

Technique of the Staple

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The staple auxiliary of the edgewise arch has an importance all out of proportion to its size, and its proper application requires not only a knowledge of the work to be performed but also an exacting technique. While this technique is not difficult it must be followed closely if uniform results with a minimum expenditure of time are to be expected. The instruments, materials and steps have been evolved through a process of constant refinement and it is extremely doubtful if anyone, without a great deal of experience, can improve them.

The flux is the same as that used in all other soldering operations on the edgewise arch mechanism, namely pure, crystal borax from which a creamy mix is made by rubbing it on a piece of frosted glass or some other similar surface. The instruments, shown in Fig. 1, consist of a fine explorer, soldering tweezers No. 125, a No. 00 miniature brush, a tungsten needle clamped in a broach holder and a jeweler's eye glass.

Recording the Location

The correct placing of the staple is of vital importance. No difficulty will be experienced in determining whether a staple belongs on the mesial or the distal aspect of a band, for the direction of rotation will decide this. Whether to place it gingivally or occlusally to the archwire, however, requires an understanding of the mechanics involved and for the explanation of this principle the reader is referred to articles that have already appeared in the literature. (See bibliography.)

Having decided on the exact spot where we desire the staple to stand, two scratch marks are made on the band with a fine explorer, one in a horizontal and the other in a vertical direction, both passing through the predetermined spot. With the band in position on the tooth, the horizontal mark is made by placing the point of the instrument next to the bracket and half way between the edge of the band and the arch slot, then drawing the line parallel with the edge of the band, carrying it to the adjacent tooth. The vertical mark is inscribed from the occlusal to the gingival edges by resting the explorer against the adjacent tooth so that the mark is made one thirty-second of an inch from the tooth. This will be found to be sufficient clearance in the majority of cases.

This procedure will place the staple far enough from the edge of the band to prevent tearing or loosening when traction is applied and yet allow the staple to clear the archwire as the rotated tooth nears its correct position.

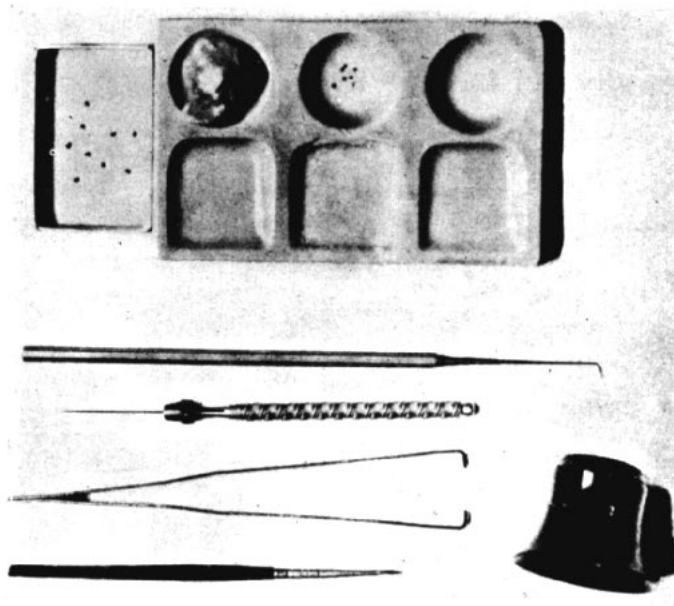


Figure 1
Instruments used in Staple technique.

Placing the Flux and Solder

The band is removed from the tooth and creamy borax is applied with the fine point of a No. 00 miniature brush at the junction of the two scratch marks. A piece of No. 416 solder (0.030" x 0.007" disc) is picked up on the point of the brush and placed on the flux after which the flux is allowed to dry. This prevents the solder from popping off the band when heated. When dry the band is carried to the flame and the solder is flowed.

Care must be exercised in placing the flux in order that it may confine the solder to the point needed. It must be borne in mind that the flux cleans the surface with which it comes in contact and the solder will flow over the entire fluxed area. This is the objection to using any of the prepared fluxes. The carrying agent in the preparation spreads when heat is applied,

taking the borax with it, thereby cleaning a larger area than is desired. When placing the borax, the brush should be drawn to a fine point by moistening and rolling on the back of the hand. A very minute amount of borax can be placed in this way.

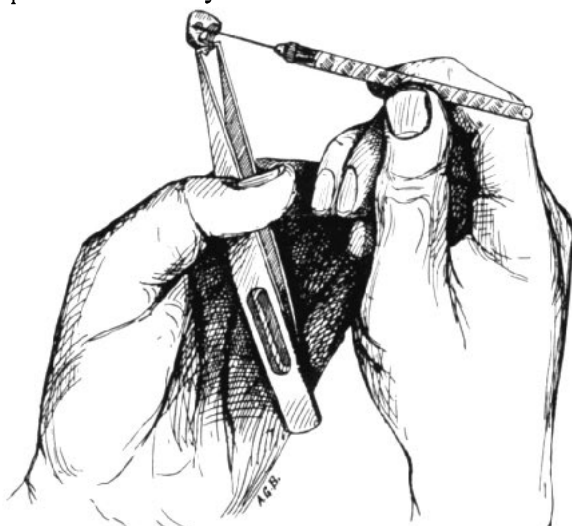


Figure 2
Hand and instrument positions for soldering the staple to a band. (Pen sketch by Dr. Allan G. Brodie.)

Soldering the Staple

Grasp the tail of the band between the beaks of soldering tweezers No. 125 and hold the tweezers in the left hand clamped between the palm and thumb, leaving the fingers free, as shown in Fig. 2. Lay the staple on a wooden block and pick it up by forcing the tungsten needle, contained in the broach holder, through the opening. Another convenient method is to keep the staples in a small jeweler's cardboard box from which they may be picked up with the needle. The broach holder is held between the thumb and forefinger of the right hand with the fingers slightly flexed, much the same as one would hold a pencil. Then grasp the tips of the free fingers of the left hand in the palm of the right, forming a human soldering jig as illustrated in Fig. 2. Move the needle into final position so that it is parallel with and overlies the vertical scratch mark and the two legs of the staple rest on the solder. With the blowpipe adjusted with a very small flame, carry the band to it in this position, and solder.

Unquestionably, the most difficult part of the technique to conquer is the hand positioning. This will be found extremely awkward at first but with a little practice on technique material the operator will find his fingers becoming so sensitive that he will even be able to tell when both legs of the staple are in contact with the band without looking at them. It should be remembered, however, that no step may be slighted if one expects uniformly perfect results, thus avoiding wasted time through failures.

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