C. GEFRORER.

Tinners' and Roofers' Gasoline Furnace.

No. 210,114. Patented Nov. 19, 1878.

FIG. 1

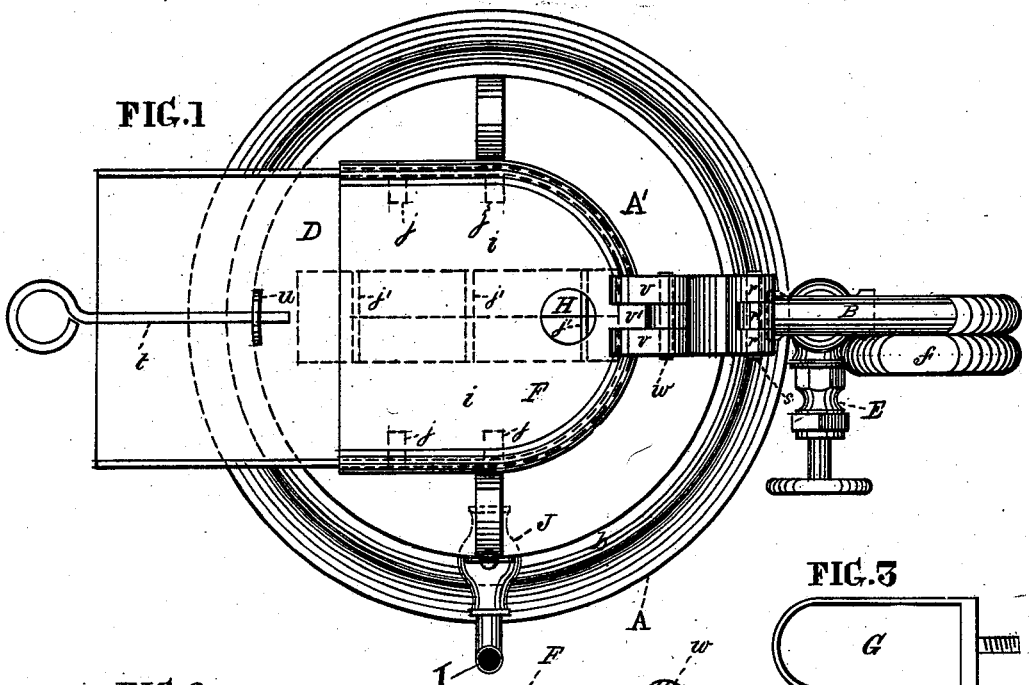

FIG. 3

FIG. 2

FIG. 4

FIG. 5

Witnesses

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IMPROVEMENT IN TINNERS' AND ROOFERS' GASOLINE FURNACES.

Specification forming part of Letters Patent No. **210,114**, dated November 19, 1878; application filed May 13, 1878.

To all whom it may concern:

Be it known that I, CHARLES GEFRORER, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Tinners' and Roofers' Gasoline Furnaces, of which the following is a specification:

The object of my invention is to furnish a cheap, simple, and convenient portable furnace that is not liable to explode; and the nature of the invention consists of the following particulars:

The base of the furnace constitutes a chamber, from which the gasoline is supplied to the burner through a feed-pipe, which is provided with a stop-cock for regulating the flow of the gasoline. The chamber of the burner is formed by the union of two dish-shaped plates, which give suitable capacity and form to the chamber for generating the gas before it enters the tip. The feed-pipe is coiled to increase its length in a small space, whereby to check the passage of the heat from the combustion-chamber to the gasoline-chamber. The flame is prevented passing into the feed-pipe by filling the latter, near its connection with the burner, with wire-gauze. This filling also prevents the too rapid flow of the gasoline to the burner.

The heating-chamber is provided with a cover to retain the heat upon the soldering-irons. It is hinged, for the purpose of being thrown upward to see the tools when being heated. The heating-chamber is also hinged to the combustion-chamber, for the purpose of being thrown upward out of the way for lighting the burner.

The top plate of the gasoline-chamber is provided with a cover of mica and asbestus, to prevent the heat from the furnace striking down into the gasoline.

I am aware that a non-conducting material has been used as a packing to protect the fluid from the heat of the flame, as in the patents of J. L. Sharp, dated June 22, 1875, and that of S. D. Baldwin, dated February 5, 1878; but my mode is essentially different, as the protection is given to the top plate of the fluid-chamber by covering it with the non-conducting material instead of placing it beneath metallic plates. In the latter case, the connecting-rim of the two plates becomes more or less heated, whereby heat is communicated to the fluid; but by my mode this is entirely prevented by the cover of the non-conducting material.

