J. M. TOBIAS.

GAS HEATING STOVE.

APPLICATION FILED NOV. 22, 1913.

1,093,499. Patented Apr. 14, 1914.

Fig. 3.

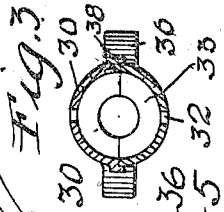


Fig. 1.

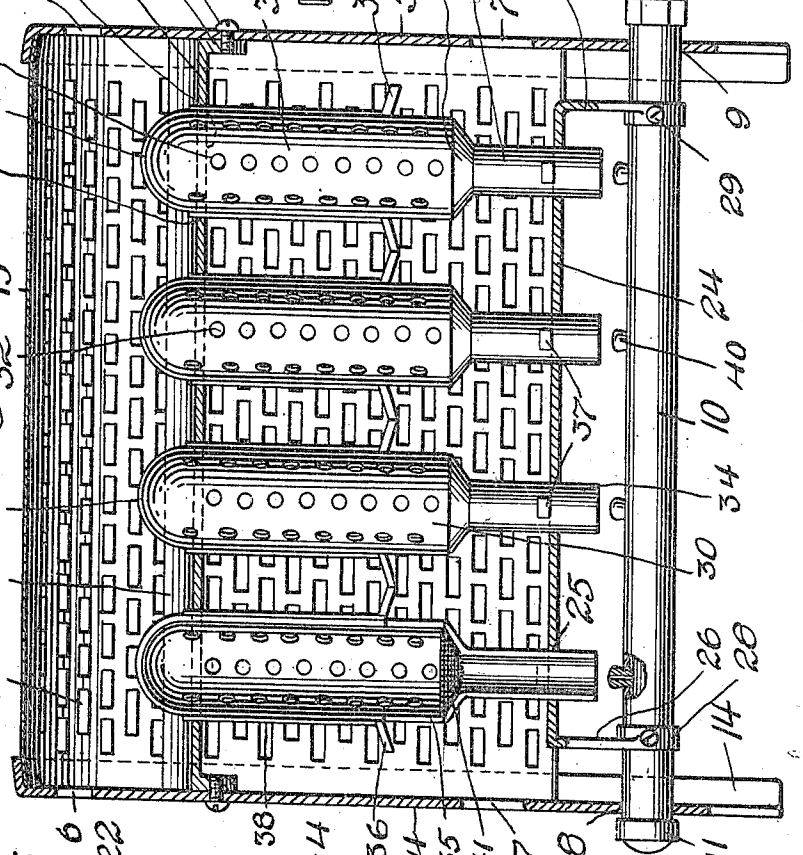
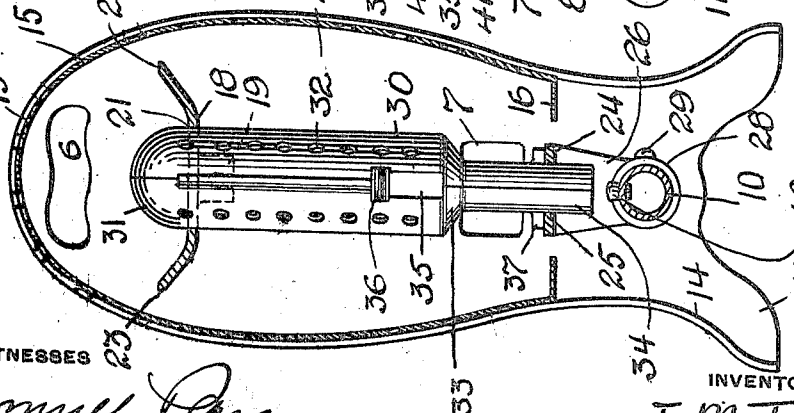


Fig. 2.



WITNESSES

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GAS HEATING-STOVE.

1,093,499. Specification of Letters Patent. Patented Apr. 14, 1914.

