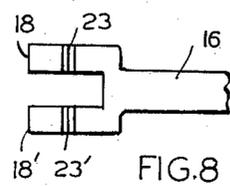
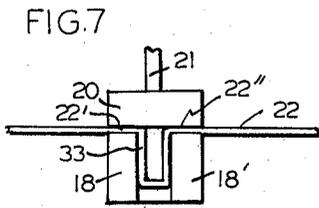
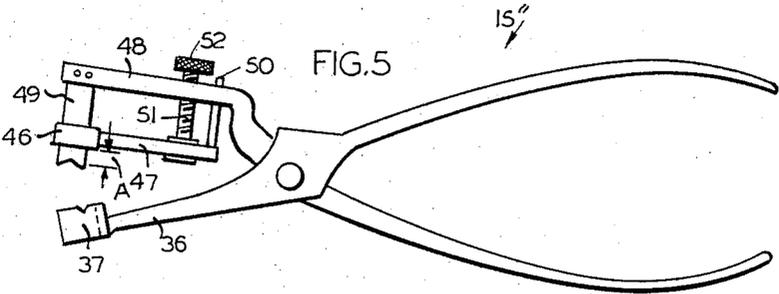
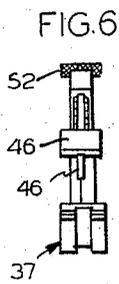
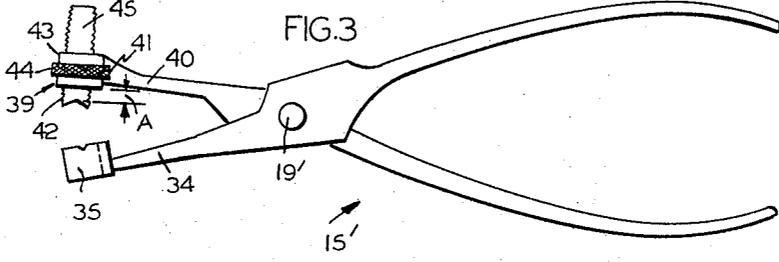
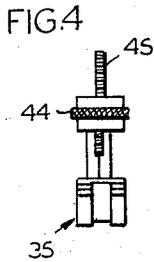
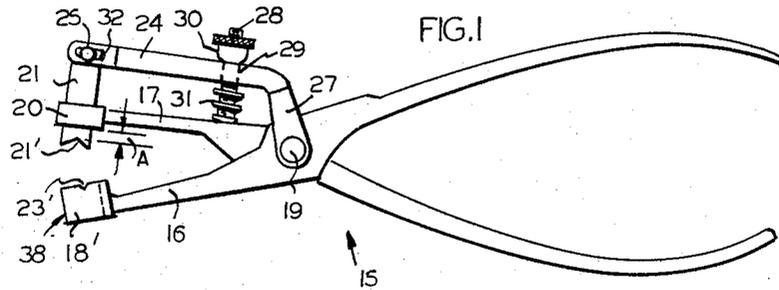
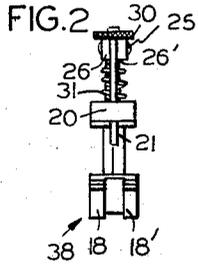


April 5, 1966

M. WALLSHEIN
CRIMPING TOOLS WHICH SQUARE THE CRIMP'S SHOULDERS
AND AFFORD CRIMP LENGTH ADJUSTMENT
Filed June 6, 1963

3,244,201



INVENTOR,
MELVIN WALLSHEIN,
BY
Melvin Wallshein
ATTORNEY.

1

3,244,201

CRIMPING TOOLS WHICH SQUARE THE CRIMP'S SHOULDERS AND AFFORD CRIMP LENGTH ADJUSTMENT

Melvin Wallshein, 8645 Bay Parkway, Brooklyn, N.Y.

Filed June 6, 1963, Ser. No. 285,948

8 Claims. (Cl. 140-106)

The present invention relates to improvements in crimping pliers.

The principal object of this invention is to provide a novel and improved plier construction which can be adjusted to make crimps of different lengths with squared shoulders. This is especially required in orthodontia so that when a crimp is made in an arch wire installed about teeth in a mouth, there shall occur no distortion in said wire to make it deviate from its set general form.

