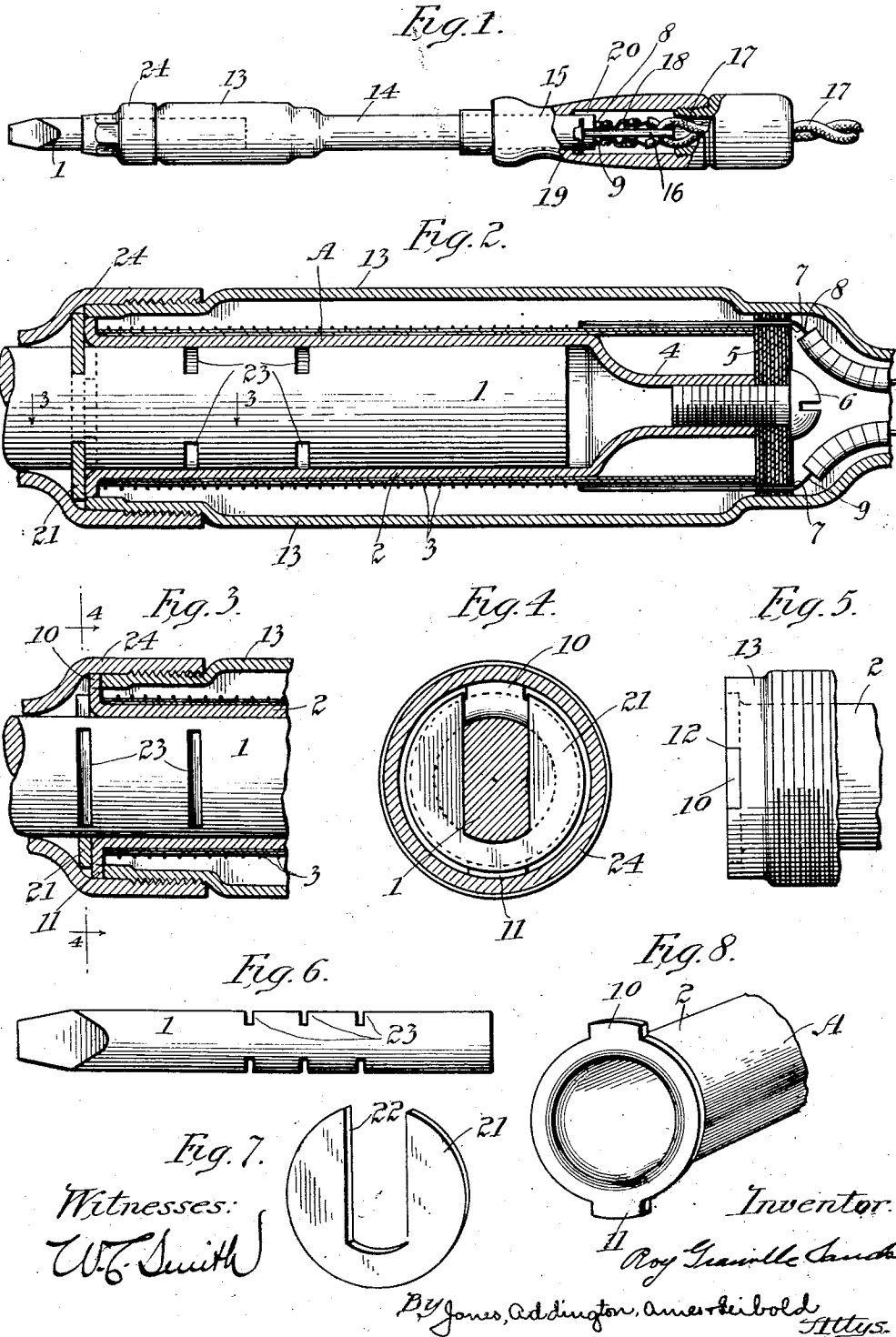


R. G. SANDS.  
SOLDERING IRON.  
APPLICATION FILED OCT. 9, 1917.

1,372,778.

Patented Mar. 29, 1921.



# UNITED STATES PATENT OFFICE.

ROY GRANVILLE SANDS, OF WAUKEGAN, ILLINOIS, ASSIGNOR TO FRANK B. COOK COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## SOLDERING-IRON.

1,372,778.

Specification of Letters Patent.

Patented Mar. 29, 1921.

Application filed October 9, 1917. Serial No. 195,518.

*To all whom it may concern:*

Be it known that I, ROY GRANVILLE SANDS, a citizen of the United States, residing at Waukegan, in the county of Lake and State of Illinois, have invented new and useful Improvements in Soldering-Irons, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to soldering-irons, and has to do more particularly with the provision of an adjustable soldering-tip whereby, as the tip wears off, it may be adjusted so as to keep the extreme end suitably clear of the holder or body portion, which contains the receptacle for the tip.

My invention is more particularly useful in connection with electrical soldering-irons, and, although illustrated in connection with such a device, it is not limited to such a particular application. Other features of my invention will be more particularly pointed out in the ensuing specification and in the appended claims.

For a better understanding of my invention, reference is to be had to the accompanying drawings, in which like reference characters indicate like parts, and in which—

Figure 1 is a side elevation of a complete soldering-iron embodying my invention;

Fig. 2 is a longitudinal cross-sectional view showing more particularly the heating element within the outer casing, and the adjustable tip;

Fig. 3 is a longitudinal section along the line 3—3 of Fig. 2;

Fig. 4 is a transverse section along the line 4—4 of Fig. 3;

Fig. 5 is a portion of the end of the outer casing;

Fig. 6 is a detail view of the adjustable soldering-tip;

Fig. 7 is a perspective view of the lock-washer, which is adjustable on the soldering-tip; and

Fig. 8 is a perspective view of the heating element-body or core, which also acts as a receptacle for the tip.

