

# Technique of the Pinch-Band

ALLAN G. BRODIE, D.D.S.,

*Chicago, Illinois*

If one is to use a mechanism that demands the banding of a number of teeth, a technique for accurately and rapidly fitting pinch-bands becomes imperative. The Angle Holding and Forming Pliers were designed with this need in mind and the operator who will spend a little time in mastering them will be amazed that they have not been universally adopted. With less than the average amount of separation an operator, skilled in the manipulation of these instruments, can make bands for every tooth in a denture, and have them ready for cementation, in forty-five minutes. Furthermore, bands, made in this manner, have a snugness of fit that exceeds that of bands made according to any other technique. The secret of the accuracy and snugness of fit lies in the ability to stretch the band material to accurately conform to the shape of the tooth and, since the band is manipulated with but one hand, it is possible to burnish at the same time one is fitting and stretching the band material.

The band material may be of any thickness up to .004" and 1¼" or 2" long, depending on the tooth to be banded. All teeth, but the largest bicusps and deciduous molars, may be fitted with the shorter length. The technique of preparing this material for placing it in the pliers is as follows:

The piece of band material is formed into a loop with the ends flush and even with each other. (Figure 1.)

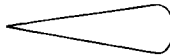


Figure 1

The ends of this loop are grasped with Pliers No. 142, the band and plier beaks forming a right angle. (Figure No. 2.)

Using the thumb and index finger of the left hand, the ends of the bands are bent at right angles to permit their insertion in the vise-beak of the pliers. The bend should be made toward the body and the tails should be maintained in this direction. (Figure No. 3.)

The band material is now ready to be placed in the Holding and Forming

pliers and the technique of this procedure should be studied and followed if the operator is to conserve his time to the utmost. Figure No. 4 shows a detail of the plier beaks and it will be noted that the proximal side of the forming beak presents a V-shaped groove. This groove should be used for the initial reception of the band as shown in Figure No. 5 and the beaks of the pliers should be wide apart at this stage. As soon as the sides of the band are caught, the direction of the band is reversed as in Figure No. 6.

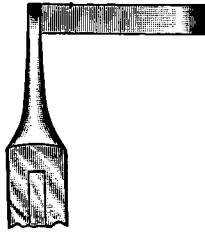


Figure 2

The beaks of the pliers are closed until the vise-beak is in line with the bent tails of the band and then the band is swung up into the jaws for clamping. (Figure No. 7.) It will be noted that the clamp-beak also presents a "feeder" in the form of a beveled jaw, so that it is not necessary to open the clamp very wide. The band should never be carried any further into the vise than the level shown in the drawings but when the tooth is short or the band is going to be formed close to the gingival tissue, it is

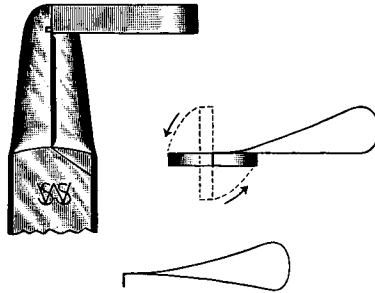


Figure 3

desirable and permissible to stop the insertion at the level of the flat jaw. When the band has been clamped, the plier beaks are brought together and the sides of the band strip are lubricated at the points where they emerge

from the forming-beak. A very handy way of doing this is to have one of the tiny solder bottles filled with vaseline. A needle is driven through the cork and this needle is used as an applicator for the vaseline. Only a minute amount is necessary. This should be placed on the outside surface of the band.

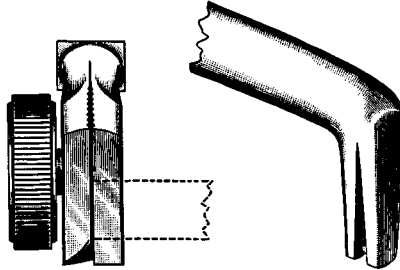


Figure 4

### Application of the Band to the Tooth

The correct position for a band is the middle third of the tooth crown and if all of the bands bear this relationship to their respective teeth they will present an even level when the denture is brought into its normal form. Before slipping the band over the tooth one should determine just where he

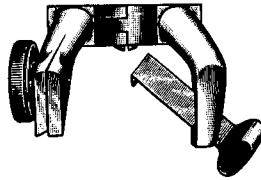


Figure 5

wishes it to lie. Starting with a central incisor, the incisal level of the band is marked on the tooth with a pencil and, using this as a guide, the rest of the teeth to be banded are marked at corresponding parts of their anatomy, regardless of their positions of malocclusion.

