

March 24, 1953

L. KÖHLER
DENTAL PLIERS

2,632,248

Filed Nov. 28, 1950

2 SHEETS—SHEET 1

Fig. 2a

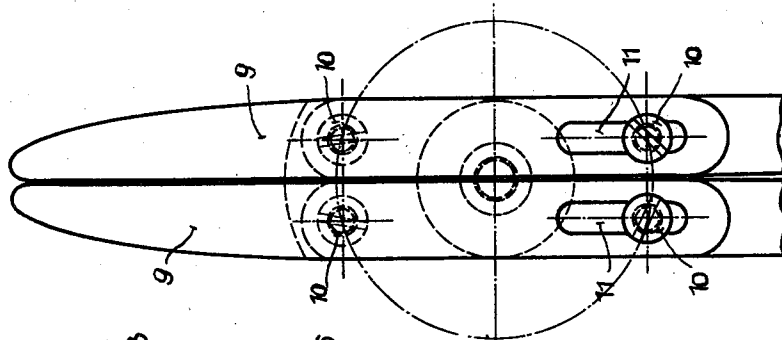


Fig. 2

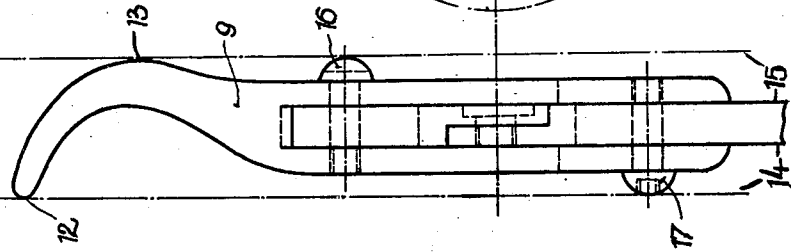


Fig. 1a

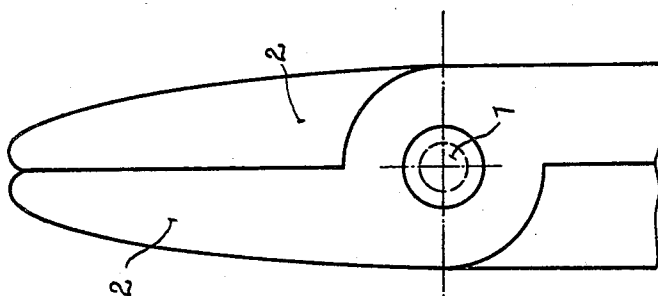
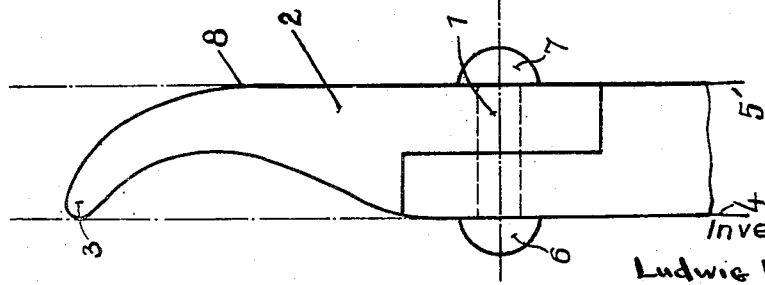


