

THE USE OF .0225 ALIGNMENT WIRE

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THERE is a prevailing idea, that a great deal of force is necessary to move teeth and expand arches. If results are not obtained immediately, it is because there is not enough force. Therefore more force is applied. We have become accustomed to the action of the 16 gauge wire, and it is hard to conceive of tooth movement being produced with anything less rigid.

THE .030 WIRE.

When the .030 wire was introduced, some three or four years ago, and the claim was made, that with it the teeth could not only be moved but moved bodily, and whole arches could be expanded, many shook their heads in doubt for it seemed absurd. Experience has proved that all this can be done with the .030 wire. Articles in the different journals, however, show that many of the leading orthodontists are using much larger wire, and are very slow in accepting .030. Some are using large wire with pins and tubes to move only one or two teeth at a time—just cutting off an inch of the dog's tail at a time.

THE .0225 WIRE.

I stated in my paper at the Pittsburg meeting that there was a tendency to use much smaller wire and that I thought we would come to use 0.225.

After a year's trial of the 0.225 wire, I am so pleased with it that I have changed all my .030 wire for the smaller one, because in using the .030 with direct attachments to all, or nearly all of the teeth, it was soon apparent that it was too rigid.

LARGE AND SMALL WIRES PRESENT DIFFERENT PROBLEMS.

An arch wire that is attached only from molar to molar, presents a very different problem from the wire with direct attachments, stationary anchorage, if you please, to eight or ten teeth. A wire that has four inches between the attachments presents different problems from the one with attachments every half of an inch. For such use, the .030 wire was too rigid, and I began using .0225 wire after seeing Dr. Robinson's clinic. Since then I have used only the .0225, and am very much pleased with it, for it enables me to discard the D band, with all of its objectionable features, including the sectional arch wire.

SIMPLICITY OF THE .0225 WIRE.

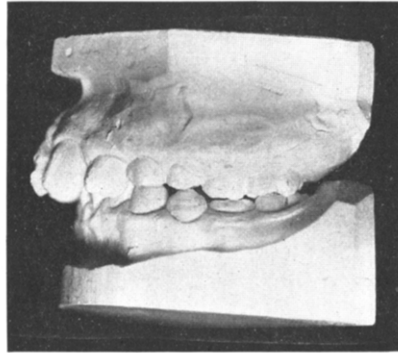
This wire can be used with the Robinson attachments or with the pins and tubes, or with both. In very close bites of the molars, the Robinson attachments are especially indicated. The technic can be demonstrated better by illustrating how to proceed with a given case.

A CASE FROM PRACTICE.

Case 1, Mr. B. B., age 11. Bands were made for the upper molars of material consisting of platinum 6%, gold coin 94%, soldered with platinum gr.

$\frac{1}{2}$ silver gr. 1, gold coin dwt. 1. The bands are 32 gauge thick and $\frac{7}{16}$ wide. After burnishing the bands to the teeth, gold-platinum tubes, gauge .023, length $\frac{7}{32}$ are soldered vertically, slightly anterior to the middle of the buccal side of the bands, with 16 solder, and a spur of .030 on the anterior lingual side to rest against the baby molar.

Bands of the same material, but of 38 gauge, are made for the baby cus-



Case. 1

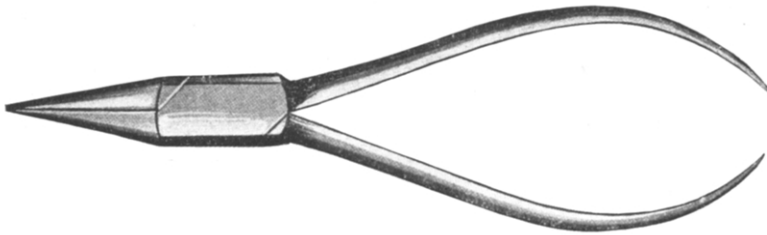


Fig. 1.—Sharp-nosed pliers for bending .0225 wire.



Fig. 2.—After first bend is made in wire.



Fig. 3.—Second step.

pids, with a spur to rest on the lingual of the first baby molar. The tube should be placed slightly to the distal of the middle of the tooth, to take care of the side pressure necessary to carry the baby molar.