A further object of this invention is to provide a novel and improved crimping plier of the character described, which is simple in construction, reasonably cheap to manufacture, easy to adjust and manipulate and efficient in carrying out the purposes for which it is designed.

Other objects and advantages will become apparent as this disclosure proceeds.

For on practice of this invention, one jaw of the plier is a clevis and the second jaw offers a finger through a collar which are relatively movable and releasably fixed to one another on said second jaw. The finger extends towards said clevis, so upon closing the plier, a wire laid on and across the tines will be intercepted by said finger and will be drawn between said tines to form a crimp. Said collar, in co-operation with said tines, squares the shoulders of the crimp, meaning, that the parts of the wire at each side of the crimp, become coplanar, if they had suffered any distortion during the crimping operation.

Various constructions of pliers embodying this invention will be described, for which reference is had to the accompanying drawing which forms part of this specification, in which drawing, similar characters are used to designate corresponding parts in all the views.

FIG. 1 is a longitudinal face view of a plier structure in accordance with this invention.

FIG. 2 is an end view of FIG. 1.

FIG. 3 is a longitudinal face view of a plier of modified construction.

FIG. 4 is an end view of FIG. 3.

FIG. 5 is a longitudinal face view of still another plier embodying this invention.

FIG. 6 is an end view of FIG. 5.

FIG. 7 is an enlarged fragmentary end view showing how a crimp is formed in a wire and its shoulders squared. This end view may be deemed of each of the pliers illustrated.

FIG. 8 is an enlarged fragmentary top plan view of a clevis of any of the pliers shown.

In FIG. 1 of the drawing, the numeral 15 designates generally a plier, whose jaws are indicated by the numerals 16 and 17 respectively. The jaw 16 terminates in a clevis whose tines 18, 18' are spaced in a direction which is parallel to the axis pin 19 of said plier. The jaw 17 terminates in a collar 20 through which is the slidable finger 21. When the plier is closed, said finger is between said tines 18, 18' and equally spaced from each of them, and said collar 20 acts as a clamp in conjunction with each of said tines respectively, as in FIG. 7; the surfaces of said tines which are met by the collar being coplanar and that surface of said collar which bears against the tines when the plier is closed, being flat; the end of the finger 21 which enters between said tines 18, 18', having a notch 21' to engage the wire 22 which is laid in the aligned notches 23, 23' in said tines. An L-shaped link designated generally by the numeral 24,

2

is formed with a clevis at each of its ends. Said finger 21 is linked at its other end by a double-headed pin 25 to the tines 26, 26' of one clevis on the link 24; said finger being between such tines, while the tines of the other clevis 27 on said link 24 which straddles the plier, are swingably mounted on the axis pin 19. A screw 28 extends fixed from the jaw 17, loosely through a suitable hole 29 in said link 24, and beyond said link, said screw has an adjustment nut 30 thereon. A compression coil spring 31 is about said screw, bearing against said link 24 and the jaw 17. Said pin 25 extends through a slot like 32 in each of the clevis tines 26, 26'. It is evident that upon turning the nut 30, the distance A can be adjusted to change the length of the crimp 33 effected in the wire 22. The position of the finger 21 is fixed in relation to the collar 20, against any decrease in the distance A, while the nut 30 is untouched.

When the plier 15, laden with a wire 22 is closed, the crimp 33 will be formed in such wire, and due to the clamping action of the collar 20 in cooperation with the tines 18, 18', the shoulders 22', 22'' of said crimp will be squared.

Though the plier tools indicated generally by the numeral 15' and 15'' respectively have different constructions to accomplish adjustment of the distance A, the jaw 34 and its terminal clevis 35 in FIG. 3, as also the jaw 36 and its terminal clevis 37 in FIG. 5, are identical with the jaw 16 and its clevis terminal 38 as shown in FIG. 1.

In FIG. 3, the collar indicated generally by the numeral 39 at the distal end of the jaw 40, has a slot 41 to form a clevis thereof; such clevis having the tines 42 and 43 which are spaced in a direction which is perpendicular to the axis pin 19'. A nut 44 fits for rotation between said tines 42, 43 and is in threaded engagement with the finger 45. It is evident that upon turning the nut 44, the distance A will be altered. The position of the finger 45 is fixed in relation to the collar 39, against any decrease in the set distance A, while the nut 44 is untouched.

