Triangular Wire

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The new stainless steel Tri-Ang wire* is an equilateral triangle in cross-section, .030" to a side, with rounded edges (Fig. 1). Its unique triangular shape makes it advantageous in various orthodontic applications.

One of the best uses for Tri-Ang wire is in retainers and other removable orthodontic appliances. The labial frameworks of Hawley appliances and various types of clasps made of round wire usually cross the occlusion, creating interferences that can cause patient discomfort and thus affect compliance (Fig. 2). The round wire can act as a wedge to cause interproximal spacing, which can disrupt the occlusion, with a potentially adverse effect on long-term stability, and can create food traps that increase the possibility of periodontal problems. Finally, the constant biting on the interfering round wires leads to frequent breakage.

All of these problems are alleviated or eliminated by the use of triangular wire, which adapts better interproximally than round wire

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Dr. Broussard is in the private practice of orthodontics at 203 Chimney Rock, Houston, TX 77024. Dr. Graham is in the private practice of dentistry in Houston. Dr. Broussard is donating any profits from the product described here to the American Association of Orthodontists Foundation.

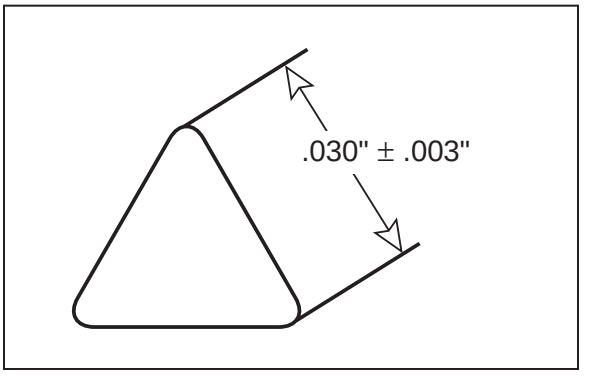

Fig. 1 Tri-Ang wire (U.S. Patent No. 4,273,530).

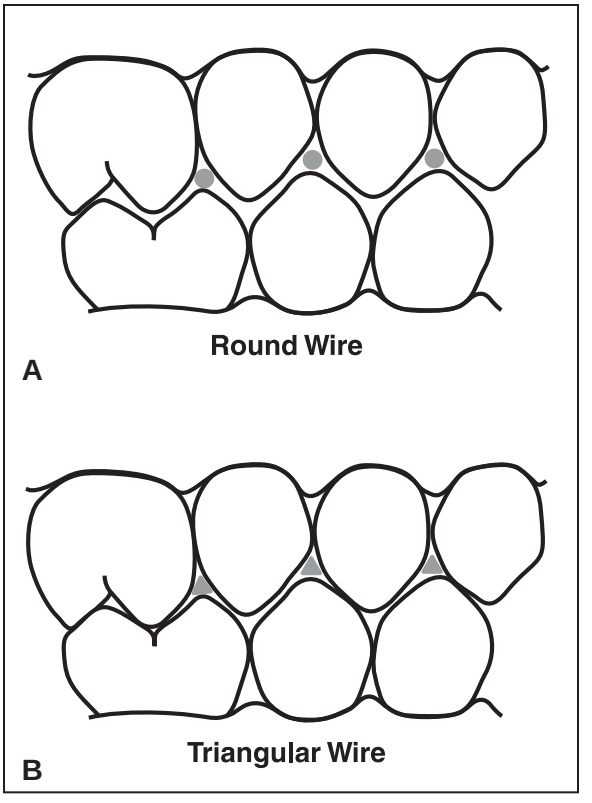

Fig. 2 Occlusal interferences caused by round retainer bow and clasps (A) reduced or eliminated with Tri-Ang wire (B).

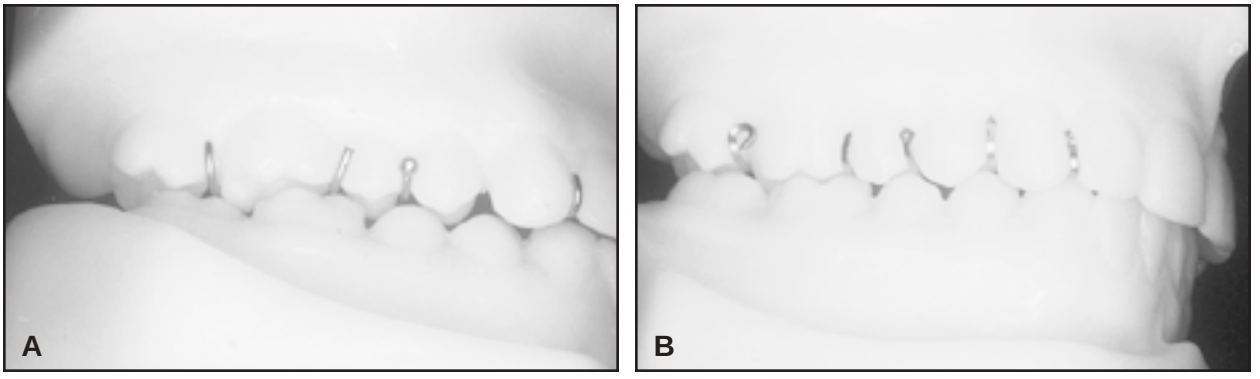

Fig. 3 Retainer clasps made of round wire (A) and Tri-Ang wire (B) on same set of models show less occlusal interference with Tri-Ang wire.

Fig. 4 Flat side of Tri-Ang wire rests against labial tooth surfaces, reducing jiggling and tooth abrasion.

(Fig. 3). The flat surface of the triangular wire reduces jiggling and thus lessens tooth abrasion compared to the Hawley labial wire (Fig. 4). Clasps formed with Tri-Ang wire promote patient comfort, periodontal health, and appliance stability (Fig. 5).

Tri-Ang wire can also be used for bonded lingual retainers (Fig. 6). Round wires have a greater tendency to rotate and torque under the forces of mastication, which can lead to bond failures.

A prototype Tri-Ang plier** has been designed for bending triangular wire (Fig. 7). A No. 139 plier can also be used if a nick is made to accommodate the corner of the wire.

**Orthopli Corporation, 10061 Sandmeyer Lane, Philadelphia, PA 19116.

Fig. 5 Shelf of light-cured adhesive bonded to anterior teeth to keep labial Tri-Ang bow in place. "Eye" clasps are not bonded to allow free sliding.

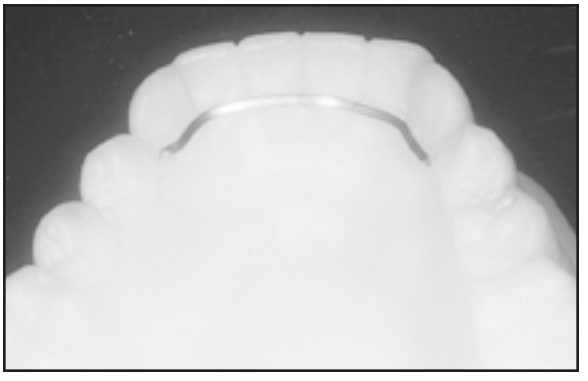

Fig. 6 Tri-Ang wire used for bonded lingual retainer.

Fig. 7 Special plier designed to bend Tri-Ang wire.