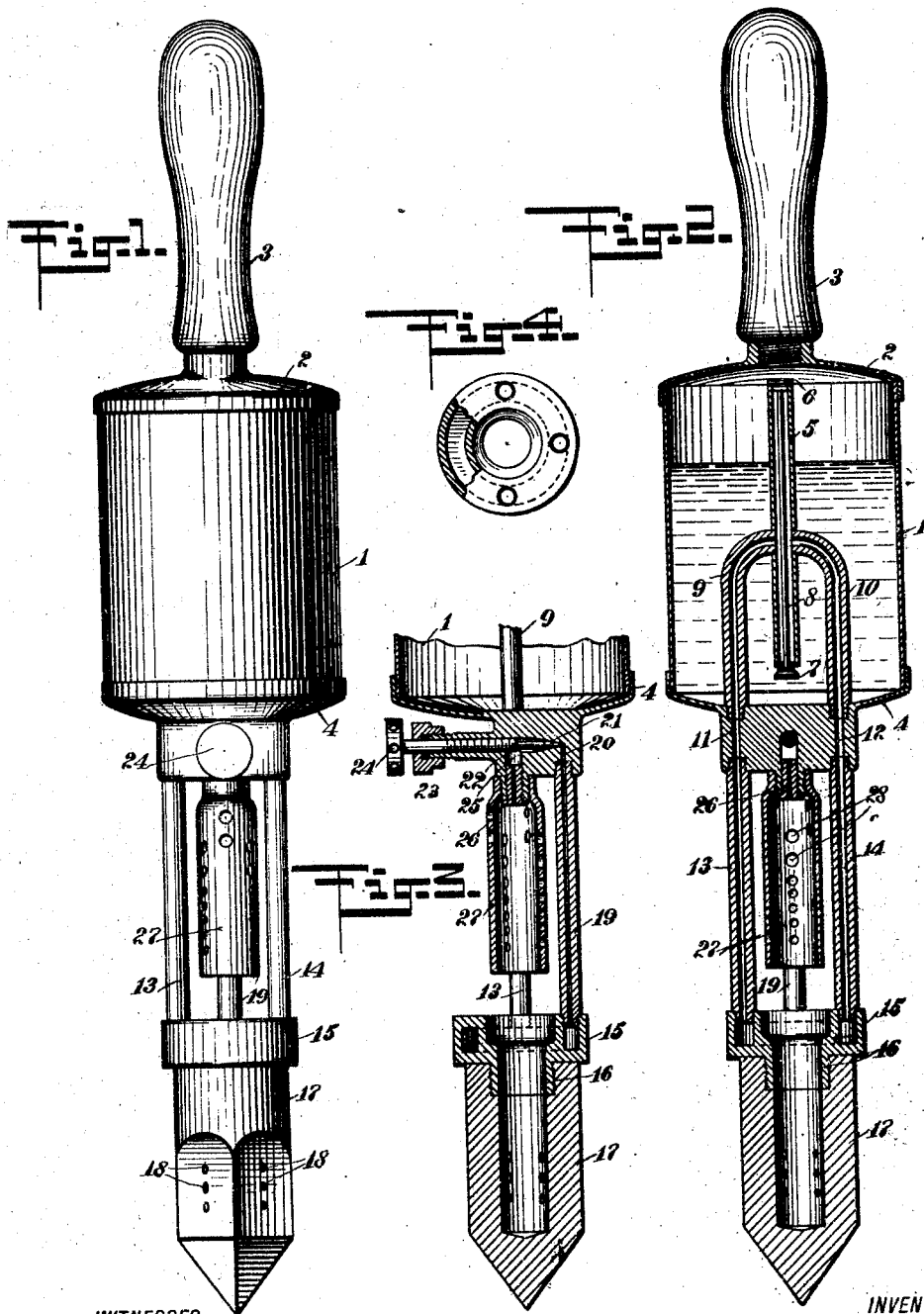


J. E. ROWE.
SOLDERING IRON.
APPLICATION FILED JUNE 23, 1909.

1,015,713.

Patented Jan. 23, 1912.



WITNESSES

F. G. Hackenbury
R. W. Linton

INVENTOR

James E. Rowe
BY *Mum & Co*
ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES E. ROWE, OF NEW YORK, N. Y.

SOLDERING-IRON.

1,015,713.

Specification of Letters Patent.

Patented Jan. 23, 1912.

Application filed June 23, 1909. Serial No. 503,829.

To all whom it may concern:

Be it known that I, JAMES E. ROWE, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and useful Improved Soldering-Iron, of which the following is a full, clear, and exact description.

This invention relates to a new and improved self-heating soldering iron; which is adapted to be heated by a gas supplied from a suitable vaporizable fluid stored in the body of the device.

An object of the invention is to provide a device which will be simple in construction, safe and efficient in its operation, and at the same time strong and durable.

A further object of the invention is to provide means whereby the fluid to be vaporized may be freely and positively fed without danger of intermixing air.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

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, and in which—

Figure 1 is a view in elevation of my device; Fig. 2 is a vertical longitudinal section through the center of my device; Fig. 3 is a fragmentary vertical section at right-angles to the section taken in Fig. 2; and Fig. 4 is a detail view, partly in section, of the vaporizing head.

