

(No Model.)

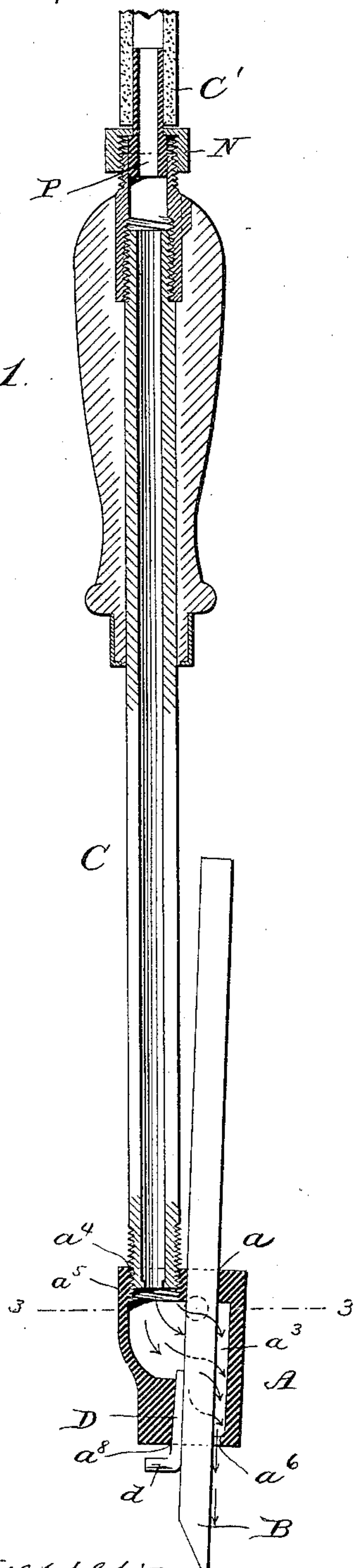
2 Sheets—Sheet 1.

C. L. WAGANDT.
SOLDERING TOOL.

No. 462,607.

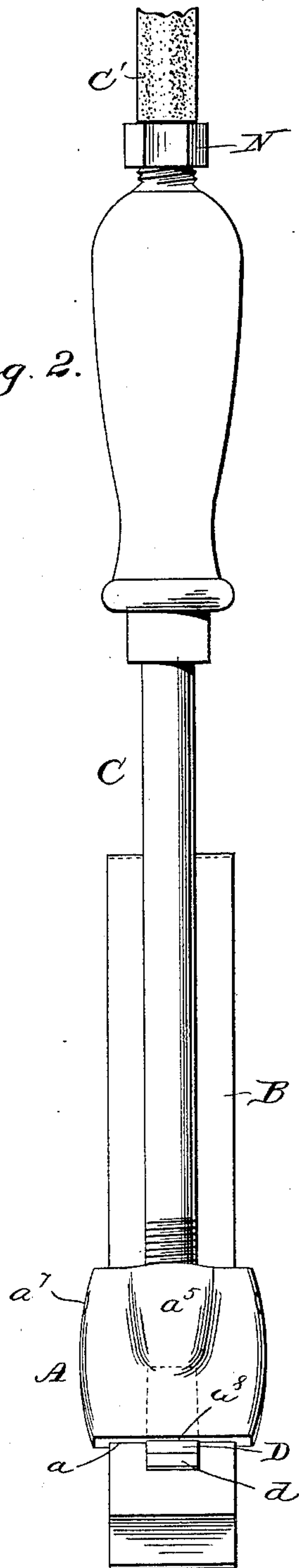
Patented Nov. 3, 1891.

Fig. 1.



Witnesses:-
N. G. Thompson.
L. M. Low

Fig. 2.



