

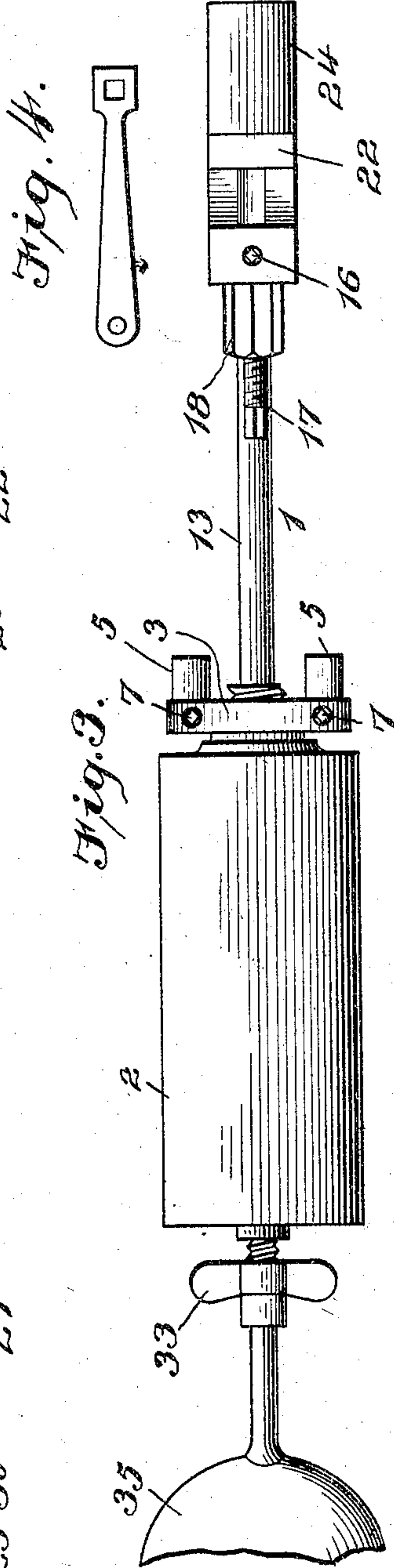
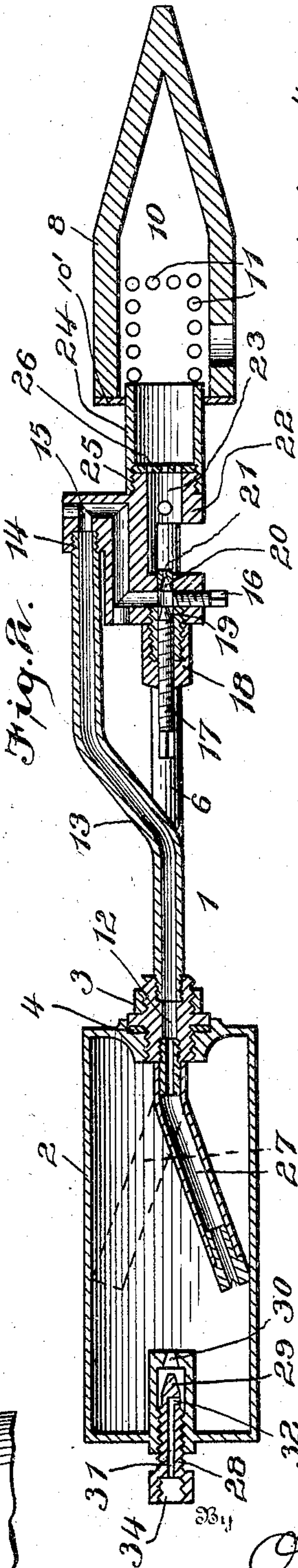
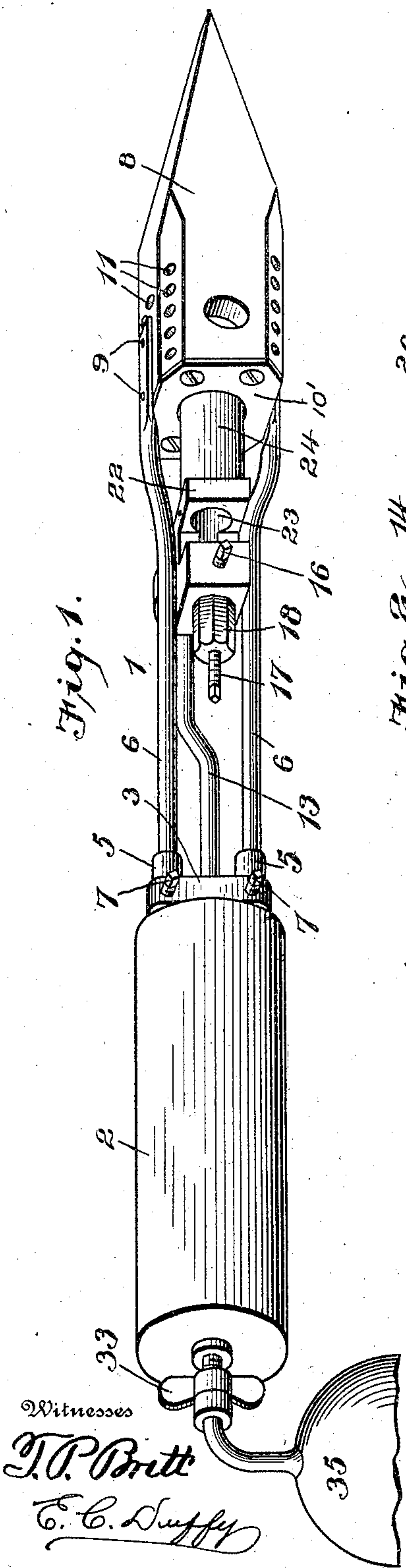
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PATENTED MAY 30, 1905.

