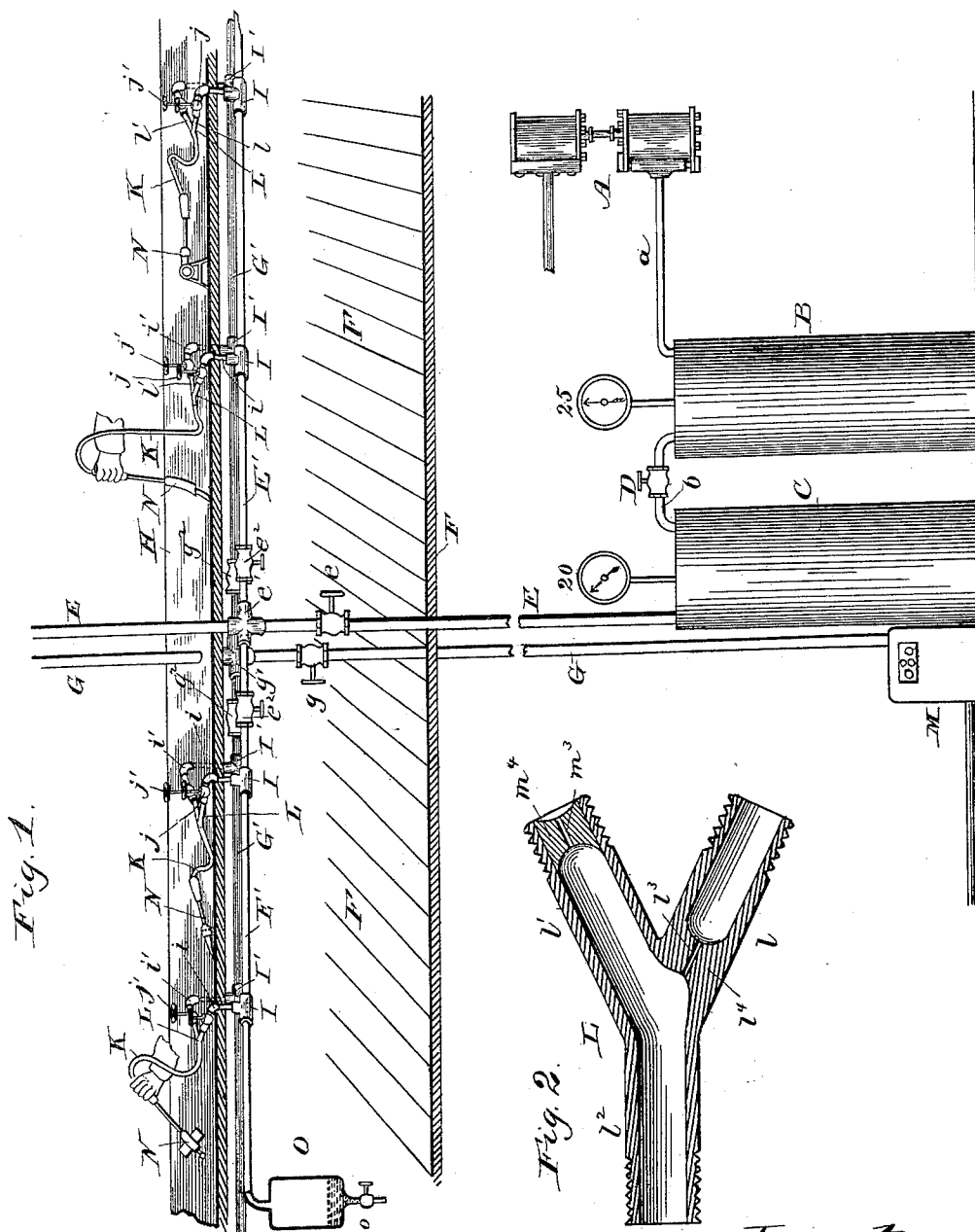


(No Model.)

C. L. WAGANDT.
SOLDERING APPARATUS.

No. 467,694.

Patented Jan. 26, 1892.



Witnesses:
J. B. McGinn.
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UNITED STATES PATENT OFFICE.

CHARLES LEWIS WAGANDT, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO KEEN & HAGERTY, OF SAME PLACE.

SOLDERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 467,694, dated January 26, 1892.

Application filed December 14, 1888. Serial No. 293,607. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEWIS WAGANDT, a citizen of the United States, residing in the city of Baltimore and State of Maryland, have invented certain new and useful Improvements in Soldering Apparatus; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to devices whereby the soldering of various articles of manufacture, in large numbers, may be conveniently, rapidly, and cheaply effected; and it is the object of my improvements to insure a steady and continuous flame in the soldering-tool; to provide for the simple and direct distribution of the compressed air and combustible gas to a number of such tools, and to secure other advantages.

With such objects in view my invention consists in the apparatus hereinafter particularly set forth.

In order to make my invention more clearly understood, I have shown in the accompanying drawings means for carrying the same into effect.

