Aug. 29, 1967 J. J. STIFTER 3,337,958

ORTHODONTIC APPLIANCE

Filed May 6, 1965 2 Sheets-Sheet 1

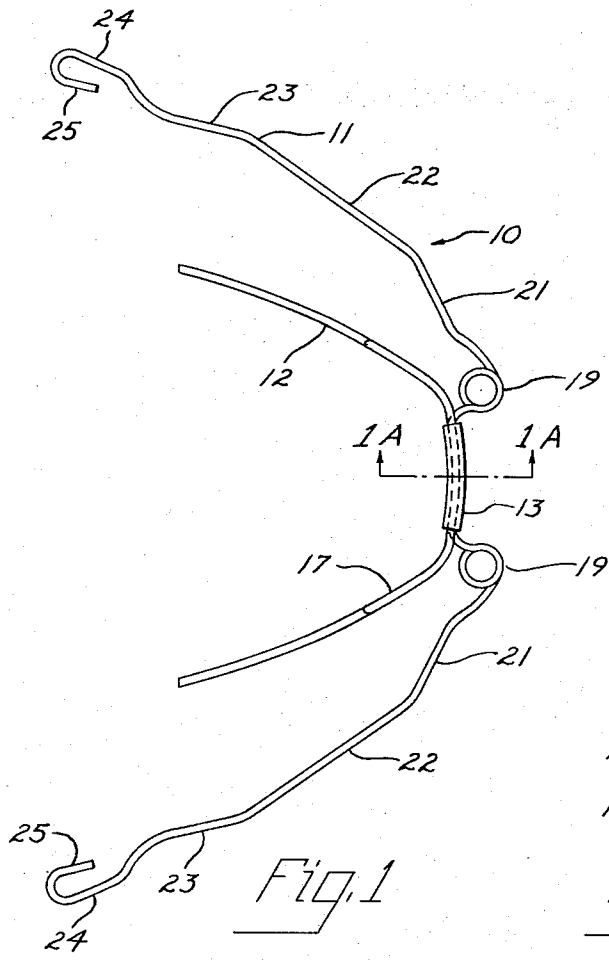



Fig. 1

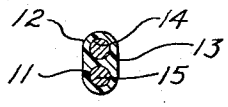



Fig. 1A.

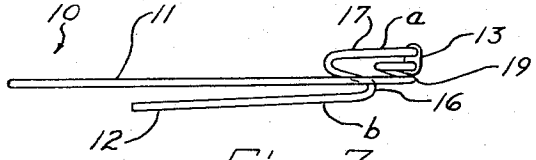



Fig. 3.

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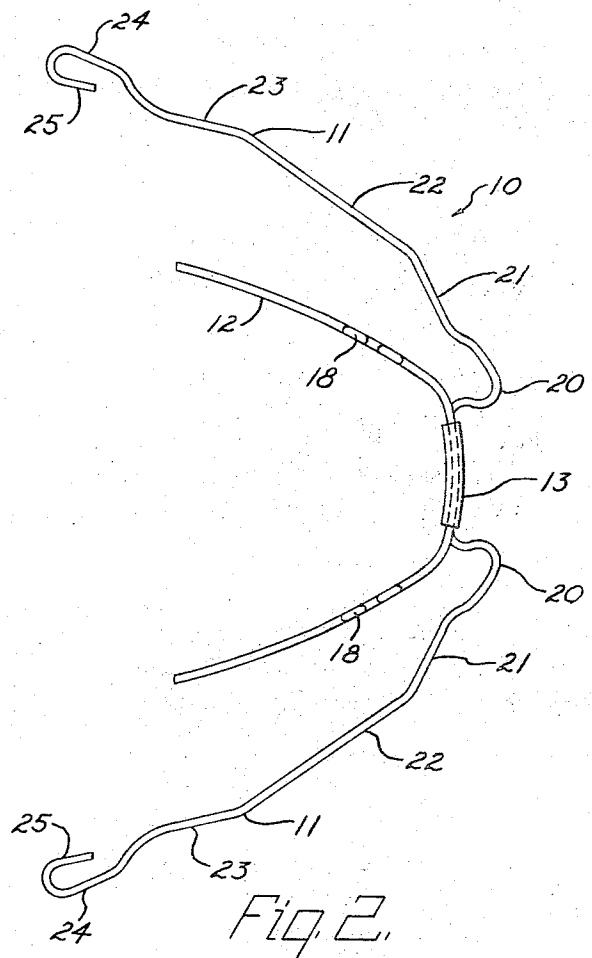



Fig. 2.

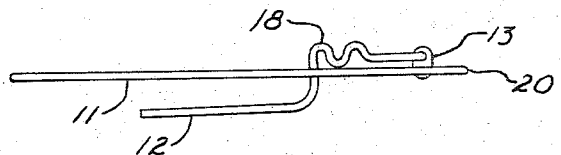



Fig. 4.

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# ORTHODONTIC APPLIANCE

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4 Claims. (Cl. 32—14)

My invention relates to an orthodontic appliance and relates more particularly to those devices known as "face bows" or "extra oral arches," etc.

It is an object of my invention to provide improved "face bows," etc. of the type referred to which will have improved corrective effect.

It is a further object of my invention to provide "face bows," etc. of the type referred to which will provide greater comfort to the wearer than prior art "face bows" with which I am familiar.

Another object of the present invention is to provide an extra-oral arch which is relatively strong and in which breakage is eliminated.

