J. M. WEYDELL.

BURNER TOP.

APPLICATION FILED NOV. 22, 1920.

1,436,420. Patented Nov. 21, 1922.

Fig. 1.

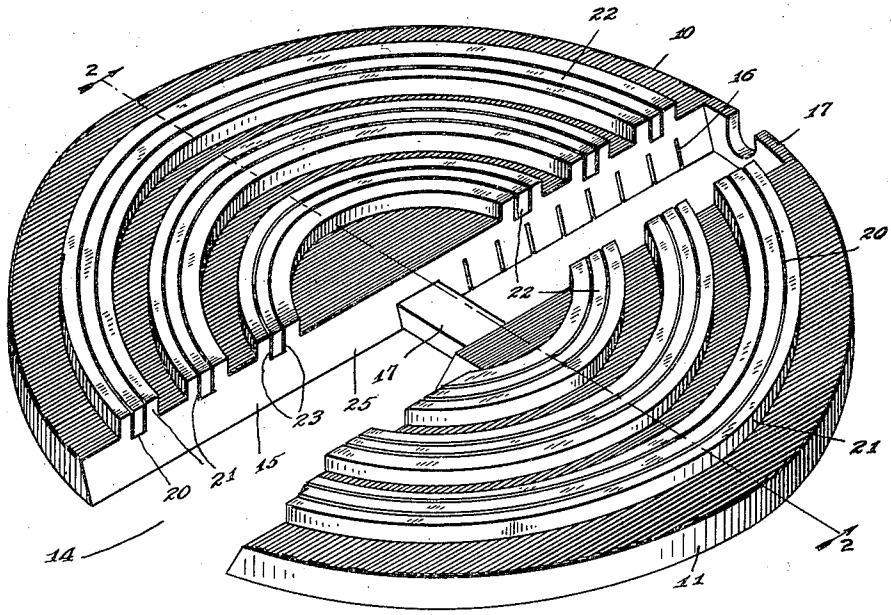


Fig. 2.

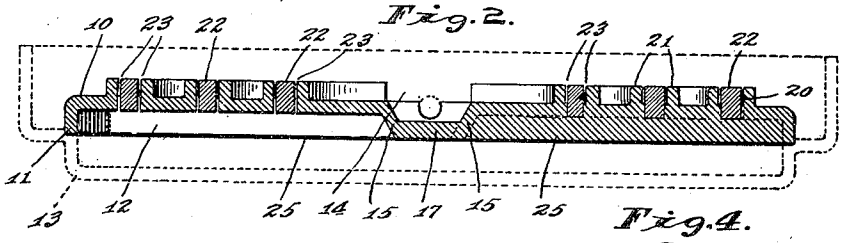


Fig. 4.

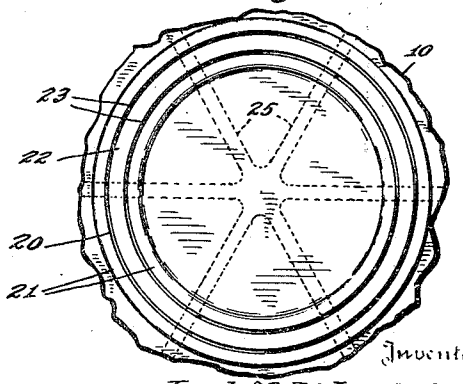
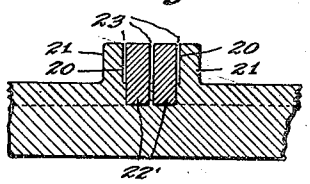


Fig. 3.



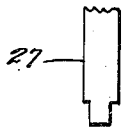


Fig. 5.

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UNITED STATES PATENT OFFICE.

JARL M. WEYDELL, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF TO EDWARD E. STOUT, OF INDIANAPOLIS, INDIANA.

BURNER TOP.

Application filed November 22, 1920. Serial No. 425,626.

To all whom it may concern:

Be it known that I, JARL M. WEYDELL, a citizen of Finland, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Burner Top, of which the following is a specification.

It is the object of my invention to produce a burner-top having narrow gas-emitting slits, which, though too narrow to be formed in casting, may be formed inexpensively and accurately and without the use of delicate tools.

