

Soldering Technic for Steel Arch Wire

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SOLDERING technic as applied to steel wire differs from that as applied to noble metals in that the union between the wire to be attached and the steel arch wire is a physical one. Hence, in order that the attachments may withstand the pressure of wire ligatures and rubber elastics, the solder must be flowed around at least three sides of the rectangular steel wire.

I have found that brass ligature wire serves best for making such attachments as intermaxillary hooks and the various kinds of stops. For intermaxillary hooks the .028" diameter wire is used; for stops, the .021" diameter wire.

After scratch marks are made for placing the various types of attachments, the brass wire is prepared in the following manner.

INTERMAXILLARY HOOK

If an intermaxillary hook is to be placed, a generous amount of low fusing solder is flowed on the flattened end of the .028" brass wire.

Next, dip the wire into steel soldering flux, covering the solder with a coating of the flux.¹

Place in contact with the steel wire, and apply a blow pipe flame, not too hot, about one-fourth inch from the steel wire. (Fig. 1A)

As the brass wire is heated the flux flows onto the steel wire and is followed by the solder, making a solid attachment without injuring the temper of the steel wire.

It is not necessary to use flux on the steel wire, but it is essential to have the steel wire absolutely clean. Otherwise, the solder will not flow from the brass wire to the steel wire.

STOPS

The same technic is used in making the various kinds of stops. However, in using the smaller diameter wire, the solder should be flowed on the wire, forming a sort of ball.

Cut the wire through the middle of the solder, and flatten the ends with a file. Thus two attachments are made. (Fig. 1B)

It is not necessary to flow the solder on the three sides of the steel wire to insure permanency of attachment of the smaller diameter brass wire.

USE WITH ROUND STEEL ARCH WIRE

While this technic may be applied to the round steel arch wire, it is not as successful as with the rectangular wire. However, it is not unusual for

¹I use WUE low fusing solder wire and Niro rustless steel flux, supplied by the Niro Corporation, Westport, Conn.

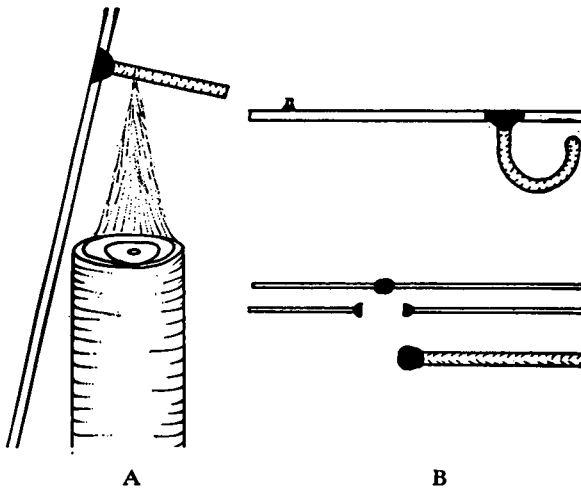


Fig. 1.—A. Position of flame when soldering attachments. B. Showing method of placing solder ball on steel wire which is cut in two making two stops of .021" brass wire.

stops to remain attached to the round arch wire for a month or two without spinning, especially when spurs are attached from the .021" arch wire to the incisal edges of the upper incisor teeth to prevent elongation of these teeth when changing the angle of inclination to reduce their protrusion.

A more nearly permanent attachment to the round arch wire can be insured by flattening it slightly at the point of attachment, on two sides, with a disk or file. Care should be taken not to remove too much of the wire, thereby lessening its elasticity.

While it may seem to those who have not tried this technic that soft brass ligature wire will not stand up under the pressure of ligature wires and rubber elastic bands, or even under the pull from the wire hooks placed on the head gear, I can vouch for the fact that it will. It is amazing how much pressure these hooks and stops will stand, even though the brass wire bends very easily.

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