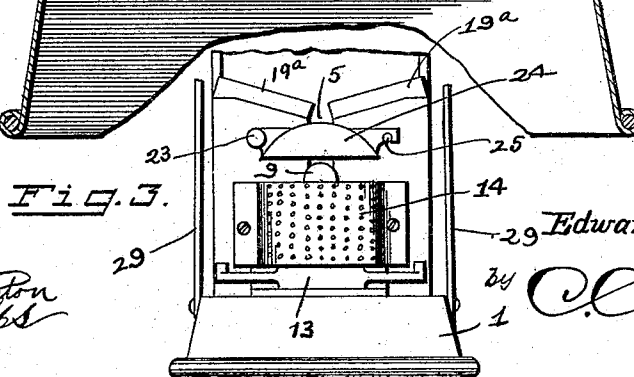
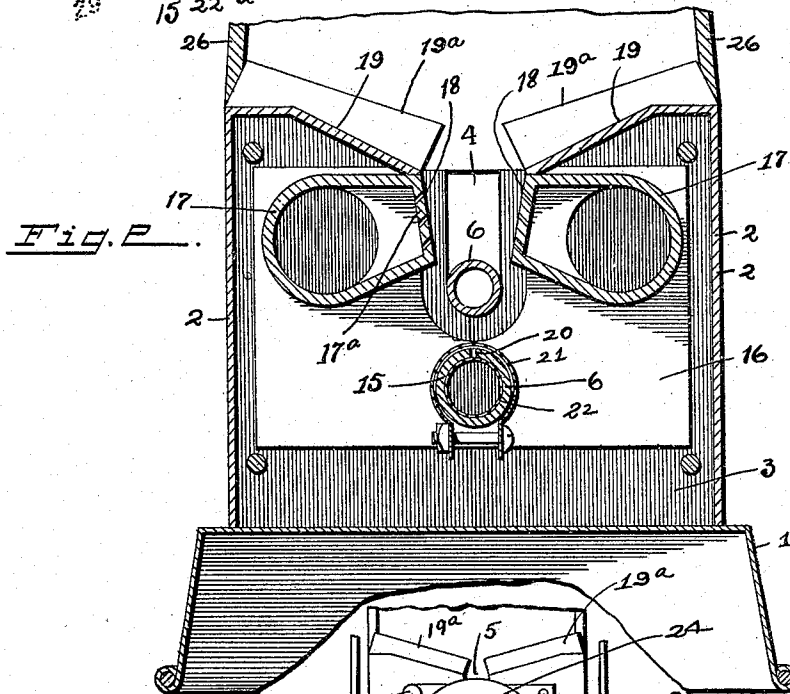
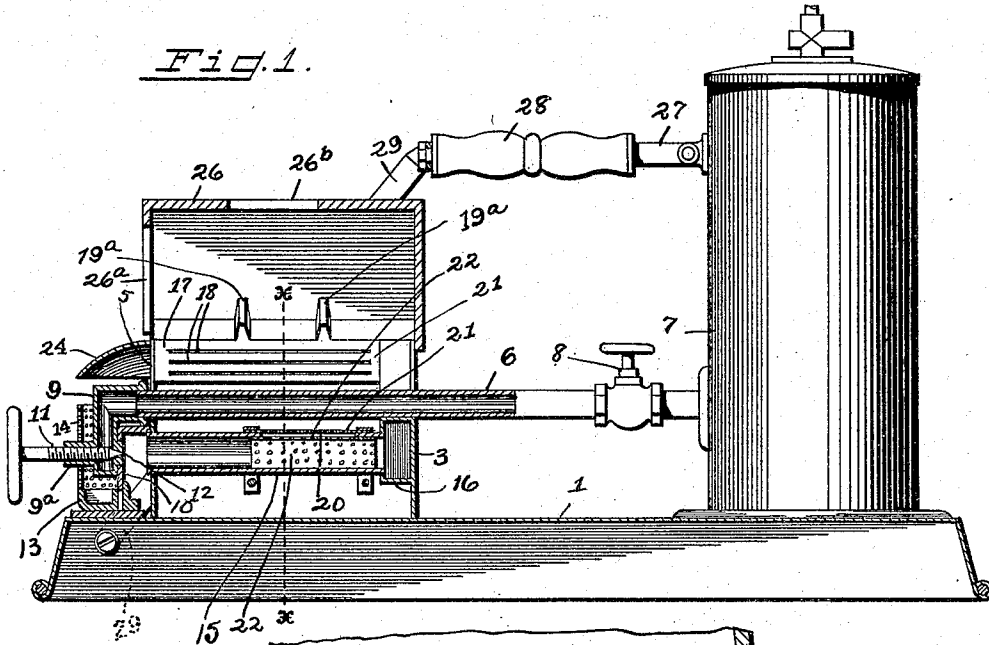


E. T. BURGESS.  
SOLDERING FURNACE.  
APPLICATION FILED APR. 17, 1909.

942,245.

