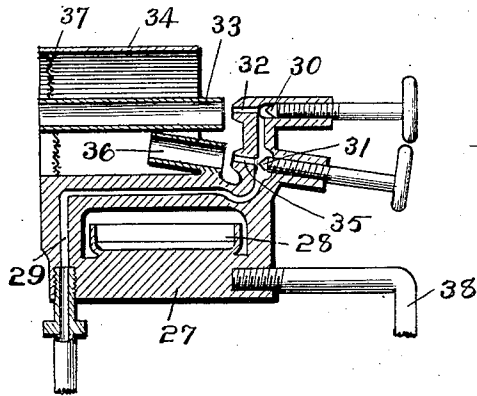


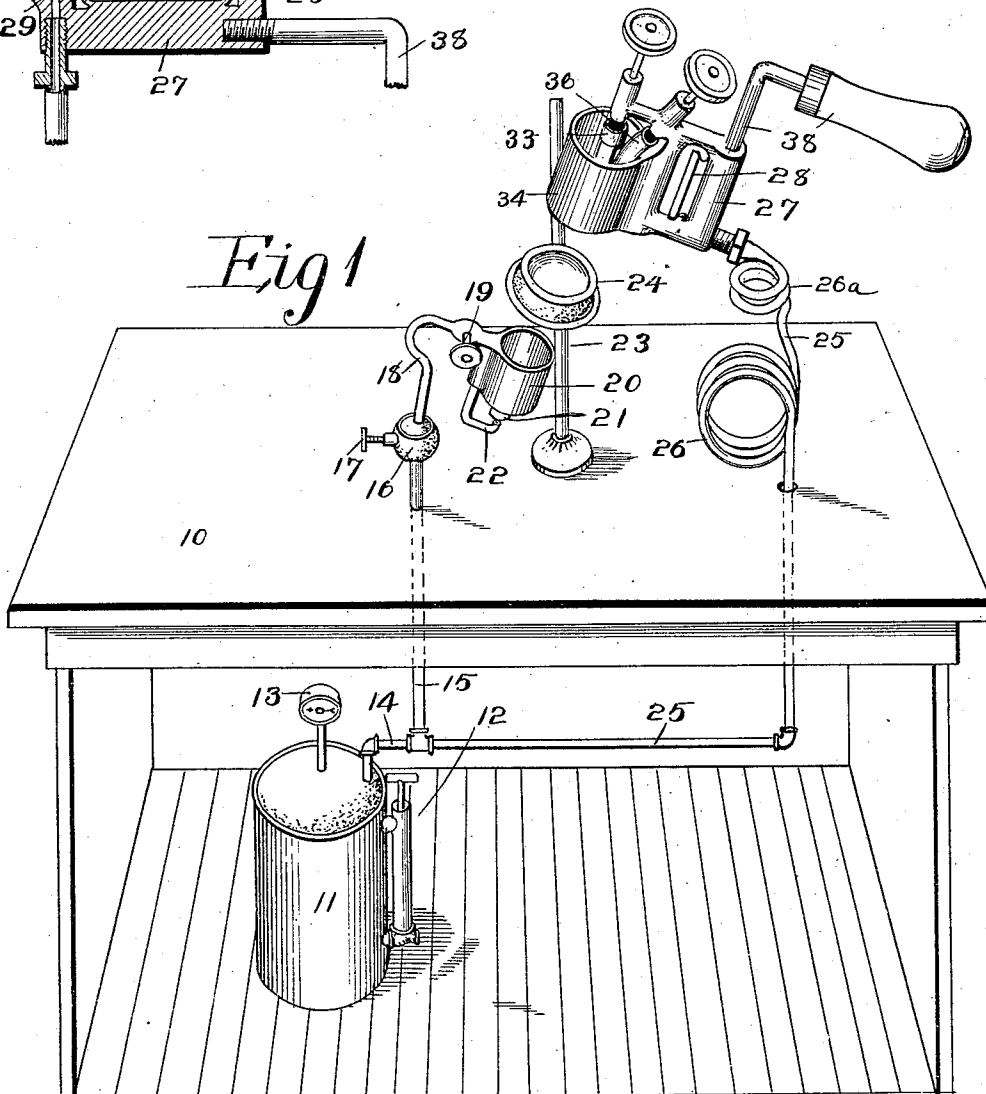
No. 880,740.

PATENTED MAR. 3, 1908.

A. H. JOY.  
DENTAL SOLDERING DEVICE.  
APPLICATION FILED JAN. 29, 1906.



*Fig. 2.*



*Fig. 1*

Witnesses.

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# UNITED STATES PATENT OFFICE.

ARTHUR H. JOY, OF NEWTON, IOWA.

## DENTAL SOLDERING DEVICE.

No. 880,740.

Specification of Letters Patent.

Patented March 3, 1908.

Application filed January 29, 1906. Serial No. 298,333.

*To all whom it may concern:*

Be it known that I, ARTHUR H. JOY, a citizen of the United States, residing at Newton, in the county of Jasper and State of Iowa, have invented a certain new and useful Dental Soldering Device, of which the following is a specification.

