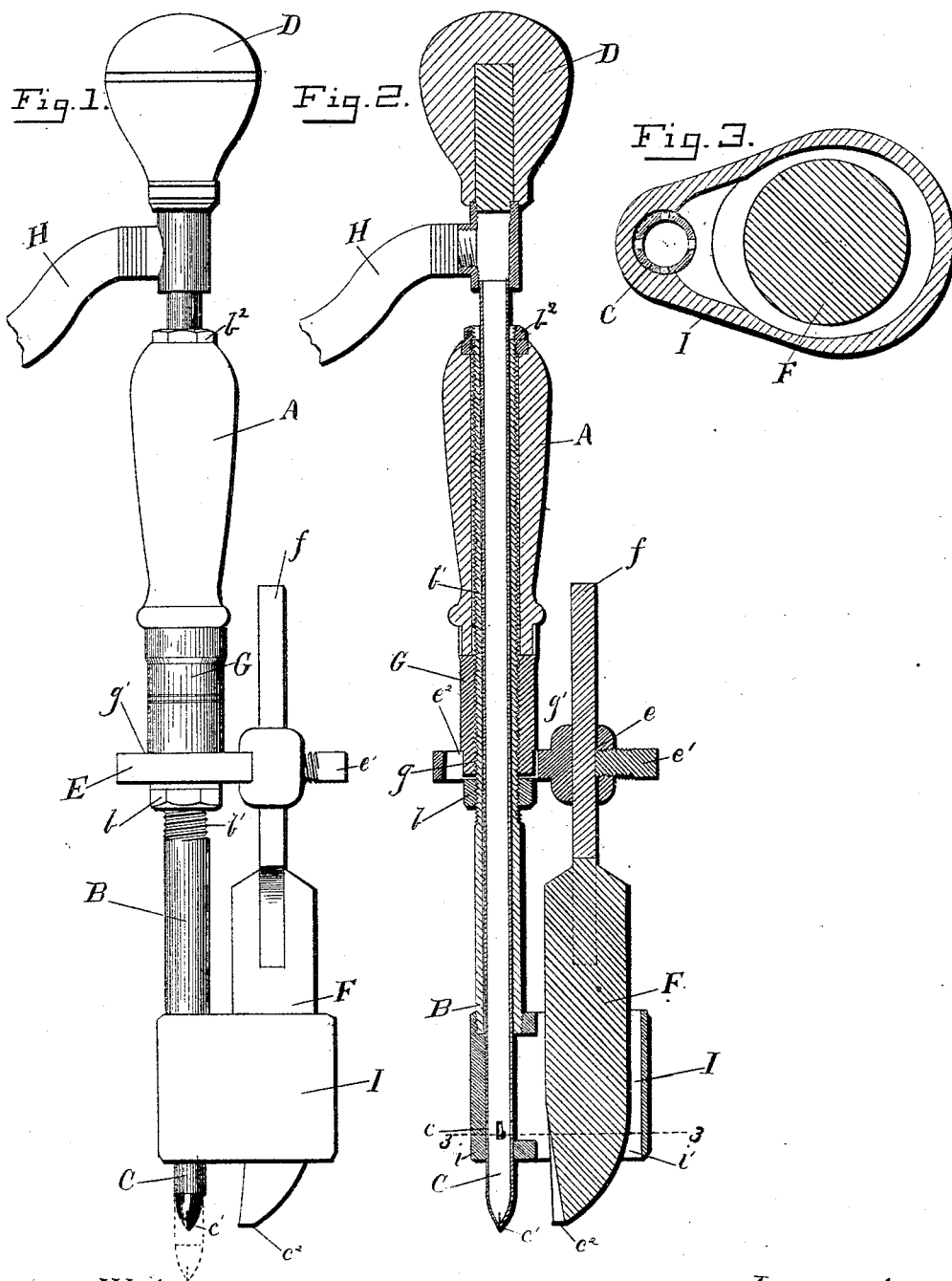


(No Model.)

C. L. WAGANDT.
SOLDERING TOOL.

No. 418,934.

Patented Jan. 7, 1890.



Witnesses:

Smith & Low
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UNITED STATES PATENT OFFICE.

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

SOLDERING-TOOL.

SPECIFICATION forming part of Letters Patent No. 418,934, dated January 7, 1890.

Application filed June 11, 1889. Serial No. 313,863. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. WAGANDT, a citizen of the United States, residing in the city of Baltimore, in the 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 invention relates to that class of soldering implements in which the tip or "iron" is raised to and maintained at the required temperature by the combustion in contact with or close proximity to the tip of a suitable gas.

It relates more particularly to those tools which are especially designed for "capping," and in which the soldering-edge of the iron is adapted to be revolved around a central burner-tube, which serves also as a centering point for the iron and as a downhold for the cap.

The operation of tools of this character involves a constant use and consumption of gas, and in the aggregate a considerable expense.

