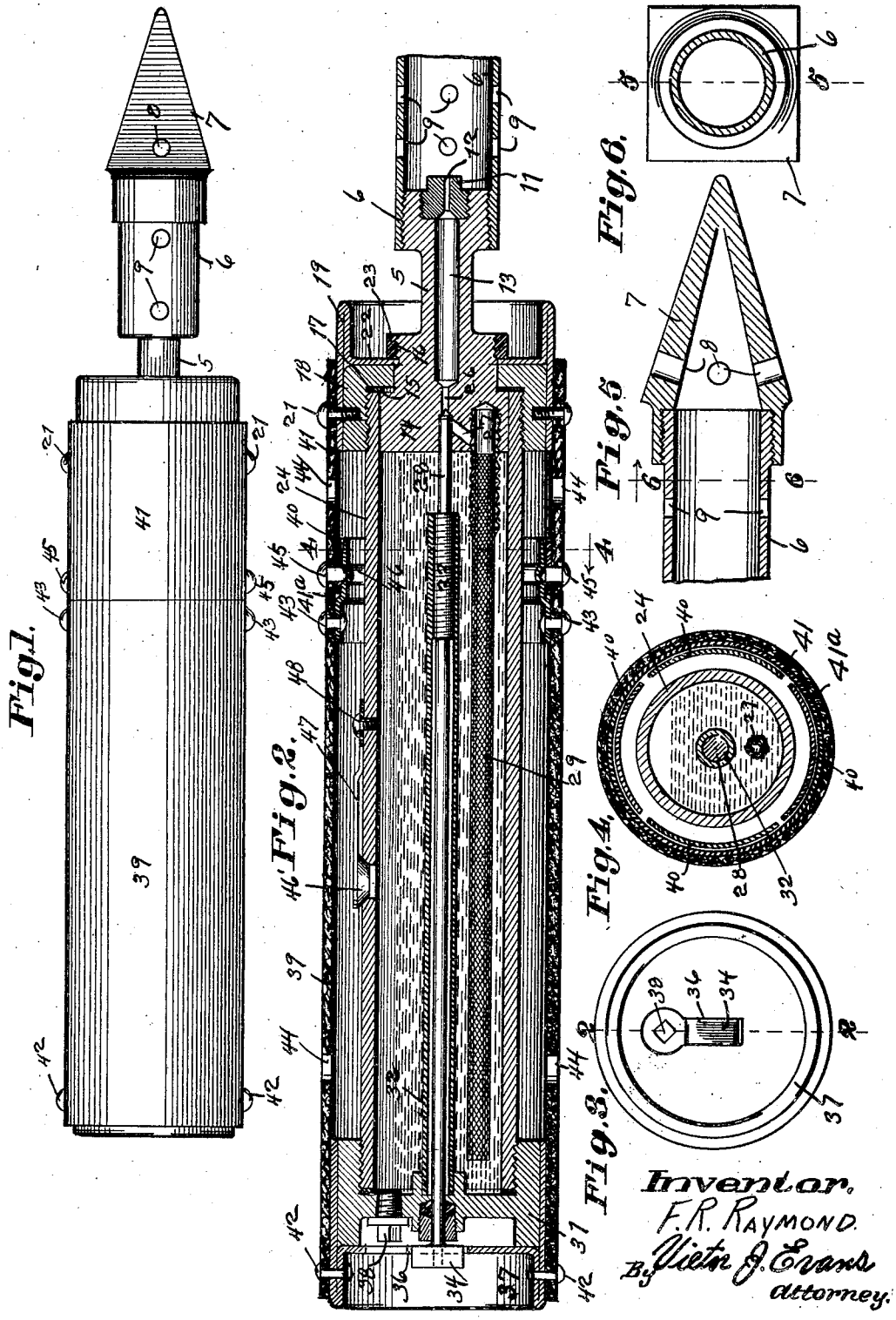
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SOLDERING IRON

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SOLDERING IRON

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This invention relates to improvements in soldering irons and has particular reference to a soldering iron wherein the heating medium is carried within the iron and burned within the tip of the iron.

The principal object of this invention is to produce a soldering iron having liquid fuel heating means fed from my reservoir within the handle of the iron.

A further object is to provide means whereby should the pressure within the handle of the iron become excessive, this pressure would be relieved and at the same time the flame in the iron will be extinguished.

A still further object is to produce a device which is similar in appearance to the ordinary soldering iron and to provide means in the handle for storing and controlling the flow of fuel to the tip of the iron.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of my iron,

Figure 2 is a vertical cross section of the handle of the iron on an enlarged scale, taken on the line 2—2 of Figure 3,

Figure 3 is a rear end elevation.

Figure 4 is a cross section taken on the line 4—4 of Figure 2,

Figure 5 is a cross section taken on the line 5—5 of Figure 6, and

Figure 6 is a cross section taken on the line 6—6 of Figure 5.

It is common to heat soldering irons either by placing the tip of the iron within a heating chamber or within a flame so as to transmit heat thereto or else to employ an electric coil in the iron so as to heat the tip from this internal coil. It is also common to employ ordinary gas which is fed to the tip of the iron. These means, however all require auxiliary attachments and prevent the iron from being readily transported from place to place.

