Oct. 2, 1945. J. E. LASKIN 2,386,124

ARCH BAR CLIP

Filed April 24, 1943

Fig. 1

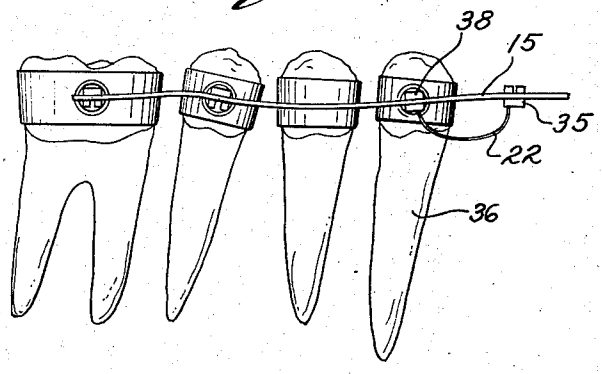


Fig. 5

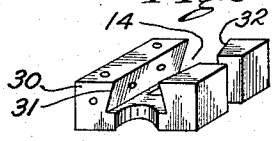
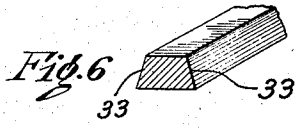


Fig. 6



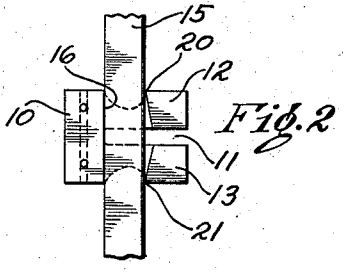


Fig. 2

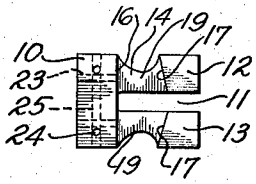


Fig. 4

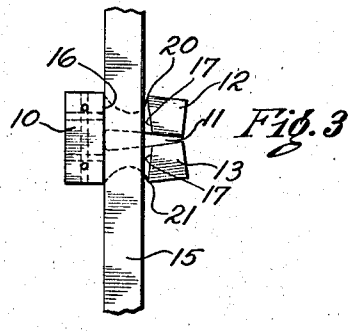


Fig. 3

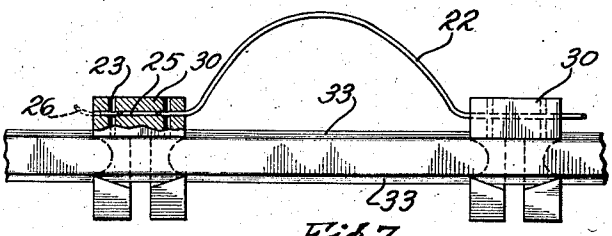


Fig. 7

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ARCH BAR CLIP

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4 Claims. (Cl. 32—14)

This invention relates broadly to orthodontic appliances and more specifically to an arch bar clip for the retention of intermaxiallary elastics, traction springs and similar mechanisms used in conjunction with the arch bar for the correction of malocclusions.

One of the objects of the invention is to provide a unitary self contained clasp or clip which is adapted for ready attachment upon an arch bar and designed for use in substitution of the spurs, hooks and similar attachments heretofore permanently affixed upon the bar.

Another object of the invention is to provide a clip which may be employed in substitution for ligature connections between the arch bar and bracket or the arch bar and tooth band.

Another object of the invention is to provide a clip which may be readily attached to an arch bar, adjusted thereon for the transmission of tractive or compressive effort and manipulated during the progressive stages of treatment without necessitating removal of the arch bar from the denture.

A further object of the invention resides in the provision of a clip or collar which is light in weight, attractive of appearance, economic of manufacture and effective of operation.

Other objects and advantages more or less ancillary to the foregoing and the manner in which all the various objects are realized will appear in the following description, which considered in connection with the accompanying drawing, sets forth the preferred embodiment of the invention.

Referring to the drawing:

Fig. 1 is a front elevational view of the improved clip showing somewhat diagrammatically the assembled relation thereof with an arch bar and certain teeth of the dental arch;

Fig. 2 is a front elevational view of the clip mounted in operative position upon an arch bar;

Fig. 3 is a front elevational view of the clip illustrating the position of the yieldable portions thereof when actuated for the release of the bar;

Fig. 4 is a front elevational view of the clip in its normal unstressed form;

Fig. 5 is a view in perspective of a clip of the type illustrated in Fig. 4 but modified to facilitate the use thereof with an alternate form of bar;

Fig. 6 is a view in perspective of a section of an improved type of bar; and

Fig. 7 is a front elevational view, shown upon an enlarged scale, of a pair of the clips illustrated in Fig. 5, a portion of one of the blocks being broken away and shown in section to illustrate the manner of anchorage of the traction wire.

