No. 834,313. PATENTED OCT. 30, 1906.

R. W. MARVELL.

SELF HEATING SOLDERING IRON.

APPLICATION FILED MAR. 17, 1906.

2 SHEETS—SHEET 1.

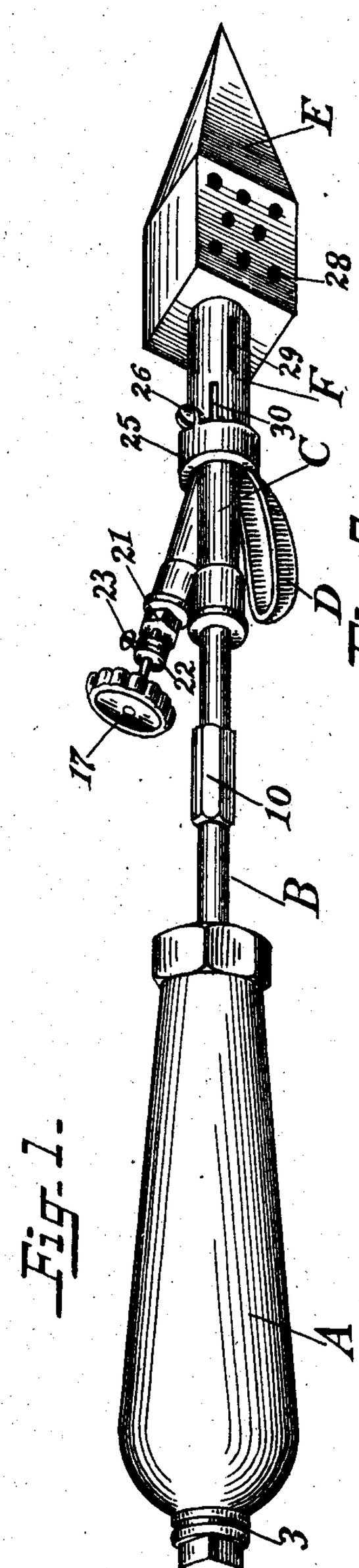

Fig. 1.

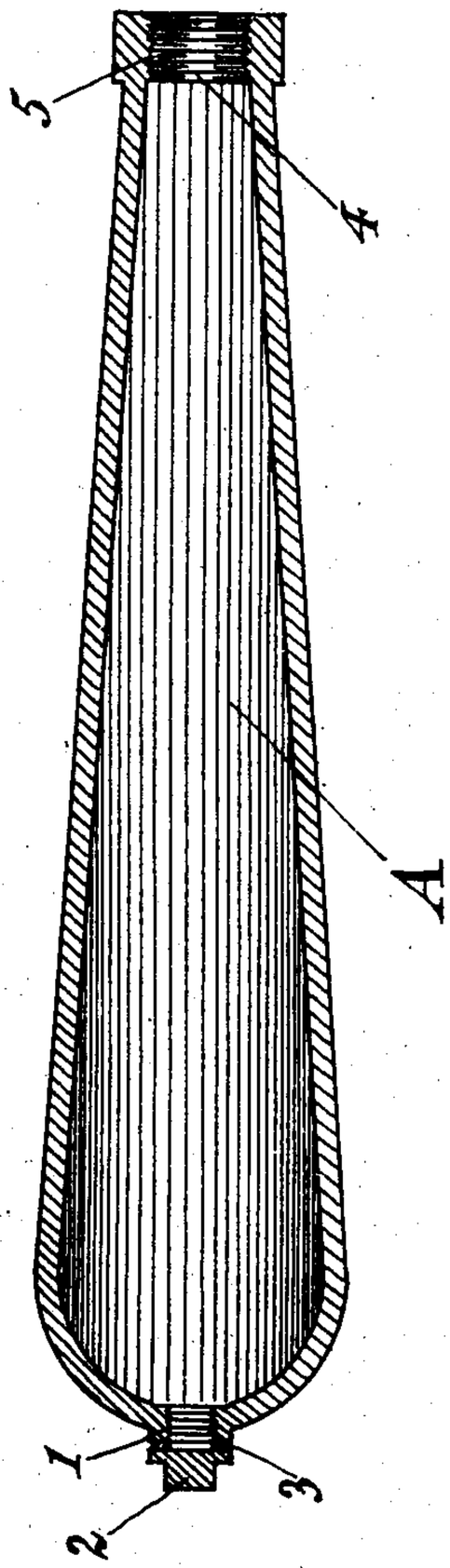

Fig. 2.

