March 11, 1924. 1,486,668

H. KIELBERG

GAS BURNER

Filed Sept. 27, 1923

Fig 1

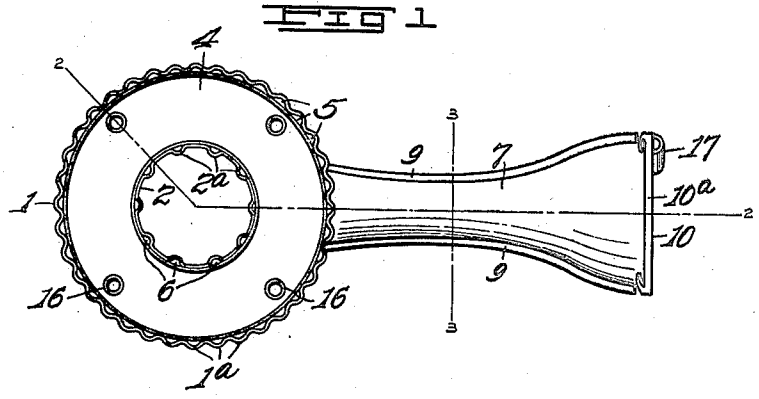


Fig 2

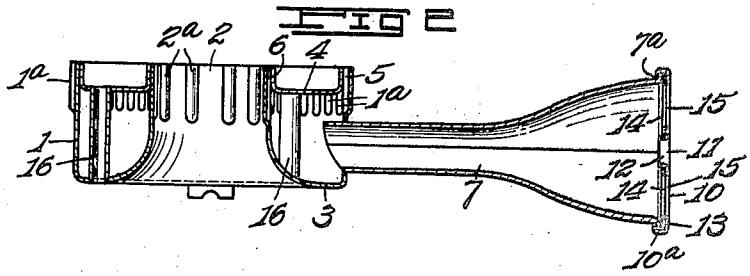


Fig 3

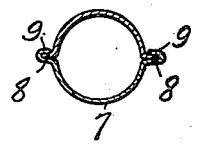


Fig 4

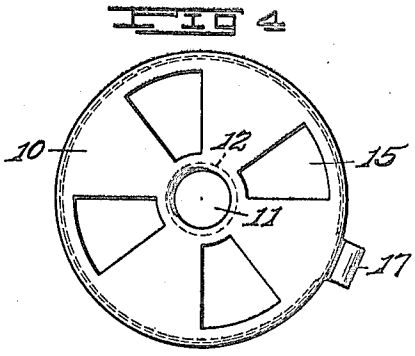
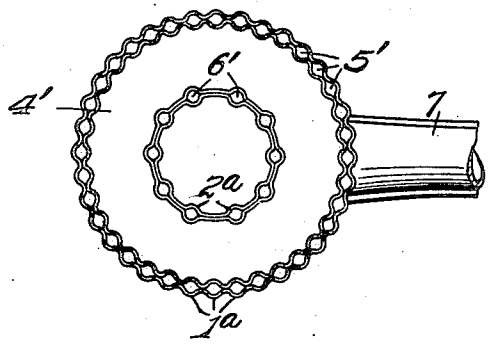


Fig 5



INVENTOR

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UNITED STATES PATENT OFFICE.

HENRY KIELBERG, OF MARTINS FERRY, OHIO, ASSIGNOR TO WHEELING STEEL CORPORATION, OF WHEELING, WEST VIRGINIA, A CORPORATION OF WEST VIRGINIA.

GAS BURNER.

Application filed September 27, 1923. Serial No. 665,067.

To all whom it may concern:

Be it known that I, HENRY KIELBERG, a citizen of the United States of America, and resident of Martins Ferry, county of Belmont, and State of Ohio, have invented certain new and useful Improvements in Gas Burners, of which the following is a specification.

This invention relates broadly to gas burners, and more specifically to a burner for gas stoves and ranges, hot plates, and the like.

The primary object of the invention is to provide a simple and durable gas burner for stoves, ranges and hot plates, which is constructed wholly of sheet metal and which, consequently, is comparatively inexpensive to manufacture.

In describing the invention in detail, reference is herein had to the accompanying drawings, in which—

Figure 1 is a top plan view of my improved gas burner;

Figure 2 is a longitudinal section on line 2—2, Fig. 1;

Figure 3 is a cross section on line 3—3, Fig. 1;

Figure 4 is an end elevation of the burner tube and damper; and—

Figure 5 is a view similar to Fig. 1. illustrating a modification.

Referring to said drawings, the invention comprises a sheet metal shell or casing consisting of an outer wall 1, preferably cylindrical in form, and an inner tubular wall 2 located concentrically with respect to and at a suitably spaced distance from said wall 1. Said shell or casing is pressed from a single sheet metal blank and has a bottom 3 joining said walls 1 and 2. The lower end of the tubular wall 2 is preferably tapered, as shown. Closely fitted between the upper end portions of said walls 1 and 2 is a ring shaped cap 4 of sheet metal, the same being of shallow U-shape in cross section and serving as a closure for the top of said casing.