In carrying out my invention, I provide in the body of the top, which is usually cast, one or more slots which are wide in relation to the desired gas-emitting slits, which slots may extend circularly; and I mount in these wide slots similarly shaped bars of slightly less width, so that narrow gas-emitting slits are formed between the walls of said grooves and the adjacent faces of said bars. The bars are conveniently supported on ribs which cross said slots at the back, said ribs and bars preferably interlocking by suitable notches. The slots may be formed in casting; but for finer structures I prefer to form them by machining them with a tool which in one application will surface the walls of the slots and the notches in the ribs.

The accompanying drawing illustrates my invention: Fig. 1 is a perspective view of a burner top embodying my invention, which burner top is shown provided with a diametral open space for receiving a gas generator which per se forms no part of the present invention; Fig. 2 is a section on the line 2—2 of Fig. 1; Fig. 3 is a fragmentary section showing gas-emitting slits formed by a slot containing two bars spaced apart and from the walls of the slot to form three gas-emitting slits; Fig. 4 is a plan of a burner in which the gas-emitting slits are circular, without provision for any gas generator; and Fig. 5 is a plan of the cutting end of a tool suitable for machining the slots.

The burner top is formed of a main body 10, usually in the form of a flat disk, with a downwardly extending peripheral flange 11 to provide an open space 12 beneath it, which burner top may be supported on any suitable base 13 (shown only in dotted lines in Fig. 2) which with the burner top forms a chamber. The top may be completely circular as shown in Fig. 4, or may be provided with a diametral opening 14 for receiving a gas generator, which is not shown because it forms no part of the present invention. The opening 14 when provided has side walls 15, which may be provided in suitable places with slots 16 by which gas from the open space 12 may be supplied for heating such generator. Where the opening 14 is provided, the two half-disks spaced apart by such opening are preferably connected by cross members 17, provided at convenient points.

In the upper face of the body 10 are provided one or more slots 20, which are of sufficient width so that they may be formed in casting or if desired may be machined with relatively heavy and wide tools. These slots 20 are much too wide to constitute suitable gas-emitting openings, but their width makes it possible for them to be formed easily, either by casting or machining. The slots 20 shown extend circularly, either in arcs as in Fig. 1 or in complete circles as in Fig. 4, but this circular form is not essential. There may be any number of these slots, according to the size of the burner; when there are more than one, they are preferably parallel, or concentric if circular. Conveniently these slots are formed between upstanding pairs of parallel ribs 21, arc-shaped or circular to correspond with the slots; but it is not necessary that these upstanding ribs be provided, as the slots 20 may be provided in a plane surface. Mounted in each slot are one or more bars 22. These bars are of the same shape, circular or arc shaped as shown, as the slots in which they are located. The bar 22 is of a width less than the width of the slots 20 by twice the desired thickness of the desired gas-emitting slits when only a single bar is inserted in a slot. When desired, two parallel bars 22′ may be located in each slot, as indicated in Fig. 3, the two bars being slightly spaced apart. When only a single bar is provided in a slot 20, it provides two gas-emitting slits 23, one on either side of it between it and the adjacent wall of such slot; but when two or more bars are provided, as in Fig. 3, more gas-emitting slits are provided, because of those which are between adjacent bars. In either case, the number of gas-emitting slits is one greater than the number of bars.

In order to hold the bars in proper position in the slots 20, I provide the underface of the body 10 with a plurality of ribs 25, which extend transversely of such grooves and support the bars 22 or 22′. Two of these ribs 25 furnish the walls 15 when the burner has the diametral opening 14. The ribs 25 are provided with notches of just sufficient width to receive the bars 22, these notches being properly located medially of the slot 20 so that gas-emitting slits 23 will be provided on both sides of each bar and the bars will be held from warping to close such slots when the device becomes heated. The bars 22 or 22′ are conveniently rectangular in cross-section, and may be formed either by casting or bending, with or without subsequent machining. The slots 20 and notches 26 may also be formed by casting, without machining; though if desired they may be finished or completely formed by a single machine operation, by the mere insertion of a single tool 27 of the form shown in Fig. 5, which is a very sturdy tool capable of rapid use, and has cutting surfaces for taking care of all such surfaces in a single operation.

