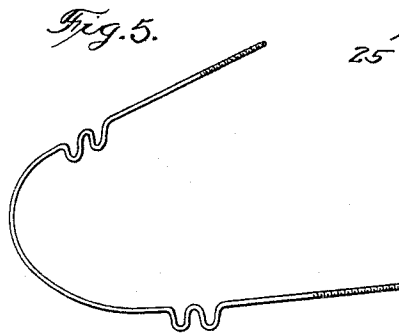
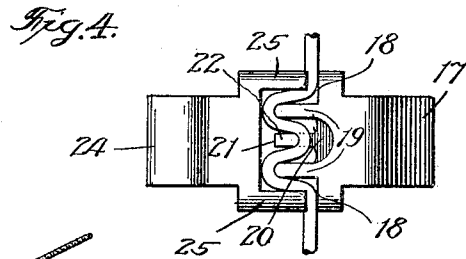
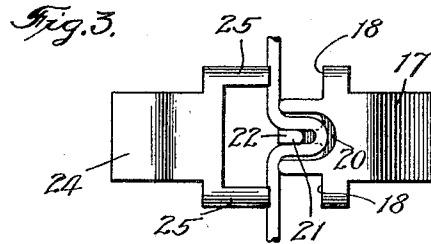
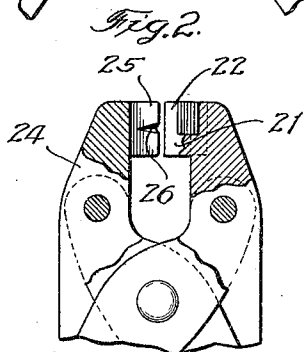
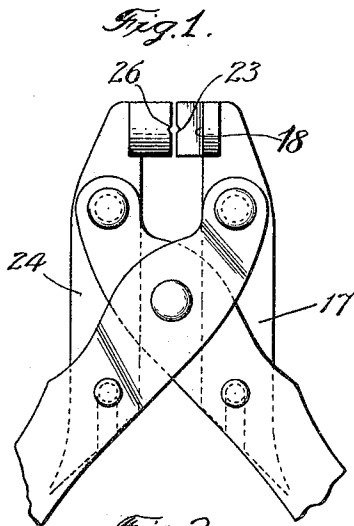


C. F. MONTAG.
 ORTHODONTIA PLIERS.
 APPLICATION FILED OCT. 23, 1913.

1,103,606.

Patented July 14, 1914.



Witnesses:
[Signature]
 Chas. H. Bull.

Inventor:
 Christoph F. Montag,
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 Att'ys. -#

UNITED STATES PATENT OFFICE.

CHRISTOPH F. MONTAG, OF BLUE ISLAND, ILLINOIS.

ORTHODONTIA-PLIERS.

1,103,606.

Specification of Letters Patent.

Patented July 14, 1914.

Application filed October 23, 1913. Serial No. 796,950.

To all whom it may concern:

Be it known that I, CHRISTOPH F. MONTAG, a citizen of the United States, residing at Blue Island, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Orthodontia-Pliers, of which the following is a specification.

My invention relates to certain new and useful improvements in orthodontia pliers, and is fully described and explained in the specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a pair of pliers for completing the bends in an orthodontia arch; Fig. 2 is a view of said pliers in the same direction as Fig. 1, but showing the parts partly in section; Fig. 3 is an end view of the pliers about to operate; Fig. 4 is a similar view after they have been operated, and Fig. 5 is a perspective view of an orthodontia arch, showing the work done by the pliers.

It will be understood that the initial bend in the orthodontia arch illustrated in Fig. 5 is made with a pair of pliers of simple and convenient form, and differing but slightly from some devices which have been used for a similar purpose.

The pair of pliers which forms the subject of my invention takes the wire, having the initial bend therein, and forms, at the two sides of said first bend, two additional ones extending in the opposite direction, so that when completed, the main part of the wire remains in the same straight line, but it has in it two complete bends out of and back into that line. 17 indicates one of the jaws of said pliers. This jaw has two flat parts 18, extending outward laterally, and which may be said to constitute the main plane of the jaw. 19 are two ribs which project upward from said main plane, leaving between them a groove 20. This groove is open at the tip of the jaw as shown in Figs. 7 and 8, but at its rear is an upwardly-projecting piece 21, from which extends forward a finger 22 adapted to lie in the first bend. The ribs 19 are notched at 23 for the purpose of positioning the wire. The wire, after having been provided with the first bend, is simply slid into position, the first bend lying in the groove and under the finger, as shown. 24 is the opposite jaw and it simply has two flanges 25, notched at 26, to hold the wire firmly in position.

When the jaws are brought together the flanges 25 pass down outside the ribs 19, putting two additional bends in the wire, and as they pinch the wires between their edges and the outwardly-projecting part 18 of the main plane of the first-mentioned jaw, they turn the wire back into a straight line, such as is required for the purpose intended. By the use of the two devices working successively upon the wires, it is very easy to place exactly the bends required in a wire without any difficulty. The bends are of perfectly even size and they necessarily lie in the same plane, so that the wire is in the most convenient possible position. Making the bends of a single standard size is of considerable importance in work of this character, because it enables the dentist to produce exactly the desired amount of spring-tension or compression in his arch. The adjusting-screw, or nut, at the end of the arch can be turned until the bends have been contracted to a pre-determined extent. It is then known definitely to the operator that the expansion of these bends to their original, known size will move the teeth a perfectly definite amount, and when the bends are of a predetermined size, and always the same, the dentist who desires a given amount of movement of the teeth, has only to adjust his arch until his bends are contracted to a given size. He then knows that the natural expansion of the bends will necessarily move the teeth just the amount required.

I realize that considerable variation is possible in the details of the present construction without departing from the spirit thereof, and I do not intend therefore to limit myself thereto, except as pointed out in the following claims, in which my intention is to claim all the novelty inherent in the construction as broadly as is permitted by the state of the art.

What I claim as new and desire to secure by Letters Patent, is:—

1. In orthodontia pliers, a jaw having two ribs with a groove therebetween to receive a bend in the wire, a finger in said groove, and a second jaw having two ribs to pass outside the ribs on the first jaw, for the purpose set forth.

2. In orthodontia pliers, a jaw having two ribs with a groove therebetween to receive a bend in the wire, a finger in said groove and out of contact with the walls to lie in said bend, and a second jaw having two ribs to

straddle the ribs of the first jaw, for the purpose set forth.

3. In orthodontia pliers, a jaw having two ribs with a groove therebetween to receive a bend in the wire, and a second jaw having two ribs to pass outside the ribs on the first jaw, each of said jaws having lateral engaging parts to turn the ends of the wire into line, for the purpose set forth.

4. In orthodontia pliers, a jaw having two ribs with a groove therebetween to receive a bend in the wire, a finger in said groove and

out of contact with the walls which lie in said bend, and a second jaw having two ribs to straddle the ribs of the first jaw, each of said jaws having lateral engaging parts to turn the ends of the wire into line, for the purpose set forth.

In testimony whereof I have hereunto set my hand October, 1913.

CHRISTOPH F. MONTAG.

In presence of two subscribing witnesses:

A. C. FISCHER,

O. C. AVISUS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."