Inventor:-
C. L. Wagandt.
by Smith & Low
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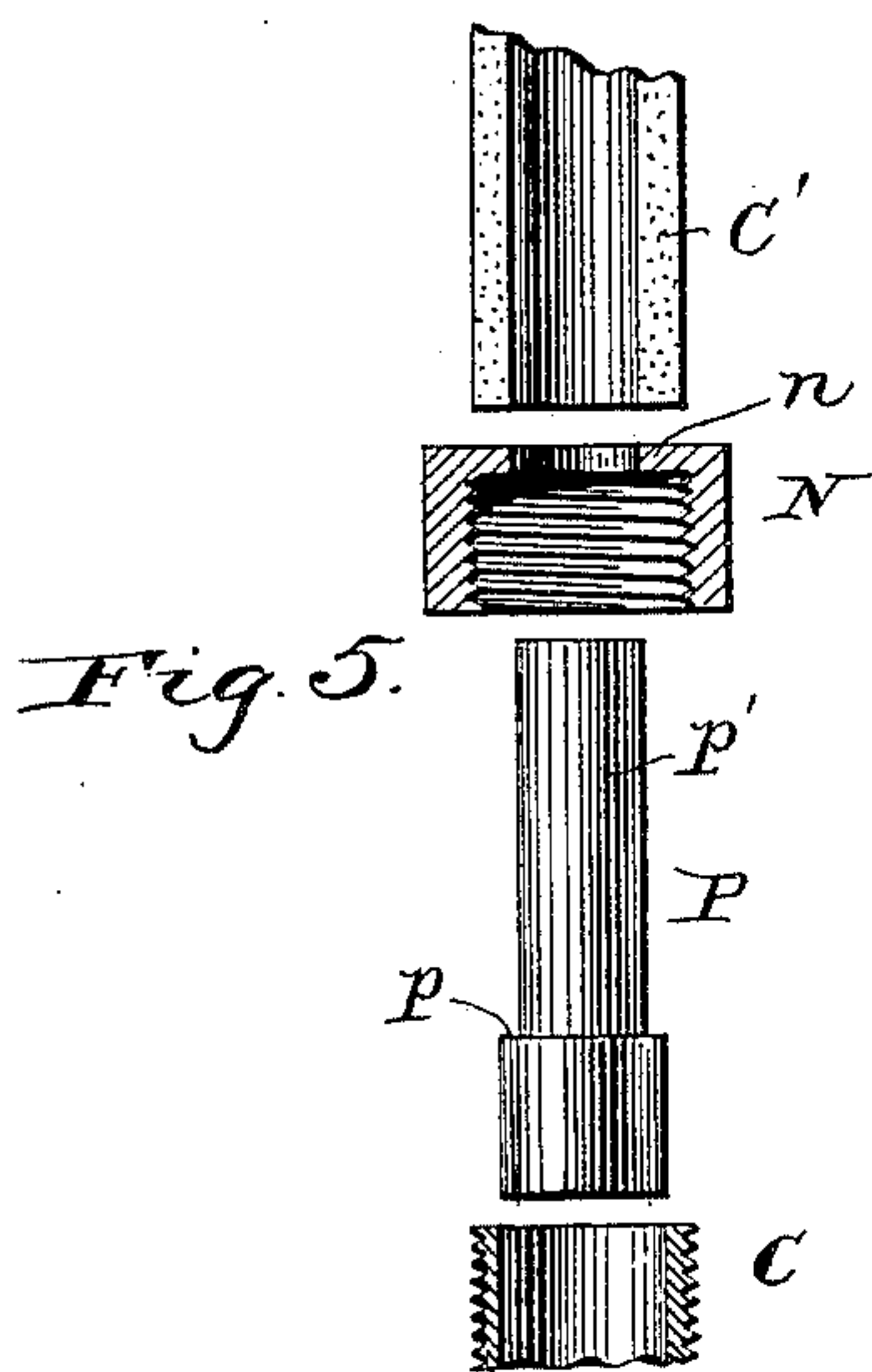