After the band has been slipped over the tooth it is placed in its predetermined position by carrying the pliers lingually, their beaks in contact with each other, until the band strip forms the maximum contact with the labial surface of the tooth. In this position it can be stabilized and held on the pencil mark by the thumb or forefinger of the left hand. The operator will find a side-chair position best for work on the left side of the mouth and front-chair position best for work on the right.

When the band has been applied to the tooth in the manner described, the labial surface of the forming beak will be found to lie more or less parallel to the labial surface of the tooth. From this point on, the hand holding the pliers should maintain an even, steady lingual pull on the tooth.

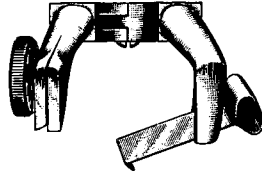


Figure 6

As the pliers are slowly squeezed, opening the beaks and closing the band, the right hand should be slowly rotated at the wrist so that when the forming beak reaches the tooth it lies parallel with the *lingual* surface and in contact with it both incisally and gingivally. To accomplish this it is sometimes necessary to carry the lingual portion of the band to a more

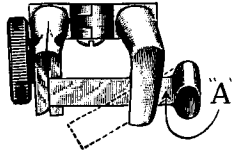


Figure 7

gingival position than the labial. Once they have been squeezed into this position and the joint fold has been put in the band material, the beaks should be carefully opened and the joint examined. The beginner will frequently find that one leg of the band lies at a higher level than the other, indicating that the right hand has been either raised or lowered as the squeezing was going on. To correct this the hand is carried to an opposite position i.e. it is either raised or lowered, depending on what the fault has been. Then the pliers are squeezed in this new position a few times until examination shows that the edges of the joint are correct.

We are now ready for the stretching of our band material and the left hand is no longer necessary for the maintenance of the band on the tooth. The right hand, however, must not be allowed to change its level or relax its squeezing-tension during the subsequent steps.

The first and most important stretching operation is performed as follows: The thumb of the left hand is placed on the top of the forming beak and pressure is exerted in a gingival direction. (Figure No. 8.) The squeezing force of the right hand must be maintained, otherwise this step will result, only, in carrying the legs of the band material deeper into the slot of the pliers.

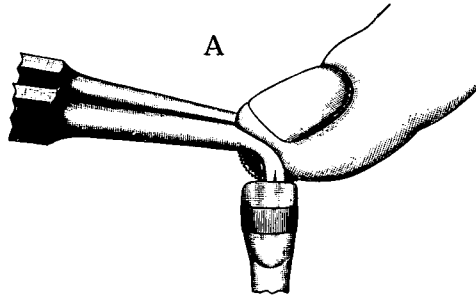


Figure 8

and the stretching force will be lost. During this step the wrist of the right hand should permit the forming beak to maintain its two points of contact on the lingual surface as the thumb presses the beak gingivally. In other words,

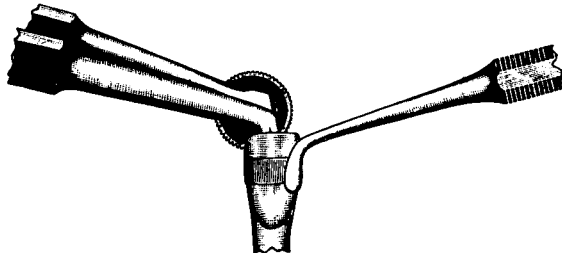


Figure 9

this beak should follow the arc of the lingual surface. Care must be exercised that the right hand does not cause the forming beak to leave either of its two resting points or the band will cut at the fold, as paper is torn from a roll against the edge of the cutter.

While the right hand holds what has been gained by the previous step, the band is burnished with the left hand. (Figure No. 9.) Two simple strokes with the burnisher, one mesial and one distal from the center of the labial surface on the incisal edge of the band are all that are usually necessary.

The burnishing of the band is followed by two stretching operations in the vertical plane. Using the incisal resting point as a fulcrum, the gingival edge of the band is stretched by rocking the wrist so that the tip of the forming beak leaves the surface of the tooth as shown in Figure No. 10. The slack thus gained is taken up by squeezing the plier handles as the beak is brought back to its two points of contact with the tooth. The second operation is just the reverse, the gingival being held in contact with the tooth while the incisal is rocked lingually.