A multiplicity of small passages 5 of approximately semi-cylindrical form is provided intermediate the wall 1 of the shell and the therewith engaging wall of the cap 4; and a plurality of similar passages 6 is provided intermediate the wall 2 of the shell and the therewith engaging wall of said cap, said passages 5 and 6 being formed by the provision in the upper portions of said walls 1 and 2 of vertically disposed crimps 1^a and 2^a. Said passages so arranged constitute burner openings through which the gas admitted to the interior of the burner issues in the form of two concentric circular rows of jets.

A mixing tube 7 opens into the interior of the casing having its inner end fitted within an opening provided therefor in the lower part of the wall 1 and being rigidly attached to said wall, as by electric welding. Said tube is formed to two substantially semi-cylindrical sections which are permanently attached one to the other, one of said sections having its lateral edges turned outward to form flanges 8 and the other section having hook-like flanges 9 turned into embracing or clamping relation to said flanges 8. An apertured disk 10 is rigidly carried upon the outer end of the mixing tube, having an annular flange 10^a turned into closely embracing relation to a flange 7^a formed on the tube. Said disk has therein a central opening 11 for the reception of the end of an ordinary gas supply nozzle (not shown), and an inwardly pressed collar 12 is formed about said opening for embracing said nozzle. A disk 13 which is apertured to approximate the form of the disk 10 is mounted for rotation on said collar 12 and has its outer edge received between said disk 10 and the flange 7^a of the mixing tube. Said disk 13 is adapted for rotary movement with respect to the disk 10 to position its apertures 14 relative to the apertures 15 of disk 10 to regulate the air supplied for mixing with the gas. A projecting finger piece 17 carried by said disk 13 provides means whereby the latter may be grasped for effecting rotation.

Additional air for promoting combustion of the gas which issues from the two rows of passages 5 and 6 is preferably supplied at points between said rows, such additional air being admitted through a plurality of small tubes 16 which are fixed in the burner and which extend vertically through the interior of the latter, the lower ends of said tubes opening through the bottom 3 and the upper ends thereof opening through the cap 4, as shown.

The mixing tube preferably has the upper portion of its inner end prolonged, forming a projecting lip 7^b which serves to deflect

forward the inflowing gas to the extent that the latter is prevented from rising and issuing in preceptibly greater volume from the passages nearest the side at which it enters than at other points.

In the modification illustrated in Fig. 5, the upright walls of the cap 4′ have formed therein crimps similar in form to and adapted to register with the crimps 1^a and 2^a of the shell, thereby forming passages 5′ and 6′ of approximately cylindrical form.

The burner described is not only simple in form and comparatively inexpensive to construct, but is also efficient in operation and possesses great durability.

What is claimed is—

1. In a gas burner, a casing comprising two substantially cylindrical upright concentrically related walls having an intermediate closed bottom, a ring-like closure fitted between the upper ends of said walls, said walls having their closure engaging surfaces provided with crimps whereby are formed between said walls and said closure concentrically related rows of ports for egress of gas from the casing, and a mixing tube opening into said casing for supplying gas into the latter.

2. In a gas burner, a one-piece casing comprising an outer substantially cylindrical upright wall, an inner upright tubular wall, said walls being concentrically related, and a bottom intermediate the lower ends of said walls; a ring-like closure fitted between the upper ends of said casing walls, said walls and said closure being shaped relatively to form therebetween two concentrically related rows of ports for egress of gas from the interior of the casing, and means for conducting gas to the interior of the casing.

3. A gas burner comprising a one-piece casing shaped to form two substantially circular concentrically related upright walls with an intermediate closed bottom, said walls having vertical crimps formed in the upper end portion thereof, a ring-like closure fitted between said walls, said closure having upright flanges on its outer and inner edges seated against the crimped surfaces of said walls and complementing the latter in the formation of two concentric rows of ports for egress of gas from the interior of the casing, and means for conducting gas to the interior of the casing.

4. A gas burner comprising a one piece casing shaped to form two substantially circular concentrically related upright walls with an intermediate closed bottom, a ring-like closure disposed between said walls and having inner and outer edge flanges seated against said walls, said walls and said flanges being shaped relatively to provide therebetween ports for egress of gas from the interior of said casing, at least one of said engaging surfaces having crimps formed therein.

5. A gas burner comprising a one piece casing shaped to form two substantially circular concentrically related upright walls with an intermediate closed bottom, a ring-like closure disposed between said walls and having inner and outer edge flanges seated against said walls, said walls and said flanges being shaped relatively to provide therebetween ports for egress of gas from the interior of said casing, at least one of said engaging surfaces having crimps formed therein, and a plurality of vertical tubes extending through the casing and having their opposite ends opening through the closure and the bottom of the casing.

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

HENRY KIELBERG.

Witnesses:
H. E. DUNLAP,
M. T. MANION.