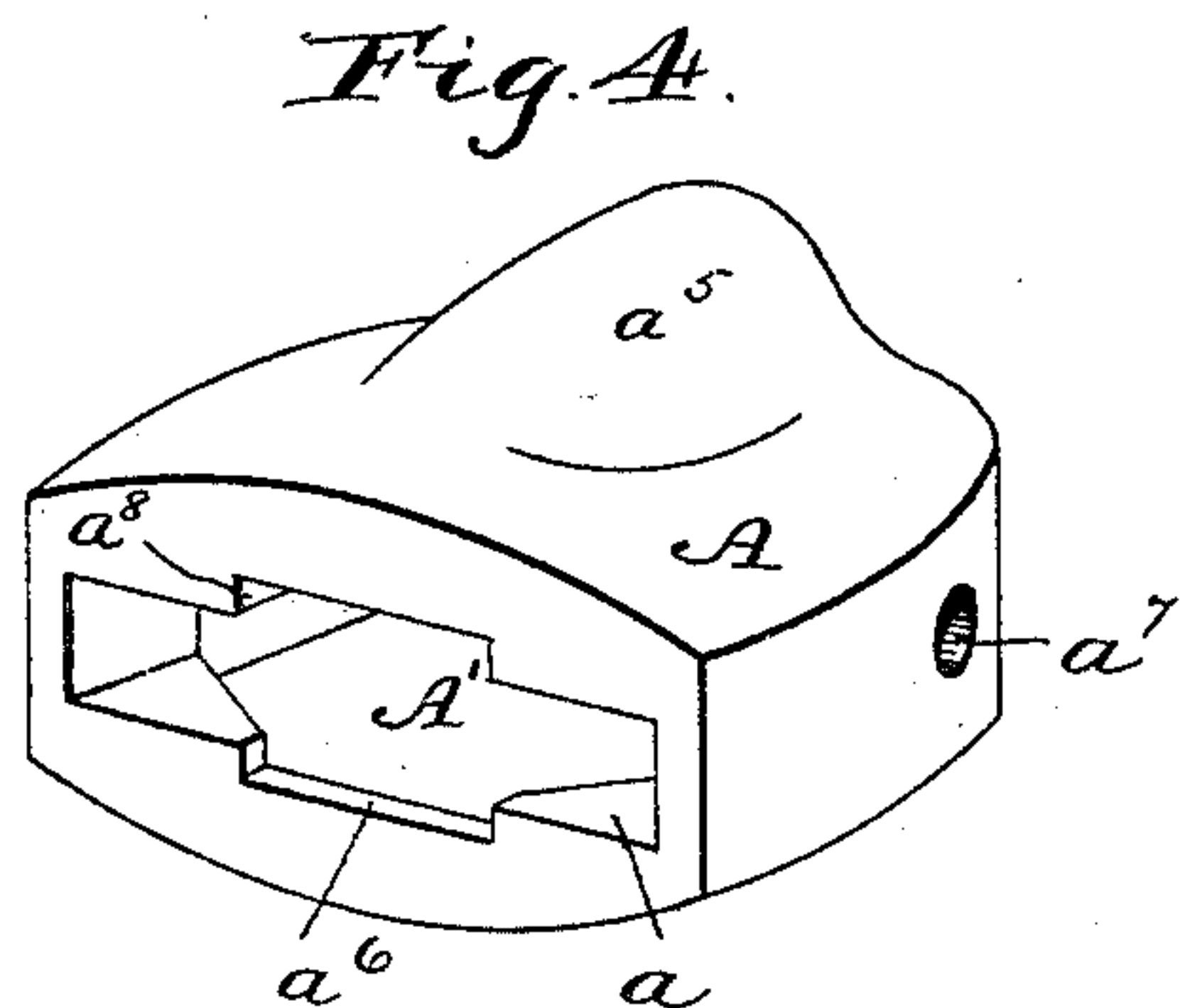
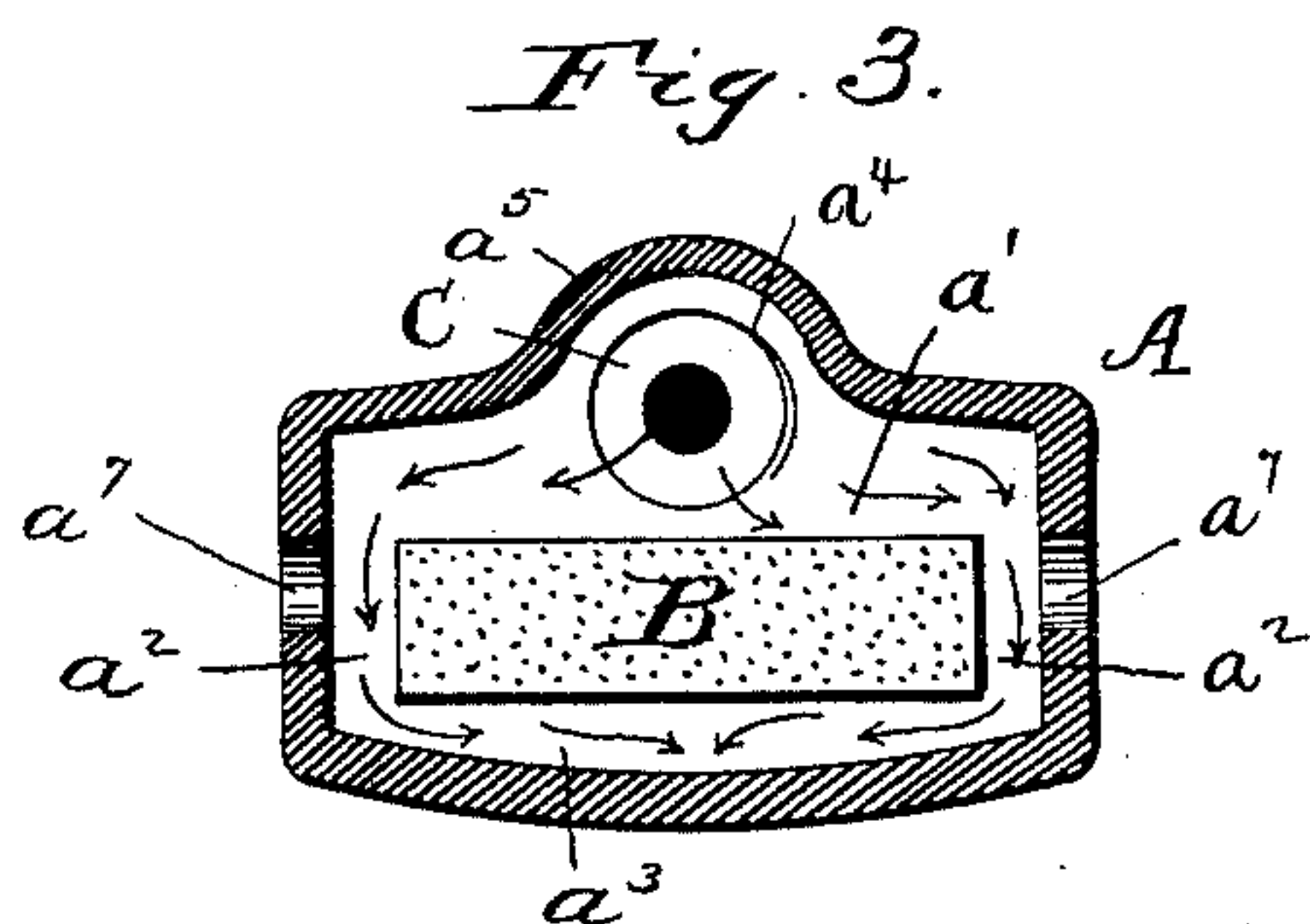
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2 Sheets—Sheet 2.