Patented Dec. 7, 1909.



Witnesses

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# UNITED STATES PATENT OFFICE.

EDWARD T. BURGESS, OF COLUMBUS, OHIO.

## SOLDERING-FURNACE.

942,245.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed April 17, 1909. Serial No. 490,551.

*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 certain new and useful Improvements in Soldering-Furnaces, of which the following is a specification.

My invention relates to the improvement of soldering furnaces, and the objects of my invention are to provide a soldering furnace of superior construction and arrangement of parts; to provide improved means for maintaining a constant and uniform generation of gas in the gasolene conducting pipe; to provide improved means for supporting a soldering iron in position for receiving the heat from the burners and to otherwise produce an improved soldering furnace of simple, compact arrangement so constructed as to insure a soldering iron supported therein, being subjected to a uniform high degree of heat, and to produce other improvements the details of which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawing, in which:

Figure 1 is a central longitudinal section of my improved soldering furnace, Fig. 2 is an enlarged transverse section on line  $x-x$  of Fig. 1, and, Fig. 3 is a front elevation of my improved furnace.

Similar numerals refer to similar parts throughout the several views.

1 represents a horizontal supporting base, which is preferably of the inverted pan form shown. Rising from this pan near one end thereof, are the vertical side and end walls 2 and 3 of my improved soldering furnace body, said end walls being provided with central vertical recesses 4 and 5 formed in their upper sides, said oppositely located recesses forming a support for a horizontally disposed central pipe 6, which in rear of the stove body, connects with a vertical gasolene tank 7. The pipe 6 is intersected near the tank 7 by a suitable cut-off and regulating valve 8. The forward end of the pipe 6 which projects, as shown, beyond the front plate or wall of the stove body, is connected with the upper horizontal member of an angular pipe section or valve casing 9, the downwardly extending member of which is connected with an angular bracket 10 which projects from the front wall 3 of the stove body. The downwardly extending member 9 is formed with a forwardly projecting

boss 9<sup>a</sup> within the central threaded opening of which is fitted a horizontal needle point valve 11, said valve intersecting the lower portion of the pipe member 9 and having its pointed termination entering and adapted to close a needle valve opening 12 in the rear wall of said member 9.

Beneath the pipe member 9, I provide a desirable form of cup 13 which is connected, as shown in Fig. 1, with the lower end of the bracket 10. Secured to the front face of the stove body on either side of the center of the width thereof above the cup 13 and on the outer side of the pipe member 9, is a perforated shield plate 14. Beneath the pipe 6 and extending rearwardly through the front wall of the stove body, is a gas supply pipe 15, the latter at its rear end, connecting with the lower portion of a flattened box or oblong casing 16 which is secured to or formed with the inner face of the rear wall 3 of the stove body.

As shown more clearly in Fig. 2 of the drawing, the upper portion of the casing 16, is bifurcated or centrally recessed to permit of the passage therethrough of the pipe 6 and on each side of said central recess or bifurcation, I provide an elongated hollow burner body 17, which burner bodies extend in the direction of the length of the stove and are provided with inclined inner sides 17<sup>a</sup>, through which are formed upwardly inclined parallel burner kerfs or slits 18. Above each of these burners and extending lengthwise of the stove body, is provided a soldering iron supporting plate 19, the latter extending inwardly from the side walls of the stove body and thence inclining downward to meet the upper sides and forward portions of said burners. Each of these plates 19 has formed thereon, upwardly projecting parallel inclined ribs 19<sup>a</sup>. The distance between the inner ends of the opposing ribs is such as to admit of a soldering iron being supported by said rib ends without passing between the same.

