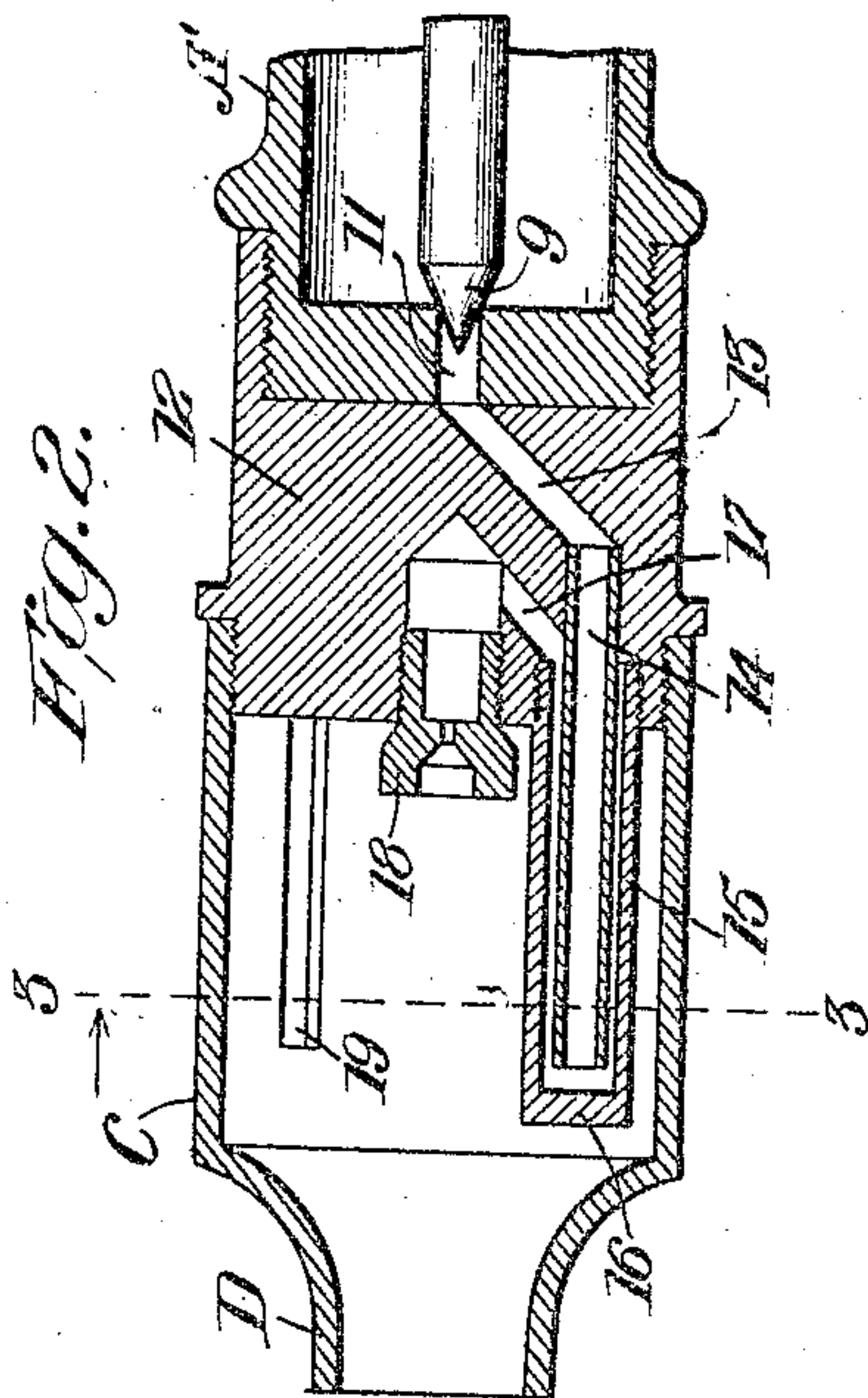
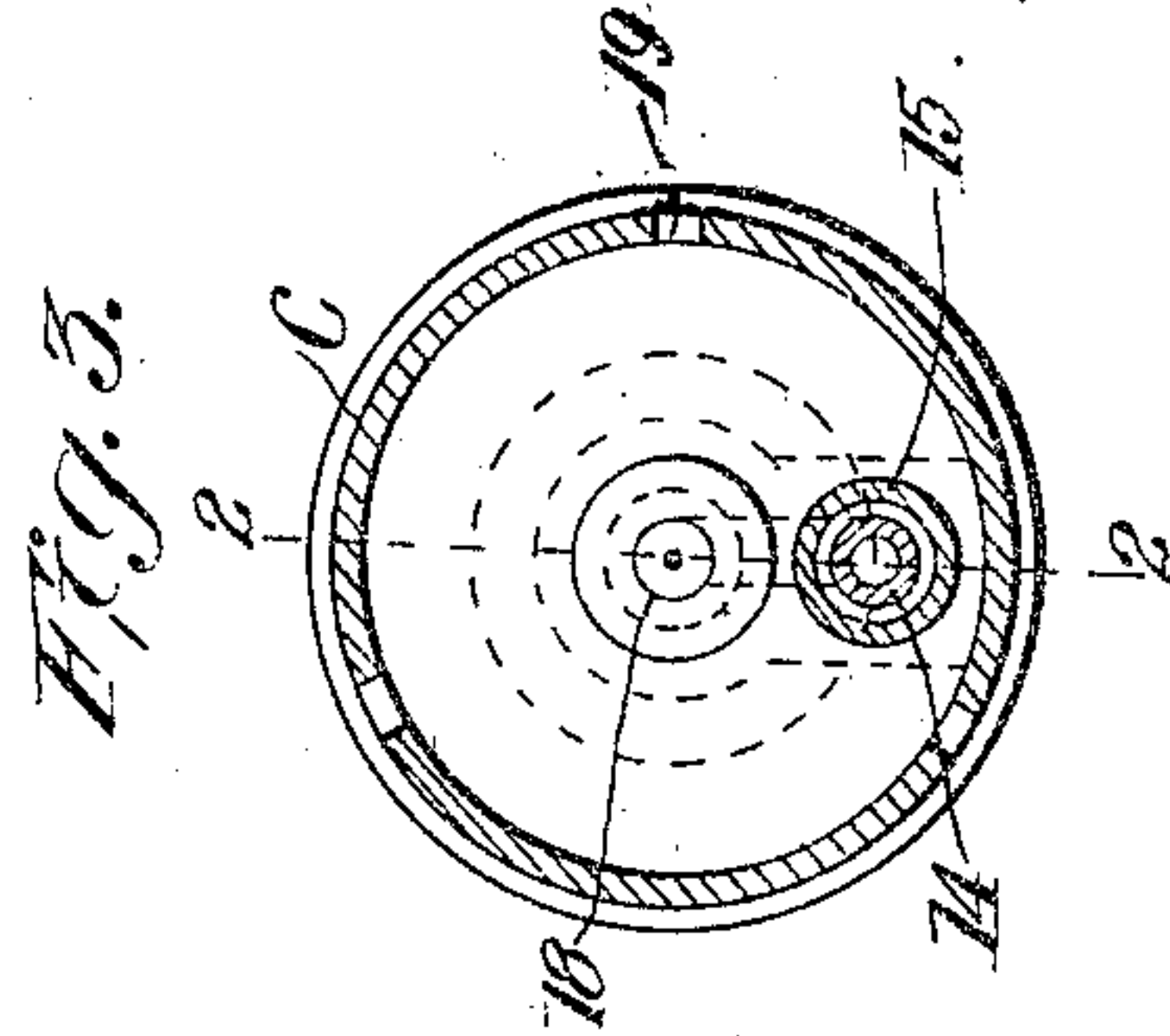
