

# The retention of Class II cases — The staple and hook sectional retainer

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Ladies and Gentlemen,

If there is any part of the retention of the teeth after correction which has been, and still is, an annoyance and a puzzle to most of us, it is that part directly relating to the retention of the teeth where a Class II malocclusion has been present and corrected. There are many forms of retainers used today by different men to accomplish his work, but the experience of all goes to show that the retainers used, which accomplish the purpose of retention as we intend they shall, and as they should, are very few. There are some forms which aid very nicely in retaining these cases, but they have still some drawbacks which we would like to overcome. Today I wish to present to you some new principles in appliances which I am making use of and with excellent results. As far as I can see the most objectionable features of some other retainers are overcome with these principles and the good features of the others are preserved and seemingly improved.

Retention of the teeth means the use of certain forces, whether natural or mechanical, which will antagonize and counterbalance the forces which tend to draw the various tissues and teeth to their former positions. This force may be slight or very great. In Class II cases we find as much movement taking place during the treatment of the case as we have in any other Class. This movement must be retained and the retention of these cases is as difficult as is the retention of any other class. If we are able to successfully retain Class II cases, we can safely assume we can retain the others.

In Class II cases we find that the lower arch and body of the mandible is in distal relation to the upper arch and maxilla. This distal relation may be one or both sides.

All retaining appliances must possess three qualities:

- (1) Efficiency; they must be strong enough to remain in place for a long period with little or no danger of breaking or coming loose. They must be so made that they will not interfere with the normal settling of the teeth and the development of bone.
- (2) Cleanliness; the appliance must fit accurately and all bands be firmly and carefully cemented to the teeth. They must be made in such a manner as to allow easy cleaning and have no places which will retain food.

- (3) Appearance; they should be pleasing in appearance, so the patient will be content to wear them the required length of time.

## *Removable retainers not efficient.*

Perhaps you need no warning against the use of the removable retainer. I have always advised against their use. They cannot be successfully used in Class II cases. Experience has shown that the fixed retainer is in every way superior, much more efficient, much more easily made and applied to the teeth, and much more comfortable for the patient to wear. Natural movements are always allowed when a fixed retainer of the proper kind is worn, settling of the teeth and the proper bone development go on unhindered.

## *The cuspid-molar anchorage in treatment.*

Before I begin the explanation of the principle I am about to show you, I wish to call your attention, for a moment, to an auxiliary appliance which I make use of to give stability to the molar anchorage (Fig. 1). I have termed this the cuspid-molar anchorage. It consists of an accurately fitted band on the cusped which has a small staple soldered to the distal side of the labial surface. A piece of No. 20 wire is soldered to the D band in front of the tube. This wire passed by the bicusps, not touching them, and engages the staple on the cuspid band, the end being bent in the form of a hook, as shown by Figure 1. This device was adopted after using many different methods to prevent the upper molar from tipping or moving distally. It has great value in treating Class II division 1 cases, where we have to depress the incisors, as is so often the case. This spring on the arch,



Figure 1

together with the force downward and backward of the intermaxillary ligatures, causes the molar to be displaced. In Class II division 2, it is of still greater value, for in those cases the incisor region has to be expanded. Hence you can see the great value of the added support in such cases. Some claim it is necessary to retract the upper molars in order to get results, but I am not of that opinion. I believe the upper molars should not be retracted, but the mandible must be reformed, since it has developed abnormally, the angle having become less obtuse.

By using this 'cuspid-molar' anchorage the upper molars are kept where they should be and retention is much easier. The cuspid attachment does not interfere with it being expanded, rotated or retracted, if need be.

### *The upper retainer*

Figure 2A shows the form of an upper arch before correcting, and Figure 2B shows the corrected form. The arch has been widened and shortened. This movement must all be retained until nature has re-established normal conditions.

One very difficult part of the retention has been the retention of the anterior teeth so as to prevent a return of the overbite. This point is well taken care of in the retainer. It has been a custom with some to use an arch which passes around the outside of the teeth from molar to molar, having

soldered to it hooks which pass over the incisor ends. With this appliance it is necessary to have bands on the laterals or cuspids with spurs passing over the wire to support it. Also being in one section, it does not allow settling of the molars as a sectional retainer would. It was after considerable use of the plan just described that I began to use the sectional retainer. The upper retainer has five separate parts; the lower has three. Should an accident occur to any part that may be removed without disturbing the remainder of the appliance, repaired and replaced. In Figure 3 you will notice the double spur retainer. It is a modification of the Angle spur and plane, and when used we do not need a special retainer to retain the buccal expansion of the upper molars. Next we place bands on the lateral with staples on the lingual and labial surfaces. A piece of No. 22 wire is soldered to the end of the screw on the D band and allowed to extend forward, touching the bicuspid and cuspid, the end bent in the form of a hook to engage the staple on the lingual surface of the lateral incisor band (Figs. 4 and 5). This retains the bicuspid and cuspid. The bands on the lateral incisors are connected by a wire which passes over the surface of the centrals (Fig. 6), the end of which is bent to engage the staples on the labial surface of the lateral bands. This wire has two short pieces soldered to it, and when in place the short

