(No Model.)

A. S. MUNGER.

SOLDERING APPARATUS.

No. 250,381. Patented Dec. 6, 1881.

Fig. 1

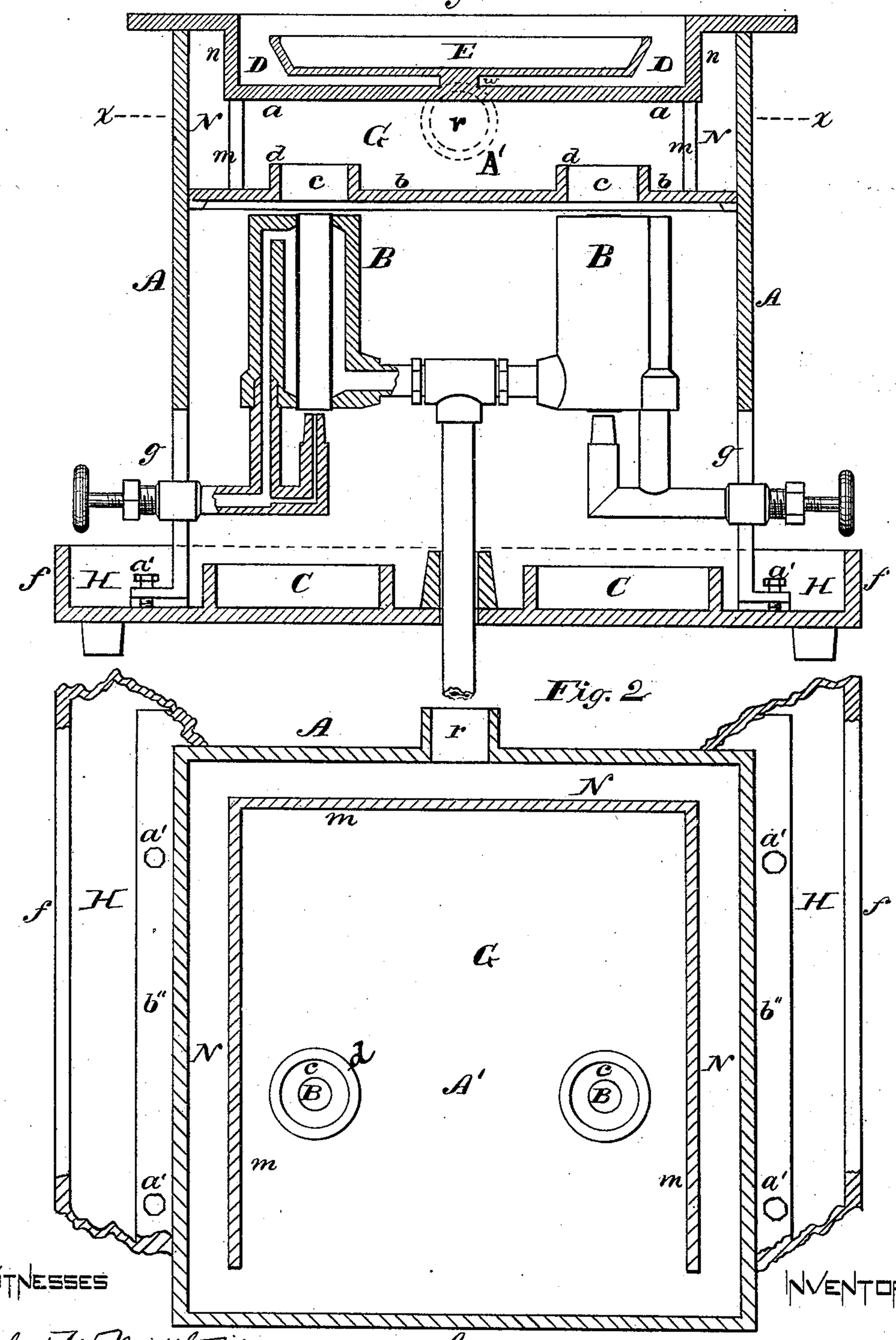

Fig. 2

WITNESSES

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ALFRED S. MUNGER, OF BROOKLYN, NEW YORK.

SOLDERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 250,381, dated December 6, 1881.

Application filed March 22, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALFRED S. MUNGER, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Soldering Apparatus, of which the following is a specification.

This invention relates to that class of soldering apparatus in which the joint to be soldered is dipped into molten solder contained in a heated reservoir or pan, the object of said invention being to insure an economical, uniform, and equable distribution of heat throughout said reservoir or pan, in order that the soldering action may be uniform and simultaneous at all parts of the joint when dipped as aforesaid. The said invention comprises certain novel combinations of parts whereby said object is effectually secured.

