

No. 715,083.

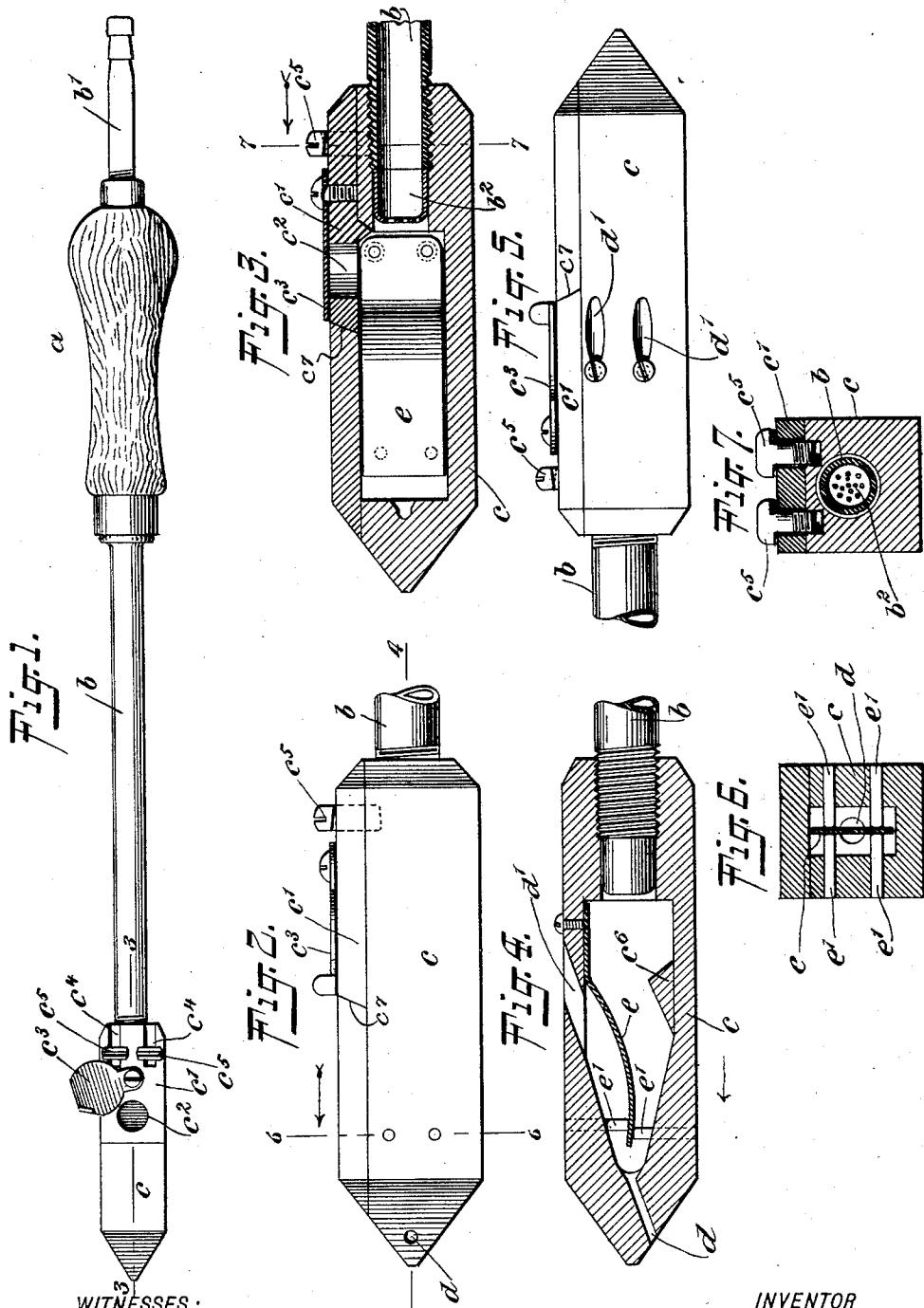
Patented Dec. 2, 1902.