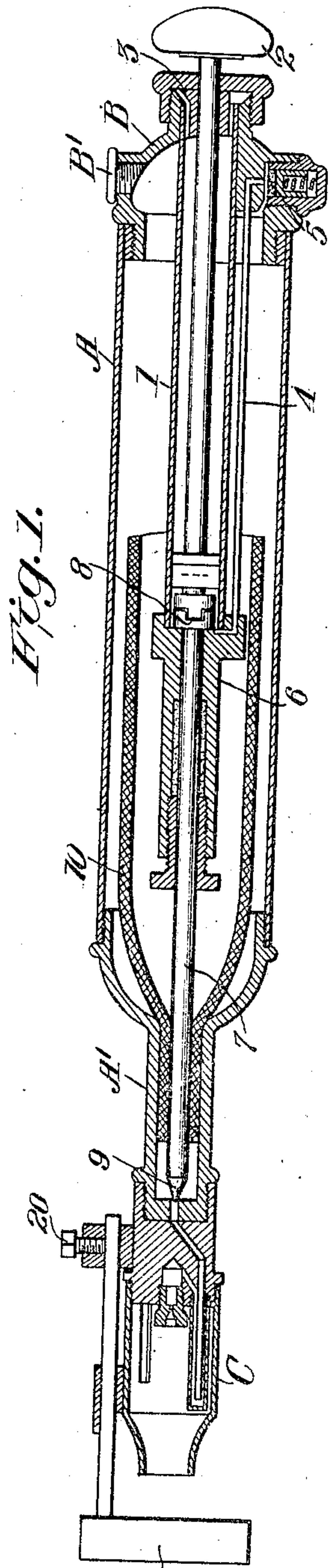


