

H. S. SARONI.

Improvement in Soldering-Irons.

No. 126,905.

Patented May 21, 1872.

Fig. 1.

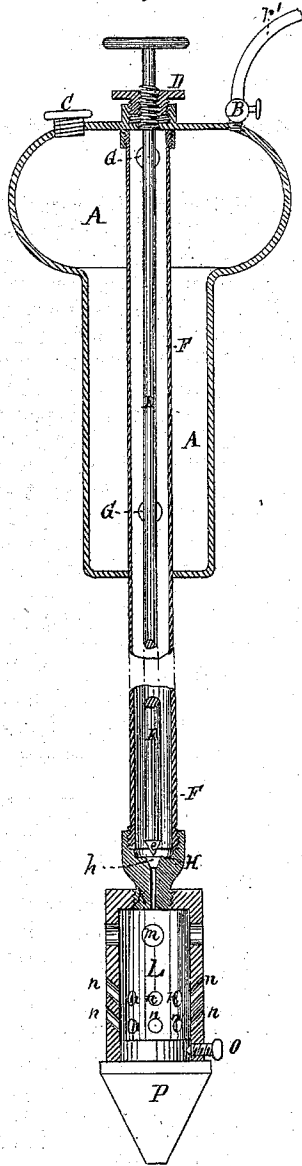
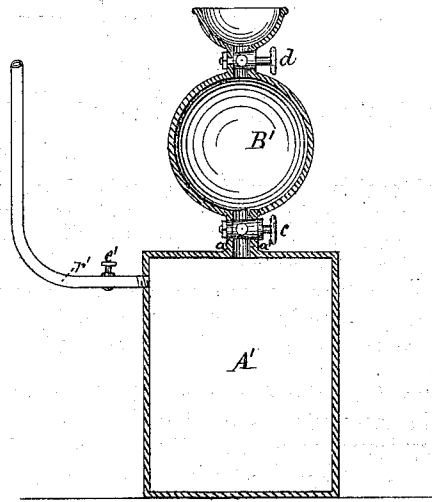


Fig. 2.



Witnesses:

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IMPROVEMENT IN SOLDERING-IRONS.

Specification forming part of Letters Patent No. 126,905, dated May 21, 1872; antedated April 30, 1872.

Specification describing certain Improvements in Soldering-Iron, invented by HERRMAN S. SARONI, of Cincinnati, in the county of Hamilton and State of Ohio.

The invention consists in certain improvements upon soldering-irons, as hereinafter fully described and subsequently pointed out in the claim.

Figure 1 of the drawing exhibits a longitudinal section of the soldering-iron and handle with my improvement applied thereto. Fig. 2 is my carbonic-acid-gas generator shown in section.

A A represents the compound handle and reservoir, having the stop-cock B and fill-screw C. F is a tube having apertures G G, and passing through the handle A A at the lower, but flush with the upper end. E is a rod, which passes through the packing in the top of the said tube, and is tapered at the end to form a conical valve, *e*. H is a tubular vaporizer, provided with a valve-rest, *h*, and fitted around the tube F. L is the socket of a soldering-iron, provided with aperture *m* at the rear and openings *n* near the front end. It thus becomes a compound socket-and-combustion chamber. Into this socket is inserted the projection K of the vaporizer. P is a soldering-iron, which is detachably fastened by a set-screw, O. A' is a chamber provided with tube *r'* having cock *e'*, and a neck, *a'*, having cock *c*, as shown in Fig. 2. Attached to and above this neck is chamber B', having tube with cock *d*.

The mode of operation is as follows: Into chamber A' is poured a solution of bicarbonate of soda, and, the cock *c* being closed, there is also poured into the chamber B' a solution of tartaric acid. The intermediate cock *c* being again opened, these two compound elements form a chemical combination. In the reaction that follows carbonic-acid gas is one of the products. After the handle-reservoir A is partially filled with hydrocarbon, the fill-screw C replaced, and the valve *e* forced into its seat *h*, the stop-cock B is opened, carbonic-acid gas is forced into the reservoir A A until a considerable elastic pressure is superinduced upon

the fluid itself. The cock B is then shut. The effect of this is to express the fluid through holes G G into the tube F and against valve *e*. This valve being removed to a greater or less degree from its seat, the fluid at once rushes into the vaporizer H, which has been previously heated to a proper extent. The minute stream of hydrocarbon is at once transmuted into vapor and passes into the combustion-socket L. Here it receives a supply of oxygen through hole *m* and becomes inflamed. Through the scattered holes *n* additional air is introduced to increase and complete the combustion and impart the necessary heat to the bit P. The vaporizer requires from an outside source but the impartation of heat sufficient to commence the combustion, and will thereafter automatically receive from the combustion-socket L itself all the heat necessary to perform its function as a gas-generator.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with soldering-bit P, of a combustion-socket, L, provided with apertures *m n*, and connected with a vaporizer, as and for the purpose described.

2. The combination, with a soldering-iron handle, A, serving as a hydrocarbon reservoir, of an apertured tube, F, passing therethrough, and the tubular vaporizer H, arranged to operate together, as specified.

3. The combination, with a soldering-iron socket L *m n*, vaporizer H, and tube F, of a hydrocarbon reservoir in the handle A provided with a gas-induction cock B, whereby the necessary degree of elastic force to expel the fluid in the reservoir can be introduced therein and stored up before the soldering-iron is applied to use.

4. The carbonic-acid generator A' B' *c d e*, combined with a hydrocarbon reservoir, to furnish the elastic carbonic-acid gas at the time, in the manner and for the purpose specified.

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Witnesses:

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