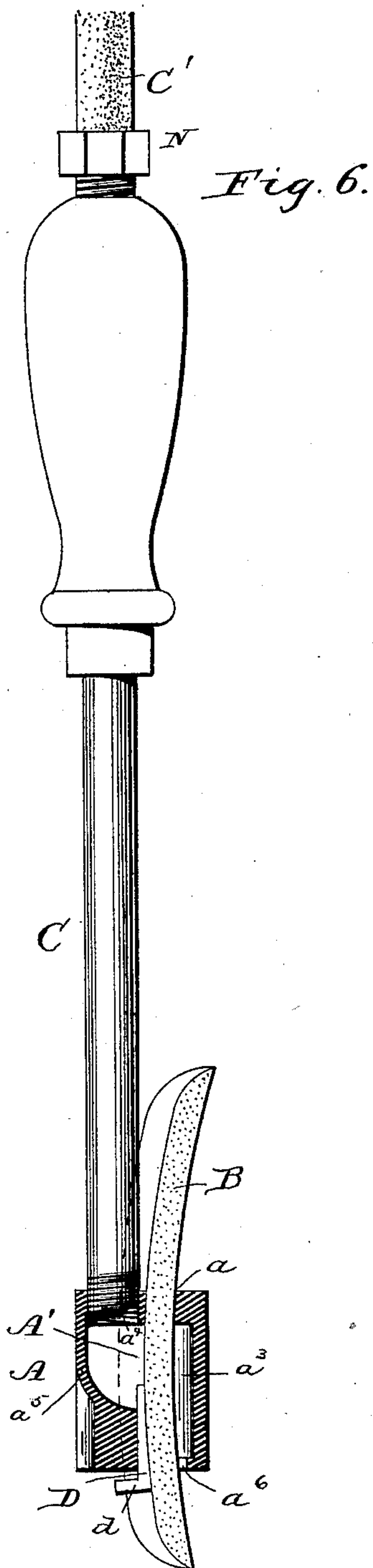
C. L. WAGANDT.
SOLDERING TOOL.