Following this we have two stretching operations in the horizontal plane. For these we rotate the pliers around an axis that passes through both lingual contact points, as in Figures No. 11 and No. 12. After each we return to the center and take up the slack by squeezing the handles.

The last step is a repetition of the first, i.e. the gingival pressure exerted by the left thumb with the forming beak traveling in the arc of the lingual surface. Following this the right hand is allowed to relax and the band is gently removed from the tooth and then from the pliers.

The foregoing technique is to be followed in the banding of incisors and cuspids. When we band bicuspids or molars, one or two slight modifi-

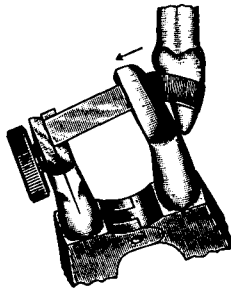


Figure 10

cations are necessary. These teeth are of a different general form in that their surfaces are more parallel. Hence we do not have to stretch the gingival portion of the band as in the anteriors and in our initial squeezing of the pliers we do not rotate the wrist. The forming beak is maintained in a plane parallel to the buccal surface.

Bands for these teeth should be  $5/32''$  in width and  $1/32''$  should be

allowed to extend above the tooth interproximally. All of the various stretching movements are performed the same as on any other tooth but burnishing should be carried to only the mesial and distal angles of the buccal surface during the forming operations. The band is cut and soldered in the usual manner, as will be described later.

If these buccal bands have been correctly made, the beginner may experience some difficulty in replacing them on the teeth. They should be worked gently up on the tooth, the buccal preceding the lingual surface, until the buccal portion is in its correct position. This is then held and a band driver applied to the occlusal edge of the joint on the lingual side. One or two light blows of the mallet will cinch the band so that it is difficult to

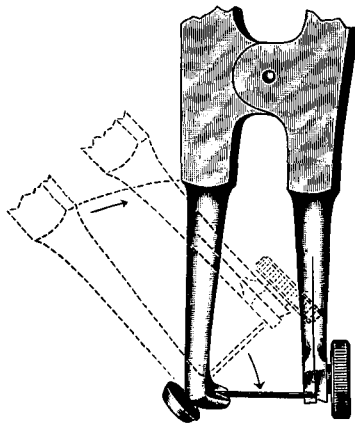


Figure 11

remove with the fingers. The final burnishing of the band is now done. This should always proceed from the centers of the buccal and lingual surfaces and go around the mesial and distal angles so that the excess material is carried interproximally. Then it is spun over the marginal ridges and the band is finished. It should be displaced by pulling gently in an occlusal direction from the gingival edge of the joint.

## Soldering the Band

Bands, formed according to this technique, require an equally exacting soldering technique if we are to enjoy the utmost reward for our pains. They are so accurately stretched that it is easily possible to make them either too small or too large during the soldering operation. Therefore, the following steps are included in this description and should be carefully followed if uniformly good results are to be expected.

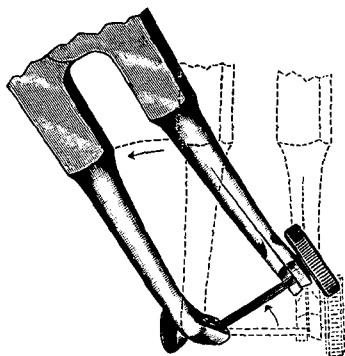


Figure 12

The tails of the formed band are cut  $1/16''$  from the joint and the approximating surfaces of the flaps are painted with creamy borax, using a No. 00 miniature brush for the purpose. One piece of No. 417 gold solder ( $1/16'' \times 1/16''$ ) is placed between the flaps and the latter are then grasped with the soldering tweezers, No. 125. The band should be held in the tweezers with the lightest possible grip, for when the solder (and flaps) fuses into solution a tight grip will so shorten the band that it will be impossible to get it on the tooth. Another point to be watched is the position of the band in the tweezers. It should always be gingival edge up and at such an angle that the joint on the inside may be seen from above.

Figure No. 13 shows the first position in the flame and it will be noted that the shafts of the tweezers are receiving the heat. The purpose of this is to prevent the too rapid conducting of heat away from the joint when this is taken to the flame. To plunge the band into the flame without this preliminary step will almost always result in burning the gold. The seam is carried to the flame only after the beaks show a dull red heat and is removed as soon as the solder appears in the joint. During this step the pliers are horizontal and the joint is in view from above. (Figure No. 14.) The band may be plunged into water immediately upon its withdrawal from the flame.