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To all whom it may concern:

Be it known that I, JOHN MARK TOBIAS, a citizen of the United States of America, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Gas Heating-Stoves, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a gas heating stove, and has for its object to provide a stove of such class, in a manner as hereinafter set forth, whereby when in operation it will be free of obnoxious fumes.

Further objects of the invention are to provide a gas heating stove, which is simple in its construction and arrangement, strong, durable, efficient in its use, insuring perfect combustion, having the burner elements thereof substantially indestructible and maintained in perfect alinement, compact, readily assembled, sightly in appearance and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—

Figure 1 is a longitudinal sectional view of a gas heating stove in accordance with this invention, Fig. 2 is a cross sectional view of the same, and Fig. 3 is a sectional plan of a burner.

Referring to the drawings in detail, 4 and 5 denote a pair of end plates provided with openings 6, 7, and further having openings, 8, 9, for supporting a longitudinally extending gas supply pipe 10, the latter being capped at one end as at 11, whereby the said end is closed and having attached to its other end a cut-off 12, which is adapted to communicate with a gas feed pipe (not shown). The pipe 10 projects from each of the end plates 4 and 5.

The reference character 13 denotes the casing of the stove and which is positioned between the end plates and is substantially semi-oval in vertical section. The casing 13 is of less height than the height of the end plates 4, 5, and these latter are flanged inwardly as at 14, whereby the ends of the casing 13 are overlapped. The casing 13 abuts against the inner faces of the end plates 4, 5, and is formed of a single sheet of thin metallic material, which is perforated throughout, the perforations, by way of example being illustrated as rectangular, are indicated at 15. The ends of the sheet of material from which the casing 13 is constructed are formed with inwardly extending flanges 16, thereby partially closing the bottom of the casing.

The end plates 4, 5, are cut away at their lower ends to provide supporting legs 17 and the said end plates are coupled together through the medium of a combined supporting and coupling bar 18, which is concave in cross section and has the longitudinal edges thereof spaced from the inner faces of the sides of the casing 13. The bar 18 is formed with depending flanges 19, which are fixedly secured to the inner faces of the end plates 4, 5, through the medium of the holdfast devices 20. The bar 18 is furthermore provided, centrally thereof, with a longitudinal row of openings 21, which are equally spaced with respect to each other, the function thereof will be presently referred to.

The bar 18 is positioned between the center and top of the casing 13 dividing the chamber formed by the casing into an upper and a lower portion and as the longitudinal edges of the bar 18 are spaced from the inner faces of the sides of the casing 13, passages 22, 23, are provided which establish communication between the upper and lower portion of the casing 13.

Supported by the pipe 10 and extending into the casing 13, at the bottom of the latter, is a longitudinally disposed alining bar 24 provided with equally spaced openings 25, for a purpose to be presently referred to, and further having depending angularly disposed ends 26, 27 terminating in collars 28, which are mounted upon the pipe 10 and maintained in position through the medium of set screws 29 carried by said collars and capable of abutting against the pipe 10 when adjusted. By such an arrangement, the

alining bar 24 is prevented from longitudinal movement when mounted upon the pipe 10.

Arranged within the casing 13 is a series of burners, as illustrated four in number, but it is obvious that the number can be increased or diminished. The burners are disposed vertically and positioned equidistant with respect to each other. Each of the burners is indicated by the reference character 30, has the intermediate part of the body portion thereof cylindrical throughout and formed with vertical rows of openings 32, the top which is indicated by the reference character 31 rounded. The bottom of the body portion of the burner 30 is funnel-shaped in contour as indicated by the reference character 33 and terminates in a cylindrical mixing tube 34, which is of materially less diameter than the body portion of the burner and is imperforate throughout.

The body portion of the burner 30, in proximity to the bottom 33 thereof is formed with a pair of rectangular openings 35, which oppose each other and projecting from the top of each opening 35 is a laterally extending inclined lug 36. The lugs 36 are disposed in opposite directions with respect to each other and when a plurality of burners are employed in the stove, the lugs of the opposing sides of the burners abut as clearly illustrated in Fig. 1, and form what may be termed a brace for the burner body. The openings 35 are employed primarily for the purpose of the escape of gas or flame from one burner body to ignite the gas in the other burner body.

