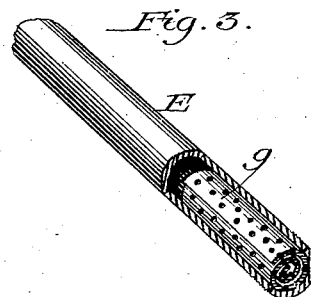
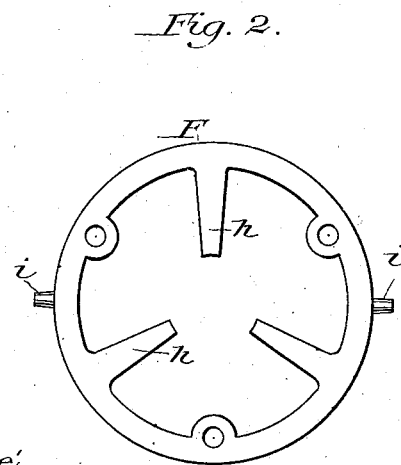
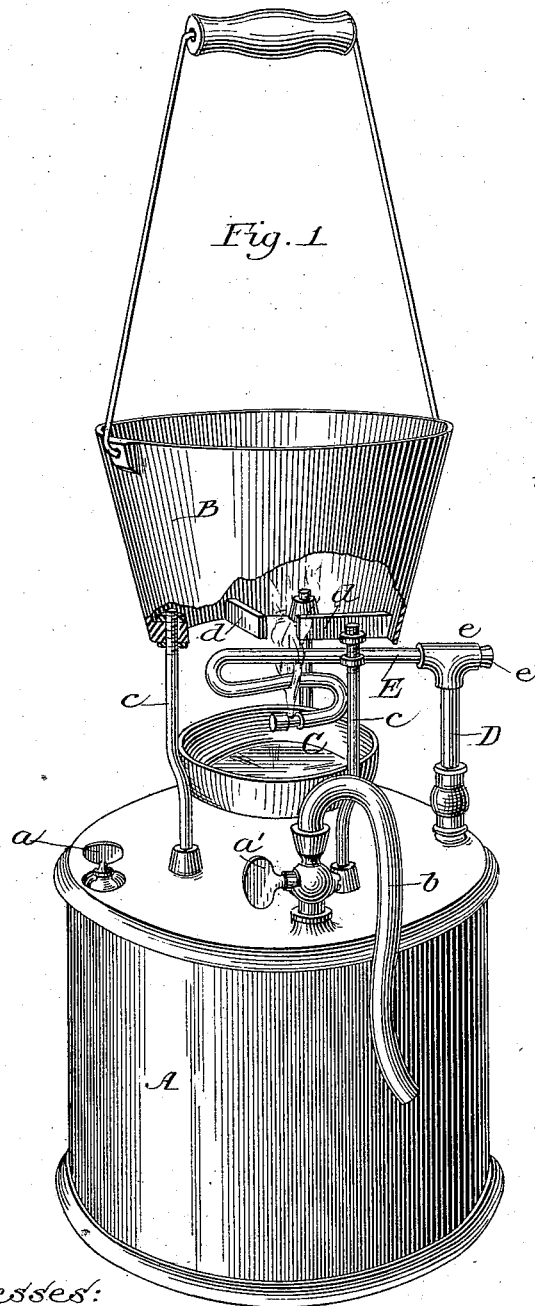


(No Model.)

D. NORTON.
GASOLINE FURNACE.

No. 260,224.

Patented June 27, 1882.



Witnesses:

Frank S. Blanchard
William C. Whiting.

Inventor:

Dennis Norton
By Geo. G. Elliott
Attorney.

UNITED STATES PATENT OFFICE.

DENNIS NORTON, OF CHICAGO, ILLINOIS.

GASOLINE-FURNACE.

SPECIFICATION forming part of Letters Patent No. 260,224, dated June 27, 1882.

Application filed January 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, DENNIS NORTON, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gasoline-Furnaces, of which the following is a specification.

My invention relates to portable gasoline-furnaces in which the burner and heating-chamber are mounted above the gasoline-reservoir and the supply-pipe is heated by the flame of the burner to generate gas from the gasoline forced through the pipe to the burner by air-pressure within the reservoir, which furnace is adapted for heating tools, sad-irons, solder, glue-pots, &c.