J. W. BUCHANAN.

COMBINED SELF HEATING SOLDERING IRON AND TORCH.

APPLICATION FILED MAR. 5, 1904.



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# UNITED STATES PATENT OFFICE.

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## COMBINED SELF-HEATING SOLDERING-IRON AND TORCH.

SPECIFICATION forming part of Letters Patent No. 790,951, dated May 30, 1905.

Application filed March 5, 1904. Serial No. 196,650.

*To all whom it may concern:*

Be it known that I, JAMES W. BUCHANAN, a citizen of the United States, residing at Asheville, in the county of Buncombe and State of North Carolina, have invented certain new and useful Improvements in a Combined Self-Heating Soldering-Copper and Torch; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to a self-heating soldering-copper and torch combined, and has for its object to provide a device for soldering which is self-heating and which can be used without the usual portable furnace and charcoal.

With this object in view my invention consists in the novel construction of the hollow soldering-copper and in the burner.

My invention also consists in the manner of connecting the copper to the gasoline-tank and also in certain other novel features of construction and in combination of parts, which will be first fully described and afterward specifically pointed out in the appended claim.

Referring to the accompanying drawings, Figure 1 is a perspective view of my invention. Fig. 2 is a vertical longitudinal sectional view taken through Fig. 1. Fig. 3 is a plan view of my device with the soldering-copper removed in order to be used as a torch. Fig. 4 is a plan view of a key to operate the several set-screws.

Like numerals of reference indicate the same parts throughout the several figures, in which—

1 indicates the device, which consists of the gasoline-tank 2, which is threaded onto the bracket 3, a suitable gasket 4 making the connection tight. The bracket 3 is provided with two sleeves 5, into which the arms 6 enter. Suitable set-screws 7 secure said arms in the bracket. 8 indicates the hollow soldering-copper, to which the said arms 6 are secured at 9. The said soldering-copper 8 is provided with a hollow chamber 10 and also

with a series of perforations 11, and on the rear of said copper is a plate 10', through which the burner-sleeve 24 passes, said plate acting to effectually contain the flame from the burner-sleeve directly within the hollow chamber of the soldering-copper.