C. A. KAISER.

## **SOLDERING IRON.**

(Application filed Dec. 9, 1901.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES A. KAISER, OF LONG ISLAND CITY, NEW YORK.

## SOLDERING-IRON.

SPECIFICATION forming part of Letters Patent No. 715,083, dated December 2, 1902.

Application filed December 9, 1901. Serial No. 85,136. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. KAISER, a citizen of the United States, and a resident of the city of New York, (Long Island City, borough of Queens,) in the county of Queens and State of New York, have invented a new and Improved Soldering-Iron, of which the following is a full, clear, and exact description.

This invention relates to a soldering-iron adapted to have gas burned therein, whereby to heat the iron; and it involves certain novel features of construction which will be fully described hereinafter.

This specification is a specific description of one form of the invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a top view of the invention. Fig. 2 is an enlarged side view of the iron proper. Fig. 3 is a section on the line 3 3 of Fig. 1. Fig. 4 is a section on the line 4 4 of Fig. 2. Fig. 5 is a view looking toward the side of the iron opposite that shown in Fig. 2. Fig. 6 is a section on the line 6 6 of Fig. 2, and Fig. 7 is a section on the line 7 7 of Fig. 3.

*a* indicates the handle of the tool, having *b* the tubular shank *b* run therethrough, the upper extremity of this tubular shank having a tip *b'*, adapted to be joined to a flexible head for the purpose of supplying the mixture of air and gas which is burned in the iron proper.

*c* indicates the iron proper, which may be of integral or composite structure, as desired, and is provided with a removable lid *c'*, occupying a part of the top of the iron. This lid is provided with an orifice *c*<sup>2</sup>, through which a flame may be introduced to ignite the gas through the iron, and *c*<sup>3</sup> represents a cover for the orifice *c*<sup>2</sup>, said cover being mounted on the lid *c'*. The lid *c'* is provided with two slots *c*<sup>4</sup>, and these slots are adapted to receive screws *c*<sup>5</sup>. These screws have horizontally-elongated heads, as shown in Fig. 1, which when turned crosswise of the slots *c*<sup>4</sup> will securely hold the lid *c'* in place at its rear end. The front end of the lid is beveled, as shown in Figs. 2 and 3, and engages the undercut portion *c*<sup>7</sup> of the iron, thus holding

the front part of the lid. Reference to Figs. 2, 3, 5, and 7 will show that the bottom faces of the heads of the screws *c*<sup>5</sup> are formed to lie in planes disposed diagonally of the longitudinal axes of the screws. These diagonal faces ride against the top surface of the lid *c'* and draw it tightly into place. By this construction it is always possible to hold the lid tightly in place, notwithstanding that the engaging parts may in time wear away to a greater or less extent.

The tubular shank *b* enters into the rear or upper end of the iron *c* and is provided, as best shown in Fig. 3, with a sieve or screen *b*<sup>2</sup>, which prevents the fire within the iron from entering into the tubular shank. The iron is provided with an orifice *d* at its front end or point, and at its right-hand side two orifices *d'* are formed. The orifice *d* is directed forwardly, and the orifices *d'* are directed rearwardly. Within the iron *c* is arranged a baffle-plate *e*, the rear end of which is fastened rigidly to the inner right-hand side wall of the iron *c*. From this point the baffle-plate curves slightly and extends forwardly to a point near the front extremity of the orifice within the iron, at which point the baffle-plate is held adjustably by pins *e'* at each side thereof. The pins *e'* are friction-tight in the iron *c* and may be adjusted at will. This baffle-plate forms a passage along the length of the iron at one side and thence around the end of the baffle-plate back along the other side. The gases burning within the iron pass in a current from the shank *b* along the left-hand side of the baffle-plate, some of the gas passing out of the orifice *d* and the other portions passing back along the right-hand side of the baffle and out of the orifices *d'*.

