D. WEIDLEY.

Soldering Tools.

No. 149,816. Patented April 14, 1874.

Fig. 1.

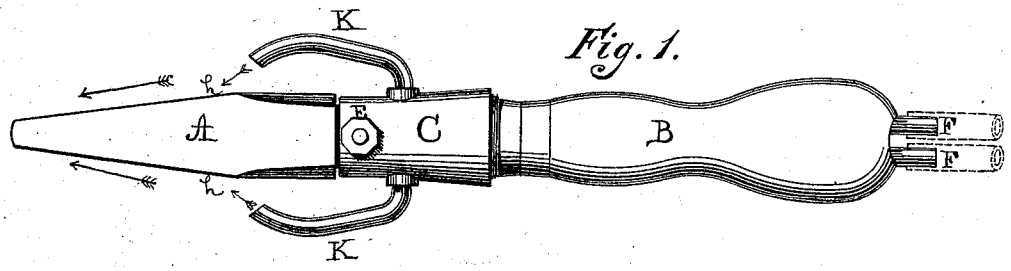


Fig. 2.

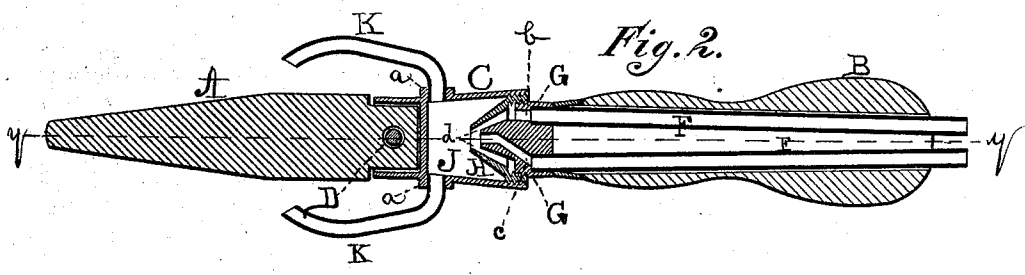
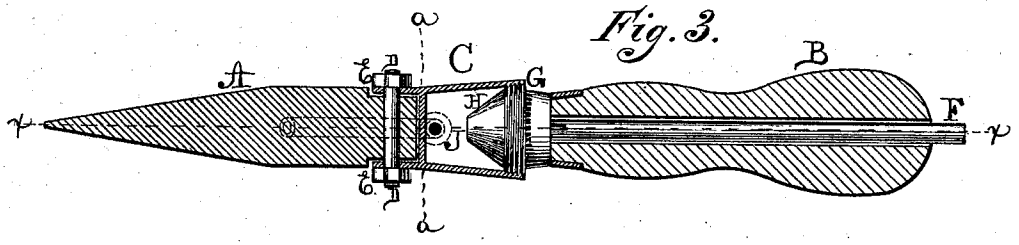


Fig. 3.



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UNITED STATES PATENT OFFICE.

DECATUR WEIDLEY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SOLDERING-TOOLS.

Specification forming part of Letters Patent No. **149,816**, dated April 14, 1874; application filed July 3, 1873.

To all whom it may concern:

Be it known that I, DECATUR WEIDLEY, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Soldering-Irons; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a side view of the device embodying my invention. Fig. 2 is a central longitudinal section in line *x x*, Fig. 3. Fig. 3 is a similar view in line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a soldering-tool of the order known as gas-heated; and consists in pipes arranged on the outside of the tool, and extending toward the point thereof, so as to heat the tool and utilize the flame, after the manner of a blow-pipe. It also consists in a chamber, in combination with a plug and cap, the induction-pipes, and the eduction-pipes. It also consists in the construction of parts for holding the tool or point, and permitting the removal thereof.

Referring to the drawings, A represents the tool or point, and B the handle thereof, which are attached to each other by the connection C. This connection is hollow, and divided transversely by a plate, *a*, which leaves two chambers, the forward one of which receives the inner end of the tool or point A, and the rear chamber constitutes a receptacle for gas or other fluid employed for heating the tool A, as will be hereafter stated. An opening is made in the connection C and inner end of the tool, and through these openings is passed a screw-bolt or pin, D, on which are fitted tightening-nuts E, which, together, serve to hold the tool or point firmly in place, yet permit the ready removal thereof from the connection C whenever desired or required. The handle B is hollow, and through the same is passed two pipes, F F, one of which communicates with a gas-supply, and the other with an air-blast, and both pipes are attached to a plug, G, which is arranged at the forward end of the handle B and rear of the connection C. On the plug G is fitted a perforated conical cap, H, which thus projects in the rear chamber J of the connection C, and its dimensions are such that a space, *d*, is left between said cap and the plug G. The pipes F communicate with the space *d* by means of openings *b c* formed in the plug G, which openings may be said to be continuations of the said pipes F. K represents pipes, one or more, which project from the connection C, and communicate with the chamber J, which pipes extend forward, and are curved or bent toward the pointed end of the tool, the opening of the pipes being likewise toward the pointed end.

The operation is as follows: The gas and air blast being "let on," each flows through its respective pipe F, and the two unite at or about the perforation of the conical cap H, so that the two volumes commingle, or are mixed, in which state they fill the chamber J, then escape with a uniform pressure through the pipes K K, and are then directed in a blast against the tool A.

On ignition of the compound fluid, it is evident that the flame thereof will be driven against the tool A, so that the latter will be subjected to the action of every particle of the flame, and thus be heated in a powerful and uniform manner, the heating qualities of the gas being increased by its union with air, in the manner stated.

Another advantage in the arrangement of the pipes, as stated, is that the flame may be directed against the solder or article to be soldered after the manner of a blow-pipe. The flame first impinges against the tool, as at *h*, thus heating the same, and is then directed along the surface of the tool toward and beyond its extreme point, so that the flame reaches every portion of the working part of the tool, and thoroughly heats the same.

For heavy work, the employment of the heated tool and of the flame will be found of great service.

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

1. The combination, with the tool A, of the

pipes K, arranged on the outside of the tool, and projecting toward the point thereof, so that the tool will be heated and the flame may be used after the manner of a blow-pipe, as herein set forth.

2. The chamber J, intermediate of the induction-pipes F and eduction-pipes K, in combination with the plug G and cap H, substantially as and for the purpose set forth.

3. The connection C between the handle B and tool A, constructed with the plate *a*, forming the rear chamber J, and the front recess for the reception of the rear of the tool, and provided with the bolt D, passing through the connection and tool, and the nut or nuts E, substantially as and for the purpose described.

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Witnesses:

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