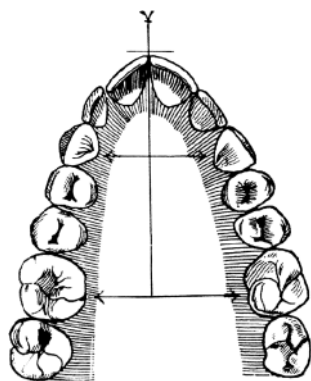


Figure 2A

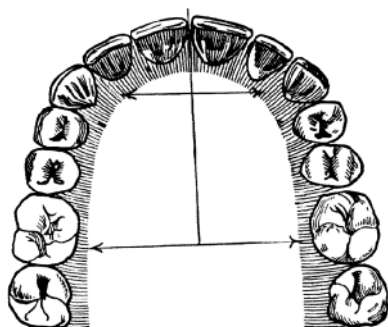


Figure 2B

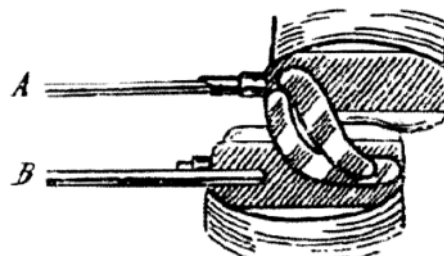


Figure 3

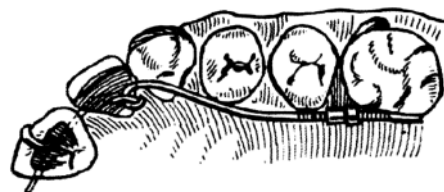


Figure 4

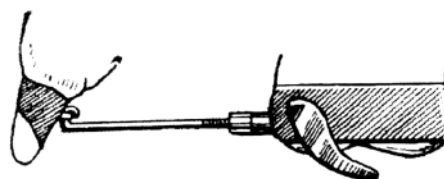


Figure 5

pieces are bent over and under the cutting edge of the centrals. This retainer allows free movement of the teeth during the development of the tissues, and at the same time they are under perfect control. In a short time the hooks over the incisors can be dispensed with and only the main wire used. The molars are kept in their upright position and are not allowed to tip backward during retention. In a paper by Dr. Dewey, which was published in *Items of Interest and the Proceedings of the Third Annual Meeting of the American Orthodontists*, he describes a retainer which also was used to prevent the tipping of the molar during the retention of Class II. He called the principle 'stationary occlusal retention'. Unfortunately the cut used to illustrate the device was wrongly made, and so far as I know the principle has not been used by anyone else since that time. The appliance which I use is much simpler, but the principle of preventing the tipping of the molar is the same. For division 2, the appliance is altered to meet the case.

#### *The lower retainer*

Figure 7 shows the D band with a wire soldered to it in front of the spur. This wire passes forward past the bicuspid and the end, bent into the form of a hook, engages a staple which is soldered to the labial surface on a band which is placed on

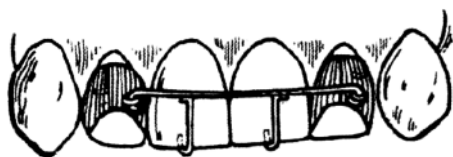


Figure 6



Figure 7

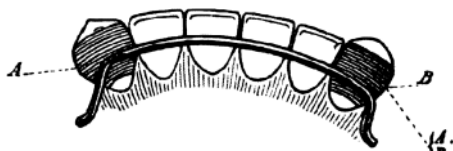


Figure 8

the cuspid. The cuspids are joined together by a wire on the lingual surface which retains the incisors and the expansion of the cuspids (Fig. 8).

By letting this wire extend past the cuspids, the end can be so adjusted as to retain the first bicuspid. The connection between the molar and cuspid keeps the length of the arch correct and prevents any tipping of the molar. I have found, as a rule that the lower arch does not require expansion in the molar region, therefore the sectional retainer is all that is required. If the lower molars have been expanded, I would suggest the use of a wire arch lingually to retain them. Bands may be placed on the cuspids or other teeth that have been rotated: these bands having spurs soldered to them will support the lingual arch.

Figure 9 shows the occlusal view of the upper retainer, as used in Class II division 1. Figure 10 shows occlusal view of the lower retainer.

These principles are applicable to the cases of other Classes, with modifications to meet the requirements. If the 'staple hook retainers' are used, carefully made and adjusted, you will be very greatly pleased with the results obtained. Also, if the auxiliary anchorage described at the beginning of this paper is used, it will be possible to get more perfect results from the use of the retainer.

I use iridium-platinum for the bands (10% iridium) and wire (30% Iridium), size 20, 22, 23 and 24, American gauge.

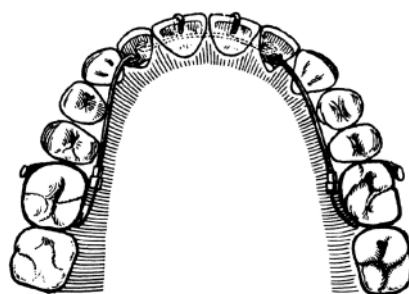


Figure 9



Figure 10