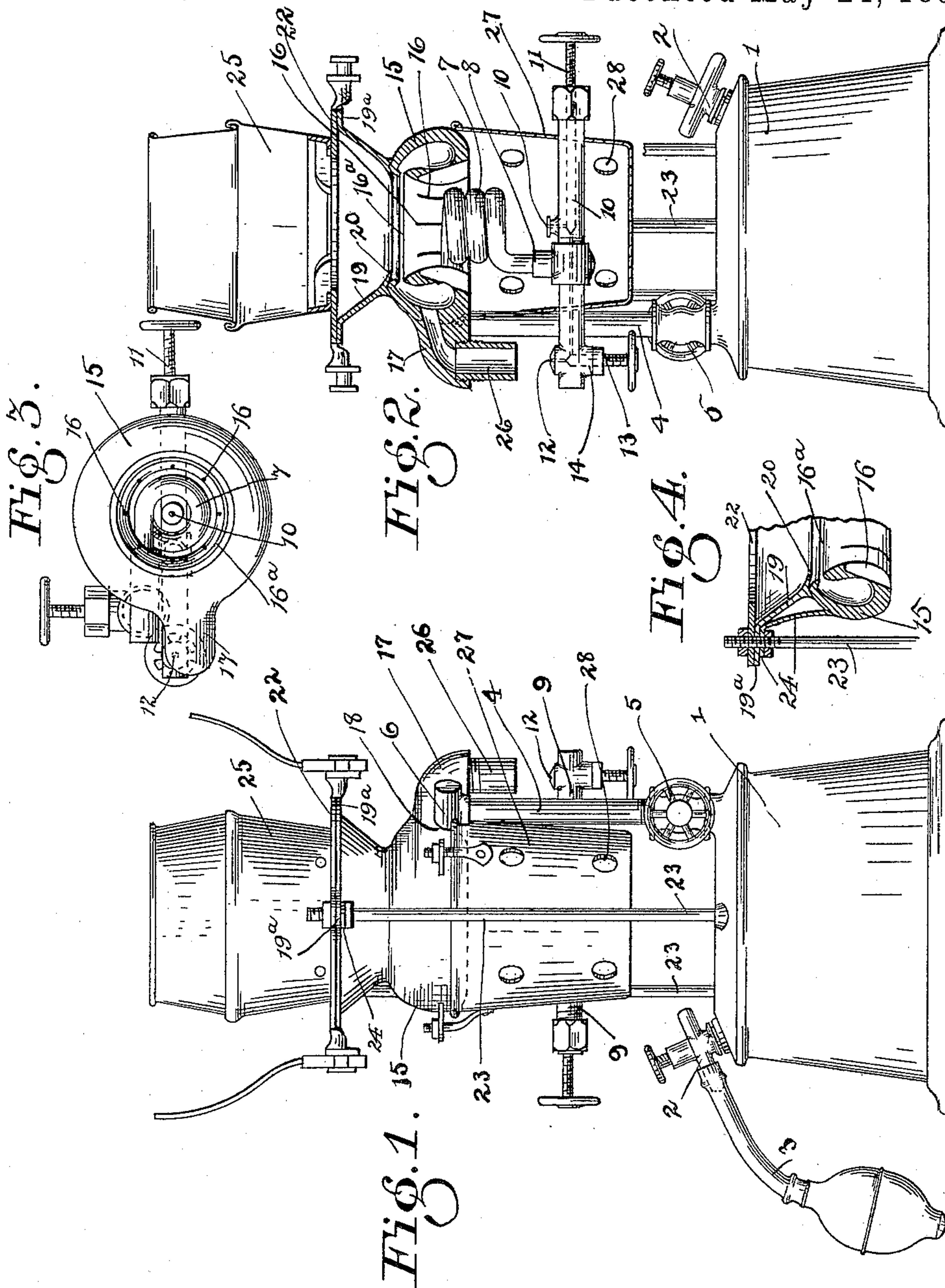


(No Model.)

E. T. BURGESS.
PLUMBER'S FURNACE.

No. 604,518.

Patented May 24, 1898.



WITNESSES:

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PLUMBER'S FURNACE.

SPECIFICATION forming part of Letters Patent No. 604,518, dated May 24, 1898.

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To all whom it may concern:

Be it known that I, EDWARD T. BURGESS, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Plumbers' Furnaces, of which the following is a specification.

My invention relates to the improvement of plumbers' furnaces of that class which are adapted for heating soldering-irons or melting metal and which employ gasolene or similar fuel.

The objects of my invention are to provide an improved furnace of this class of superior construction and arrangement of parts, to provide a plumber's furnace wherein are combined improved means for producing a blow-pipe or ordinary flame and admit of the same being used separately or together, and to provide other improvements in details of construction and arrangement of the operating parts, which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved plumber's furnace. Fig. 2 is a central vertical section of the same. Fig. 3 is a plan view with the parts above the burner removed; and Fig. 4 is a detail sectional view of a portion of the burner flaring flame-ring, which I employ in the manner hereinafter described.

Similar numerals refer to similar parts throughout the several views.