Bands of 38 gauge are made for the centrals and laterals with the tubes slightly to the distal of the middle, as these teeth are to be rotated. After the bands have been boiled and the tubes filled with soap or wax, cement them on the teeth with a good quick setting cement.

CONSTRUCTING THE ALIGNMENT WIRE.

The next step is the shaping of the alignment wire and soldering the pins. It is a combination of platinum and gold, .0225 in diameter, and can be gotten from the Blue Island Specialty Co., The S. S. White Co., and other dealers, under the name of pin tube, or orthodontic wire.

Take a piece of wire about six inches long, and with pliers (Fig. 1) bend the end as shown in Fig. 2. Then place this right angle in the left molar tube, and after getting the length of the loop, make a scratch on the wire to indicate where the next pin should be soldered (Fig. 3). Pins $\frac{3}{16}$ inch long, cut from the same .0225 wire, with a small sliver of 16 gold solder melted to one end, should be at hand ready for use. Dip the end of this pin in S. S. White flux, and solder it to the wire as indicated by the scratch. A jig, or any other



Fig. 4.

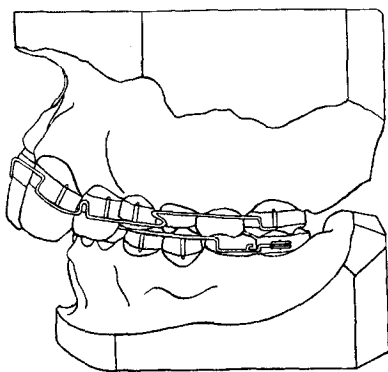


Fig. 5.

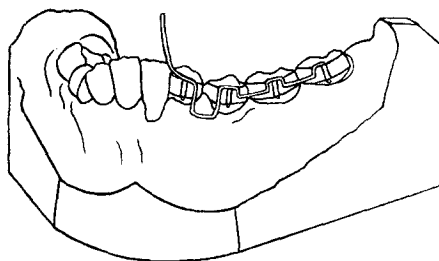


Fig. 6.

mechanical apparatus, is absolutely unnecessary, unless the operator is pretty shaky. The jig was thought to be necessary when using the stiff .030 wire, which was too rigid to bend and adjust if the pin was not absolutely in the correct position. In making the loop just distal to the cuspid, shape it so that it will act as a hook for the Baker anchorage. Either do this, or solder a small piece of wire for this purpose. Make your next loop and get your measurement for the next pin, as before, but provide for the rotation of the centrals and laterals as shown in Figs. 4 and 5, where the loop rests on the mesial corner of these teeth.

PUTTING THE ALIGNMENT WIRE IN PLACE.

After boiling the appliance and slightly bending the pins so they will bind in the tubes, and shaping it to as near an ideal curve as practicable, it is ready to slip in place. There is no need of adjusting it again for several months, and possibly not at all, for there are the hooks for Baker anchorage, the spring

for the necessary expansion, and the upward spring necessary to carry the incisors upward and reduce the excessive overbite, as shown in Fig. 5.

DIFFERENT PROBLEM IN THE LOWER ARCH.

In attaching the lower, the close bite of the molars presents another problem. The pins and tubes are indicated, but it is an ideal place for the Robinson attachment, which requires less vertical room, Case 1, and Fig. 5.

The molar bands are fitted just as the upper were, with lingual spurs to carry out the baby molars. All the other teeth on the lower arch are banded and tubed, and the wire and tubes adjusted just the same as on the upper, except for the Robinson attachment on the molars, and that the wire is not sprung in to attach to the right lateral, but a rubber is looped over it until it is a

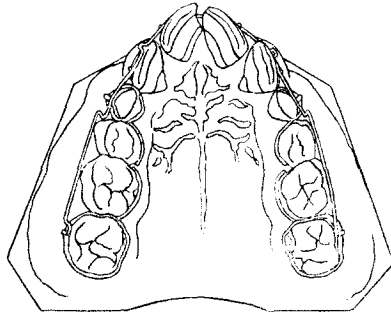


Fig. 7.

