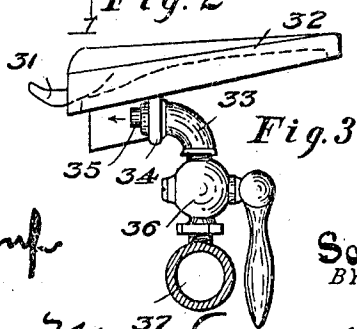
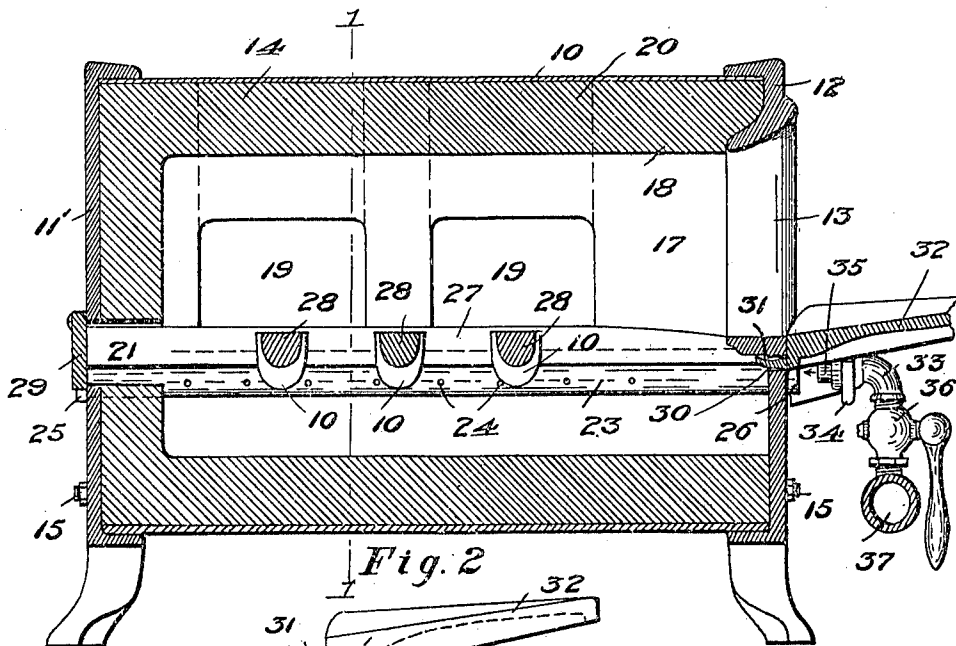
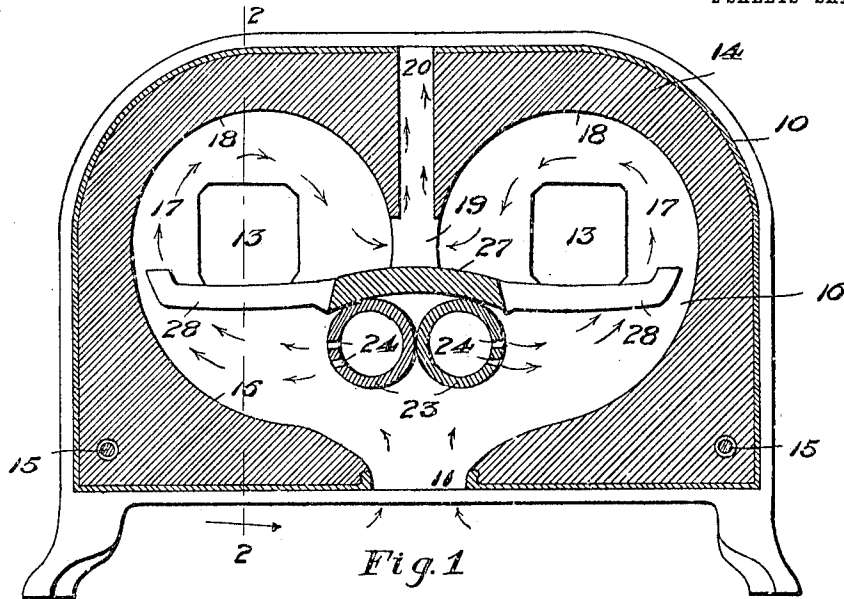