Figure 1 is a vertical sectional view of a soldering apparatus embracing my said invention, and Fig. 2 is a horizontal sectional view of the same, taken in the line *x x* of Fig. 1.

A is the shell of a heating-furnace, of which *a* is the top and *b* a horizontal partition or diaphragm, the latter being formed with one or more openings, *c*, around each of which is preferably provided an upwardly-extending flange, *d*. Below each of the openings *c* is a burner, B, which is constructed for the burning of naphtha or other fluid hydrocarbon oils, and which may be of any suitable construction. I prefer, however, to use the liquid-hydrocarbon burner shown and described in my separate application for Letters Patent filed of even date with this.

Underneath each burner B is a "flash-pan," C, so termed, and the use of which is to provide for heating the burners preparatory to ignition of the hydrocarbon oil supplied thereto, inasmuch as this, by warming the hydrocarbon, renders the same capable of more effectual ignition. A small quantity of hydrocarbon being poured into each flash-pan and there kindled will by a brief blaze heat the adjacent burner to the requisite degree, The shell A is formed with a radial flange, *b''*, (or, in lieu of this, with radial studs for the same purpose,) in which are vertically-adjustable set-screws *a'*, the lower ends of which rest upon a base, H, which latter has its edges *f* turned upward, as shown more fully in Fig. 1, in such manner as to constitute what may be termed a "bottom drip-pan." The screws enable the shell A and the parts carried thereby to be leveled upon the drip-pan as upon a base, while the latter catches any drip of the hydrocarbon oils that may come from any part of the apparatus.

In the sides of the shell A are openings *g* to admit air to the burners. The space between the top *a* and horizontal partition *b* constitutes a chamber, G, which, by means of a partition, *m*, (which extends from the partition *b* up to the top *a*, around three sides of the shell A, and at a suitable distance therefrom,) is provided with a passage, N, at the three sides, so that the products of combustion pass through the openings *c* from the burners B, and pass into the chamber G, and then from the central part, A', of said chamber into the passage N, and thence to the outlet-flue *r*. By this means the hot products of combustion are caused to pass in contact with the under side of all parts of the top plate, and thereby heat the same uniformly throughout; and inasmuch as said top plate of the furnace constitutes, as hereinafter described, the bottom of the pan or reservoir which holds the molten solder, it follows that said reservoir or pan and the contents thereof are effectually and uniformly heated throughout their whole extent.

It is preferred that, in order that the circumference of the reservoir or pan, as well as the bottom thereof, may be heated by the action of the circulating hot products of combustion from the burner, the top *a* be formed with a circumferential rabbet or jog, *n*, which, being coincident with the space between the vertical partition *m*, as shown in Fig. 1, in effect carries the passage N to a height coincident, or substantially so, with the upper part of the pan or reservoir D, which latter has its sides formed by the inner sides of the jog or rabbet just referred to; in other words, the top *a* is so constructed that its hollow or concave upper side constitutes the pan or reservoir, as shown in Fig. 1.

Supported in the pan or reservoir D by a short standard, *w*, is a rest, E, upon which the can is placed during the operation of soldering, the edges to be soldered, of the can or other like article, being extended downward around the edges of the rest E, in a manner well un-

derstood in the trade, and consequently needing no specific description here.

It will be observed that, from the relation of the horizontal diaphragm *b* to the burners and the chamber G, the heat and hot products of combustion are prevented from dispersing through any considerable space and from losing a part of their caloric, as would be the case if they were directed simply into a large space, such as would exist if the action of the heating arrangements were not modified by the position of the diaphragm.

What I claim as my invention is—

1. The combination, in a soldering apparatus, of the chamber G, constructed with the diaphragm having openings *c*, the partition *m*, arranged to provide a circulatory passage at the circumference of said chamber, one or more burners placed to discharge their heat and products of combustion through the openings *c* to the chamber G, and the soldering pan or reservoir placed above the said chamber, substantially as and for the purpose herein set forth.

2. The combination of adjusting set-screws with the lugs or flanges formed on the shell A of the furnace and the bottom drip-pan, H, whereby the apparatus may be adjusted to a level upon said drip-pan, substantially as and for the purpose herein set forth.

3. The organized apparatus for soldering, composed of the bottom drip-pan, the adjustable shell A, one or more hydrocarbon-burners, B, one or more flash-pans, C, the chamber G, having openings *c* and circulating-passage N, and the pan or reservoir E for holding the molten solder, all substantially as and for the purpose herein set forth.

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Witnesses:
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