The openings 21 in the bar 18 are employed for the passage of the upper ends of the burners 30 and the openings 25 are utilized for the passage of the mixing tubes 34. By such an arrangement, the upper ends of the burners are retained in spaced relation by the bar 18 while the mixing tubes 34 are maintained in spaced relation by the bar 24. The mixing tubes 34 are provided with laterally extending supporting lugs 37, which engage the bar 24 and support the burners 30.

To prevent shifting of the burners when mounted in the bars 18, 24, the body portion of each burner has formed on each side a vertically disposed rib 38, which is seated in a notch 39 formed in the wall of the opening 21. By such an arrangement rotative movement of the burners is prevented.

Arranged in alinement with the center of the mixing tube 34, as well as being spaced therefrom are outlet nipples 40 carried by the supply pipe 10. Arranged in the bottom 33 of each burner 30 is a wire sieve 41, which constitutes a filler and provides means to arrest the entrance of any foreign substances to the burner 30, and furthermore spreads the mixture of gas and air.

What I claim is:—

1. A gas burner including a body having a closed top and a funnel-shaped bottom, that part of said body between the top and bottom being cylindrical throughout and provided with perforations, an imperforate mixing tube integral with said bottom and of materially less diameter than the diameter of the perforated part of said body, said tube positioned in alinement with the longitudinal axis of said body, and a foraminous member positioned in said bottom.

2. A gas burner including a body having a closed top and a funnel-shaped bottom, that part of said body between said top and bottom being cylindrical and provided with perforations, a mixing tube integral with said bottom, and said cylindrical part of said body near said bottom provided with a pair of rectangular openings arranged opposite each other and said cylindrical part further having a lateral lug projecting from the top of each of said rectangular openings, said cylindrical part of said body formed of a single member and providing a gas chamber uninterrupted from said bottom to said top.

3. A gas burner comprising a body portion cylindrical throughout and having a closed top and a funnel-shaped bottom, said body portion provided with perforations, an imperforate mixing tube integral with said bottom and of materially less diameter than the diameter of said body portion, said body portion provided near its bottom with a pair of rectangular openings arranged opposite each other and further having a lateral lug projecting from the top of each of said rectangular openings, and said body portion further provided with a vertically disposed rib extending from said lug to said closed top.

4. A gas burner comprising a body portion cylindrical throughout and having a closed top and a funnel-shaped bottom, said body portion provided with perforations, an imperforate mixing tube integral with said bottom and of materially less diameter than the diameter of said body portion, said body portion provided near its bottom with a pair of rectangular openings arranged opposite each other and further having a lateral lug projecting from the top of each of said rectangular openings, said body portion further provided with a vertically disposed rib extending from said lug to said closed top, and oppositely disposed laterally extending supporting lugs integral with said mixing tube.

5. A gas burner comprising a body portion cylindrical throughout and formed with rows of perforations, said body portion having a rounded closed top and a funnel-shaped imperforate bottom, a mixing tube integral with and depending from said bottom and

of materially less diameter than said body portion, and provided with oppositely disposed laterally extending supporting lugs.

6. A gas burner comprising a body portion cylindrical throughout and formed with rows of perforations, said body portion having a rounded closed top and a funnel-shaped imperforate bottom, a mixing tube integral with and depending from said bottom and of materially less diameter than said body portion, said body portion in proximity to said bottom formed with a pair of opposing rectangular openings, and a laterally projecting lug arranged at the top of each of said rectangular openings, said body portion further provided with a pair of vertically disposed ribs, each of said ribs extending from the lug of the body portion to a point in proximity to said closed top.