In the construction of my device I employ a base in the form of a suitable gasolene tank or can 1. This tank has connected therewith a combined filling-plug and valve 2, with which is connected the usual flexible bulb-holding air-tube 3, through the medium of which air is forced into said can to place the gasolene therein under pressure. Rising from the upper and preferably inner side of the can or tank 1 is a vertical supply-pipe 4, which is provided adjoining said can with a suitable valve 5. The upper portion of the pipe 4 is provided with an inwardly-extending arm 6, which above the center of the tank is converted into a generator-coil 7. The lower end of this coiled pipe-arm connects at 8 with a transverse pipe-arm or valve-tube 9, the latter being thus supported below said coil and

above the tank. Immediately beneath the central portion of the vertical coil 7 the valve-tube 9 is provided with a needle-point valve-outlet 10, which is controlled by a valve-rod 11, which extends into said valve-tube 9 and has a threaded engagement with the outer end thereof in the usual manner. The remaining end portion of the valve-tube 9 is closed; but is provided on its upper side with a needle-point opening at 12, which is controlled by a vertical valve 13, which has a threaded engagement with a downwardly-extending boss 14 of said tube.

15 represents a burner, the body of which is substantially in the form of a hollow ring, and the inner wall of which is provided at intervals with substantially vertical slotted openings 16. Above the slotted burner-openings 16 and adjacent to the upper side of the burner said inner wall is provided with a continuous circular slot 16^a. This circular or ring burner is provided on one side with an outwardly-extending supply-neck 17 and is recessed, as indicated at 18, to receive the inwardly-extending arm portion 6 of the pipe 4.

The burner 15, which is made to surround the upper portion of the vertical coil 7, has rising from about its mouth or upper end portion a flaring flame-protecting band or shield 19, the latter having its lower end portion flanged inwardly, as indicated at 20, this inwardly-flanged portion forming a hood to protect the slotted opening 16^a for the purpose hereinafter described. Upon the upper side of the flaring flame-ring 19 is supported a suitable plate 22, the outwardly-extending peripheral lugs of which are connected by means of vertical bolts 23 with the upper side of the tank 1. These bolts also pass through flange-lugs 19^a on the ring 19 and through the upper ends of brace or supporting arms 24, which rise from the burner-body, thus insuring the support and retention of said burner and flame-ring in their proper positions.

Upon the upper side of the plate 22 may be supported a desirable form of detachable melting-pot or soldering-iron holder 25.

The outwardly and downwardly extending neck 17 of the burner is provided with a short vertical tube extension 26, which, as indicated in the drawings, is immediately over the

needle-point valve-opening 12 of the valve-tube 9.

27 represents a drip-cup which has its upper end portion secured about the base of the burner-body, from which said cup depends. This drip-cup is provided at intervals with openings 28, and through two of these openings, which are oppositely located, passes the valve-tube 9.

The manner of utilizing my improved plumber's stove is substantially as follows: In case it is desired to utilize the burner 15 the valve 5 is opened, allowing the gasolene under pressure within the can or tank to rise in the pipe 4 and pass through the coil 7. By then opening the valve 11 and allowing the same to remain open a sufficient length of time a small quantity of the gasolene is allowed to escape through the needle-point opening 10 and drip downward into the cup 27. The valve 11 being closed, the gasolene contained within the cup may be ignited and the heat imparted therefrom to the coil, resulting in the generation of gas in said coil. The valve 13 being now opened, the gas which has passed from the coil-pipe into the valve-tube 9 is discharged through the needle-point opening 12, and mixed with the air passes into the tube 26 and burner-neck 17 and out through the slotted openings 16 and 16^a, where it may be ignited. The flame which rises from the slotted burner-openings 16 and 16^a is prevented from flaring outward and retained beneath the plate 22 by the flaring flame-protector 19. In this manner the direct heat from the burner is imparted to the irons contained in the holder 25. In case it is desired to combine with the flame above described a forced or blowpipe flame the valve 11 may also be opened, allowing the gas to pass outward through the needle-point opening 10, and by force of the air-pressure within the tank the gas thus escaping will be driven through the center of the coil 7, at the top of which it may be lighted. Owing to the volume of gas which escapes from the valve-opening 10 being ignited without passing through a burner or being otherwise interfered with, it is obvious that the flame produced therefrom must be in the nature of what is known as a "blowpipe" or forced flame, while the flame arising from the burner-slots is what may be termed a comparatively "tame" flame. If desired, the valve-opening 12 may be cut off and the blowpipe-flame employed alone.

In the manner above described it will be seen that simple and reliable means are combined in one furnace for the production of either an ordinary heating-flame or blowpipe-flame, or both.

By providing the lower end portion of the flame-protecting band 19 with the inwardly-projecting flange 20 a hood or shield is provided above the slot 16^a, which prevents any tendency of the solder dropping within said slot from the irons or metal-pot.

The construction and arrangement of the parts of my improved furnace are such as to provide a furnace of a strong, durable, and neat construction and at a reasonable expense.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a plumber's furnace the combination with a burner 15 having burner-openings therein, of a generating pipe-coil 7 having connection with a tank and a valve-tube 9 connected with said coil, said valve-tube being provided with valve-openings 10 and 12 adapted to discharge respectively through said coil and into said burner, substantially as and for the purpose specified.

2. In a plumber's furnace the combination with a hollow circular burner body or ring having burner-openings on its inner side and means for discharging gas into said burner, of a flaring flame-protecting ring rising from said burner-top and an inturned flange portion 20 formed on the lower end of said protector-plate and adapted to form a protecting-hood for the burner-openings, substantially as and for the purpose specified.

3. In a plumber's furnace the combination with a hollow circular burner-body having a gas-receiving neck 17 and having a continuous horizontal burner-opening 16^a in its inner wall, and substantially vertical burner-openings 16 below said burner-opening 16^a, of a tank 1, a generating-coil burner encircled by said burner-body and connected with said tank, a valve-tube connected with said coil and supported therefrom and valve-controlled openings in said valve-tubes adapted to discharge respectively through said coil and into said burner-neck, substantially as and for the purpose specified.

EDWARD T. BURGESS.

In presence of—

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