S. T. WILLSON.  
SOLDERING IRON FURNACE.  
APPLICATION FILED MAR. 2, 1907.

954,235.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

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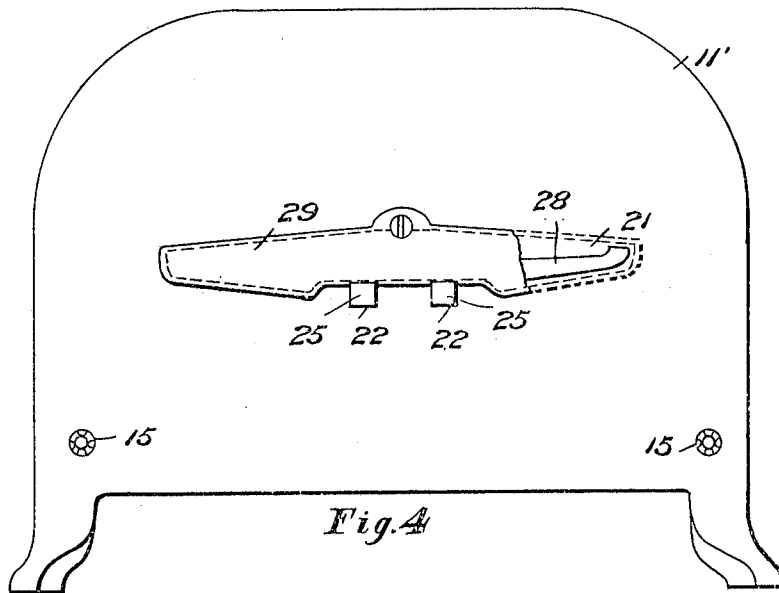


Fig. 4



Fig. 5

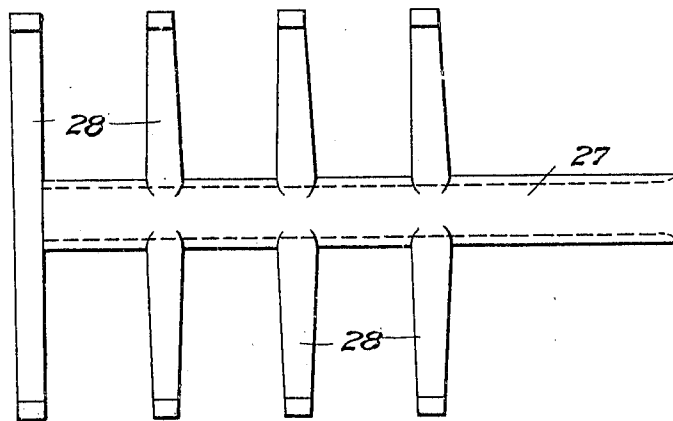


Fig. 6

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# UNITED STATES PATENT OFFICE.

SAMUEL T. WILLSON, OF DENVER, COLORADO.

SOLDERING-IRON FURNACE.

954,235.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed March 2, 1907. Serial No. 360,169.

*To all whom it may concern:*

Be it known that I, SAMUEL T. WILLSON, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Soldering-Iron Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to furnaces and especially to that class of furnaces ordinarily and usually employed by tanners and other artisans for heating soldering irons and similar utensils.

The object of the invention is to provide in a device of the class described a portable furnace embodying means for subjecting the contained implement to the maximum number of heat units produced by the combustion of the fuel employed.

A further object of the invention is to provide in a portable furnace of the class described means for the utilization of fluid fuel.

A further object of the invention is to provide a portable furnace of the character described embodied in a minimum amount of space, and with removable parts of improved form for connection with a supply of fluid fuel.

A further object of the invention is to provide in a portable furnace, implement receiving openings of improved form proportioned to cause an equal heating of the contained implement.

A further object of the invention is to provide in a portable furnace burners properly positioned and improved means to protect the burners from clogging and becoming inoperative.

With these and other objects in view, the invention comprises certain novel constructions, combinations and arrangements of parts, as will be hereinafter more fully described and claimed.

In the drawings:—Figure 1 is a transverse, vertical, sectional view of the improved furnace taken on line 1—1 of Fig. 2. Fig. 2 is a longitudinal, vertical, sectional view of the improved furnace taken on line 2—2 of Fig. 1. Fig. 3 is a view in detail of the removable implement-supporting apron removed from the furnace. Fig. 4 is a view of the improved furnace in rear elevation.

Fig. 5 is a view in side elevation of one of the burners employed in the improved furnace. Fig. 6 is a top plan view of the grate and protector or baffle employed in the improved furnace.

Like characters of reference designate corresponding parts throughout the several views.

In its preferred embodiment the improved furnace forming the subject-matter of this application comprises a casing 10, preferably formed with its upper corners curved so that the curve from the top into the sides is continuous, and with a flat bottom having a longitudinally extending slit or opening 11 formed therein. The casing 10 is provided with a rear end wall 11' and a front wall 12 having openings 13 formed therein to permit the introduction of soldering irons or similar implements. The casing 10 is lined internally with any approved heat-non-conducting material, shown at 14, which may be of magnesia, asbestos or other approved material, and the end plates 11' and 12 are clamped upon the casing 10, and the insulating material 14, by means of longitudinally extending bolts 15. The insulating material 14 is open at the bottom to coincide with the opening 11 formed in the casing and is curved therefrom reversely upon each side, as shown at 16, to form partially separated chambers or spaces 17, continuously curved from the curve 16 and arched at the top as at 18, and communicating by means of openings 19 with one or more vertically disposed vents or flues 20, disposed centrally between the chambers 17. The rear end plate 11' is provided with an elongated opening 21 and with angular off-set openings 22. Longitudinally within the chambers and vertically above the opening 11 are secured preferably a plurality of pipe-shaped burners 23 having openings 24 formed in the opposite sides thereof and extending at one end through the end plate 12 and at their other ends provided with angular plugs or caps 25 proportioned to engage within the angular off-set openings 22 in the end plate 11' and prevent rotary movement of the pipes 23. The ends of the pipes 23, which extend through the end plate 12, as at 26, are left open. Through the opening 21 is inserted the grate and baffle member shown at Fig. 6, comprising a baffle plate 27 which bears and rests upon the upper sides of the pipes 23 and with fingers or grate bars 28 extend-

ing laterally therefrom into juxtaposition with the sides of the chamber 17. The opening 21 is closed by means of a plate 29 proportioned to cover the said opening and to bear upon the upper sides of the angular caps 25 and to hold such caps rigidly within the openings 22, which plate 29 may be formed integral with the grate shown at Fig. 6.

