

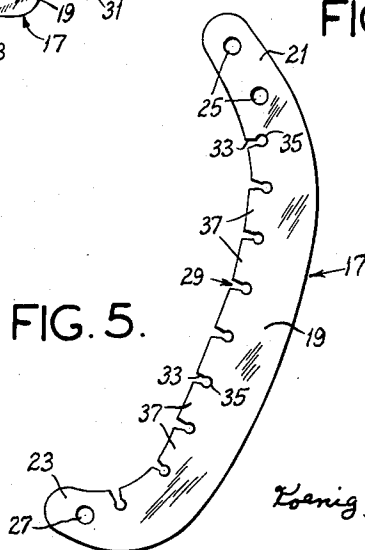
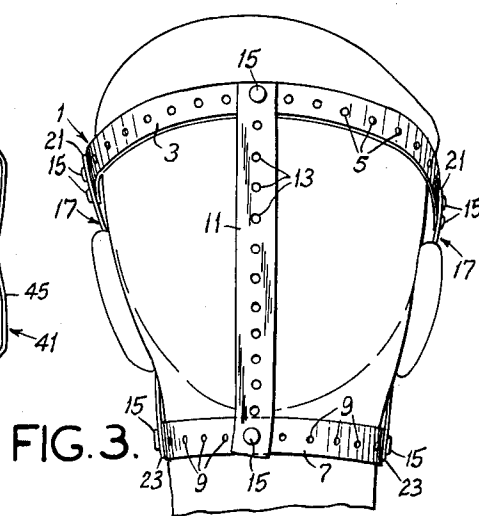
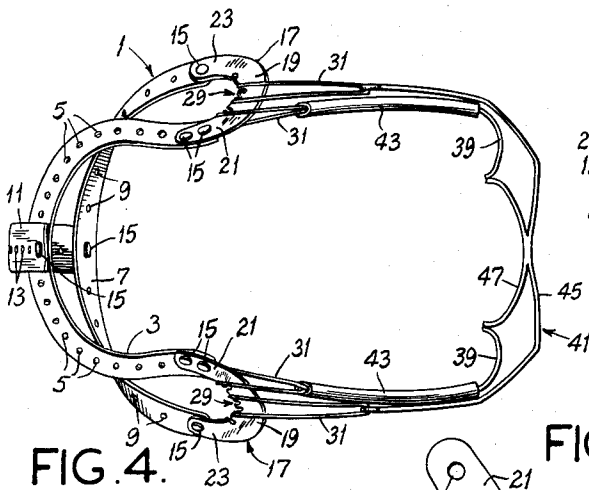
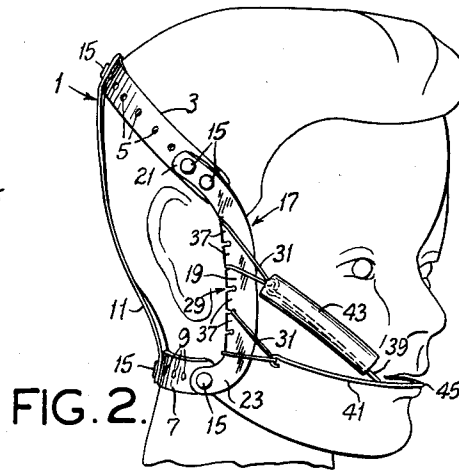
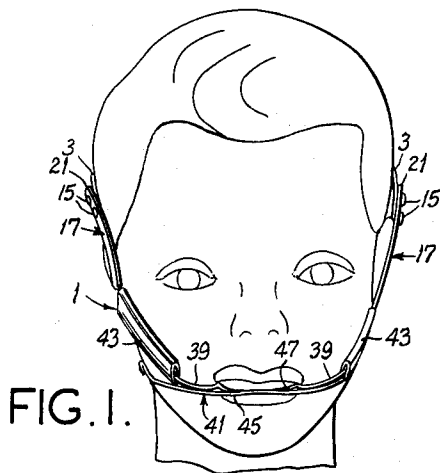
Aug. 31, 1965

S. INTERLANDI

3,203,099

TRACTION HEADGEAR FOR ORTHODONTIC USE

Filed July 5, 1963



Sebastiao Interlandi,
Inventor.

Konig, Pope, Senniger and Povera,
Attorneys.

1

2

3,203,099

TRACTION HEADGEAR FOR ORTHODONTIC USE

Sebastiao Interlandi, Brentwood, Mo., assignor to Ortho-band Company, Inc., St. Louis, Mo., a corporation of Missouri

Filed July 5, 1963, Ser. No. 292,994

10 Claims. (Cl. 32—14)

This invention relates to orthodontic appliances, and more particularly to orthodontic headgear for use in conjunction with so-called arch bands to apply traction for orthodontic purposes.