Fig. 1



Inventor:
Ludwig Köhler

by Burgess +
Dinklage
Attorneys

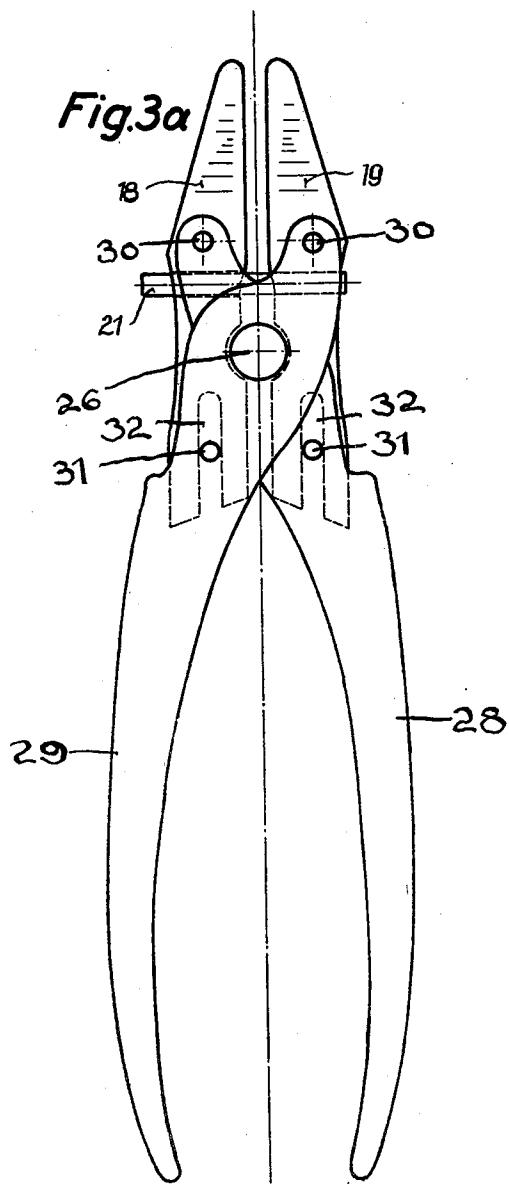
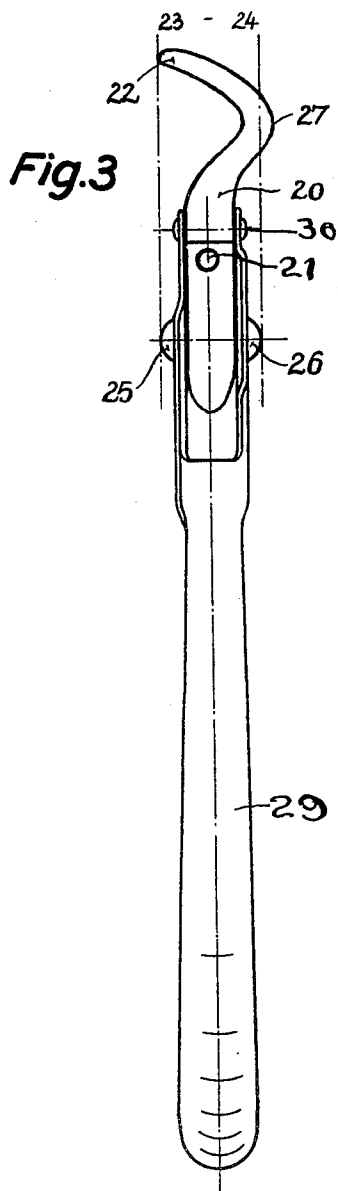
March 24, 1953

L. KÖHLER
DENTAL PLIERS

2,632,248

Filed Nov. 28, 1950

2 SHEETS—SHEET 2



Inventor:
Ludwig Köhler

by
Burgess +
Dinklage
Attorneys

UNITED STATES PATENT OFFICE

2,632,248

DENTAL PLIERS

Ludwig Köhler, Steeg, near Bacharach-on-the-Rhine, Germany, assignor to Fred L. Koehler, New York, N. Y.

Application November 28, 1950, Serial No. 198,005
In Germany December 5, 1949

9 Claims. (Cl. 32—62)

1

This invention relates to new dental pliers. One object of this invention is a new pliers for gripping and grasping for use in dentistry.

Pliers with curved jaws have many uses in dentistry. In the past bent or curved jaw pliers were constructed so that the jaws extended beyond the thickness of the joint. When used, the joints on these pliers were subjected to strong stresses by lever action and were thus often injured.

The pliers in accordance with the invention are bent or curved jaw pliers for gripping and grasping in which the jaws are provided with a curvature or bend out of the plane of the handle and in which the jaw ends do not extend past the thickness of the joint. It is also preferable in accordance with the invention that no part of the jaw extend beyond the thickness of the joint. In considering the thickness of the joint, any projection such as rivets or screw heads may be considered part of the joint.

The new pliers may be constructed with the conventional swivel joint, or may be constructed so that the jaws move parallel to each other. When using parallel operated jaws in the new pliers it has been found particularly advantageous to include an additional guide which will prevent twisting even when extremely high forces are used. This additional guide may consist of a pin or bolt fitted in a bore hole which is parallel to the broadside of the joint, and the motion of the jaws. The jaws for these new pliers may also be constructed so that they are changeable.

The invention and the details of construction can be more readily understood by referring to the drawings in which:

Figure 1 shows a side elevation of the jaws of a new plier in accordance with the invention;

Figure 1A shows a front elevation of Figure 1;

Figure 2 shows a side elevation of parallelly operated jaws of a plier in accordance with the invention;

Figure 2A shows a front elevation of Figure 2;

Figure 3 shows a side elevation of a plier in accordance with the invention having a parallelly operated jaw with changeable jaw ends and an additional jaw guide, and

Figure 3A shows a front elevation of the pliers shown in Figure 3.

When using a conventional swivel joint as shown in Figure 1 and Figure 1A with two movable jaws 2, a round rivet joint 1 having heads 6 and 7, the end of the jaw 3 should not be curved or bent beyond the thickness of the joint as shown by the line 4—5. It is also preferable that

2

no part of the curved jaws extend beyond the line 4 to 5. In considering the thickness of the joint the ends of the rivet 6 and 7 may be taken into consideration.