The objects of my invention are to provide means for effectually utilizing the hottest portion of the flame from the burner for heating the supply-pipe, whereby the gases may be quickly generated when starting the machine, and also maintain such gases at a high temperature during the operation of the furnace; to provide means for preventing the radiation of the heat from the flame to the reservoir; to strain and at the same time retard the gasoline in its flow through the supply-pipe, and to provide a plate capable of being substituted for the combustion-chamber for supporting in close contact with the flame vessels of larger size than said chamber and other vessels when it is desirable to heat their contents to a high degree. I attain these objects by devices illustrated in the accompanying drawings, in which—

Figure 1 is a perspective of a gasoline-furnace embodying my invention, and having a portion of the combustion-chamber broken away to show the supporting grate-bars and the means employed for securing said chamber to the rods or standards; Fig. 2, a plan view of the detachable supplemental plate; and Fig. 3 a detail, partly in section, of the supply-pipe, showing the strainer.

Similar letters of reference indicate the same parts in the several figures of the drawings.

A represents a gasoline-reservoir of the ordinary construction provided with a plug, *a*, hermetically closing the filling-opening, and with a valve-nozzle, *a'*, having attached a rub-

ber tube, *b*, through which air is introduced to the reservoir for creating a pressure to force the gasoline through the supply-pipe.

Mounted upon rods *c c c*, secured to the top of the can and screw-threaded upon their upper ends, is a cone-shaped combustion-chamber, B, open at both ends and provided with grate-bars *d d*, secured near its inner bottom edges and converging toward the center of the chamber, but not connected together, and thus leaving an open space between their ends for the passage of the flame. This chamber is provided at a point between the grate-bars with perforated lugs coinciding with and secured upon the rods by suitable nuts. Rods *c c c* are bent outwardly toward their lower ends to form shoulders supporting a cup, C, which serves the double purpose of holding oil ignited to heat the supply-pipe when starting the furnace and of preventing the radiation of the heat from the flame from heating the reservoir.

It will be observed that the center of the cup is more highly heated than its outer edges, and that if the cup had a central support the induction of the heat to the reservoir would be infinitely greater than is possible by my construction, it of course being understood that the cup has sufficient diameter to effectually protect the top of the reservoir for the purpose intended.

D represents a vertical pipe extending through the top to near the bottom of the reservoir, and connected to the S-shaped pipe E by a T-coupling, *e*, provided at its outer end with a plug, *e'*, for access to the pipe E when such pipe becomes clogged. Pipe E is the supply-pipe proper, and has upon its lower and free end a burner, *f*, the opening of which is directly under the two convolutions of the supply-pipe.

By this arrangement the gas from the burner is ignited directly under the central convolution, and the flame is therefore divided at its center or hottest portion, and so passes to the upper convolution, where it is divided in the same manner. By reason of this particular form and arrangement of the supply-pipe it is much more quickly heated and maintained at a higher degree of heat, which is very desirable—

ble, than is possible where the supply-pipe is coiled and the flame passes through the center of the coils, as in some of the present constructions of these furnaces.

5 In order to prevent sediment from reaching and clogging up the burner the supply-pipe has inserted into it a coil or roll of perforated metal or wire-gauze, *g*, which has the additional function of retarding the flow of the oil
10 to the heated portion of the pipe, and also of preventing radiation through the oil in the supply-pipe to the oil in the reservoir.

For the purpose of heating quickly and to a high degree of heat, or of heating vessels
15 which cannot be inserted in a conical heating-chamber, I have provided a circular plate, *F*, perforated to correspond with the rods *c c c*, which I substitute for the heating-chamber. This plate, which I term a "supplemental
20 plate," is provided with converging arms *h h*, similar to those in the heating-chamber, and also with lugs *i i* for the attachment of a bail in the same manner as shown in Fig. 1, for convenience in carrying the furnace.

25 My furnace is not only very simple and cheap in its construction, but by practical demonstration is found to be much more effective in operation than those of a more complicated
30 structure now in use.

It may be well to add that my furnace may

be effectively operated when the lower convolution of the supply-pipe is omitted—that is to say, by making it **L** instead of **S** shaped, as shown—though the latter construction is preferable, because heated more quickly and
35 to a higher degree of heat.

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

1. The combination, with the reservoir, the
40 standards, and the burner, of a cup supported by and between the standards, substantially as and for the purpose described.

2. The combination, with the reservoir, the standards, the burner, and the cup, of a sup-
45 plemental plate, *F*, the converging arms of which are disconnected at the center of the plate, said plate having lugs, substantially as described.

3. The combination, with the reservoir, the
50 burner, and the standards, of a cone-shaped heating-chamber having an open bottom and supported upon said standards, and provided with the horizontal converging grate-bars projecting over said bottom, substantially as de-
55 scribed.

DENNIS NORTON.

Witnesses:

JNO. G. ELLIOTT,

WILLIAM C. WHITING.