Among the several objects of the invention may be noted the provision of improved headgear of the class described which is adapted for applying traction to a maxillary arch band and/or a mandibular arch band; the provision of headgear of this class which has means for varying the direction of pull on an arch band according to the need of individual patients; and the provision of headgear of this class which is readily adjustable for different head sizes and which is comfortable to wear. Other objects and features will be in part apparent and in part pointed out hereinafter.

The invention accordingly comprises the constructions hereinafter described, the scope of the invention being indicated in the following claims.

In the accompanying drawings, in which one of various possible embodiments of the invention is illustrated,

FIG. 1 is a front elevation illustrating a headgear of this invention as it is worn on the head;

FIG. 2 is an elevation of FIG. 1, as viewed from the left and somewhat toward the front of FIG. 1;

FIG. 3 is a rear elevation of FIG. 1;

FIG. 4 is a top plan view of the headgear per se; and

FIG. 5 is an enlarged side elevation of a part of the headgear.

Corresponding reference characters indicate corresponding parts throughout the several views of the drawings.

Referring to the drawings, a headgear of this invention is generally designated 1. As shown, this comprises a first strap 3 adapted to be positioned so as to extend around the back of the head from one side of the head to the other. In general, this strap 3 is of such length as to be capable of extending around the back of the head (the occiput) from ear to ear. Accordingly, it constitutes an occipital strap. It is provided with a series of holes 5 equally spaced apart along its length. A second strap 7 is adapted to be positioned so as to extend around the back of the neck. Accordingly, it constitutes a cervical strap. The cervical strap has a series of holes such as indicated at 9 equally spaced apart along its length. A third strap 11, which may be referred to as the back strap, connects the center of the straps 3 and 7. Back strap 11 has a series of holes such as indicated at 13 equally spaced apart along its length. The upper and lower ends of the back strap 11 are secured to the occipital strap 3 and cervical strap 7, respectively, by fasteners 15 extending through holes 13 and respective holes 5 and 9 of straps 3 and 7. Straps 3, 7 and 11 are made of any suitable flexible relatively nonstretchable material. They may be plastic tapes, or may be made of cloth, leather or the like.

Yokes 17 are attached to the forward ends of straps 3 and 7 at each side of the headgear. Each yoke consists of an essentially flat plate member, generally of reverse C-shape, formed of any suitable relatively rigid material such as plastic, wood or metal. Each yoke, being of reverse C-shape, has a generally vertical elongate bar portion 19 and posteriorly extending upper and lower arms 21 and 23, respectively. Arm 21 is inclined, extending

upward from elongate bar portion 19 at an angle greater than 90°. Each yoke 17 is adapted to be positioned flatwise on the respective side of the head with its generally vertical bar portion 19 anterior to the ear on that side of the head, with its upper arm 21 extending posteriorly over the top of the ear, and its lower arm 23 extending posteriorly under the lower portion of the ear.

Upper arm 21 of each yoke 17 is provided with two holes 25 spaced apart a distance corresponding to the spacing between two adjacent holes 5 occipital strap 3. Fasteners 15 extend through the holes 25 and the registering holes 5 for securing together the occipital strap 3 and the respective yoke 17 and maintaining the angular relationship between strap 3 and yoke 17, i.e., the strap 3 is prevented from pivotal movement with respect to yoke 17. Lower arm 23 of each yoke is provided with a hole 27, and a fastener 15 extends through hole 27 and one of the holes 9 in the respective end of cervical strap 7 for securing together the latter and the respective yoke 17.

Each yoke has a series of notches 29 in the posterior edge of its elongate bar portion 19. These notches constitute recesses for receiving one or more traction-applying elastic bands (rubber bands) 31. As shown, notches 29 are of keyhole shape, having a narrow entrance 33 and an enlarged inner end portion 35. The notches divide the posterior edge of body portion 19 into a plurality of posteriorly extending tongue portions 37. One end of each elastic band 31 is adapted to be looped around one or more tongue portions 37 and drawn forwardly into the notches 29. The other end of each elastic band is adapted to be connected to a face bow such as indicated at 39 or 41. Each bow 39 is formed in the shape of a hook and is adapted to be attached to an arch band for the maxillary arch (the upper teeth), for example. Traction is exerted on the arch band by the elastic bands 31 acting through the face bows. A tubular sleeve 43, formed of plastic for example, may be provided on the shank of each bow 39 to prevent irritation of the cheeks by the bows. Bow 41 is shown as having an anterior portion 45 and a posterior portion 47 located centrally relative to portion 45 and connected to the latter. The ends of posterior portion 47 are adapted to be attached to an arch band in the same manner as the ends of bow 39. Traction is exerted on the arch band by the elastic bands acting on the ends of outer bow portion 45.