K. ERLER.
 SELF HEATING SOLDERING IRON.
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966,183.

Patented Aug. 2, 1910.



Witnesses

C. H. Wacker.
Newton P. Orick.

Inventor

Karl Erler,

By

Watson & Boyden.

Attorney

UNITED STATES PATENT OFFICE.

KARL ERLER, OF BASEL, SWITZERLAND.

SELF-HEATING SOLDERING-IRON.

966,183.

Specification of Letters Patent.

Patented Aug. 2, 1910.

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To all whom it may concern:

Be it known that I, KARL ERLER, a citizen of Switzerland, residing at Basel, in the Canton of Basel and Republic of Switzerland, have invented certain new and useful Improvements in Self-Heating Soldering-Irons, of which the following is a specification.

My invention relates to liquid fuel vaporizers and burners and more particularly to burners of this character adapted especially for use in connection with self heating soldering irons and the like.

The object of the invention is to provide a device of this character which shall be efficient in use and the parts of which can be readily disassembled for the purpose of cleaning or repairing.

With the above and other objects in view the invention consists in the construction and arrangement of parts hereinafter described, and illustrated in the accompanying drawings, in which,

Figure 1 is a longitudinal section of a self heating soldering iron embodying my invention; Fig. 2 is a similar view, on an enlarged scale, of the burner and associated parts, the section being taken on the line 2—2 of Fig. 3; and Fig. 3 is a section through the burner substantially on the line 3—3 of Fig. 2, looking in the direction of the arrow.

Referring to the drawings, which are to be taken as illustrative only, A designates the handle of the device, which is preferably cylindrical, and which constitutes the fuel reservoir. The reservoir A is provided at one end with a reduced neck portion A', and at the other end with a cap B, having a screw plug B', through which fuel may be fed into the reservoir.

Secured to the cap B is a pump cylinder 1, in which works a piston having an operating handle 2 projecting through a stuffing box 3, carried by the cap B. From the inner end of the pump cylinder 1 extends a pipe 4 to a check valve 5 which controls communication between the pipe and the interior of the reservoir.

Secured to the inner end of the pump cylinder 1 is a guide piece 6, extending centrally through which is a valve rod 7. This valve rod 7 carries at its inner end a clutch head 8, adapted to be engaged by the piston of the pump so that the rod may be turned and thus adjusted. In this way the

other end 9 of the rod 7, which is conical in shape, may be thrust more or less into the opening 11 formed in the casting A', and thus the passage of the liquid through such opening may be regulated as desired. A wick 10 surrounds the rod 7 and extends up into the neck A'.

12 designates the base of the burner proper, such base being secured to the neck portion A' of the handle, as by means of screw threads. Screw threaded to the outer end of this base 12 is a burner casing C, having a contracted mouth D, adapted to direct the flame against the soldering iron E, which is adjustably clamped in position as by means of a set screw 20. A port 13 is formed in the base 12, so as to register at one end with the opening 11, and into the other end of this port is set a small straight pipe 14 which extends outwardly into the burner casing. Surrounding this pipe 14, and of somewhat greater diameter, is a tube 15, having one end set into the base 12 and having its other end closed as shown at 16. It will be seen therefore that an annular chamber is formed between the outside of pipe 14 and the inside of tube 15. Communicating with this chamber is a passage 17 formed in the base 12 and extending to a burner tip 18, which is centrally mounted in the base 12. The walls of the casing C are preferably provided with a plurality of slots or openings 19 through which the air necessary to support combustion may freely circulate.

In operation, when the handle 2 is actuated, compressed air is forced from the cylinder 1 through pipe 4, and valve 5, into the fuel reservoir A, thus subjecting the contained fuel to pressure. Under the influence of this pressure, therefore, the liquid passes along through the wick 10, opening 11, part 13, and into pipe 14. Issuing from the outer end of this pipe, it strikes against the closed end 16 of the tube 15, and, thus forming a spray, travels back along the annular chamber between the tube and pipe, through passage 17, to burner 18. After the apparatus has been started, the heat from the flame issuing from burner 18 raises tube 15 to a high temperature, and as the fuel flows along the inside of this tube it is rapidly vaporized before it reaches the burner.

It will be observed that the casing C', or base 12, or both, may be readily unscrewed

and taken apart, as may also the burner 18 and the tube 15.

It will thus be seen that I have provided, in connection with a self-heating tool, a burner which admits of being easily and quickly cleaned, and which lends itself readily to practical requirements, and it is thought that the numerous advantages of my invention will be readily appreciated by those skilled in the art.

What I claim is:—

1. In a liquid fuel vaporizer and burner, the combination with a base, of a cylindrical casing removably secured thereto, a burner tip mounted on said base and centrally arranged within said casing, a fuel feed pipe also projecting from said base within the casing, said pipe having an open end, and a tube fitting over said pipe and having a closed outer end, said tube being arranged within said casing adjacent and at one side of said burner tip and being screwed into said base around said pipe so as to provide an annular chamber between said tube and pipe, and said base having wholly within itself a passage establishing direct com-

munication between said chamber and burner tip.

2. In a self heating tool, the combination of a liquid fuel reservoir arranged to constitute the handle of the device, means for forcing the fuel from said reservoir under pressure, a burner comprising a casing having a contracted mouth, means for supporting the tool to be heated adjacent but outside of such mouth, a burner tip disposed within said casing, and a continuous passage extending from said reservoir to said burner tip, such passage comprising a pair of concentrically arranged conduits mounted within said casing adjacent the burner tip, said conduits being straight and readily separable, and comprising between them an annular chamber through which the fuel is adapted to flow.

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

KARL ERLER.

Witnesses:

GEORGE GIFFORD,
ARNOLD ZUBER.