Referring now more particularly to the form of my invention as shown herein, it comprises a tip 1 adapted to be inserted into a receptacle A which is preferably an elec-

trically-heated unit including an element-body or core 2 preferably a steel tube having a mica insulated winding 3 of any of the well-known materials which are adapted for heating purposes. The element-body or core 2 may be made of other material, such as porcelain, if desired. The rear end of the receptacle or element-body 2 is reduced, as shown at 4, so as to act as a support for mica washers 5 which are secured thereto by means of a screw 6, the washers 5 having holes 7 through which the terminals 8, 9 of the coil 3 pass. The outer end of the member 2 is flanged and carries a pair of ears 10, 11, which are adapted to set in recesses 12 (Fig. 5) provided in the outer end of the casing 13. This casing 13 is preferably tubular steel which is reduced at 14 so as to serve as a shank adapted to be inserted in the handle 15. A plate 16 of insulating material is secured in the shank end 14, the terminals 8, 9 of the heating element being secured to the insulating plate 16. A two-strand cord 17 passes through the handle 15 and is attached to the insulating plate 16 and connected to terminals 8, 9 by means of connectors 18. A lock-washer 19, similar to that shown in Fig. 7, spans the shank 14 and rests against the shoulder at the bottom of the enlarged hole 20 in the handle.

The soldering-tip 1 is adapted to be inserted in the receptacle A, being a snug fit, so that it is in intimate contact with the member 2, which acts as a core for the heating-element winding 3.

One of the features of my invention is the provision of a simple adjusting means for the tip 1, so that as its soldering end becomes worn off the tip may be suitably extended so that it is in a convenient position relative to the receptacle and readily available for use. For this adjusting means, I preferably provide a lock-washer 21 slotted at 22 and adapted to slip over any one of the pairs of notches 23 in the tip 1. In the assembly views (Figs. 2 and 3) the lock-washer 21 is shown at the extreme end pair of notches 23, and the tip 1 is inserted in the heating element to its greatest extent, the washer 21 resting against the outer end of the member 2 and the casing 13. In order to hold the tip in the receptacle, a threaded collar or nipple 24 is provided, being adapted to be placed over the end of the tip 1 and

threaded onto the casing 13, the shoulder in the nipple 24 contacting with the washer 21 and maintaining the tip in place.

As appears from Fig. 2, the washer 21 is in contact with the ends of both the casing 13 and the tip-receptacle 2, but it will be apparent that the washer 21 may engage both elements 13 and 2, or either one, just as desired.

In order to adjust the tip, the nipple 24 is removed and the tip 1 with its collar 21 removed from the heating-receptacle A, after which the lock-washer 21 is slipped off the tip and replaced at the desired pair of notches 23. The tip is then again inserted in the receptacle until the collar 21 comes into contact with the end thereof, after which the nipple 24 is threaded onto the casing 13. Thus, it will be apparent that as the natural wear of the tip occurs, or if it is desired to vary the adjustment of the tip for other reasons, it may be readily removed and the adjustment of the lock-washer 21 changed, after which the tip is again inserted and held in place by the nipple 24.

In illustrating my invention, I have shown a preferred form, one that has been found adaptable for commercial purposes, but it will be apparent that my invention is not limited to the particular embodiment shown, and I contemplate applying it in other ways than that illustrated. Therefore, I do not desire to be limited to the exact structure shown and described, but aim to cover all that which comes within the spirit and scope of the appended claims.

I claim as new and desire to secure by Letters Patent of the United States:

1. A soldering-iron comprising an elongated tip, a hollow receptacle for said tip, a stop adjustable along said tip in a plurality of positively fixed positions to vary the relation of said tip and receptacle, and means for holding the tip in the receptacle.
2. A soldering-iron comprising an elongated tip, a receptacle for said tip, a stop, said tip being provided with a series of notches to receive the stop to vary the adjustment of said tip, and means for holding the tip in the receptacle.

3. A soldering-iron comprising an elongated tip, a hollow receptacle for said tip, a lock-washer, said tip being provided with a series of notches to receive the washer to vary the adjustment of said tip, and means for holding the tip in said receptacle.

4. A soldering-iron comprising an elongated tip, a hollow receptacle for said tip, an adjustable lock-washer for said tip cooperative with said receptacle to vary the extending portion of the tip, and means for holding the tip in said receptacle.

5. A soldering-iron comprising an elongated tip, a hollow heating-element receptacle for said tip, an adjustable lock-washer for said tip cooperative with said receptacle to vary the extending portion of the tip, and a nipple cooperative with said tip, washer and receptacle for holding the tip in said receptacle.

6. A soldering-iron comprising an elongated tip, a hollow electrically-heated receptacle for said tip, and a lock-washer for the tip cooperative with a stop at an end of the receptacle to limit the insertion of the tip in the receptacle, said tip being provided with a series of notches to receive the lock-washer to vary the adjustment of the tip.

7. A soldering-iron comprising an elongated tip, a hollow electrically-heated receptacle for said tip, a casing for the receptacle, an adjustable lock-washer for the tip, and a nipple adapted to thread onto the casing and cooperative with the lock-washer for holding the tip.

In witness whereof, I have hereunto subscribed my name.

ROY GRANVILLE SANDS.

Witness:

E. B. HOLLINGSWORTH.