

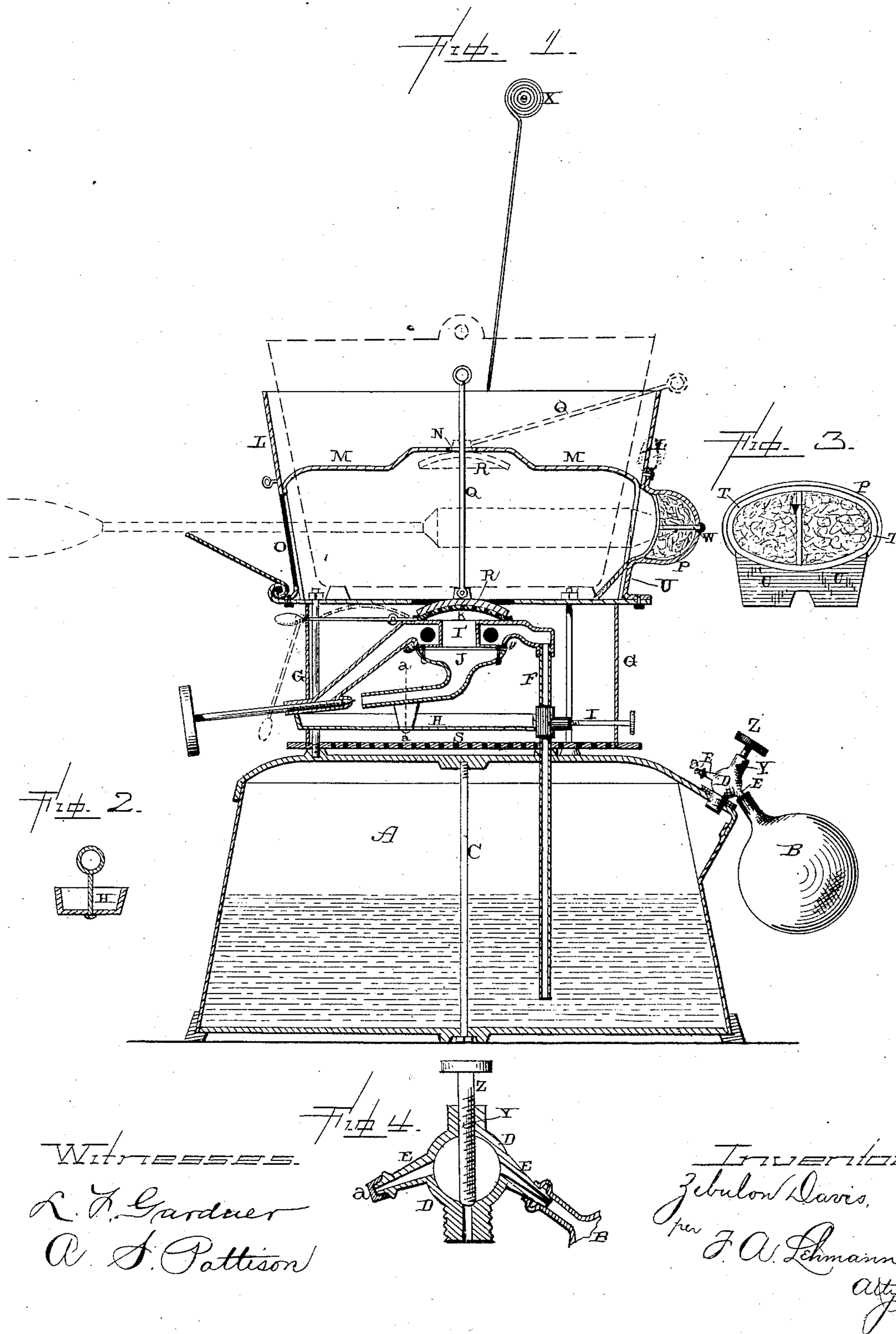
(No Model.)

Z. DAVIS.

PLUMBER'S OR TINNER'S FURNACE.

No. 374,398.

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WITNESSES.
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PLUMBER'S OR TINNER'S FURNACE.

SPECIFICATION forming part of Letters Patent No. 374,398, dated December 6, 1887.

