(No Model.)

B. REIN.

VAPOR DENTAL FURNACE.

No. 551,650. Patented Dec. 17, 1895.

Fig. 1.

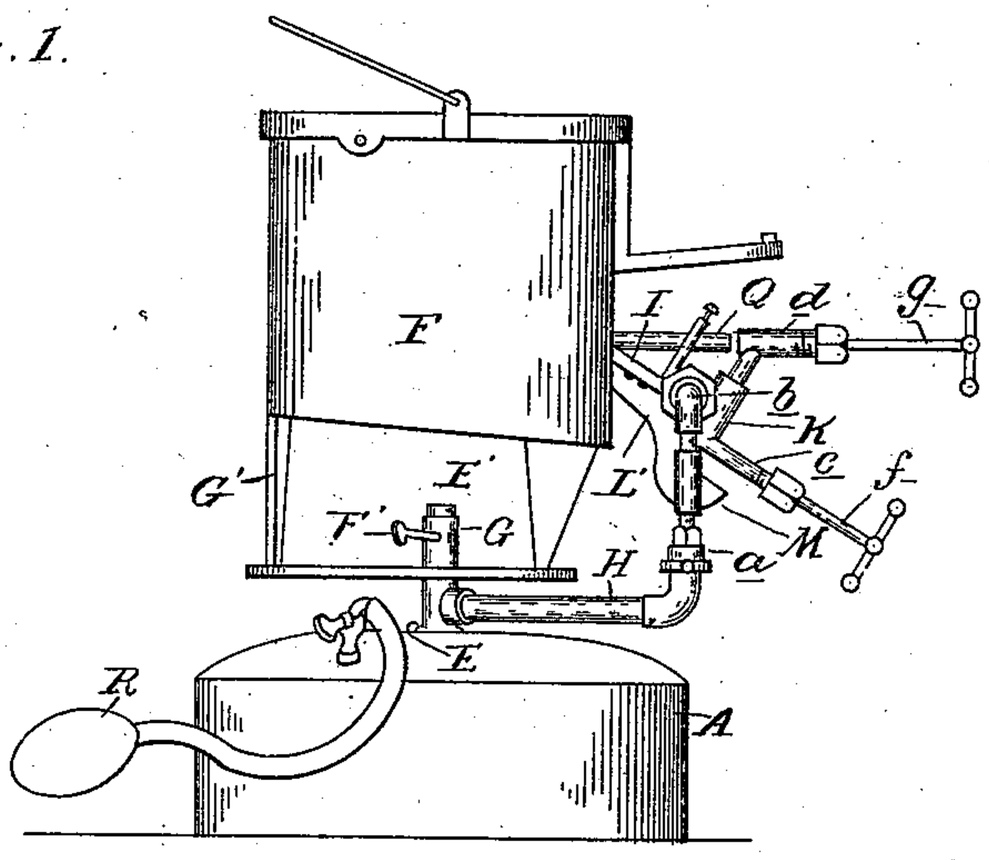


Fig. 3.

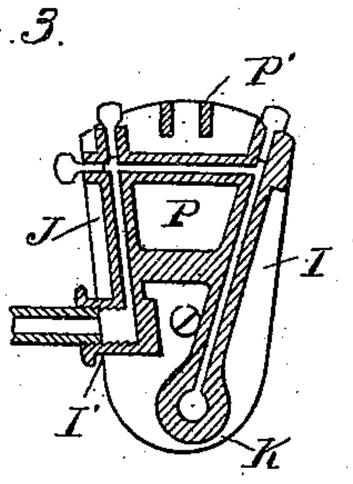


Fig. 2.