I claim as my invention:

1. A burner top, comprising a body portion having a slot through it, said slot being wide in relation to desired gas-emitting slits, and a bar separate from said body portion and of less width than said slot and located in said slot to form relatively narrow gas-emitting slits on both sides of said bar between it and the walls of the wide slot, the sides of said bar and said slot being substantially parallel.

2. A burner top, comprising a body portion having a slot through it, said slot being wide in relation to desired gas-emitting slits, a bar separate from said body portion and of less width than said slot and located in said slot to form relatively narrow gas-emitting slits on both sides of said bar between it and the walls of the wide slot, the sides of said bar and said slot being substantially parallel, and ribs extending transversely of said slot and upon which said bar rests.

3. A burner top, comprising a body portion having a slot through it, said slot being wide in relation to desired gas-emitting slits, a bar separate from said body portion and of less width than said slot and located in said slot to form relatively narrow gas-emitting slits on both sides of said bar between it and the walls of the wide slot, the sides of said bar and said slot being substantially parallel, and ribs extending transversely of said slot and upon which said bar rests, said ribs being provided with notches in which said bar fits to hold it properly spaced with relation to said wide slot.

4. In a burner top, the combination of a body portion provided with a circularly extending wide slot, a circularly extending bar separate from said body portion and of less width than said slot mounted in said slot and spaced from the walls thereof to provide narrow gas-emitting slits on both sides of said bar, the sides of said bar and said slot being substantially parallel.

5. A burner top, comprising a body portion having a slot through it, said slot being wide in relation to desired gas-emitting slits, a bar separate from said body portion and of less width than said slot and located in said slot to form relatively narrow gas-emitting slits on both sides of said bar between it and the walls of the wide slot, the sides of said bar and said slot being substantially parallel, and ribs on the underface of said main body extending transversely of said slots and supporting said bar, said ribs being provided with notches in which said bar fits to hold it in proper relation to the walls of the wide slot.

6. A burner top, comprising a body portion having a slot through it, said slot being wide in relation to desired gas-emitting slits, a bar separate from said body portion and of less width than said slot and located in said slot to form relatively narrow gas-emitting slits on both sides of said bar between it and the walls of the wide slot, the sides of said bar and said slot being substantially parallel, and ribs on the underface of said main body extending transversely of said slots and supporting said bar.

7. A burner top, comprising a body portion having a parallel-sided slot through it, said slot being wide in relation to desired gas-emitting slits, and a parallel-sided bar of less width than said slot and located in said slot to form a relatively narrow gas-emitting slit between the bar and a wall of the wide slot.

8. In a burner top, the combination of a body portion provided with a circularly extending wide parallel-sided slot, a circularly extending parallel-sided bar of less width than said slot mounted in said slot and spaced from the walls thereof to provide a narrow gas-emitting slit between the bar and a wall of said circularly extending slot,

9. A burner top, comprising a body portion having a slot through it, said slot being wide in relation to desired gas-emitting slits, and a plurality of bars separate from said body portion and collectively of less width than said slot and located in said slot to form relatively narrow gas-emitting slits on both sides of each bar between it and the adjacent bar or slot-wall.

10. A burner top, the combination of a body portion provided with a circularly extending wide slot, a plurality of circularly extending bars separate from said body portion and collectively of less width than said slot and all mounted in said slot and spaced

from the walls thereof and from one another to provide narrow gas-emitting slits on both sides of each bar.

11. A burner top, comprising a body portion having a slot through it, said slot being wide in relation to a desired gas-emitting slit, and two bars separate from said body portion and collectively of less width than said slot and located in said slot to form a relatively narrow gas-emitting slit between them.

12. A burner top, the combination of a body portion provided with a circularly extending wide slot, two circularly extending bars separate from said body portion and collectively of less width than said slot and mounted in said slot and spaced from each other to provde a narrow gas-emitting slit between them.

In witness whereof, I have hereunto set my hand at Indianapolis, Indiana, this 18 day of October, A. D. one thousand nine hundred and twenty.

JARL M. WEYDELL.