No. 462,607.

Patented Nov. 3, 1891.



Witnesses:
A. G. Thompson.
L. M. Low.



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C. L. Wagandt.
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UNITED STATES PATENT OFFICE.

CHARLES L. WAGANDT, OF BALTIMORE, MARYLAND.

SOLDERING-TOOL.

SPECIFICATION forming part of Letters Patent No. 462,607, dated November 3, 1891.

Application filed February 20, 1891. Serial No. 382,224. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. WAGANDT, a citizen of the United States, residing at Baltimore city, State of Maryland, have invented certain new and useful Improvements in Soldering-Tools; 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 present invention is directed to an economy in soldering-tools and in the use thereof in three important particulars: first, in the quantity of gas required for a given amount of work, which quantity is by my invention materially reduced; second, in the consumption of the copper or soldering block, which I completely utilize; third, in the rapidity with which seams can be run and consequent economy of the workman's time, resulting from the high degree of heat which can be maintained in the copper and from the general efficiency of the tool.

With such objects in view my invention consists in the parts and combinations thereof hereinafter more particularly described and claimed; but it will be understood that my improvements are not limited in their application to that construction which, for the sake of illustration, I have set forth.

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

In said drawings, Figure 1 is a sectional view of a soldering-tool embodying my improvements. Fig. 2 is a front view of the same. Fig. 3 is a transverse section on line 3 3 of Fig. 1. Fig. 4 is a perspective view of the combined holder and gas-chamber. Fig. 5 is a sectional view, on a larger scale, of the swivel-joint for the gas-pipe. Fig. 6 illustrates by side view the application of the invention to the holding and heating of another form of copper.

I may here remark that while my invention is especially adapted for use in "floating" or "bottom" irons, so called, it is also available in seaming-irons.

Referring to the drawings, A indicates the combined holder and gas-chamber, provided with a through longitudinal aperture or seat a , into which the copper bar or block is adapted

to be introduced and in which it is longitudinally adjustable.

A' is a combustion-chamber or space, which occupies the center of the holder A and when the copper is in place surrounds the latter. This space is then divided into what may be termed a "top chamber" a' , two "side chambers" $a^2 a^2$, and a "bottom chamber" a^3 .

a^4 is an end gas-supply opening above the aperture a and entering the chamber a' in the direction parallel with said aperture. The top of the holder is preferably furnished with a swell or enlargement a^5 to accommodate this opening and the opening screw-threaded to receive the gas-pipe.

a^6 is a flame or heat vent opening from the bottom chamber a^3 and in the end of the holder opposite to that in which the supply opening a^4 is formed. This vent is immediately contiguous to or forms a part of the aperture a , so that the issuing flame and heat plays along and upon the under face of the copper.

a^7 indicates one or more ventilating or lighting openings into the rear of the chamber A' to aid the ignition and combustion of the gas.

