a gas burner constructed in accordance with the present invention.

Figure 2 is a view in vertical transverse section, taken substantially on the line 2—2 of Figure 1.

Figure 3 is a detail view in bottom plan of the draft control slide.

Figure 4 is a plan view of the blank from which the draft tube is formed.

Figure 5 is a plan view of the blank from which the primary deflector or baffle is formed.

Figure 6 is a detail view in side elevation of one of the deflector or baffle supports.

Figure 7 is a fragmentary view in perspective, showing one end portion of the casing with the bottom and end wall removed.

Figure 8 is a fragmentary view in bottom plan, showing the rear end portion of the bottom of the casing.

Figure 9 is a detail view in end elevation of the bottom of the casing.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises an elongated casing which is designated generally by the reference numeral 1, said casing including a top 2 having perforations 3 therein, and integral side walls 4 having upturned, external flanges 5 on their lower edges. Interlocked with the flanges 5 are flanges 6 on the bottom 7 of the casing. The casing 1 further includes comparatively thick or heavy front and rear end walls 8 and 9, respectively, the latter extending below said casing and having an opening 10 therein for a purpose which will be presently set forth. Bolts 11 are tapped into the end walls 8 and 9 for securing the casing in position on a suitable supporting structure (not shown). The casing 1 defines a mixing chamber 12.

Mounted longitudinally in the rear portion of the casing 1 is a draft tube 13, the rear end of which abuts the end wall 9. The draft tube 13 comprises a top 14 from which integral side walls 15 depend, said side walls abutting the side walls 4 of the casing and being fixed thereto. The bottom 7 of the casing 1 constitutes the bottom of the draft tube 13, said bottom 7 terminating in spaced relation to the end wall 9 for providing an air inlet opening 16 with which the draft tube communicates.

The draft opening 16 is controlled by a slide 17 which is mounted for longitudinal adjustment beneath the bottom 7 of the casing, said slide including upstanding longitudinal marginal flanges 18 which embrace the flanges 6 of the bottom 7, as illustrated to advantage in Figure 2 of the drawings. The forward end portion of the slide 17 has formed therein a longitudinal slot 19 which accommodates an apertured ear 20 which depends from the bottom 7 of the casing 1. Fixed on the forward portion of the slide 17 is a depending nut 21 in which an adjusting screw 22 is threadedly engaged, said adjusting screw extending rotatably through the opening 10 which is provided therefor in the rear end wall 9. The adjusting screw 22 is rotatably anchored in the apertured ear 20 through the medium of pins 23. It will thus be seen that by actuating the screw 22, the slide 17 may be adjusted as desired for controlling the supply of air to the burner. A conventional gas cock is tapped into the end wall 9, as at 24, for discharging gas into the draft tube 13 above the air inlet opening 16.

Mounted in the mixing chamber 12 are longitudinally spaced, curved, perforated deflectors or baffles 25 and 26, said baffles curving forwardly and upwardly and then rearwardly from the bottom 7 of the casing 1, as best seen in Figure 1 of the drawings. The uppermost portions of the baffles or deflectors 25 and 26 are spaced below the top 2 of the casing 1, the secondary baffle 26 terminating, at its rear end, at a point in spaced relation above an intermediate portion of the primary baffle 25. It will also be noted that the primary baffle 25 extends rearwardly over the draft tube 13.

Supporting plates 27 are fixed on the side walls 4 of the casing 1 and terminate, at their upper ends, in downturned flanges 28 beneath which upstanding flanges 29 (see Figure 2) on the

upper end portion of the secondary baffle 26 are secured, as by spot welding. Extending rearwardly from the plates 27 are branches 30 having downturned flanges 31 on their upper edges beneath which upstanding flanges 32 on the rear end portion of the primary baffle 25 are fixed, as by spot welding. As best seen in Figure 6 of the drawings, the supporting plates 27 for the baffles 25 and 26 include rearwardly projecting extensions 33 between the side walls 15 of the draft tube 13 and the side walls 4 of the casing 1.

Briefly, the operation of the burner is as follows:—

Gas enters the mixing tube 13 under pressure and creates a suction therein which draws air into said mixing tube through the inlet opening 16, as will be understood. The volume of air entering the draft tube 13 may be regulated as desired through the medium of the control slide 17. The gas and air pass through the draft tube 13 and enter the mixing chamber 12 where the primary and secondary perforated baffles 25 and 26, respectively, are encountered, said baffles functioning to distribute the mixture evenly throughout the chamber 12 from which it passes through the perforations 3 in the top 2 of the casing 1.

It is believed that the many advantages of a gas burner constructed in accordance with the present invention will be readily understood, and although the preferred embodiment of the invention is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:—

1. A gas burner comprising an elongated casing having perforations in its top, said casing providing a mixing chamber, the casing further having an air inlet opening in its bottom at one end thereof, a draft tube mounted longitudinally in the casing and communicating with the air inlet opening, said draft tube being open at its forward end, means for introducing gas into the draft tube at the rear end thereof and above the air inlet opening, a plurality of upwardly and rearwardly curved perforated baffles mounted at longitudinally spaced points in the mixing chamber forwardly of the draft tube, and means for controlling the flow of air through the inlet opening.

2. A gas burner comprising an elongated casing having perforations in its top, said casing providing a mixing chamber, the casing further having an air inlet opening in its bottom at one end thereof, a draft tube mounted longitudinally in the casing and communicating with the air inlet opening, said draft tube being open at its forward end, means for introducing gas into the draft tube at the rear end thereof and above the air inlet opening, a plurality of upwardly and rearwardly curved perforated baffles mounted at longitudinally spaced points in the mixing chamber forwardly of the draft tube, means for controlling the flow of air through the inlet opening, said means comprising a slide mounted for longitudinal adjustment beneath the bottom of the casing, said slide including upturned side flanges, an apertured ear depending from the casing, the slide having a slot therein accommodating the ear, a depending nut fixed on the slide, and an adjusting screw threadedly engaged in the nut and rotatably anchored in the ear.

3. A gas burner comprising an elongated casing having perforations in its top, a draft tube mounted longitudinally in the lower rear portion of the casing, said draft tube being open at its forward end, the casing further having an air inlet opening in its bottom communicating with the draft tube, plates fixed on the side walls of the casing at an intermediate point, downturned flanges on the upper ends of the plates, a plurality of upwardly and rearwardly curved perforated baffles mounted in the casing at longitudinally spaced points, and upstanding flanges on the rear end portions of the baffles engaged beneath the first named flanges.

4. A gas burner comprising an elongated casing including a perforated top, side walls, a bottom, and front and rear end walls, said bottom terminating in spaced relation to the rear end wall for providing an air inlet opening, said rear end wall extending below the bottom of the casing, a draft tube mounted longitudinally in the lower rear portion of the casing and communicating with the inlet opening, said draft tube being open at its forward end for communication with the casing, a slide for controlling the air inlet opening, said slide being mounted beneath the bottom of the casing, an apertured ear depending from the bottom of the casing, the slide having a longitudinal slot therein for the accommodation of the ear, a depending nut fixed on the slide, an adjusting screw threadedly engaged in the nut and rotatably anchored in the ear, said adjusting screw extending rotatably through the depending lower portion of the rear end wall of the casing, and a plurality of longitudinally spaced, perforated baffles mounted in the casing forwardly of the draft tube.

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