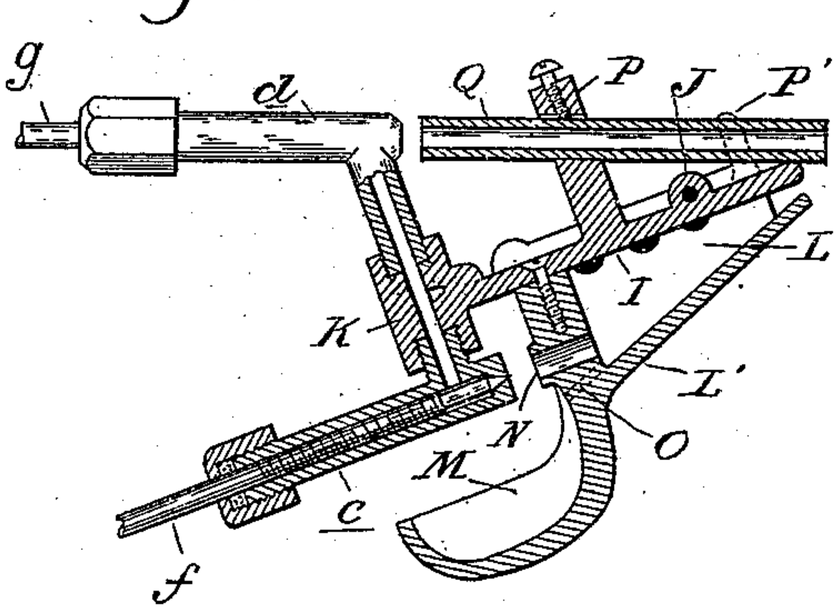
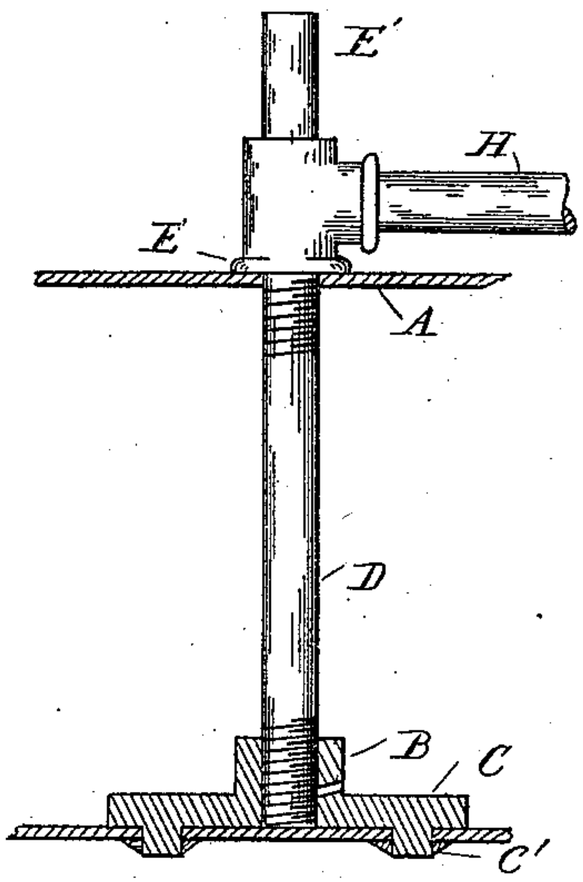


Fig. 4.



Witnesses:
A. L. Habby
F. M. McDogherty

Inventor
Bernard Rein
By Thos. G. Sprague & Son
Atty's.

UNITED STATES PATENT OFFICE.

BERNARD REIN, OF DETROIT, MICHIGAN, ASSIGNOR TO THE UNION HEATER SUPPLY COMPANY, OF SAME PLACE.

VAPOR DENTAL FURNACE.

SPECIFICATION forming part of Letters Patent No. 551,650, dated December 17, 1895.

Application filed December 14, 1893. Renewed May 22, 1895. Serial No. 550,276. (No model.)

To all whom it may concern:

Be it known that I, BERNARD REIN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Vapor Dental Furnaces, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the peculiar construction of a tank upon which is supported a furnace and a burner, the burner being connected to the tank by means of a universal joint, so that it may be made to enter the furnace and assume any desired angle, or may be used independently.

The invention further consists in the peculiar construction of the burner, whereby I obtain a combination of what is known as a "fan-tail" burner and a "blow-jet," and further, in the peculiar construction, arrangement, and combination of the various parts.

In the drawings, Figure 1 is a side elevation of my improved device. Fig. 2 is a vertical central section through the burner and valves. Fig. 3 is a horizontal section through the vein-plate. Fig. 4 is a vertical section through the tank, showing the manner of connecting the supply-pipe therein.