The holder thus described may be employed with any suitable copper or soldering block and may be variously supported or handled.

In the construction shown B is a soldering-copper of uniform cross-section and adapted to fill the aperture a , and C the gas-supply pipe and handle adapted to be screwed into the opening a^4 . The handle and copper thus lie parallel with each other, and the tool is adapted for use as a floating or bottom iron, while the copper is at the same time unlimitedly adjustable or at least adjustable to a degree limited only by its own length, its longitudinal position in the holder not being restricted either by the holder itself or by the handle. I am therefore able, first, to provide a floating-iron for which the coppers may be made of any desired length; second, to apply the heat at a point immediately contiguous to the soldering-edge and there only whatever be the length of the copper, and, third, to consume and utilize practically the entire copper before discarding it. By adjusting the soldering-edge of the copper to a point close to the vent a^6 I am able to obtain the highest degree of heat that can be desired, and the work-

man can flow the solder and run seams with great rapidity.

Heretofore it has generally been the practice to secure the copper in the holder by one or more set-screws. I have found that in a soldering-tool such securing means is not at all durable. The high degree of heat to which the parts are subjected, combined with the use of the set-screw, soon disintegrates the screw-threads and prevents the secure adjustment of the copper. Another frequent cause which renders the tools useless and which is incident to the use of set-screws is that when highly heated and softened the screws are often twisted off in the effort to clamp the copper. The device is then useless until the remains of the screw are drilled out from the holder.

I have provided the holder above described with a longitudinally (or laterally) operating wedge D, for which a seat a^8 is formed in the holder, this seat constituting an enlargement of the seat or aperture a . The wedge is provided with a handle d by which it may be withdrawn. When in place it bears upon one face of the copper and presses the latter firmly against the opposite side or bottom of the holder.

In order to facilitate the manipulation of the tool, the upper end of the handle and gas-tube C is connected with the flexible rubber gas-pipe C' (through which a suitable mixture of air and gas is fed in the usual manner) by means of a swivel-joint. This joint comprises an internally-screw-threaded coupling-nut N, adapted to screw tightly upon the upper externally-threaded end of the tube C or upon an interposed bushing and provided with an end flange n and a nipple P, adapted to fit closely but smoothly and so as to rotate within the end of the tube C, having a peripheral shoulder p , adapted to abut the inner face of the flange n , and a reduced portion p' , passing through the outer end of the nut N and tightly or rigidly connected with the rubber tube C'. There is thus provided a smoothly-working swivel-joint, the escape of gas through which is precluded by the fit of the nipple P within the tube C and the fit

of the shoulder p against the flange n . With regard to the heating of the copper it will be observed that the end which is to be used only, and not the whole copper, is raised to the high working temperature.

Having thus described my invention, what I claim is—

1. In a soldering-tool, a combined gas-chamber and holder for the copper or soldering block, having therethrough a longitudinal aperture or seat for the copper, an end gas-supply opening above and parallel with said aperture, a combustion chamber or space surrounding the space occupied by the copper, and an end flame or heat-vent opposite to the said supply-opening, substantially as set forth.

2. In a soldering-tool, the combination of a gas-chamber and holder having a supply-tube connected therewith and having an aperture therethrough and a copper passing entirely through said aperture and longitudinally adjustably therein, the rear portion of said aperture being closely fitted and closed by the copper and the forward portion of said aperture being enlarged for the exit of gas and flame, substantially as set forth.

3. The combination of the holder, the soldering-block, the gas-supply tube, the flanged nut N, the nipple P, fitting within the tube and having the shoulder p , and the flexible pipe secured to the outer end of the nipple, substantially as set forth.

4. In a soldering-iron, the combination of the combined holder and gas-chamber having an aperture therethrough and a seat a^8 formed in the side of the aperture, the gas-supply pipe connected to the chamber, the copper passing through said aperture, and the securing-wedge fitting and closing said seat and substantially flush with the wall of the aperture, substantially as set forth.

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

CHARLES L. WAGANDT.

Witnesses:

JNO. T. MADDOX,

WM. W. RICHARDSON.