At its forward end the plate 12 is provided with openings 30 disposed immediately beneath the openings 13 and adapted to receive fingers 31 of the apron 32, and hold the said apron in an inclined position to support the handles of the soldering irons or other implements inserted through the opening 13 into the chambers 17 and upon the grate bars 28. At its under side the apron 32 is provided with an elbow or bent pipe 33 supported by means of a yoke or stirrup 34 and provided with an orificed block 35 so disposed that when the apron 32 is properly positioned upon the plate 12 the orificed block is in position to discharge fluid fuel into the open end 26 of the burners 23. The pipe 33 is provided with any approved form of stop-cock as 36 and is connected with a pipe 37 by means of which connection is made with a flexible or other pipe carrying fluid fuel. It will be understood that the fluid fuel being admitted by means of the stop-cock 36 through the pipe 33, and orificed block 35, will enter the open end 26 of the burners 23, and carry therewith atmospheric air to form a desirable fuel mixture within the burner tube 23, which is discharged through the openings 24, preferably in substantially horizontal jets. The formation of the chambers 17 with the curve 16 and 18 cause the jets of flame from the burners 23 to follow the direction indicated by the arrows and to completely surround a soldering iron or other implement disposed upon the grate bars 28 and to be finally discharged through the openings 19 and flue 20, the tops of the chambers 17 being higher than the outlets 19. Air to support combustion is likewise admitted through the opening 11, as indicated by the arrows.

When the furnace is not in use the pipe 37 may be disconnected from the flexible or other conductor in the usual well known manner, and the stop cock and connection disconnected from the furnace, together with the apron 32 by being raised, and the fingers 31 withdrawn from the openings 30. The baffle plate 27 disposed above the burners 23 prevents flame or heat from the burners rising directly from the said burners and passing out through the flue 20, and also protects said burners from being clogged by dust or dirt, this latter being one of the principal uses of the baffle.

What I claim is:—

1. In a furnace, a casing having imple-

ment receiving openings, and ventilating inlet and outlet openings, a burner disposed within the casing and below the outlet and above the inlet openings, an apron removably secured to the exterior of the casing and adjacent the implement receiving openings, a fuel supply device carried by the apron, and means within the casing adapted to support an implement while being heated.

2. In a furnace, a casing having implement receiving openings and ventilating inlet and outlet openings, burners disposed within and extending without the casing and positioned below the outlet and above the inlet openings, an apron removably secured to the exterior of the casing, orificed blocks carried by the apron and positioned adjacent the exterior end of the burner, and means within the casing adapted to support an implement while being heated.

3. In a furnace, a casing having implement receiving openings and ventilating inlet and outlet openings, a burner disposed within the casing and positioned below the outlet and above the inlet openings, and means within the casing adapted to support an implement while being heated, said means being removable through an opening formed in the casing and comprising a plate located below the outlet, extending longitudinally of the burners, and carrying laterally projecting arms, such plate deflecting the air currents between the arms and against the side and upper walls of the casing before passing to the outlet.

4. In a furnace, a plurality of heating chambers in juxtaposition and separated by a partition, an outlet flue disposed between the heating chambers, a burner disposed beneath the outlet flue, and a baffle plate disposed between the burner and flue.

5. In a furnace, a plurality of heating chambers, provided with a common ventilating outlet and a common ventilating inlet, and a burner disposed intermediate the chambers above the inlet and beneath the outlet, and a device arranged above the burner comprising a central longitudinal body portion, laterally extending implement supporting arms, and means for supporting said device in an opening in the wall of the furnace.

6. In a furnace, a plurality of heating chambers provided with a common air inlet, a common outlet flue, a burner disposed intermediate of the chambers above the air inlet and beneath the outlet, such burner removable through an opening in the wall of the furnace, and a baffle plate disposed between the burner and the outlet flue and removable through an opening in the opposite end of the furnace.

7. In a furnace, a heating chamber, a burner disposed within the heating chamber and embodying an open outer end extending

without the principal structure, and an  
apron removably secured to the furnace  
structure and carrying a block provided  
with an orifice directed toward the open end  
5 of the burner.

8. In a furnace, a heating chamber, a  
burner therein, the front wall of the furnace  
provided with an opening, an apron detach-  
ably mounted on said front wall adjoining

the opening, and a fuel supply device car- 10  
ried by the apron.

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

SAMUEL T. WILLSON.

Witnesses:

W. B. SHATTEN,  
CARLE WHITEHEAD.