*c*<sup>6</sup> indicates an abutment which is placed within the iron at the left-hand side and by which the current of gas rushing into the iron is deflected slightly toward the baffle. This causes all parts of the iron to be uniformly subjected to the heat developed, and the point of the iron may be used for soldering in the usual manner. Also the flame passing from the orifice *d* may be directed against the work and the work, if necessary, heated by the direct contact of the flame.

Various changes in the form and details of

my invention may be resorted to at will without departing from the spirit of my invention. Hence I consider myself entitled to all forms of the invention as may lie within the intent of my claims.

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

1. The combination with a chambered instrument adapted to be heated, of a lid therefor, said lid having a slot, and a screw working in the chambered instrument to hold the lid in place, the screw pressing through the slot of the lid and having a horizontally-elongated head, the bottom faces of which lie in planes disposed diagonally of the longitudinal axis of the screw and at an inclination to the lid, for the purpose specified.
2. A chambered instrument adapted to be heated by combustion of fuel therein, said instrument comprising a body or head part, and a removable lid, the lid having an igniting orifice the cover being mounted on the lid to swing toward and from the orifice therein and a cover for said orifice.
3. A chambered instrument adapted to be heated by the combustion of fuel therein, said instrument having an interior baffle causing the burning gases to pass circuitously, an orifice for the emission of part of said gases, the orifice being located intermediate of the ends of the said gas-passage, said baffle comprising a plate fast at one end, and means for adjustably holding its other end.
4. A chambered instrument adapted to be heated by the combustion of fuel therein, said instrument having an interior baffle forming in conjunction with the walls of the chamber, a circuitous passage for the burning gases, and an orifice for the emission of part of said gases, the orifice being located intermediate the ends of the said gas-passage, and the body having an interior abutment located at one side of the baffle to deflect part of the gases toward the same.
5. A chambered instrument adapted to be heated by combustion within the same, said instrument having a baffle-plate extending longitudinally therein, the rear end of the baffle-plate being fast and the forward end being adjustable, said plate forming a passage for the burning gases forwardly around one side and around its front end backward toward the rear, and the body of the instrument having an orifice for the emission of the gases.
6. A chambered instrument adapted to be

heated by combustion within the same, said instrument having a baffle-plate extending longitudinally therein, the rear end of the baffle-plate being fast and the forward end being adjustable, said plate forming a passage for the burning gases forwardly around one side and around its front end backward toward the rear, and the body of the instrument having two passages for the emission of the burning gases, one passage being located at the front end of the baffle-plate and the other adjacent to the rear end.

7. A chambered instrument, adapted to be heated by the combustion of fuel therein, said instrument having an interior baffle-plate causing the burning gases to pass circuitously, the instrument also having inlet and outlet passages for the gases, and the body of the instrument having an interior abutment located at one side of the baffle-plate to deflect part of the burning gases toward the baffle-plate.

8. A chambered instrument adapted to be heated by the combustion of fuel therein, the said instrument comprising a hollow body and a baffle-plate set therein, the side edges of the baffle-plate being in close proximity to the adjacent walls of the chamber, and one end of the baffle-plate being engaged with an interior wall of the chamber, the other end of the baffle-plate being separated from the walls of the chamber to allow the gases to pass around said other end of the baffle-plate and the body of the instrument having inlet and outlet orifices for the gases.

9. A chambered instrument adapted to be heated by the combustion of fuel therein, said instrument comprising a hollow body part, and a baffle-plate extending longitudinally therein, the rear end of the baffle-plate being fastened to the interior wall of the chamber and the forward end of the baffle-plate being separated from the walls of the chamber to permit the passage of the gas along one side of the baffle-plate, around the front end thereof, and backward toward the rear end, the body of the instrument having inlet and outlet orifices for the gases, said orifices being located respectively at the sides of the baffle adjacent to its rear end.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES A. KAISER.

Witnesses:

J. B. OWENS,  
JNO. M. RITTER.