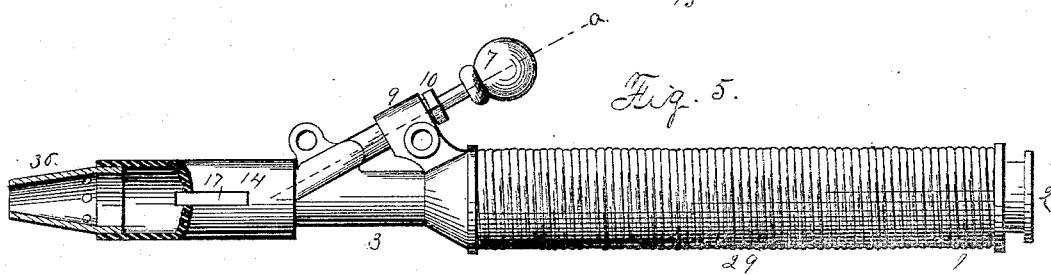
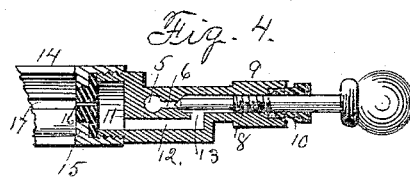
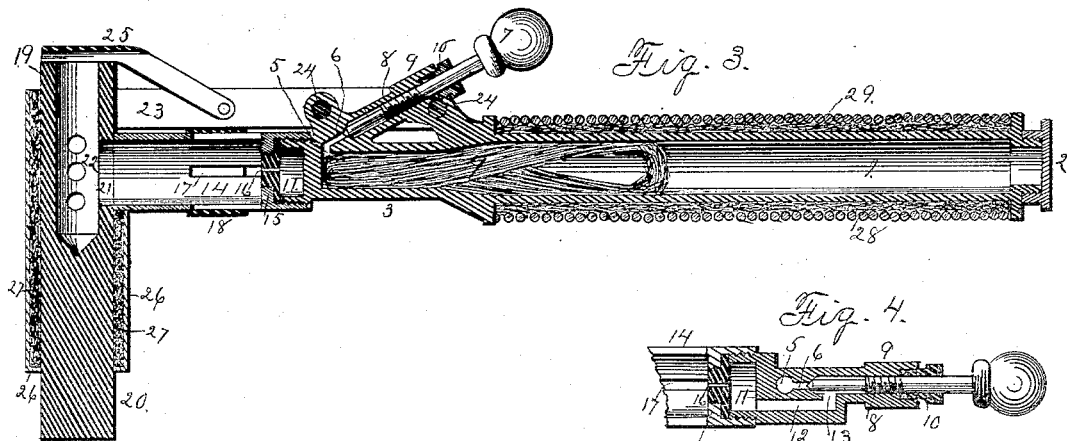
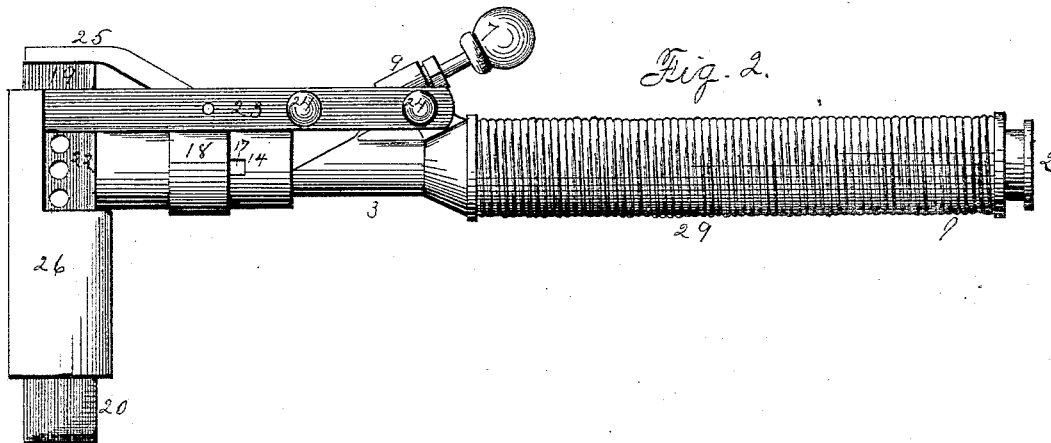
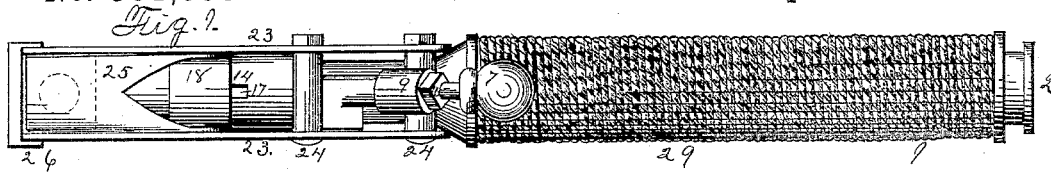


(No Model.)

C. R. DANIELSON.
SOLDERING IRON.

No. 381,533.

Patented Apr. 24, 1888.



Witnesses:
A. O. Behel.
E. Behel.

Inventor:
Carl R. Danielson.
Per Jacob Behel, Atty.

UNITED STATES PATENT OFFICE.

CARL R. DANIELSON, OF ROCKFORD, ILLINOIS.

SOLDERING-IRON.

SPECIFICATION forming part of Letters Patent No. 381,533, dated April 24, 1888.

Application filed January 21, 1885. Serial No. 261,527. (No model.)