Referring first to Fig. 4, the clip comprises a block 10 formed of spring metal stock, and machined with a medial kerf 11 in the forward face thereof defining furcations or arms 12 and 13. The block is further machined with a slot 14 for the reception of an arch bar 15, the rearward vertical wall 16 of the slot being disposed in normal relation to the kerf 11 while the forward vertical walls 17 and 18 thereof are arranged in convergent relation with each other. The width of the slot 14 as measured across the outer edges of the opening is less than the width of the arch bar, the depth of the slot, however, being equal to the thickness of the bar. The outer walls of the webs 19 are notched to facilitate deformation of the end portions thereof under application of compressive effort upon the free ends of the arms, the width of the kerf and configuration of the notches being designed to influence oscillation of the arms towards each other, and thus effect enlargement of the slot 14 as shown in Fig. 3.

In practice the arch bar 15 may be assembled within the groove 14 through the use of pliers, forceps or similar instruments capable of exerting sufficient compressive effort upon the ends of the arms 12 and 13 to deform the webs and permit entry of the bar 15. Obviously, as the pliers are released the arms 12 and 13 striving to regain their unstressed form will force the edges 20 and 21 of the inclined walls into impinged engagement with the side walls of the arch bars, the resiliency of the metal being sufficient to effect the retention thereof and to resist the tensive or compressive effort imposed thereon through the spring or elastic. The head of the block is drilled for the reception of the traction wire 22 or other corrective expedient used with the arch bar, the holes 23 and 24 being disposed at right angles to the opening 25 and preferably in a common plane therewith to facilitate the securement of the wire against rotation within the block. Such anchorage may be effected as illustrated in Fig. 7 by first inserting a free end of the wire into one of the drilled holes, for example, the opening 25, cutting the end 26 thereof flush with the outer wall of the clamp, then clinching the portion of the wire within the bracket by forcing a blunt instrument through the openings 23 and 24 with sufficient effort to crimp or deform the wire into the appurtenant portions of the openings.

As illustrated in Fig. 5, the block 30 is of a design similar to that illustrated in the foregoing figures, save, however, that the walls 31 and 32 of the slot 14 are inclined downwardly and outwardly for engagement with the inclined walls 33

of an arch bar of alternate form. In this embodiment the function, mode of operation and manner of application of the device is the same as that of the clip illustrated in Figs. 2, 3 and 4, the modification being illustrative of merely one of the numerous types of arch bars contemplated for use with the improved clip.

In the assembly illustrated in Fig. 1, the clip **35** is organized to correct the position of the tooth **36**, the traction spring **22** being connected to a bracket **38** of a type which will accommodate the sliding movement of the arch bar **15**, and thus facilitate movement of the tooth under the pressure imposed through the spring.

It will be readily recognized that the clip embodying the present invention may be employed not only as a traction spring support but also as a ligature holder to effect buccal, lingual or labial movements of a tooth or distal movements thereof without cutting the arch bar or necessitating removal of the bar from the denture for the purpose of soldering spurs, hooks or loops thereon.

Although the foregoing description is necessarily of a detailed character, in order that the invention may be completely set forth, it is to be understood that the specific terminology is not intended to be restrictive or confining, and that various rearrangements of parts and modifications of detail may be resorted to without departing from the scope or spirit of the invention as herein claimed.

I claim:

1. An orthodontic appliance for the support of a spring wire, comprising a block having openings therein for the reception of a wire, said block having a kerf therein, a pair of arms separated by said kerf, said arms having a slot therein normal to said kerf, said slot being transversely smaller at its outer ends than the width of an arch bar and transversely larger at the center than the bar, webs in said arms intermediate the ends thereof, said webs having notches in the outer edges thereof to influence the direction of movement of the arms, whereby the width of the outer ends of said slot is enlarged when the arms are pressed together for the reception of the arch bar.

2. A spring clamp for engagement with an orthodontic arch bar comprising a bifurcated resilient block having grooves in the furcations thereof, said block having a plurality of intersecting openings therein to accommodate the securement of a wire, the walls defining said grooves being configured at their outer ends for intimate engagement with an arch bar when the furcations are stressed and being formed at their inner ends for clearance with the bar.

3. A spring clip adapted for self supporting engagement upon an orthodontic arch bar, comprising a bifurcated resilient block having grooves in the furcations thereof for the reception of an arch bar, means for the securement of a spring wire in said block, the walls defining said grooves being undercut and being tapered inwardly towards the slot defining the furcations.

4. A clip for connecting one end of a spring to an orthodontic arch bar, comprising a block having openings therein for the support of a wire, resilient arms on said block disposed in spaced relation with each other and having transverse grooves therein, the opening between the outer edges of said grooves being narrower than the opening at the inner edges thereof and narrower than an arch bar when the arms are in their unstressed form, the opening defined by the outer edges of said grooves being wider than an arch bar when the arms are sprung together, whereby said block will be held in self supporting engagement upon the arch bar when the arms are sprung thereover.

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