In FIG. 5, the collar 46 is at the distal end of a bar 47 which is between the plier jaws 36 and 48, and such collar is slidably mounted on the finger 49 which is fixed to said jaw 48 and extends towards the clevis 37. The bar 47, at its other end has a fixed pin 50 extending therefrom parallel to the finger 49 and slidably mounted through a suitable hole in the jaw 36. A screw 51, swivelled at its tip end to said bar 47, extends through the jaw 48 where it is threadedly engaged and terminates in a head or knob 52. It is evident that upon turning the knob 52, the distance A can be adjusted to change the length of the crimp 33 effected in the wire 22. The position of the finger 49 is fixed in relation to the collar 46, against any decrease in the distance A while the knob 52 is untouched.

The manner of operation of the pliers 15' and 15'' to form the crimp 33 in a wire 22, and to square its shoulders, is evident and needs no further explanation.

These plier tools may be made in any size and their crimping fingers in any desired shape as may be required by the use to which they may be put. Though I have indicated their use as desirable in orthodontia, they may be adapted for general use as crimping pliers in all the crafts of industry.

This invention is capable of various forms and applications without departing from the essential features herein disclosed. It is therefore intended and desired that the embodiments shown herein shall be deemed merely illustrative and not restrictive and that the patent shall cover all patentable novelty herein set forth; reference being had to the following claims rather than to the specific description and showings herein, to indicate the scope of this invention.

I claim:

1. In a crimping tool of the character described, two jaws which are arranged to approach each other and move apart; one of said jaws terminating in a clevis, a finger on the second jaw, positioned to enter between the tines of said clevis when said jaws approach each other, a collar on said finger; said collar and finger being relatively slidable and one of them being fixedly carried by the second jaw; each of said tines cooperating with said collar to act as a clamp to square the crimp's shoulders after movement of said jaws whereby said finger has entered between said tines, and means on the second jaw for altering the relative position of said finger and collar and thereby change the distance said finger extends from said collar towards said clevis; said means holding said finger and collar in any set position relative each other on the second jaw, whereby said distance is maintained against being shortened.

2. A crimping tool as defined in claim 1, wherein said means includes a turntable threadedly engaged member which when turned will alter the relative position of said finger and collar and thereby change the mentioned distance.

3. A crimping tool as defined in claim 1, wherein it is the collar that is fixed on the second jaw.

4. A crimping tool as defined in claim 3, wherein said means includes a turnable threadedly engaged member which when turned will alter the position of said finger in said collar and thereby change the mentioned distance.

5. A crimping tool as defined in claim 3, wherein said means comprises an element pivotedly linked at one end to that end of the finger which is most remote from said clevis and pivotedly linked at its other end to said second

jaw whereby on movement of said element about its pivotal connections, the finger will slide in said collar, a spring biasing said element to move said finger away from the clevis and a screw means to shift said element to bring said finger towards the clevis.

6. A crimping tool as defined in claim 3, wherein said means comprises a nut held on the second jaw against any appreciable lateral movement, but permitted rotary movement thereon; said finger being a screw structure in threaded engagement with said nut.

7. A crimping tool as defined in claim 1, wherein it is the finger that is fixed on the second jaw; said means comprising an element extending from the collar along the second jaw, a pin extending from said element parallel to the direction of movement of said collar on said finger and slidable through the second jaw and screw means to alter the distance between said element and the second jaw whereby the collar is slid along the finger.

8. A crimping tool as defined in claim 1, wherein said jaws are those of a plier; such plier being part of said tool.

References Cited by the Examiner

UNITED STATES PATENTS

25	540,790	6/1895	Johnson	81—390
	765,328	7/1904	Stripe	140—106
	1,108,493	8/1914	Federspiel	140—106
	3,146,804	9/1964	Wallshein	140—106

FOREIGN PATENTS

30	332,149	1/1920	Germany.
----	---------	--------	----------

CHARLES W. LANHAM, Primary Examiner.