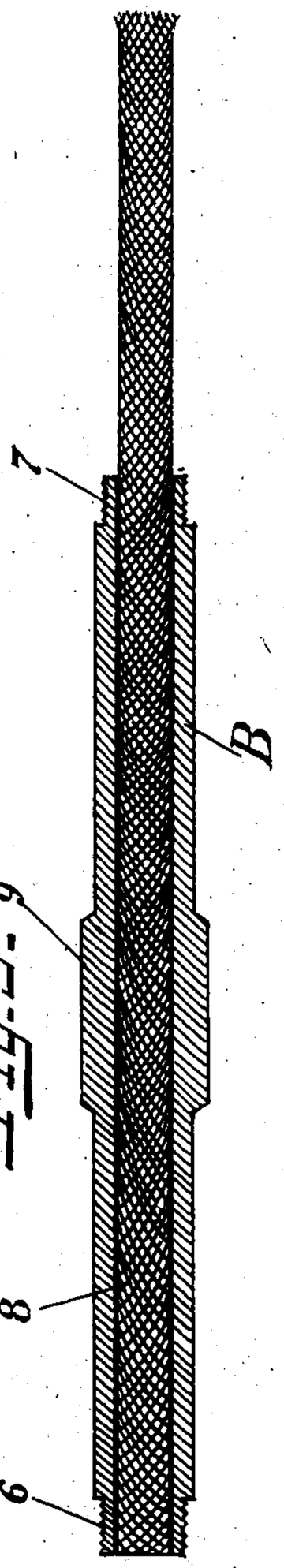

Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 4.