When using parallelly operated jaws as shown in Figures 2 and 2A with the jaws 9, the forward jaw swivels 10, the jaw slots 11, and the after jaw guides 12, the same principle applies. Here the thickness of the joint is taken from the ends of the forward jaw swivel head 16 and the after swivel guide head 17, as shown by the lines 14—15. The jaws are so curved that the end 12 is not bent past the thickness of the joint, as shown by the lines 14 to 15. In Figure 2 the curved portion of the jaw 13 does not extend beyond the thickness of the joint.

It has been found extremely advantageous in accordance with the invention to use parallelly operated jaw pliers having an additional jaw guide and changeable jaws, as shown in Figure 3. Here the jaws 18 are changeable and operate parallelly. The additional guide 21 serves to prevent loosening and wear on the other joint and serves for a stronger, more positive grip. Here the thickness of the joint is shown by the lines 23 to 24 measured from the ends of the head of the main joints shown as 25 and 26. Though the end 22 does not extend past the thickness of the joint, the curved portion of the jaws 27 does. It can thus be seen that though it is preferred not to have any portion of the jaws extend beyond the thickness of the joint, it is possible to have the curvature of the joint extend beyond the thickness provided that the end does not.

Parallelly operated jaws are constructed in the following manner. (Referring to Figures 3 and 3A.) Two handles 28 and 29 are mounted on a conventional swivel joint 26. The two handles 28 and 29 each have two pins 30 and 31. These pins are mounted on opposite sides of the main swivel joint 26 equidistant from the center of this main joint so that the circumference of a circle, drawn with the center of joint 26 as its center, passing through any one of the pins 30 and 31 would pass through all 4 pins. The jaw 18 is attached to the forward swivel pin 30 of the handle 28, and the slot 32 of the jaw 18 fits over the after guide pin 31 of the handle 29. Jaw 19 is mounted on pin 30 of handle 29 and pin 31 of handle 28. When the handles are opened or closed about the joint 26 all the 4 pins 31 and 32 remain equidistant from the center of joint 26. The after guide pins 31 slide back and fourth in the slots 32

3

and thus the jaws 18 and 19 open and close with their gripping surfaces remaining parallel to each other. The pin 21 may be inserted by drilling a passage through both jaws 18 and 19 parallel to the motion of the jaws and inserting the pin. This pin serves as an aid in absorbing any twisting stresses put on the jaws.

The jaws may be made exchangeable by having the slots 32 open at the bottom. Thus the jaws may be removed and exchanged by removing pin 30, sliding the jaws forward.

Since in dentistry in the extraction of molars, a curved jaw pliers must be used, these new pliers in accordance with the invention have been found particularly effective for this purpose. The new pliers have greater gripping and holding power and are much easier to manipulate. Greater twisting and turning force may also be obtained when using these new pliers. Consequently the dentist need not apply as great force as would be previously required and thus may pay more attention to the various manipulations necessary for extraction and can proceed with less discomfort to the patient.

It of course is evident that these advantages of the new pliers make them extremely useful in any other dental work, and in dental laboratory work in which curved jaw pliers are needed.

I claim:

1. A curved jaw dental pliers for grasping and holding comprising two curved jaws movably positioned for grasping engagement through a plier joint mechanism, two handles positioned for operating said jaws through said joint mechanism, said jaws being curved in a direction out of the plane of said handles, the ends of said jaws not extending beyond the thickness of said joint.

2. Pliers according to claim 1 in which the

4

thickness of said joint is measured by the thickness of any projections on said joint.

3. Pliers according to claim 1 in which no part of said jaws extends beyond the thickness of said joint.

4. Pliers according to claim 1 in which said jaws are parallelly guided jaws, and said joint mechanism is a parallel joint mechanism.

5. Pliers according to claim 4 in which the thickness of said joint is measured by the thickness of any projections on said joint.

6. Pliers according to claim 4 in which no part of said bent jaws extends beyond the thickness of said joint.

7. Pliers according to claim 4 in which said jaws are changeable jaws.

8. Pliers according to claim 4 in which said joint mechanism includes means defining a pin positioned through said jaws as an additional jaw guide.

9. Pliers according to claim 8 in which the thickness of said joint includes any projections on said joint.

LUDWIG KÖHLER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
6,741	Bourne	Sept. 25, 1849
168,924	Russell	Oct. 19, 1875
491,231	Von Haus et al.	Feb. 7, 1893
656,394	Deiters et al.	Aug. 21, 1900
688,237	Davis	Dec. 3, 1901
1,465,905	Hoff	Aug. 21, 1923