In the construction of the pipe 15, it will be observed that I form in the upper side thereof, a longitudinal slotted opening or burner kerf 20 and on the inner and outer sides of the slotted portion of said pipe, I provide perforated plates 21 and 22. Above the pipe 9 and the perforated shield 14, I pivot at one side of the center of the stove front, as indicated at 23, one end of a semi-dish shaped shield 24, the remaining end of

which is notched to provide for detachable engagement with a stud 25, which projects from the front of the stove body. Upon the stove body is detachably seated, a suitable form of cover or hood 26, which is formed with a forward side opening 26<sup>a</sup> and an upper side opening 26<sup>b</sup>. In order to provide a suitably located and braced handle, by which my improved stove may be supported and balanced, I connect with the forward side of the upper portion of the gasolene tank 7, a forwardly extending arm 27 on which is mounted a suitable handle member 28. From the forward end of the arm 27 lead outwardly and downwardly on opposite sides of the stove body, brace arms 29, these arms having their lower ends secured at opposite points to the sides and forward portion of the base 1.

In utilizing my device, it will be understood that the cup 13 is first supplied with a comparatively small quantity of gasolene, which when lighted, results in the heating of the pipe member 9 so that the gasolene which passes through the pipe 6, will through contact with said heated pipe be converted into gas. The gas thus produced is by the turning of the needle valve 11, permitted to pass through the needle point opening 12 into the open end of the pipe 15 and through said pipe and casing 16 to the burners 17, which communicate with said casing, as shown in Fig. 2 of the drawing.

In order to maintain gas generation within the pipe 6, I have provided the burner kerf or opening 20 in the pipe 15 and by lighting the gas which escapes through said kerf, heat from the flame produced, will be directly imparted to the underside of said pipe 6. It is desirable, however, that a comparatively small flame be maintained at the burner opening 20 and that the greater volume of gas be carried beyond said opening 20 to the burner openings and in order to insure a comparatively small flame from the opening in the pipe 15 and at the same time prevent a tendency of the gas in said pipe from being drawn through the opening 20 in undesirable volume, I have provided the perforated baffle plates 21 and 22 which will tend to retard the escape of the gas through the opening 20. It is obvious that a soldering iron when supported by and between the inner end portions of the ribs 19<sup>a</sup>, will be subjected to the heat of the flames at the burner openings 18 and owing to the inclination of the supporting ribs 19<sup>a</sup>, it is evident that the soldering iron will be retained in a central position above the flames from the burners.

From the construction and operation described, it will be understood that the pipe 15 will act as both a gas supply and burner pipe and that the pipe 6 will perform the

double office of a supply and generating pipe.

Owing to the pivotal connection of the shield or hood 24 with the stove body, it will be understood that in case it is desired to disconnect and remove the pipe 6 from the stove, said hood or shield may be swung to one side to permit a free withdrawal of said pipe.

What I claim, is:

1. In a soldering furnace, the combination with a stove body, opposing burners arranged in said body, and a gasolene supply pipe extending below said burners, of a gas conducting pipe extending beneath said gasolene supply pipe and having a burner opening therein, said gas conducting pipe being connected with said opposing burners, and means for discharging gas generated in said gasolene supply pipe into the forward end of said gas conducting pipe.

2. In a soldering furnace, the combination with a stove body, a hollow burner therein, and a gasolene supply pipe beneath said burner, of a gas conducting pipe below the gasolene pipe and having a burner opening, a perforated plate partially closing said burner opening, a connection between the rear end of said gas pipe and said hollow burner, and means for discharging gas generated in said gasolene pipe and its connections into said gas pipe.

3. In a soldering furnace, the combination with a stove body, hollow burners supported therein, a gasolene supply pipe extending below said burners, an angular pipe extension at the forward end of said gasolene pipe, and an adjustable valve intersecting said pipe extension, of a gas conducting pipe beneath the gasolene pipe having a burner opening therein, a gas conducting connection between said gas pipe and said hollow burners, and inclined soldering iron supports above said burners.

4. In a soldering furnace, the combination with a stove body having vertical end recesses, a gasolene conducting pipe extending through said recesses, and burners above said gasolene pipe, of a gas conducting pipe below said gasolene pipe and connected with said burners, said gas conducting pipe having a burner opening, and means for discharging gas from the gasolene pipe into said gas conducting pipe, and a shield crossing the forward recess in said stove body and pivoted on one side thereof.

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

EDWARD T. BURGESS.

Witnesses:

A. L. PHELPS,  
L. CARL STOUGHTON.