The bracket 3 is provided with a small opening 12, and a pipe 13 is threaded in said opening, as shown in Fig. 2. The forward end of said pipe 13 threads into the burner-section at 14 and connects with the port 15 in said burner-section. At the end of said port 15 is a set-screw 16. Entering said port in rear thereof is a regulating set-screw 17 and a lock-nut 18, said regulating-screw having a tapered or needle point 19 arranged to enter the seat 20 at the forward end of said port 15. The opening 21 of said port is decreased very much in diameter, so as to cause the gasoline passing through the port to jet. The forward portion 22 of the burner-section is provided with an opening 23, and a burner-sleeve 24 is threaded on said forward section at 25, as shown in Fig. 2. A suitable perforated disk or screen 26 is located within the said burner-sleeve 24, and the forward end of said burner-sleeve extends within the hollow portion 10 of the soldering-copper 8, as shown in Figs. 1 and 2.

Referring to the bracket 3, it will be noted from Fig. 2 that a flexible tubing or pipe 27 is secured thereto within the gasoline-tank 2, and at the rear end of said tank 2 is a regulating-screw 28, which threads into the tank, said regulating-screw being provided with a tapered end 29, which is attached to enter the seat 30. A port or passage 31 in said regulating-screw passes through the same to the point 32, where it turns at right angles, as clearly shown. Said screw is provided with a wing-nut 33 for the purpose of turning the same, and said wing-nut is internally threaded at 34 to receive the stem of the bulb 35 or a small hand-pump.

Referring to Fig. 3, it will be seen that I show the device in the capacity of a torch, the soldering-copper 8 and arms 6 being removed.

Having thus described the several parts of my invention, its operation is as follows: A suitable quantity of gasoline is run into the



tank 2, and when it is desired to use the soldering-copper the regulating-screw 17 in the burner-section is adjusted according to the amount of heat which is required. The wing-nut 34 and the adjusting-screw 38 are threaded, so that the tapered point 29 is unseated from the seat 30. The bulb 35 or hand-pump is then operated, which forces air under pressure into the gasoline-tank 2, and as the flexible pipe 27 in said tank always rests on the lowest side of said tank the said pipe is always immersed in the gasoline no matter in what position the device may be. The air-pressure in the tank 2 obviously forces the gasoline into the flexible pipe 27 through the bracket 3, through pipe 13, and into the burner, where it jets through the burner-opening 21. The amount of gasoline passing through the burner-opening, upon which depends the length of the flame, is regulated by the regulating-screw 17, so that the flame ranges from a very small jet to one of four or five inches in length. The flame passes from the burner-opening, through the screen or perforated disk in the burner-sleeve, into the chamber 10 of the soldering-copper 8, which copper can be heated to any desired degree. The same operation applies to the device when being used as a torch, as shown in Fig. 3, with the exception that the soldering-copper and arms are removed, as before described.

Having thus set forth my invention, I do

not wish to be understood as limiting myself to the exact construction as herein set forth, as various slight changes may be made therein which would fall within the limit and scope of my invention, and I consider myself clearly entitled to all such changes and modifications.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

In a combined self-heating soldering-copper and torch, the combination with a tank, of a pipe leading therefrom, sleeves on said tank, arms carried by said sleeves, a hollow soldering-copper carried by said arms, a burner-section carried by said pipe and provided with a port, a set-screw in said port, a regulating set-screw in the rear of said port, said regulating set-screw having a tapered or needle point arranged to enter a seat at the forward end of said port, said port being provided with a contracted outlet, a burner-sleeve secured on said burner-section, a perforated disk or screen located within said burner-sleeve, said burner-sleeve extending within the said hollow soldering-copper, substantially as described.

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

JAMES W. BUCHANAN.

Witnesses:

A. D. WEAVER,  
W. C. BAKER.