Application filed October 26, 1886. Serial No. 217,201. (No model.)

To all whom it may concern:

Be it known that I, ZEBULON DAVIS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful
5 Improvements in Plumbers' or Tinner's 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 pertains to make and use it,
10 reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in plumbers' and tinner's furnaces; and it consists in the arrangement and combination of
15 parts, which will be more fully described hereinafter, and set forth in the claims.

The object of my invention is to provide a furnace which is adapted especially for tinner's or plumbers' use, and which is provided with a packing-box upon one side to receive the point of the soldering-tool for the purpose of preventing the tinning from being burned while being heated; to entirely inclose the burner by means of a screen, and thus protect it from being accidentally blown out at
25 any time; to provide a perforated plate, which forms the bottom of the screen, placed around the burner so as to break up the currents of air as they pass to the flame and at the same
30 time form a shield for the top of the reservoir to prevent it from becoming heated, and to provide a means whereby the flame of the burner can be turned down very low without the danger of snapping out when not needed for immediate use, and thus prevent the needless
35 consumption of fluid.

Figure 1 is a vertical section of an apparatus embodying my invention. Fig. 2 is a detail view taken through the induction-tube and the
40 lighting-cup on the line *a a* of Fig. 1. Fig. 3 is a detached view of the packing-box. Fig. 4 is a vertical section of the plug detached and made on an enlarged scale.

A represents the reservoir, which is strengthened at its center against the pneumatic pressure which is introduced by the bulb or air-forcing mechanism B by means of the screw-rod C. This rod C serves to secure the top of the reservoir rigidly in position and prevents
50 it from being forced off by the pressure which

is introduced for the purpose of forcing the fluid to the burner in the usual manner. The bulb is applied to the air-plug D, which is provided with two stems or inlets, E E, to either one of which the bulb may be applied. When
55 the plug is screwed in position, the bulb is applied to that stem which projects outward. The other stem is closed by means of a small screw-plug, *a*, which fits tightly into it.

As the leather packing or washer which
60 forms the air-tight joint between the reservoir and the plug becomes worn or compressed, and it becomes necessary to turn the plug farther around to tighten it, the stems change position, and then it becomes necessary to change
65 the bulb and the screw-plug. The screw-plug is removed from the inlet of the stem to which it was applied and is transferred to the other stem, and the bulb is then attached to that stem from which the screw was removed. The
70 object of this construction is to always have the bulb in the most convenient position for use and as far as possible from the heat of the burner.

The burner is mounted upon the stand-pipe
75 F and is entirely surrounded by the shield or casing G, which protects the burner from any drafts of wind when the burner is being used out-of-doors, and thus prevents all possibility of the flame being accidentally extinguished.
80 The lighting-cup H projects through this screen upon one side, so that the operator can see the amount of fluid that is in it and to enable it to be lighted. This cup is supported from the under side of the induction tube, as
85 shown.

In the stand-pipe F is placed a suitable valve, I, the stem of which projects through the screen G, whereby the flow of fluid to the burner can be stopped at any time.
90

The burner J is adapted for use in connection with either a tinner's or plumber's furnace. When used by a plumber for melting lead, the perforated plate-cap K is drawn to one side, as shown in dotted lines, and then the flame is
95 projected through the large central opening, I', with blow-pipe force directly against the bottom of the pot, which is shown in dotted lines. When the furnace is to be used by a tinner for heating soldering-irons, a perforated
100

cap is placed over the large central opening of the burner, as shown, and then a quiet heating-flame is produced. As no claim is made in this application to the construction of this burner, no further description of it is necessary. Substantially this form of burner is shown in an application filed by me August 3, 1886, and bearing Serial No. 209,895. As here shown, there is left a suitable space or opening through the side of the burner, through which sufficient gas escapes to keep up a heating-flame when the burner is not in use. This opening extends entirely around the burner, as shown in Fig. 1, the parts J I' being separated from each other sufficiently far to allow a subsidiary flame to be kept up all the time that the burner is in use, except when a blow-pipe flame is produced.