A tube is projected from the top of the gasoline-chamber, through which a sufficient quantity of air is blown by the mouth into the chamber to prepare for the combustion of the gasoline. If desired, the air may be forced through the tube from a hollow gum ball stuck on the end of the tube. A stop-cock is connected with the tube for confining the air in the chamber.

In the accompanying drawings, Figure 1 is a plan view of my improved furnace. Fig. 2 is a side elevation of the same, with the upper part in section. Figs. 3 and 4 are top and side views of the deflecting-plate G. Fig. 5 is a perspective view of the ribbed rest H.

Like letters of reference in all the figures indicate the same parts.

A represents the base of my improved furnace, and A′ the combustion-chamber. The base A has a chamber, *b*, of sufficient capacity to hold the gasoline for consumption. To prevent the heat of the combustion-chamber striking down into the gasoline-chamber the top plate *k* of the projection *c* has a cover, which is a non-conductor of heat, and consists of a sheet, *l*, of asbestus, and a sheet, *m*, of mica. The cover is held upon the plate *k* by means of screws *n* and the lugs *o* of the combustion-chamber, the latter also being held in connection with said plate by the same means. The top of the base A, outside of the projection *c*, has a sink, *d*, which is provided with an opening, through which the gasoline is supplied to the chamber *b*. The opening has a screw-plug stopper, *e*.

B is a feed-pipe at the opposite side of the base, the lower end of which projects downward to within a short distance of the bottom of the chamber. The upper end extends into the combustion-chamber A′, and is provided with the burner C C. The pipe is coiled to increase its length, at *f*, in a convenient space, to prevent the heat of the furnace passing through it into the gasoline-chamber.

The flow of the gasoline is regulated by means of the stop-cock E. The burner is

mainly composed of two concave disks, C C, soldered together, whereby the chamber is made of suitable form and capacity for the free expansion of the oil in the generation of the gas. To the lower side of the burner is soldered, or otherwise secured, the cup *d'*, into which a small quantity of gasoline is discharged from the tip *g* of the burner, and is ignited to heat the latter to start the generation of the gas.

D is the heating-chamber for the soldering-irons. It is provided with the cover F, for the purpose of retaining the heat upon said tools. Within the central opening, *p*, in the bottom of the heating-chamber is the deflecting-plate G, connected at one end with the upper side of the burner, as shown in Fig. 2.

H is a ribbed rest, which is shown in detail in Fig. 5. It is fastened by means of the screw *q* to the bottom plate of the heating-chamber, leaving an opening, *i*, at each side of the central opening, *p*, for the passage of the flame or heat from the burner to the soldering-irons, which are laid on the ribs *j*, which project upward from the bottom plate of the chamber D, outside of the central opening, *p*, and the ribs *j'* of the rest H.

To provide for swinging the chamber D upward and backward, out of the way, for lighting the burner, it is hinged to the combustion-chamber A' by means of the lugs *r r* at one side of the latter, the lug *r'* at one end of the heating-chamber, and the joint-pin *s*. When the latter chamber is in the position shown in Fig. 2, it is held firmly in place by means of the slip pin or wire *t*, which is passed through the projection *u* of the combustion-chamber.

The cover F is hinged to the heating-chamber D by means of the cheeks *v v* of the latter, the lug *r'* of the former, and the joint-pin *w*, so as to provide for its being swung upward for viewing the soldering-irons during the heating operation.

Preparatory to lighting the burner a small quantity of air is blown into the gasoline-chamber *b* through the tube I, the mouth of the operator being applied to the open end or mouth of the tube. Instead of applying the mouth to the tube the air may be forced in from a hollow gum ball having a hole on one side to connect with the mouth of the tube. The tube I is provided with the stop-cock J for confining the air in the chamber *b*.

I claim as my invention—

1. A cover of the sheets *l* and *m*, of asbestus and mica, in combination with the top plate, *k*, of the projection *c* of the gasoline-chamber, to prevent the heat of the combustion-chamber passing through said plate *k* into the gasoline, substantially as set forth.

2. The ribbed rest H, in combination with the heating-chamber D, having ribs *j* for holding the soldering-irons in position to be heated, substantially as set forth.

3. The double concave disk-burner C C, in combination with the feed-pipe B and cup *d'*, substantially as and for the purpose set forth.

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Witnesses:
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STEPHEN USTICK.