It is best not to trim the seam until the time has come for final cementation as the tabs will be found very convenient for grasping the band if any accessories, such as staples, spurs, etc., are to be soldered to it. This, also, insures against unsoldering the joint during such subsequent heatings.

To finally fit the band, it is slipped on the tooth and carried gingivally,

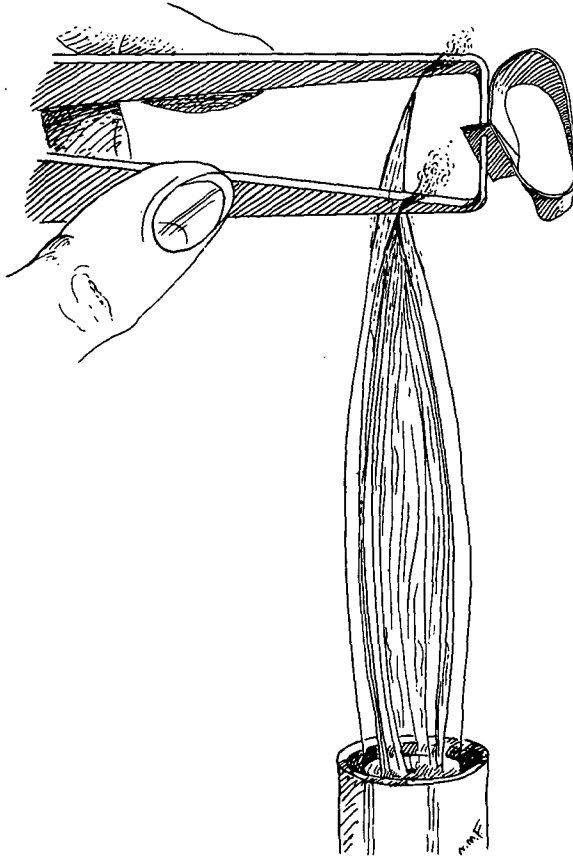


Figure 13

as far as possible, with the fingers. It may then be forced up with the band driver by means of hand pressure working around the circumference of the band. The final seat is given with gentle taps of the mallet against the band driver, one at the mesial and distal points on the labial or buccal surface, and the last on the joint on the lingual side. After this the final burnishing may be done and, in the case of the incisors, this should be restricted to

the labial surface. To burnish into the lingual concavity on these teeth is a mistake as the band is stretched and will loosen if a pulling force is exerted on the labial surface. The lingual surface of the band should run straight across, from marginal ridge to marginal ridge, and the interval between should be bridged with cement. Care must be taken, in cementation, to avoid squeezing the cement out by improper position of the fingers.

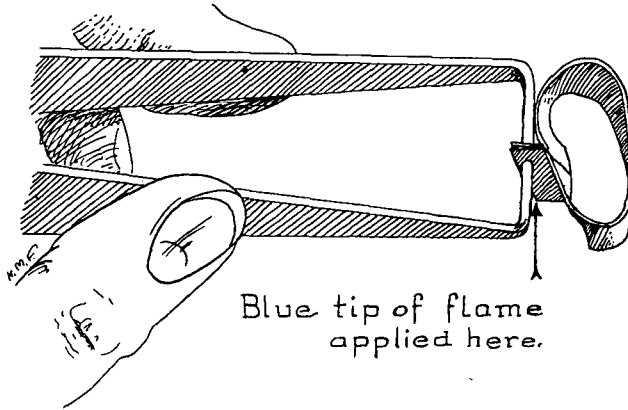


Figure 14

In closing it seems advisable to warn those, to whom the technique is new, that this has been worked out in such minute and accurate detail that, to modify it, is but to decrease its effectiveness. Some steps, such as left-handed burnishing, will seem awkward at first but it is far better to conquer these innovations than to modify and add time and uncertainty to the operation. A little practice on a few extracted teeth, set in a plaster block, will be found extremely helpful. Nickel silver band material of the same thickness, may be used for this practice work.

This method of band forming will be found to be a great saver of time and will yield the highest percentage of beautiful results in what has been one of the most poorly executed and most damaging operations in orthodontia.

30 N. Michigan Avenue

Note: Acknowledgement is made to the S. S. White Dental Mfg., Company for cuts of steps Nos. 1-12 inclusive, and to Mrs. N. M. Frain for the pen sketches of steps No. 13 and No. 14.