(No Model.)

# B. REIN.

## BRAZING FURNACE.

No. 552,330. Patented Dec. 31, 1895.

Fig. 1.

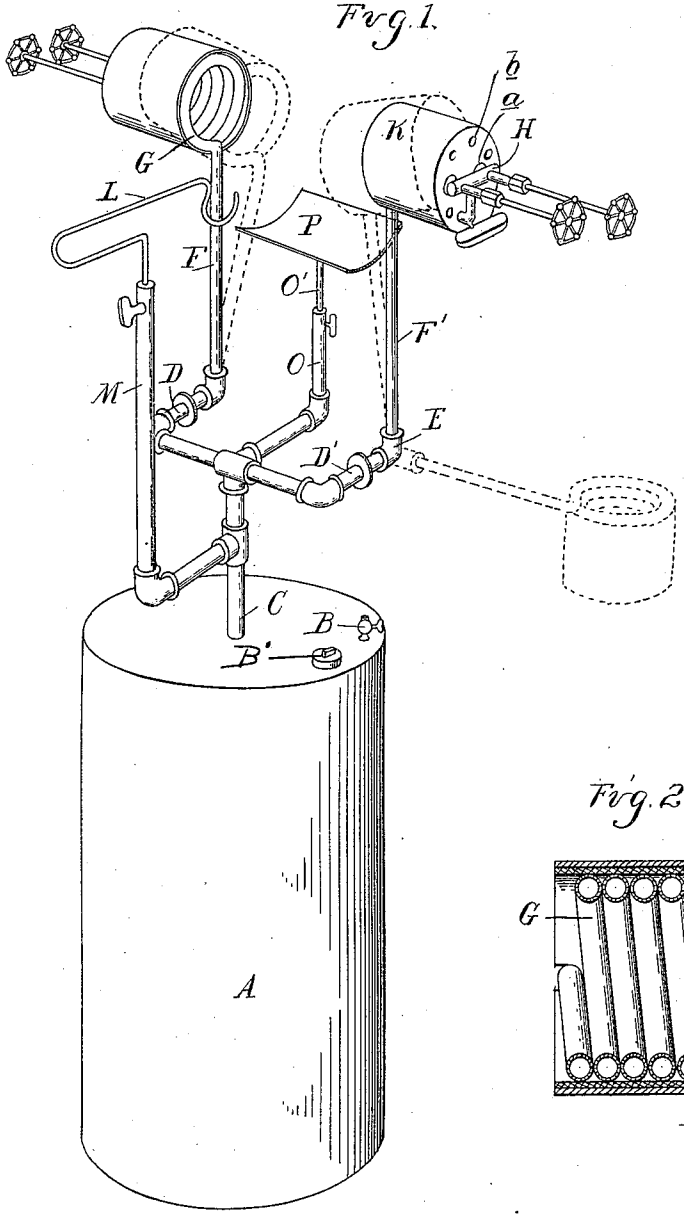
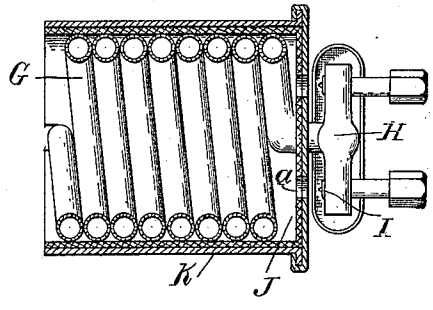



Fig. 2.




Witnesses
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# UNITED STATES PATENT OFFICE.

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

## BRAZING-FURNACE.

SPECIFICATION forming part of Letters Patent No. 552,330, dated December 31, 1895.

Application filed April 22, 1895. Serial No. 546,684. (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 Brazing-Furnaces, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the construction of a vapor-burning brazing-furnace, comprising two oppositely-arranged fire-pots adjustably arranged in relation to each other so that they may be made to approach to or recede from the work, and so that the angle at which the fire is directed upon the work may be varied as desired.

The invention further consists in the construction, arrangement and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a perspective view of my device, showing in full and dotted lines different positions of the fire-pots. Fig. 2 is a vertical central section through one of the fire-pots.

A is a tank for containing the gasoline or other liquid fuel, this tank being provided with a suitable nipple B, by means of which air under pressure may be pumped into it to force out the liquid. The top of the tank may be provided with an inlet or mouth closed by a removable plug or cap, as indicated at B'.

C is the discharge-pipe therefrom, this pipe leading to the bottom of the tank. This pipe has two horizontal branches D D', each having a swivel-joint E therein, in which are supported the vertical pipes F F', forming an extension of the branches of the supply-pipe. At the top these vertical pipes are formed into the horizontal cylindrical coils G, at the outer end of which is the cross-head H. This head carries two valve-controlled jets I, which discharge into the chamber J within the coils, which forms the combustion-chamber of the fire-pot. This chamber I preferably inclose by a cylindrical cap or hood K, having a lining of asbestos paper or other similar non-combustible non-conductor to prevent the burning out of the hood. The end or head of the hood I provide with apertures *a* opposite the jets, and with air-inlet apertures *b* around the edges to admit air for combustion. These two fire-pots being arranged oppositely, oil fed to the coils from the tank will be vaporized therein and delivered from the jets into the chambers J, where it will be mixed with a proper amount of air, and the force of the jet will throw the flame from the fire-pot outward toward the opposing fire-pot, the two flames meeting and causing intense heat at the meeting-point, at which the work is held. These fire-pots may be moved by turning them on the swivel-joints, causing them to approach or recede, and changing the angle at which the flames come together and strike the work. The work may be held upon the work-holding arm L, adjustably supported in the tubular standard M, which is supported on the pipe C, as shown. Either one of these fire-pots may be used separately if desired, and they can be turned into any desired relation to their support from the vertical to the horizontal, as shown in dotted lines in Fig. 1, the friction of the swivel-joint being sufficient to hold them in their adjusted positions.

I may and preferably do provide a tubular standard O centrally between the fire-pots, in which is adjustably supported the standard O' carrying the deflector-plate P at its top, which acts to prevent too great a vertical circulation of the air when the two furnaces are used together, and enables me to get a somewhat hotter fire than if the furnace is used without it.

While I have shown the two hoods inclosing the coils, it is evident that as these coils are made as closed coils they alone will form the combustion-chamber if desired.

What I claim as my invention is—

1. In a brazing furnace, the combination of the tank, the tubular standard thereon, having two branches, the swivel joints in said branches, pipes extending up from said joints, coils in said pipes, hoods inclosing said coils, and vapor burners discharging toward each other through the hoods, substantially as described.

2. In a brazing furnace, the combination with the supply pipe, a pipe connected therewith, a coil in the latter pipe forming the combustion chamber for the burner, an inclosing hood for said coil provided with an end plate, the end of the coil passing through said end

plate and provided with jet burners discharging into the combustion chamber through apertures in the end plate, substantially as described.

3. In a brazing furnace, the combination of the supply pipe, the branch pipes connected therewith, said pipes being coiled near one end, hoods inclosing said coils, jet burners at the end of each branch pipe situated without the hoods and discharging into and through said coils toward each other, substantially as described.

4. In a brazing furnace, the combination of the oppositely arranged combustion chambers, the bracket between the same, the vertically adjustable deflector plate between and below the plane of the burners, substantially as described.

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

BERNARD REIN.

Witnesses:
M. B. O'DOGHERTY,
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