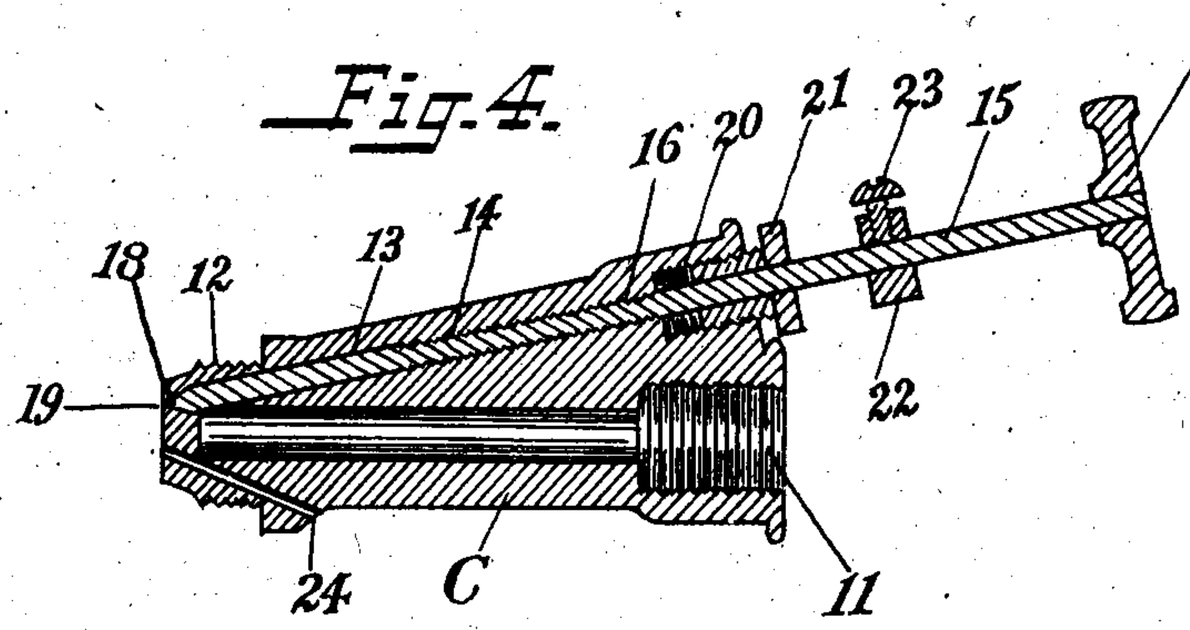


Fig. 5.

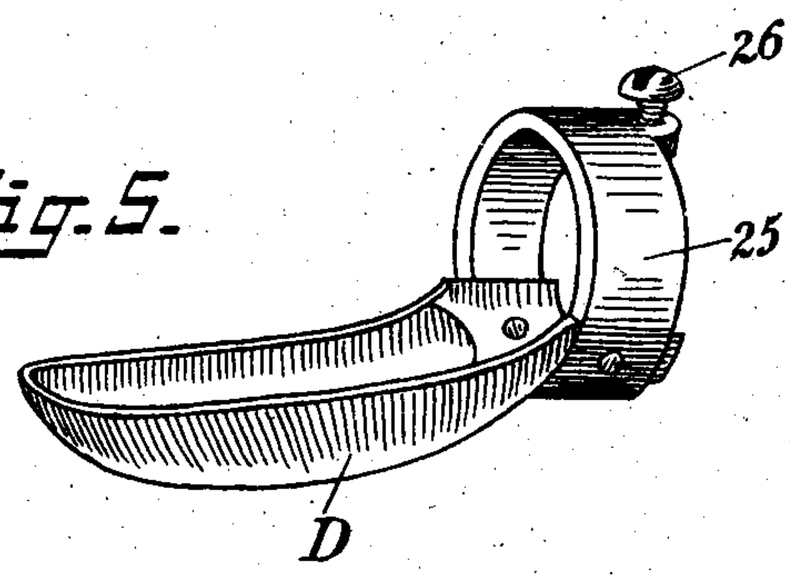
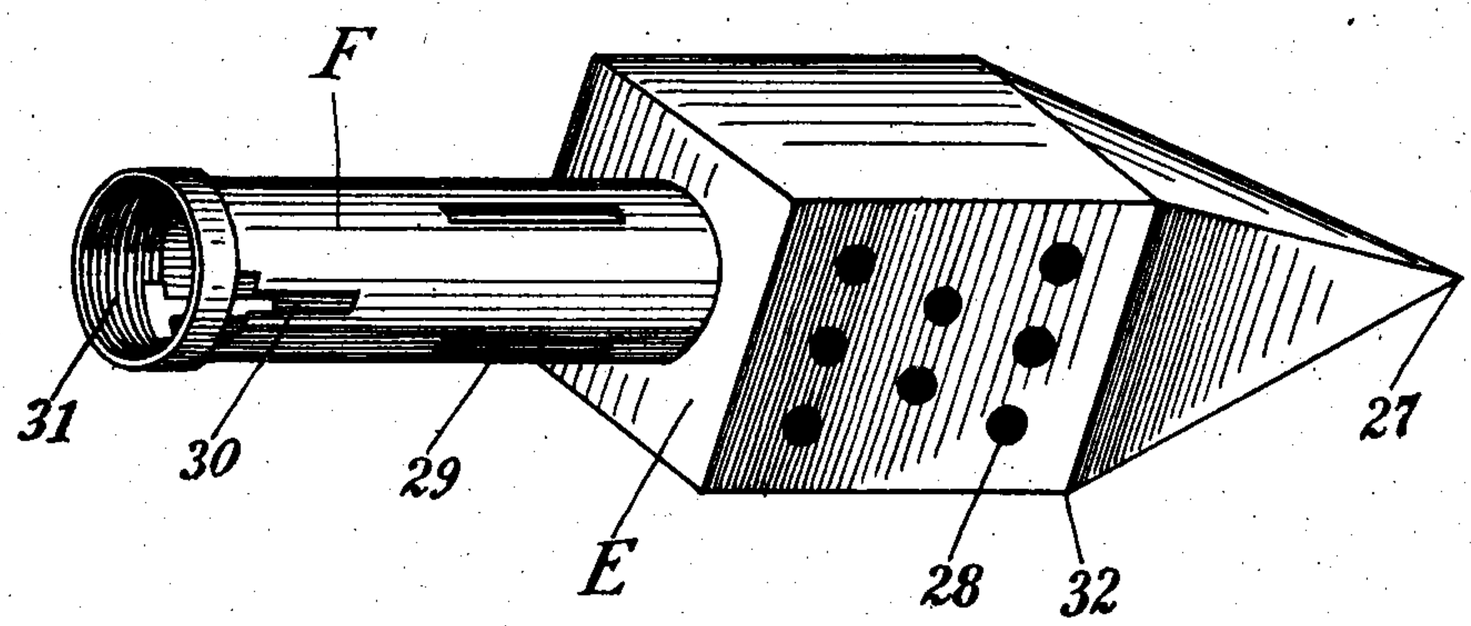