Placed inside of the hood L, which forms the top portion of the furnace, is placed the covering M, which has an opening through its center at N, and which has openings through its front and rear sides corresponding to the door O, and packing-box P, for the purpose of allowing the soldering-tools to be placed in position, as shown in dotted lines, to be heated. Passed down through the top of the covering M is the handle Q, which has attached to its lower end the solid cap R, which fits over the top of the perforated cap K for the purpose of turning down the flame when the furnace is not in use. While the furnace is in use the handle Q and the solid cap R occupy the position shown in dotted lines; but when the furnace is not in use and it is desired to turn down the flame, so as to prevent the useless consumption of fuel, they occupy the position shown in solid lines. While this solid cap is placed upon the top of the perforated one the flame is turned down very low, and the burner being entirely surrounded by the screen G, there is no danger whatever of the flame being blown out or snapping out.

The bottom of the screen G is formed by the perforated plate S, which not only serves to break up the currents of air which are fed to the burner, but at the same time forms a shield for the reservoir A, and thus prevents the reservoir from becoming heated. All of the cold air which is supplied to the burner passes over the top of the reservoir A and up through this perforated plate S, thus rendering it impossible for the top of the reservoir to become heated to any considerable extent.

Secured to the rear side of the hood L is the packing-box P, which may be made of any suitable shape, and which is filled with asbestos or any other suitable refractory material, for the purpose of protecting the point of the soldering-iron which is being heated from time to time from the flame; and thus prevent the burning off of the tinning. This packing is preferable; but it may be dispensed with, and then the point of the iron will project into the box or an opening in the side of the box, or through an opening which is made in the side

of the hood. The packing serves to more perfectly protect the point, and it is preferable for this reason. The box P is secured to the side of the hood L and to its bottom plate, as shown; but it may be secured in position in any other suitable manner. In order to prevent the packing from being readily displaced or withdrawn with the soldering-iron, the small frame T is inserted inside of the box P, as shown in Fig. 3. This frame T serves to hold the packing in place. Forming a part of this frame T is the apron U, which is inclined downward at a suitable angle, and which serves to guide the point of the soldering-iron directly into the box P. Across the frame T extends a cross-bar, V, upon the back side of which is formed the tang or projection W, which passes through the side of the box P, where it is riveted, and thus serves to hold the frame T rigidly in position. While the soldering-iron is in the position shown by dotted lines and the flame applied to its heel or inner end, it is thus caused to heat more evenly and with less danger of burning the point.

When it is no longer desired to use the furnace, the air-pressure in the reservoir A is let off through the small opening Y in the plug D. The screw Z is turned backward until its point rises above the small opening Y, and then the air freely escapes. This construction prevents the necessity of removing the screw Z, which otherwise has to be done where the hole Y is not used.

Having thus described my invention, I claim—

1. The combination of the reservoir with the screw D, provided with the two stems, which are placed upon opposite sides of the plug, the screw-plug inclosing one of the stems, the bulb B, which is applied to the other stem, and the screw Z, substantially as described.

2. The combination of the reservoir, screw-plug D, having the air-outlet Y, the screw Z, and two or more stems for the attachment of the bulb B, substantially as set forth.

3. The combination, in a portable burner, of the reservoir, the burner, the hood L, having an opening, O, through one side for the insertion of the tools to be heated and an opening through its opposite side through which the point of the tool is passed, and a packing-box which is secured to one side of the hood opposite the opening through which the points of the tools are passed and which is filled with a suitable refractory packing, substantially as set forth.

4. The combination of the reservoir, a burner, the hood L, provided with a door, the box P, secured to one side and filled with a refractory packing, and the frame T, which is placed inside of the box P for the purpose of holding the packing in place, substantially as specified.

5. The combination of the reservoir, a burner, the hood L, provided with a door, the box P, provided with a refractory packing, the

frame T, placed inside of the box to hold the packing in place and provided with the tang W, and the apron U, substantially as shown.

5 6. In a portable furnace, the combination of the vapor-burner provided with a perforated cap and outlets for a supplemental heating-flame, the hood which forms the top of the furnace, the removable cover or dome M, provided with an opening in its top, and the solid

cap R, provided with a hinged handle, substantially as set forth.

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

ZEBULON DAVIS.

Witnesses:

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