A is the tank, centrally on the bottom of which is the nipple B, which is secured centrally in a plate C, provided with the outwardly-projecting lugs C′, which pass through the bottom of the plate and are secured thereto by soldering or in any other suitable manner. In this nipple is secured the supply-pipe D, which passes through the top of the tank and is provided with the flange E, resting upon the top to centrally stay the tank against damage from internal pressure. This supply-pipe is provided with the plug or stem F′, upon which the furnace F is detachably supported, being secured in position by means of the set-screw F″, passing through the sleeve G on the frame G′, depending from the under side of the furnace. This furnace may be of any desired construction, such as is ordinarily used for dental forges. The supply-pipe is provided with a lateral branch H, having the vertical and horizontal swiveled joints *a b* therein, suitable elbows being employed to connect the horizontal and vertical members, and at the outer end of this supply-pipe is the burner.

The burner consists of a plate I, having formed on one side the screw-threaded socket I′, into which the supply-pipe engages. Upon the upper face of this plate are formed a series of communicating veins J, which connect at the rear end of the plate into the vertical cross-head K. At each end of this cross-head are the jet-pipes *c d*, controlled by suitable needle-valves *f* and *g*, respectively. The jet-pipe *c* is arranged parallel with the under side of the plate I and a short distance below the same, while the pipe *d* is arranged at an acute angle to that plate and above the same.

The commingling-chamber L for the lower valve is formed by securing to the under side of the plate a casing L′, fan-shaped and contracted toward its mouth, being provided at its lower end with the usual drip-cup M. The rear wall of this casing is provided with the feed-aperture N opposite the opening in the jet-pipe *c*. It is also provided with the return drip-passage O to allow the fluid which will pass through in starting the burner to flow from the chamber L into the cup M. On the upper side of the plate I is secured an apertured standard P, and at the forward end of that plate are the lugs P′, the tube Q being secured to the aperture in the standard P, and between the lugs P′, in line with the discharge from the jet-pipe *d*, forming blow-burner or blow-pipe, having its discharge arranged at an acute angle slightly beyond the mouth of the discharge from the fan-tail burner below.

The tank is provided with suitable means for forcing the oil out—such, for instance, as the bulb R—by means of which air-pressure may be created therein.

The parts being thus constructed their operation is as follows: To start the device, the operator, having put sufficient air-pressure into the tank, opens the valve *f* and a stream of gasoline will flow therefrom through the aperture N into the chamber L and thence back into the cup through the passage O.

When sufficient gasoline accumulates therein, the valve being closed, the burner may be heated by lighting the gasoline in the usual manner. The valve *f* being again opened the vapor will pass into the commingling-chamber L, which is provided with suitable air-inlets, and may be lighted at the mouth thereof, forming the usual fan-shaped flame. Now if it is desired to obtain a blow-pipe effect this may be accomplished by partially closing the valve *f*, so as to make a small flame from the fan-tail burner, which is sufficient to properly heat the plate I and generate the vapor in the veins and then open the valve *f*.

The jet-pipe *d* will be supplied with vapor in the manner described, and this will pass through the tube Q and give the desired blow-pipe effect much better than can be accomplished with the ordinary blow-pipe.

What I claim as my invention is—

1. In a gasoline burner of the kind described, the combination of the plate, the veins thereon communicating with the supply pipe and with a cross head, of valves at opposite ends of the passage from the cross head, and a burner and a blow pipe controlled by said valves, and arranged to intersect at or near the discharge, substantially as described.

2. In a gasoline burner, the combination of the tank, the supply pipe comprising a universal joint, a plate, having a nipple into which the supply pipe engages, veins on the plate extending from the nipple, a cross head at the rear of the plate into which the veins communicate, valves controlling the exits from the cross head, a fan tailed burner formed beneath the plate by the casing L′ and a blow pipe burner on top of the plate, the blow pipe and burner intersecting at or near the discharge, substantially as described.

3. In a vapor dental furnace, the tank, the nipple B, having base plate C secured to the bottom of the tank, the tubular standard D, having the flange F against which the top of the tank abuts, a lateral discharge and the pin E′, substantially as described.

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

BERNARD REIN.

Witnesses:
M. B. O'DOGHERTY,
OTTO F. BARTHEL.