Fig. 6.



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UNITED STATES PATENT OFFICE.

ROY WILLIAMS MARVELL, OF BALTIMORE, MARYLAND, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO BENNETT-MARVELL MANUFACTURING COMPANY, A CORPORATION OF DELAWARE.

SELF-HEATING SOLDERING-IRON.

No. 834,313. Specification of Letters Patent. Patented Oct. 30, 1906.

Application filed March 17, 1906. Serial No. 306,637.

To all whom it may concern:

Be it known that I, ROY WILLIAMS MARVELL, a citizen of the United States, residing at Baltimore city, State of Maryland, have invented certain new and useful Improvements in Self-Heating Soldering-Irons, of which the following is a specification.

My invention relates to an improvement in a self-heating soldering-iron, the object of which is to provide a soldering-iron with the self-heating features, that the heating "stove" or "pot," as it is usually termed, used for the purpose of heating the iron may be dispensed with, and to provide an iron whereby the fuel used in heating it can be more conveniently carried, also to provide an iron of such simple construction that the several parts may be easily and quickly disconnected, and thereby rendered so compact that it can be conveniently carried and easily and quickly assembled and ready for use when desired.

With the foregoing object in view my invention consists in certain novel features of construction and combination of parts, which will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my invention with the parts assembled. Figs. 2, 3, and 4 are sectional views cut away to show the interior of the several parts. Fig. 5 is a perspective view of the preliminary heating-cup. Fig. 6 is a perspective view of the head of the iron and vaporizing-chamber.

A is a hollow metallic handle adapted to be filled with gasolene and termed the "fuel-chamber."

1 is a hole within the thicker end of the handle through which the chamber is filled and is inwardly threaded, into which the threaded nut-screw 2 is screwed. Interposed between the nut and handle is the washer 3 to insure a tight closure. The smaller end of the handle is provided with an opening 4 and is inwardly threaded at 5.

B is a hollow metal rod, being exteriorly threaded on each end at 6 and 7, and 8 is a wick running through the entire length of the rod and projecting out of and beyond the threaded end 7 for the purpose hereinafter described.

9 is an enlargement of metal about the center of the rod and is made octagon shape, having eight flat sides 10 for the purpose of engaging with a wrench in order that the parts may be screwed tightly together and as a means for disconnecting them.

C is a hollow casting, being inwardly threaded at one end at 11 and exteriorly threaded at the other end at 12, the upper part of the casting being of greater thickness, into which is constructed a needle-valve. Through the upper thick portion is drilled a hole 13, which is inwardly threaded at 14, into which is adapted to be screwed the valve-stem 15, which is threaded at 16, the outer end of which is provided with a thumb-nut 17, and the other end is pointed at 18 to engage in the opening 19. The hole 13 is inwardly threaded at 20, into which the threaded cap-nut 21 is screwed. This cap-nut is exteriorly threaded for this purpose and is drilled out to allow the valve-stem 15 to pass therethrough.