It will be understood that the bow 39 and 41 may be used together as shown, or separately, if desired. The provision of a series of notches 29 permits a wide range of adjustment of the direction of pull exerted on the face bows so that traction may be applied to either or both a maxillary arch band and a mandibular arch band. It is desirable to have the posterior ends of the face bows as far back as possible, and preferable that the posterior ends of the face bows are rearward of the posterior ends of the arch band to insure stability of the arch band. Use of face bows having short shanks may cause instability of the arch band and hence is undesirable. The location of the notches on the rear side of the elongate bar portions 19 of the yokes provides ample distance for stretching of the elastic bands to provide the desired traction without having to resort to the use of face bows having short shanks.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. An orthodontic headgear to be worn on the human head for the anchoring of elastic bands to be attached to a face bow of an orthodontic appliance, comprising a pair of yokes adapted to be positioned on opposite sides of the wearer's head adjacent the wearer's ears, each yoke having an elongate bar portion adapted to extend in a generally vertical direction anterior of the respective ear, an upper arm adapted to extend posteriorly over the respective ear, and a lower arm adapted to extend posteriorly under the respective ear, first and second straps, fasteners securing the ends of said first and second straps to the posteriorly extending upper and lower arms, respectively, of said yokes, the first strap being adapted to extend around the back of the wearer's head from one side to another, the second strap being adapted to extend around the back of the wearer's neck, the elongate bar portion of each yoke having a plurality of notches spaced at intervals along its posterior edge, said notches being adapted to receive said elastic bands.

2. An orthodontic headgear as set forth in claim 1 wherein the posteriorly extending upper arm of each yoke also angles upward from said elongate bar portion of the yoke, said first strap extending away from said elongate bar portions of the yokes in the same general direction as said upper arms of the yokes, there being at least two fasteners securing each of the ends of said first strap to the upper arm of the respective yoke to maintain the angular relationship between said elongate bar portions and said first strap.

3. An orthodontic headgear as set forth in claim 2 wherein said first strap is provided with a plurality of holes spaced at equal intervals throughout its length, said fasteners securing each of the ends of said first strap to the upper arm of a respective yoke and extending through two adjacent holes of said plurality of holes in said first strap.

4. An orthodontic headgear as set forth in claim 1 wherein each of said notches is of keyhole shape having a relatively narrow entrance and an enlarged forward end.

5. An orthodontic headgear as set forth in claim 1 further comprising a third strap extending between the center of the first strap and the center of the second strap.

6. An orthodontic headgear to be worn on the human head for the anchoring of elastic bands to be attached to a face bow of an orthodontic appliance, comprising a pair of plates generally of reverse C-shape adapted to be positioned flatwise on opposite sides of the wearer's head with the generally vertical part of the C of each yoke anterior to the wearer's ear on the respective side of the wearer's head with the upper portion of the C extending posteriorly over the top of the respective ear and the

lower portion of the C extending posteriorly under the lower portion of the respective ear, a first strap having its ends connected to the upper portions of said plates and adapted to extend around the back of the wearer's head from one side to the other, a second strap having its ends connected to the lower portions of said plates and adapted to extend around the back of the wearer's neck, and a third strap extending between the center of the first strap and the center of the second strap, the generally vertical part of the C of each yoke having a plurality of notches spaced at intervals along its posterior edge, each of the notches being adapted to receive one of said elastic bands.

7. An orthodontic headgear as set forth in claim 6 wherein the posteriorly extending upper portion of each C angles upward from said generally vertical part of the C, said first strap extending away from said generally vertical parts of the plates in the same general direction as said upper portions, and at least two fasteners securing each of the ends of said first strap to a respective upper portion to maintain the angular relationship between said generally vertical parts and said first strap.

8. An orthodontic headgear as set forth in claim 7 wherein said first strap has a series of holes therein spaced at equal intervals along its length, the fasteners securing each of the ends of said first strap to a respective plate and extending through two of said holes.

9. An orthodontic headgear as set forth in claim 8 wherein said second strap has a series of holes therein spaced at equal intervals along its length, and a fastener extending through one of said holes in each of the ends of said second strap and securing it to the lower portion of a respective plate.

10. An orthodontic headgear as set forth in claim 9 wherein said third strap has a series of holes therein spaced at equal intervals along its length, with a fastener extending through one of said series of holes in said third strap and one of said series of holes in said first strap for fastening said first and third straps together, and another fastener extending through another of said series of holes in said third strap and one of said series of holes in said second strap for fastening said second and third straps together.

References Cited by the Examiner

UNITED STATES PATENTS

741,687	10/03	MacDowell	32—14
2,555,494	6/51	Kriegel	128—76 XR
2,968,097	1/61	De Woskin	32—14
3,117,574	1/64	Replogle	128—146

RICHARD A. GAUDET, *Primary Examiner.*