7. The combination with a casing, of a longitudinally extending gas supply pipe arranged below the bottom of the casing and having outlet nipples, an alining bar detachably connected to and arranged over said pipe, a coupling bar arranged within and connected to the ends of said casing and having the sides thereof spaced from the sides of the casing, a plurality of cylindrical burner bodies having their upper portions extending through said coupling bar, said burner bodies formed with rows of perforations, and a mixing tube integral with each of the burner bodies and extending through said alining bar, said tubes provided with supporting lugs resting upon said alining bar.

8. The combination with a casing, of a longitudinally extending gas supply pipe arranged below the bottom of the casing and having outlet nipples, an alining bar detachably connected to and arranged over said pipe, a coupling bar arranged within and connected to the ends of said casing and having the sides thereof spaced from the sides of the casing, a plurality of cylindrical burner bodies having their upper portions extending through said coupling bar, said burner bodies formed with rows of perforations, and a mixing tube integral with each of the burner bodies and extending through said alining bar, said tubes provided with supporting lugs resting upon said alining bar, each of said burner bodies provided at their lower ends with opposing rectangular openings and oppositely disposed laterally extending lugs, the lugs of said burner bodies abutting when said bodies are mounted in said bars.

9. In combination a perforated casing, end plates therefor, means for coupling said end plates together, a gas supply pipe having outlets, burner bodies cylindrical throughout and each having a closed top, each of said burner bodies formed with perforations, said burner bodies extending through said means, an alining bar supported by said pipe, and mixing tubes integral with said burner bodies and extending through said bar and arranged over and spaced from said nipples.

10. In combination a perforated casing, end plates therefor, means for coupling said end plates together, a gas supply pipe having outlets, burner bodies cylindrical throughout and each having a closed top, each of said burner bodies formed with perforations, said burner bodies extending through said means, an alining bar supported by said pipe, mixing tubes integral with said burner bodies and extending through said bar and arranged over and spaced from said nipples, and a foraminous member mounted in the bottom of each of said burner bodies.

11. A gas burner comprising a body including a closed top and an open bottom, that part of said body from said bottom to said top being cylindrical and provided with perforations, a mixing tube integral with and opening into said bottom, said bottom of a different contour with respect to said top, said body formed of a single piece of material and provided in proximity to its bottom with opposed longitudinally extending rectangular openings.

12. A gas burner comprising a body including a closed top and an open bottom, that part of said body from said bottom to said top being cylindrical and provided with perforations, a mixing tube integral with and opening into said bottom, said bottom of a different contour with respect to said top, said body formed of a single piece of material and provided in proximity to its bottom with opposed longitudinally extending rectangular openings, and oppositely disposed laterally extending lugs formed integral with said body.

13. A gas burner comprising a body including a closed top and an open bottom, that part of said body from said bottom to said top being cylindrical and provided with perforations, a mixing tube integral with and opening into said bottom, said bottom of a different contour with respect to said top, said body formed of a single piece of material and provided in proximity to its bottom with opposed longitudinally extending rectangular openings, and a foraminous member mounted in said bottom above the point of juncture between the bottom and mixing tube, said mixing tube arranged in alinement with respect to the longitudinal axis of said body.

14. A gas burner comprising a body including a closed top and an open bottom, that part of said body from said bottom to said top being cylindrical and provided with perforations, a mixing tube integral with and opening into said bottom, said bot-

tom of a different contour with respect to said top, said body formed of a single piece of material and provided in proximity to its bottom with opposed longitudinally extending rectangular openings, oppositely disposed laterally extending lugs formed integral with said body, and a foraminous member mounted in said bottom above the point of juncture between the bottom and mixing tube, said mixing tube arranged in alinement with respect to the longitudinal axis of said body.

15. A gas burner comprising a body having a closed top and an open bottom and further having perforations, a mixing tube integral with and opening into said bottom, of materially less diameter than said body and positioned in alinement with respect to the longitudinal axis of the body, said body and mixing tube formed of one piece of material, and a foraminous member mounted in said bottom and spaced from the point of juncture between the mixing tube and the bottom.

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

JOHN MARK TOBIAS.

Witnesses:

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MAX H. SROLOVITZ.