My invention is principally directed to economy of gas; and to this end it consists in certain parts and combinations thereof or in their equivalents, hereinafter more particularly set forth and claimed, whereby the heating flame or flames are concentrated upon the iron and the dissipation of their heat in other directions prevented, whereby the loss of caloric from the iron is reduced to the minimum, and which promote the combustion of the gas by preheating it.

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

In said drawings, Figure 1 is a side view of a soldering-tool embodying my invention. Fig. 2 is a longitudinal axial section of the same. Fig. 3 is a transverse section on line 3 3, Fig. 2.

Referring to the drawings, A indicates the main handle; B, the tubular shank; C, the centering and burner tube within and concentric with said shank and handle, and D

the centering and supporting handle carried by the said burner-tube at its upper end.

The devices by which the soldering-tip is secured to and adjusted upon the shank B are in some respects of well-known construction. A yoke E, having a bearing *e* to receive the stem *f* of the soldering-iron F, and a set-screw *e'*, adapted to clamp said stem in place, the yoke being laterally adjustable upon the shank B by means of a transverse slot *e²* and a clamping-nut *b*, as shown in the drawings, are well known in the art and are not claimed by me, though I prefer to use such construction in carrying my invention into effect. I, however, mount the yoke E upon the squared end *g* of a sleeve G, which engages and is longitudinally adjustable upon the shank B by means of a screw-thread *b'*. The nut *b* also engages the screw-thread *b'*, and is adapted to follow the sleeve G to any point upon the shank to which said sleeve may be adjusted and to there securely clamp the yoke E against the shoulders *g'* of the sleeve. I thus obtain a considerable range of adjustment supplemental to that afforded by the stem *f* and bearing *e*, which enables the tip F to be fully utilized. The operating-handle A passes over the upper portion of the shank, and is clamped against the sleeve G, when the latter is in the desired position, by a nut *b²*.

The combustible gas is supplied to the burner-tube C preferably by a flexible pipe H, attached laterally to the tube near its upper end, and issues through lateral burner-orifices *c* a short distance above the centering-point *c'*. The gas, being ignited at these orifices, forms a heating flame or flames, which impinge upon the inner face of the tip F near its curved soldering-edge *c²*. I will now describe the means by which the heat from said flames and the caloric of the iron F is conserved and the maximum effect from the combustion of the gas realized.

I is a metal chamber, secured to the lower end of the shank B, preferably by a screw-thread, and having upon one side a semicircular seat *i* concentric with the shank and adapted to receive the lower end of the burner-tube. At its other side the chamber I is provided with a compartment *i'*, adapted to re-

ceive and inclose the soldering-iron F at the point where it receives its heat from the gas-flames, as already described. In a direction radial to the burner-tube the compartment *i'* is of greater dimension than the iron F, to admit of the adjustment of the latter by means of yoke E and nut *b*, as above set forth.

It will thus be seen that, besides directing the action of the heating-flames and checking the radiation and waste of heat from the iron F, the chamber I has a regenerative effect upon the gas by preheating it before it reaches the orifices *c*, thus promoting complete combustion and economy of gas. It will also be seen that, although the burner-tube has a plurality of burner-orifices in order to furnish a heating-flame to the tip F to whichever side of the tube the latter be rotated, a waste of gas is prevented by the chamber I, its seat *i* serving to close all of the burner-orifices except those which are adapted to direct their flames toward the soldering-tip.

The operation of my improved soldering-tool has been sufficiently set forth in the above description of its construction.

Having thus described my invention, what I claim is—

1. In a capping-iron for soldering, the combination, with the central tube or shaft adapted to form a pivot, of the soldering iron or tip mounted eccentrically upon and adapted to rotate around the same, and a heat-conserving chamber also mounted on said pivot, inclosing said tip and rotating with the latter, substantially as set forth.

2. The combination, with the rotating shank and the soldering-tip mounted thereon and adjustable toward and from its axis, of the chamber carried by said shank, inclosing the tip and of a greater dimension to permit the said adjustment, substantially as set forth.

3. The combination, with the shank, the tip mounted thereon, and the burner-tube or gas-conduit forming a pivot around which the tip is adapted to revolve, of a chamber mounted and rotary upon said tube and surrounding the tip, substantially as set forth.

4. The combination, with the shank, the tip mounted thereon, and the burner tube having the burner-orifices and adapted to serve as an axis for the rotation of the tip, of the chamber inclosing said tube and adapted by the seat *i* to close or constrict the said orifices when the latter are turned away from the tip, substantially as set forth.

5. The combination, in a soldering-tool, of the shank having the screw-thread *b'*, the sleeve G, correspondingly threaded and mounted on the shank, the yoke E, spanning said shank and adapted to carry the soldering-tip, the clamping-nut *b*, and the handle A, substantially as set forth.

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

CHARLES L. WAGANDT.

Witnesses:

EDWARD L. WILSON,
ROBERT W. HAYS.