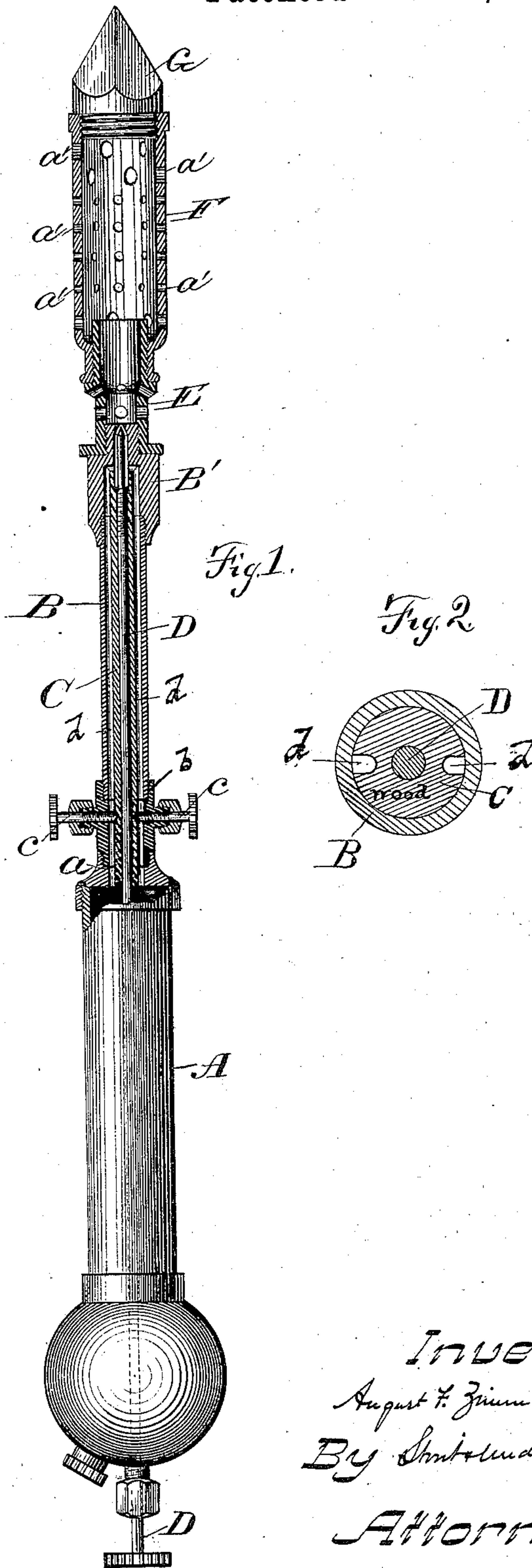


(No Model.)

A. F. ZIMMERLING.
SOLDERING IRON.

No. 309,280.

Patented Dec. 16, 1884.



Witnesses:
E. G. G. mus
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Inventor:
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UNITED STATES PATENT OFFICE.

AUGUST F. ZIMMERLING, OF MILWAUKEE, WISCONSIN.

SOLDERING-IRON.

SPECIFICATION forming part of Letters Patent No. 309,280, dated December 16, 1884.

Application filed March 15, 1884. (No model.)

To all whom it may concern:

Be it known that I, AUGUST F. ZIMMERLING, of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented
5 certain new and useful Improvements in Soldering-Irons; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to soldering-irons, and
10 is designed as an improvement on the soldering-iron described and claimed in an application filed by me on the 22d day of October, 1883, Serial No. 109,633.

In the drawings, Figure 1 is an elevation of
15 my device, partly in section. Fig. 2 is a cross-section (exaggerated) taken through the stem that connects the handle and heating-iron.

A is the handle and reservoir of my device, which is preferably formed at its upper end
20 with exterior screw-threads, which engage the interior screw-threads of a collar, *a*, which in turn forms a seat for a short tube, *b*, screw-threaded or otherwise suitably connected thereto and to a hollow stem, B, which extends
25 up to and is suitably joined with the soldering-iron proper. Though I have described this means of connecting the handle and reservoir A and the hollow stem B, the construction may be changed without any material
30 alteration—as, for instance, the short tube *b* and collar *a* may be made in one piece or form a continuation integral with the stem B.

C is a core of wood or other suitable material, that is fitted in the stem B, and extends
35 from its inlet *a* to its outlet-head B'. This core has a hole through its center to receive the valve-rod D and grooves *d d*, one on each side, that form passages for the circulation of gas and oil around through the head B' and
40 into the handle A, or from the handle to the outlet-head, and this circulation is controlled

by valves *c*, connected to the short tube *b*, substantially as shown, to regulate the back-pressure in the reservoir—that is, when the greatest heat is desired both of the valves *c* are
45 opened, so that the gas as it becomes heated at B' may flow back into the handle, to force the fluid from which the gas is generated out of the handle, and then from this point the heat may be gradually reduced by closing or
50 partly closing either or both of valves *c*.

In other respects than those hereinbefore mentioned my soldering-iron does not differ materially from that described in my previous application, having a vent-pipe, E, heating-
55 pipe F, with a series of perforations, *a' a'*, &c., and a soldering-tip, G.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—
60

1. In a soldering-iron, the handle or reservoir having a stem that connects it with the iron proper, said stem inclosing a core through the center of which the main valve-rod passes, and between which core and the sides of the
65 stem are gas-passages controlled by suitable valves, as described.

2. In a soldering-iron, the handle or reservoir A, in combination with a valve and its seat, and a hollow stem provided with a core
70 having a central passage and side passage, and means for connecting said handle or reservoir and hollow stem, substantially as shown and described.

In testimony that I claim the foregoing I
75 have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

AUGUST F. ZIMMERLING.

Witnesses:

STANLEY S. STOUT,
H. G. UNDERWOOD.