Referring more particularly to the separate parts, 1 indicates the body of the device, which consists preferably of a hollow cylindrical casing, which is closed at one end by an end 2, secured to the cylindrical portion in any well-known manner, as by means of a screw-thread, and which has a screw-threaded central opening therein which is adapted to be closed by a suitable handle 3, which serves the additional purpose of forming a stopper. The other end of the casing 1 is closed by a suitable end 4, which is secured in any well-known manner, as by means of screw-threaded engagement. The parts 1, 2 and 4 form a complete reservoir or container, which is adapted to store a supply of suitable hydro-carbon fluid.

Within the casing 1, there is provided a

suitable intake 5, which is preferably in the form of a cylindrical pipe having an opening at each end, which openings are in the form of valve-seats, and are adapted to be closed by suitable valves 6 and 7 on the end of a connecting rod 8, which is slightly longer than the intake pipe 5.

Leading into the intake 5 and secured thereto intermediate its ends in any well-known manner, there are provided a plurality of supply pipes 9 and 10, which are adapted to receive through the intake 5 a suitable fluid, such as gasoline, benzine or the like, with which the casing 1 is filled. The other ends of the pipes 9 and 10 are secured in any well-known manner, as by means of screw-threaded engagement, in alinement with the openings 11 and 12 in the head 4.

There are provided a plurality of pipes 13 and 14, which are secured in the head 4 by any suitable means, such as screw-threaded engagements, and form a continuation of the openings 11 and 12. These pipes 13 and 14 are secured preferably by screw-threaded engagement at their opposite ends, to a vaporizer 15, which is in the form of a hollow ring having a screw-threaded flange 16 thereon, which is adapted to be engaged by a hollow soldering head 17. The soldering head 17 has the usual pyramidal end, and also has perforations in the sides thereof, to permit the gases of combustion to escape.

In order to draw off the gases vaporized in the vaporizer 15, there is provided a suitable pipe 19, which is preferably connected to the vaporizer 15 by screw-threaded engagement, and also connected at its other end to the end 4 in any well-known manner. There is provided an opening 20 in the end 4 in alinement with the opening in the pipe 19. Connected to this opening 20, there is provided a suitable valve-seat 21, cooperating with which there is provided a suitable needle-valve 22. The needle-valve 22 is preferably screw-threaded, as at 23, in order that it may be forced positively onto its seat, and is adapted to be operated in any suitable manner, as by means of a thumb-screw 24.

On the other side of the valve-seat 21 from the supply opening 20, there is provided an angular conduit, which is closed at one end by a nipple 26 having a pin-hole opening therein. The nipple 26 is secured

to the head 4 in any well-known manner, as by screw-threaded engagement, and acts as a burner for the projecting hydro-carbon vapor.

- 5 Surrounding the nipple 26, and secured to the end 4 in any well-known manner, there is provided a combustion shell 27, which extends toward the head 17, and has a plurality of openings 28 therein, through
10 which the air is adapted to be drawn, to mix with the burning gas.

The operation of the device will be readily understood from the above description.

- When it is desired to fill the casing or
15 reservoir 1 with a suitable fluid, the handle 3 is removed and the liquid poured in. In using the device, the opening which supplies the intake will always be under the liquid, provided there is sufficient liquid
20 in the reservoir, no matter in what position the soldering iron is held. If the soldering iron is extended downwardly, as in Fig. 2, the valve 6 will automatically seat by gravity on the opening at the upper end of the
25 intake 5, at the same time removing the valve 7 from the opening at the bottom of the intake 5. If, however, the soldering iron is inverted, the reverse condition of affairs will take place; that is, the valve 7
30 will rest tightly on its seat, and the valve 6 will be in a position away from its seat. The purpose of this is to permit only the hydro-carbon liquid to be fed to the supply pipes 9 and 10, and thus to the vaporizer 15.

- 35 By heating the vaporizer 15, a steady stream of vaporized gas is forced out through the nipple 26, where it comes in direct contact with the air drawn into the openings 28 in the combustion shell 27.

- 40 The amount of gas fed to the nipple 26 may be accurately regulated by the needle valve 22. The jet of burning gas is pro-

jected directly into and in alinement with the soldering head 27, and the products of combustion partially come out through the
45 openings 18, thereby thoroughly heating the soldering head 17, and at the same time heating the vaporizer 15.

If it is desired, the head 17 may be removed from the rest of the device, and a
50 practical, self-contained torch is thereby provided.

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

1. In a device of the class described, the
55 combination with a fuel reservoir, of a burner connected to said reservoir, a tube within said reservoir, open at each end, means connected to said tube intermediate
60 its end, for conducting the fuel to said burner, a rod slidingly mounted in said tube, and valves on the end of said rod adapted to normally maintain one of the open ends of
65 said tube closed at any one time.

2. In a device of the class described, the
combination with a fuel reservoir, of a burner connected to said reservoir, a tube
70 within said reservoir, open at each end, means connected to said tube intermediate its end, for conducting the fuel to said
burner, a rod of greater length than the
length of said tube, slidingly mounted in
said tube, and valves on the end of said rod
75 adapted to normally maintain one of the open ends of said tube closed at any one time.

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

JAMES E. ROWE.

Witnesses:

HORATIO WHITING,

PHILIP D. ROLLHAUS.