Yet another object is to provide a face bow wherein the outer member of the face bow lies at a different plane than the plane of the inner member thereof, providing both greater comfort and different placement, as desired.

Still a further object is to provide a face bow of the type referred to which exerts high elastic pull.

A further object is to provide a face bow which will be relatively inexpensive to manufacture, being composed of but few parts, and yet highly efficient and durable in use.

Other objects of my invention and the invention itself will be more readily apparent from a purview of the appended description, in which description reference will be made to the accompanying drawings, in which:

FIG. 1 is a plan view of one embodiment of the present invention.

FIG. 1*a* is a cross-sectional view taken along plane 1*a*—1*a* of FIG. 1.

FIG. 2 shows a plan view of another modification of the present invention.

FIG. 3 shows a side view of the embodiment of FIG. 1.

FIG. 4 shows a side view of the embodiment of FIG. 2.

Referring now more particularly to the drawings, in all of which like parts are designated by like reference characters, and referring more particularly to the embodiment illustrated in FIGS. 1 and 3, at **10** I show a face bow having an outer U-shaped spring wire member **11** and an inner U-shaped spring wire member **12**; the said outer member **11** is secured to the inner member **12** by a coupling **13** having a pair of vertically spaced horizontally extending tubular passages **14** and **15** therein through which the wire members **11** and **12** are passed.

The coupling and wires encompassed thereby are then bent on a radius to crimp the wires **11** and **12** securing the same in place. On either side of said coupling in the form of FIGS. 1 and 3, the inner brace **12** is provided with a preferably S-form loop **16, 16** forming hooks for high pull tension or elastic devices for the anterior teeth, said loops **16, 16** allowing the inner member **12** of the bow to lie in two different planes, one designated at *a* and one at *b*, the plane *a* being disposed above and the plane *b* preferably disposed below the plane of the outer bow member **11**. It is contemplated that the plane *a* and the plane *b* need not be disposed above and below the plane of the outer bow member **11** but could be disposed in different planes, which planes might, for example, both be above or both be below the plane of the outer bow



member **11** and can be parallel planes or angled with respect to the other.

The use of S-shaped hooks **16, 16** eliminates the need for a solder joint in the inner bow and permits the arch or coupling portion of the bow **17** to be disposed in the plane of the lips rather than requiring the lips to be open when the bow is inserted into the mouth.

In the form of FIGS. 2 and 4, in lieu of the S-shaped loops, the wire is bent into generally M-shaped hooks **18, 18** affording an attachment for auxiliary horizontal and vertical anterior elastic members (not shown) which afford anterior torque control of the anterior teeth.

In the form of FIGS. 1 and 3, the wire of the outer bow member **11** is provided with circular spring loops or coils **19, 19** to permit an overall constant pressure to be applied against the patient's teeth. In the form of FIGS. 2 and 4, S-shaped curves **20, 20** are employed for similar effect.

The bow member **11** in each of the forms of my invention is provided on either side of the coupling rearwardly of the loops or coils **19, 19** or, in the case of the form of FIGS. 2 and 4, rearwardly of the S-loops **20, 20**, with face conforming portions **21, 22, 23** generally angled or bent with respect to each other; and the opposite ends or legs **24** of the bow member **11** are provided with inwardly extending hooks **25, 25** for attachment to an elastic head band (not shown) which with the outer bow member completes a loop around the patient's head, in a manner well known in the art.

It will be observed that the present invention dispenses with soldering, brazing, welding, etc. either the outer or inner wires of the bow and thus precludes loss of temper and resultant breakage of the bow. It will further be noted that the device is so formed as to be carried in the mouth in a natural position whereby the lips may be held in a natural open or closed position without interference. The outer member of the bow, etc. device is further conformed to the contour of the face for greater comfort of the wearer.

While I have described my invention in connection with a preferred embodiment, it is to be understood that various changes may be made therein without, however, departing from the spirit of my invention or the scope of the appended claims.

What I claim is:

**1.** An orthodontic appliance comprising a first U-shaped spring wire member adapted to be positioned inside a wearer's mouth in front of the wearer's teeth, a second U-shaped wire member having end portions adapted to be attached to a head band at the rear of a wearer's head, a coupling having a pair of elongated passageways therethrough, said passageways being spaced vertically within the coupling, portions of said first and second U-shaped spring wire members being disposed within respective of said passageways, said coupling portions of wire encompassed within the said passageways being arcuately bent to secure the wires against displacement in such coupling, the said first U-shaped wire member having a pair of flat portions lying in spaced parallel planes, one of the spaced flat portions of the first member lying below the plane of the second U-shaped wire member, and the other of said spaced flat portions lying above the plane of said second U-shaped wire member.

**2.** The orthodontic appliance of claim **1**, wherein the said pair of said first U-shaped wire member portions are joined by S-shaped loop portions.

**3.** The orthodontic appliance of claim **1**, wherein the said pair of said first U-shaped wire member portions are joined by generally M-shaped portions.

4. An orthodontic appliance comprising a first U-shaped wire member adapted to be positioned inside a wearer's mouth in front of the wearer's teeth, a second U-shaped wire member having end portions adapted to be attached to a head band at the rear of a wearer's head, a coupling member connecting portions of said first and second U-shaped wire members to each other, said first U-shaped wire member having a pair of flat portions lying in spaced, parallel planes, one of said flat portions lying below the plane of said second U-shaped wire member, and the other of said spaced flat portions lying above the plane of said second U-shaped wire member.



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