In said drawings, Figure 1 is a sectional elevation of so much of a soldering apparatus embodying my invention as is necessary for the illustration of the same. Fig. 2 is a sectional view of the connection or Y, by means of which the compressed air and combustible gas are combined preparatory to being conducted to the soldering-tool.

Referring to the drawings, A indicates an air-compressing apparatus of any suitable construction, connected by a pipe *a* with a primary compressed-air reservoir B.

C is a secondary reservoir connected with the first by means of a pipe *b*, in which pipe and intermediate between the two reservoirs is a pressure-regulator D.

25 indicates the pressure-gage of the primary reservoir, and at 20 is shown a similar gage carried by said secondary reservoir. The pressure-regulator D may be of any well-known or suitable description, and will be set to maintain a uniform pressure—say of twenty pounds—in the reservoir C, while the average

pressure in reservoir B is, say, twenty-five pounds.

E is the main compressed-air pipe leading from the secondary reservoir of the above-described apparatus to the sets of ranges of soldering-tools.

It will be seen that by these devices while the pressure in the cylinder B is continually fluctuating or pulsating by reason of the intermittent action of the compressor A the pressure in the reservoir C and main air-pipe E will always be uniform. Instead of an intermittent or pulsatory action of the heating-flames in the soldering-tools hereinafter referred to, and to which branches of pipe E lead, I obtain a steady and uniform flame and heating action highly favorable to economy of heat and of gas and to the efficiency of the apparatus.

F indicates a floor, of which there will preferably be a series, one above the other.

H is a work-bench supported at suitable height above said floor and adapted to carry the soldering-tools, their holders, and the articles which are to be operated upon.

G is a gas-pipe leading from an ordinary gas-service meter M, to which latter ordinary illuminating-gas is supplied at the usual slight service-pressure. The pipe G extends with the pipe E through the floor F and upward through the various floors of the series, the flow of air and gas through such main pipes being controlled and adapted to be stopped by valves *e* and *g*, by which valves the supply of the whole system may be cut off.

E' E' G' G' are branches extending horizontally at right angles to and of smaller diameter than the main pipes E G, with which latter they are connected through the medium of suitable couplings *e' g'*. These branch pipes extend beneath and are supported from the under side of the bench H, and are provided at intervals with suitable couplings or T's I I', from which latter compressed-air conduits *i* and gas-conduits *i'* extend upward through the bench and connect with the branches *l l'* of Y's L. Valves *j j'* serve to cut off or regulate the flow of air and gas through the conduits *i i'*.

The Y's L are constructed, preferably, as

shown in Fig. 2, and consist, preferably, of the three branches l l' l'' , through the first of which the compressed air is supplied, through the second of which the gas enters, and in the third of which the gas and air are mingled preparatory to being conducted to the soldering-tool. The branch l' is provided with a partition m^4 and contracted supply-orifice m^3 , situated preferably at the rear or outer end of the branch, while the branch l is provided at its point of juncture with the former branch with a partition l^4 and fine jet-orifice l^3 . It results from this construction that the supply of gas is limited and cannot be so increased as to be wasted, and that the action of the fine jet of heavily-compressed air in the larger chamber, into which it is discharged, cannot cause a backing up of the gas or cut off its flow, so as to extinguish the flame, but, on the contrary, accelerates the forward movement of the gas and becomes thoroughly mingled with it in such manner as to give the maximum heating power.

The branches l^2 of the various Y 's of the above-described system are connected by flexible tubes K with the soldering-tools N . These latter may be of various descriptions—such as floating-irons, seaming-irons, tinner's irons, &c.—as indicated in the drawings.

The compressed-air branch pipes E' are slightly inclined downward from their points of connection with the main pipe E , as indicated in Fig. 1. At their outer and lower ends said branches connect with the upper ends of traps O , which are provided at their lower ends with blow-off cocks o . By these devices the water of condensation is constantly withdrawn from the compressed-air branch

pipes, the flow of air through the same left unimpeded, and regularity in the flames of the soldering-irons secured. Each branch pipe E' and G' is provided at or near its junction with the main supply-pipe with a valve e^3 or g^3 , by which the flow of air or gas may be cut off from that wing of the establishment the soldering-tools of which are situated upon the lines of said pipes and such section of the establishment readily thrown out of operation, when desired, without impairing the supply or operation of other parts of the system. The supply to all of the branch pipes and the operation of the whole system is discontinued, when desired, by the cut-off valves g and e .

I do not claim any improvement in pressure-regulators, broadly, or in the particular kind of regulator herein employed.

Having thus described my invention, what I claim is—

The combination, in a compressed-air and gas soldering apparatus, with the main air and gas supply pipes, of the lateral gas-supply branches, the corresponding lateral compressed-air-supply branches downwardly inclined toward their outer ends, the series of soldering-tools arranged along and connected with said branches, and the trap O , situated at the lower end of said compressed-air-supply branch, substantially as set forth.

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

CHARLES LEWIS WAGANDT.

Witnesses:

JNO. T. MADDOX,

WM. W. RICHARDSON.