Applicant has therefore produced an iron which may be heated from a liquid fuel carried within the handle of the iron. This liquid fuel being delivered to the point of the iron where it is burned in a manner which is easily controlled.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 5 designates the neck of the iron to which the head of the iron 6 is threadedly attached. This head carries a tip 7 which is preferably threaded thereto and has perforations 8 formed therein. Similar perforations 9 are formed in the head, which perforations permit the escape of the products of combustion. A burner tip is shown at 11 which tip has an opening 12 therethrough, which opening communicates with a bore 13 formed within the neck 5.

The neck 5 is provided with an extremity 14 which has a shoulder 15 and a threaded portion 16. The shoulder 15 is adapted to abutt a packing 17 and to be compressed against a ring 18, which carries an annular member 19 held thereto as by a rivet 21. The member 19 is so bent as to form a cup bottom 22 which is engaged by a nut 23 carried upon the screw thread 16. The barrel 24 is threadedly engaged upon the ring 18 and also abuts the packing 17, the result being that when the nut 23 is screwed upon its thread 16 a tight joint is made by the portion 14 and the barrel 24. The portion 14 has a channel 26 which is offset at 27 and is intercepted by the point of a needle valve 28. A tubular member 29 carries a wick. This wick and tubular member are secured to the extremity 14 in such a manner as to communicate with the channel 27.

At 31 I have shown a cap which is threadedly engaged with the barrel 24. This cap 31 carries a centrally disposed tubular projection 32 in the lower end of which is threadedly engaged as at 33 an enlarged portion of the needle valve 28. This needle valve is rotated through the medium of a handle 34 which fits within a squared opening 36 formed in the annular end piece 37. A filler cap is shown at 38 the purpose of

which is obvious and needs no further description.

The outside casing is made of two sections designated by the numerals 39 and 41, the latter part having a filler ring 41A. The section 39 is riveted to an angular member 37, which is rotatable on the cap 31, as shown at 42. While the portion 41 is screwed to the angular member 19 by the screws 21, a split ring 40 is secured to the interior of the portion 39 by rivets 43. This split ring is pivoted with a groove 46 which engages the rivets 45 in such a manner as to have sliding contact therewith. This casing is preferably made of material which will not conduct heat.

Openings are formed therein as shown at 44, which openings permit the escape of excess pressure within the barrel 24. This escape is permitted by the introduction of a safety valve 46′, which is secured to a barrel 24 as by a spring lever 47 and a screw 48.

The manner of operating my torch is as follows:—

It is first necessary to remove the filler plug 38 and introduce a liquid fuel such as gasoline or the like into the reservoir formed by the extremity 14, the cap 31 and the barrel 24. When a sufficient quantity of fluid has been placed therein the cap 38 is replaced, the torch is then held in vertical position with the tip upward. The gasoline is then placed within the cup bottom 22 and ignited. The burning of this gasoline heats the neck 5, the head 6 and tip 7. When the same has reached a sufficient temperature to cause gasification of the liquid passing through the neck, the handle is grasped, the portion 41 in one hand and the portion 39 in the other hand.

By now holding one of these and rotating the other the fact will be that the annular member 37 with its slot 36 will cause the handle 34 of the needle valve to be rotated. This will in turn, through the threaded portion 33, open the needle valve and permit gaseous fuel to escape from the reservoir through the wick channel 27, 26 bore 13 to the burner tip 12 where it will become ignited, the products of combustion passing out through holes 8 and 9 and at the same time heating the tip 7. Should the pressure within he reservoir become excessive, the safety valve 46′ will open permitting the pressure to drop to zero which will extinguish the flame in the head while the gas will escape through the openings 44.

It will thus be seen that I have produced an iron which will accomplish all the objects above set forth.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. In a tool of the character described a reservoir having a neck portion provided with a bore therethrough, a burner tip carried by said neck portion, a head surrounding said burner tip and secured to said neck, a soldering tip secured to said head, a ring secured to said neck, a cap secured to said reservoir at the opposite end thereof from said ring, a casing extending between said ring and said cap, said casing being formed by two parts, one of said parts being secured to said ring, the other of said parts being rotatably supported on said cap and a needle valve extending through said cap and adapted to close said bore in said neck, and means carried by said casing for rotating said needle valve.

2. In a tool of the character described a reservoir having a neck portion provided with a bore therethrough, a burner tip carried by said neck portion, a head surrounding said burner tip and secured to said neck, a soldering tip secured to said head, a ring secured to said neck, a cap secured to said reservoir at the opposite end thereof from said ring, a casing extending between said ring and said cap, said casing being formed by two parts, one of said parts being secured to said ring, the other of said parts being rotatably supported on said cap and a needle valve extending through said cap and adapted to close said bore in said neck, means carried by said casing for rotating said needle valve, said casing being spaced from said reservoir, a safety valve secured to said reservoir and positioned in the space between said reservoir and said casing, and ports formed in said casing to permit the escape of excess pressure created in said reservoir.

In testimony whereof I affix my signature.

FREDERICK R. RAYMOND.