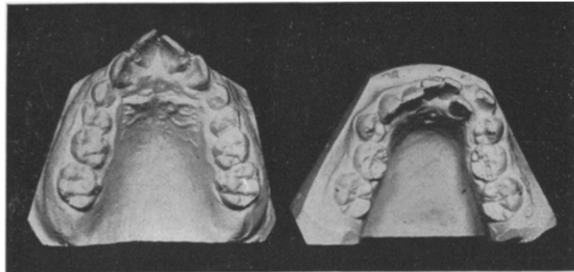


Fig. 8.

little nearer the line, when the pin can be slipped into the tube and the root movement is made in unison with the others (Fig. 6).

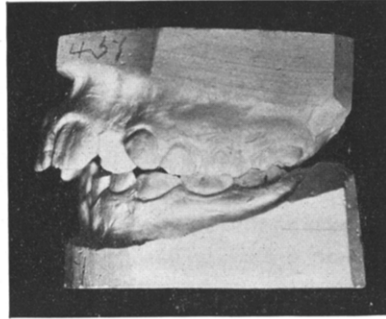
A hook for Baker anchorage is soldered on the wire just anterior to the molar attachment, and this arch wire is ready to slip into place (Fig. 5). Figs. 7 and 8 show the occlusal view.

ADJUSTING.

The loops can be spread without removing the wire, but after two or three such adjustments, the wire should be removed for fear it is out of alignment, corrected and put back. When the case is near completion, some of the bands may be removed to allow any over spacing to close up, and the rest of the appliance left in place as a maintainer.

A CASE OF NEUTROCLUSION.

Case 2, Miss V. B., age 8, is quite a unique case of neutroclusion, with very narrow arches (Fig. 9) and the spaces for the lower cuspids entirely closed. All the teeth were banded for bodily movement. The loops between the laterals and the baby molars should have enough wire to provide room for the cuspids when the wire is partly or nearly straight.



Case 2.

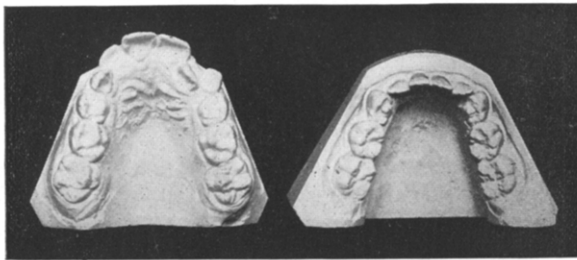


Fig. 9.

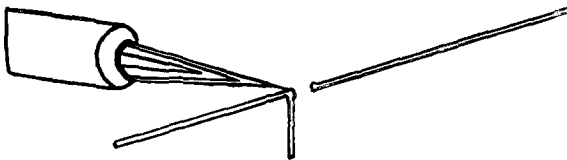


Fig. 10.—Shows method of soldering a break near one of the pins. Let the pin hang downward and the solder will hold it in place while the union is being made with the other piece.

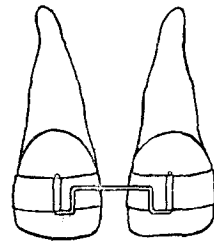


Fig. 11.—Shows appliance for closing a space, also to rotate one or both teeth.

The upper alignment wire was adjusted with enough spring to carry the case nearly to completion. The lower requires a little enlarging of the loop every month, but the pressure should not be increased fast enough to cause tipping. Go slowly enough to keep the masticating surfaces in good contact, when the jaws are closed, but not to move the crowns faster than the roots.

NOT VITAL, THAT TUBES SHOULD BE PARALLEL.

All tubes should be as near parallel and on the same horizontal plane as pos-

sible, but this is not vital. Neither do the pins have to be at exactly the proper distance, because the loops will allow of considerable change. It is also quite apparent that if the tubes were exactly parallel and on the same horizontal plane, on teeth that were inclined toward each other, they would not continue in that relation long after correction was begun.

SOME OF THE ADVANTAGES OF THE .0225 WIRE.

It is, therefore, quite apparent that this small wire presents a much simpler problem to master, in making the appliance, in adjusting it, and in repairing it if broken. It is so pliable that one can spring it to a tooth that is far out of line, and slowly and comfortably move it where desired. The large wire is too rigid to do this without many adjustments. The small wire will allow of much more play and freedom, and a more normal bone development. The D band can be eliminated, with the buccal tubes and the screw, the three piece arch wire and the special pins at 40 cents each, and the jig. Thus we have a smaller, neater appliance that is easier made, and which keeps all the teeth moving at the same time.