The object of my invention is to provide a device of this kind of simple, durable and inexpensive construction, by which the operator may conveniently and easily apply heat in the manner best adapted for the purposes intended.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a perspective view of the complete device embodying my invention. Fig. 2 shows an enlarged, detail, sectional view of one of the burners.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate a table designed to contain and support my improved dental soldering device. The numeral 11 indicates a tank to receive hydrocarbon and 12 is an air pump for forcing air into the tank to maintain a pressure therein. Connected to the top of the tank is a pressure gauge of ordinary construction. The vapor supply pipe 14 leads from the tank and has two branches, the first one 15 projects upwardly through the table top and is provided on its upper end with a ball and socket joint of ordinary construction indicated by the numeral 16. The ball may be secured in any desired position within the socket by the screw 17. Leading upwardly from the ball of this joint is a vapor pipe 18 provided with a valve 19. The burner comprises a casing 20 on the interior of which the burner tube 21 is supported. A branch of the vapor pipe 18 has its discharge end adjacent to the burner tube 21 and is indicated by the numeral 22. If the valve 19 is opened, vapor will be discharged from the pipe 22 and will mingle with the air in quantities proper for burning and this will enter the burner tube 21 where the combustion will take place.

The casing 20 will conserve the heat from the burner and discharge it through the end of the casing 20 opposite to the end in which the tube 21 is placed.

I preferably provide a standard 23 containing a supporting vessel 24 in which the article to be heated is placed and I adjust the ball and socket joint of the pipe 15 and 18 to such position that the discharge end of the casing 20 will be adjacent to the part of the vessel 24 where it is discharged to apply the heat. Obviously the adjustment provided by the ball and socket joint is limited and ordinarily the heat discharged from the casing 20 is intended to strike upon the bottom of the vessel containing the article to be heated.

A branch pipe 25 communicates with the pipe 14 and passes upwardly through an opening in the table top. This pipe is formed with coils at 26 and then extends upwardly above the coils 26 and has another set of coils 26<sup>a</sup> formed therein and it is then connected to the burner proper. This second burner is designed to be freely moved apart by the operator's hand when in use and it must move both up and down and laterally in order to utilize to the best advantage. The portion of the pipe containing the coils is made of some such flexible material as lead and with the coils arranged, as shown, it may be freely moved in every direction without injuring the pipes by excessive bending at any one point and furthermore the burner will be maintained in any position in which it is placed by the operator, because the material of which the pipe is formed will not spring. This second burner comprises a body portion 27 containing an igniting pan 28 and provided with a vapor passageway 29 leading to two valves 31 and 30 respectively. The upper valve 30 has its discharge opening 32 directly in line with a burner tube 33 which extends through the casing 34. The discharge opening 35 of the valve opening 31 is adjacent to a short burner tube 36 which discharges inside of the casing 34. A screen 37 is provided in one end of the casing 34 for the purpose of retaining the heat from the burner tube 36 within the casing 34 to a considerable extent, so that the entire interior of the casing will be heated by the flame from the burner

tube 36 and the heat passing from the casing 34 will be approximately only such as is obtained by radiation from the casing. Fixed to the body 27 is a handle 38 designed to be grasped by the operator.

In practical use and assuming that the tank 11 contains hydro-carbon under pressure and assuming further that the article to be heated is placed in the receptacle 24, the operator then adjusts the ball and socket joint for the lower burner, so that the flame from the lower burner strikes upon the receptacle 24. Then if it is desired to apply a flame direct to the article to be heated, the operator closes valve 31 and opens valve 30, thus causing the flame to pass through the burner tube 33 and discharge beyond it. The operator grasps the handle 38 and may thereby readily and easily direct the flame to all parts of the article to be heated within the receptacle 24. The heat may be applied most advantageously if the flame is directed first to one part of the article then to other parts and also if the flame is directed upon the article from different angles and different degrees of elevation. The coil 26 in the pipe being sufficient to provide for this movement of the upper burner.

The flame from the upper burners may be used at the same time that the flame from the lower burner 20 is being used, or either the upper and lower burner alone may be used, as the conditions of the work require.

If it is desired to apply heat by radiation from the upper burner, the valve 30 is closed and the valve 31 opened. When this is done, it is ordinarily preferable to move the discharge end of the casing 34 to position close to the receptacle, hence the necessity of

providing for up and down movement of the upper burner.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States, therefor is—

1. In a dental soldering device, the combination of a platform, a hydro-carbon tank below the platform, an air pipe communicating with the tank, a pipe leading from the tank, a branch projecting upwardly through the platform a hydro-carbon burner on said branch, a universal joint provided in said branch above the platform, means for securing the joint in different positions, the second branch communicating with said pipe and projecting through the platform, and having coils therein arranged at different angles, said coils being above the platform, and a burner communicating with the latter branch pipe above the coils.

2. The combination of a burner and a flexible non-elastic pipe for supporting the burner formed with two coils arranged in different planes.

3. In a dental soldering device, a platform, a hydro-carbon tank below the platform, a pipe communicating with the tank and projecting through the platform, a series of vertically arranged coils in said pipe above the platform, a series of coils in said pipe above the first series and arranged on a different plane and a burner supported upon the upper end of said pipe and communicating with it.

ARTHUR H. JOY.

Witnesses:

E. C. Ogg,  
H. J. Joy.