Fitted around the valve-stem 15 between the cap-nut and the thumb-nut is a collar 22, adapted to be adjustably secured on the stem between the points named by means of the set-screw 23 for the purpose of preventing the valve-stem from being inserted beyond a given point and the damaging thereof at the closing-points 18 and 19 within the casting. 24 is a vertical drilled hole in the small end of the casting C for the purpose of allowing the fuel to drip into the cup D, which is adjustably secured on the cylinder of the iron by means of the collar 25 and the set-screw 26 for the purpose hereinafter described.

E is the soldering-iron head, pointed at 27, perforated at 28, providing a draft for the flame. The head E is cast hollow, having the cylinder F cast to it. The cylinder F is slotted at 29 and T-slotted at 30 and inwardly threaded at the open end thereof at 31.

My invention is assembled and operative as follows: The rod B is secured to the handle A by means of the thread end 6 of the rod being screwed within the threaded end 5 of the handle A. The threaded end 7 of the rod B is then screwed within the portion of the casting C at the inwardly-threaded end 11, the extended portion of the wick 8 being inserted within the hollow casting C. The exteriorly-threaded end of the casting C is then screwed within the inwardly-threaded cylinder F of the head E by means of the

threads 31. Prior to securing the cylinder F of the iron E to the casting C, as above explained, the collar 25 of the cup D is slipped over the cylinder F and after being assembled is adjustably secured by means of the set-screws 26. After the several parts are assembled and secured together, as above set forth, the cap-screw 2 is removed from the hollow handle A and the handle filled with fuel, (preferably gasolene,) the needle-valve is opened, and the gasolene allowed to drip into the cylinder F, and by means of the diagonal-drilled hole 24 the fuel will drip from the cylinder F into the cup D, which is adjustably secured directly beneath the opening for this purpose. When the cup is sufficiently filled with the fuel, it is ignited in the cup, which will cause the casting C to become heated, through which the fuel is being conveyed from the handle to the needle-valve by the wick 8 within the rod, the heat causing the fuel to vaporize within the casting C, and when sufficiently heated it will ignite at the needle-point and continue to vaporize within the cylinder F. By means of the cylinder F being T-slotted at 30 a sufficient draft is provided to keep alive the flame at the needle-valve point, and by reason of the slots 29 the flame is induced farther into the iron and for a like reason the iron is perforated at 28. The iron is then ready for use, and by means of the valve the feeding of the fuel is controlled, which will of course regulate the flame. Consequently the iron may be kept at the desired heated degree necessary to perform its functions satisfactorily. The pointed portion of the head E from the point 27 to the point 32 is cast solid for the purpose of more readily retaining the heat. The iron is made of any suitable material, but preferably of copper or brass.

Slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not desire to limit myself to the exact construction as herein set forth; but,

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination of a self-heating soldering-iron, comprising a hollow metal handle, of a casting provided with a needle-valve therein, of a hollow cylindrical rod with a wick therein, of an octagon-shaped nut exteriorly cast about the center of said rod, means whereby the rod is connected with the handle on one end and the valve-casting on the other, of a soldering pointed head, of a hollow cylinder vaporizer cast to said head, said cylinder being T-slotted near the outer end thereof and horizontally slotted near the head portion for the purpose of inducing the flame into the head portion means of securing the valve-casting within the end of the cylinder, of a fuel-holding cup adjustably secured on and beneath the vaporizing-chamber, by means of a collar and set-screw for the purpose of starting the vaporizing of the fuel within the cylinder substantially as described and for the purpose as set forth.

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

ROY WILLIAMS MARVELL.

Witnesses:
E. WALTON BREWINGTON,
MARY M. MAGRAW.