To all whom it may concern:

Be it known that I, CARL R. DANIELSON, a subject of the King of Sweden, and residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Soldering-Irons, of which the following is a specification.

This invention relates to a class of soldering-irons known as the "self-heating soldering-iron."

Its object is to improve this class of soldering-irons to render them more efficient.

To this end I have designed and constructed the apparatus represented in the accompanying drawings, in which—

Figure 1 is a plan view of an apparatus embodying my invention. Fig. 2 is a side elevation. Fig. 3 is a vertical lengthwise central section. Fig. 4 is a section of the valve portion. Fig. 5 is a side elevation in which the soldering-iron is removed and the holder fitted with a nozzle to adapt it for certain uses.

In my improved self-heating soldering-iron a reservoir, 1, to contain the liquid fuel is preferably of cylindrical tubular form, with open end fitted with a removable cap, 2, through which the fuel is admitted to the reservoir. The end portion, 3, of the reservoir is of reduced dimensions to receive a packing, 4, which serves to regulate, in a manner, the flow of the liquid fuel to the burner. The reduced end portion of the fuel-reservoir is provided with a radial opening, 5, which communicates with a reduced opening, 6, the open end of which forms the valve-seat, preferably of conic form. A valve, 7, fitted with conic end to engage the valve-seat, is provided with a screw-thread connection with its support 9. The support 9 of the valve 7 is provided with a stuffing-box, 10, of the usual construction.

A chamber, 11, is formed in the end of the fuel-reservoir, and an oblique opening, 12, connects this chamber with the fuel reservoir by means of a horizontal opening, 13, which connects the oblique opening 12 with the opening in which the valve-stem is supported, between the screw-threaded portion of the valve-stem and the valve-seat, in such a manner that when the valve is removed from its seat the liquid from the receptacle will rise through the radial opening 5, pass through

the reduced opening 6, through the valve-seat, and thence through the horizontal opening 13 and oblique opening 12 into the chamber 11.

A combustion-chamber, 14, preferably of tubular form, has a screw-threaded connection with the reduced end portion of the fuel-reservoir, and this chamber is provided with a transverse partition-wall, 15, which, when the combustion-chamber is screwed into position, will engage the end of the fuel-receptacle, forming an outer end wall to the chamber 11. The transverse portion 15 is centrally provided with a pin-opening, 16, through which the fuel is admitted to the combustion-chamber.

The combustion-chamber 14 is provided with a series of lengthwise openings, 17, to admit air to support combustion, near the end at which the fuel is admitted.

A thimble-form damper, 18, is fitted to slide lengthwise on the combustion-chamber to open and close the openings 17 to admit more or less air to the chamber.

A soldering-iron, 19, is employed, having its free end 20 shaped in the usual form. The soldering-iron is centrally bored at its upper end about half-way of its length, and on one side toward its upper end is provided with an opening, 21, to admit the flame from the combustion of the fuel. It is also provided with transverse openings 22, to permit the escape of the products of combustion. This soldering-iron is provided with yoke-bars 23, fixed to its upper end portion, from which they project at about right angles to the soldering-iron on the side thereof in which the opening 21 is formed. The bars 23 may be bolted or screwed to the soldering-iron, or they may be formed integral therewith, as may be found desirable. This soldering-iron, by means of its yoke-arms, is removably connected to the end portion of the fuel-reservoir by means of bolts 24, passed through the parts which hold it in connection with the fuel-reservoir in such relative position therewith that the products of combustion will be driven into the central opening through the opening 21, to escape through the lateral opening 22 and through the upper end of the central opening. A damper, 25, is pivotally connected between the yoke-arms to swing into position to close the upper end of the central opening of the soldering-iron, or to swing upward therefrom to permit the es-

cape of the products of combustion upward through the central opening of the soldering-iron.

5 A metallic jacket, 26, incloses the main portion of the soldering-iron, and an asbestos packing, 27, is placed between the jacket and the soldering-iron to retain the heat produced by the combustion of the fuel.

10 The fuel-reservoir 1 is jacketed by an asbestos coating, 28, fixed in place by a cord, 29, wound thereon, or other suitable outer coating, which forms the handle portion of the apparatus.

15 A nozzle, 30, is fitted to the outer end of the combustion-chamber, to be employed when the soldering-iron is removed from its connection with the fuel-reservoir, and is intended to be employed in soldering vertical seams or in other situations in which it may be found
20 inconvenient to use the soldering-iron.

In the use of my improved soldering-iron the screw-cap 2 is first removed, the wick 4 inserted into the reservoir, the reservoir then filled with the liquid fuel of any suitable variety—such as gasoline or other like fluids—
25 and the cap replaced, which fits the apparatus for use.

To use the apparatus, withdraw the valve sufficient to admit a flow of the fuel to the

chamber 11 to generate a gas, which is forced 30 through the pin-opening 16 into the combustion-chamber, where it is ignited and forced into the soldering-iron to produce the heat required, which may be regulated by means of the valve and dampers heretofore described. 35

I claim as my invention—

1. The combination, with the fuel-reservoir, the soldering-iron, and the burner, the fuel-reservoir being provided with laterally-extending lugs, of yoke-arms fixed to the soldering-iron at one end, said arms being removably secured to the said laterally-extending lugs on the fuel-reservoir, substantially as set forth. 40

2. The combination, with a hollow soldering-iron, of a damper to control the escape of the products of combustion, substantially as set forth. 45

3. The combination, with the soldering-iron, of a metallic jacket embracing the soldering-iron, and an asbestos packing between the soldering-iron and the metallic jacket, substantially as set forth. 50

CARL R. DANIELSON.

Witnesses:

A. O. BEHEL,
E. BEHEL.