(No Model.)

E. T. STARR.

DENTAL PLIERS.

No. 340,896. Patented Apr. 27, 1886.

FIG. 1.

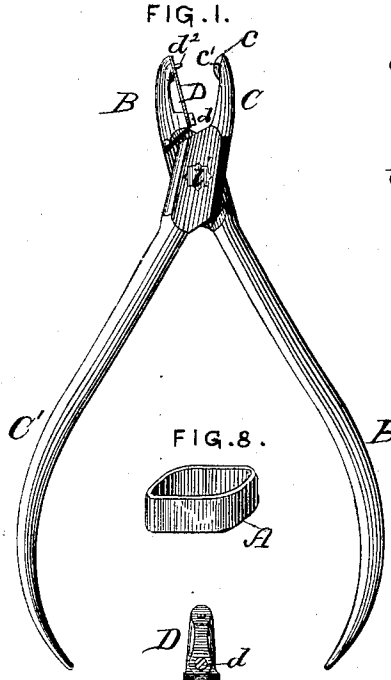


FIG. 2.

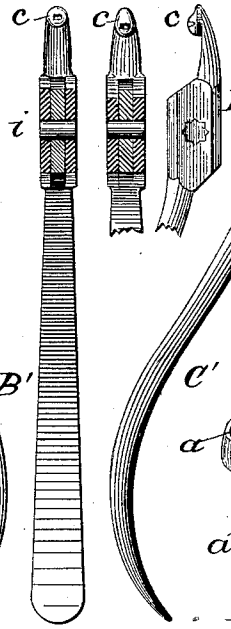


FIG. 3.

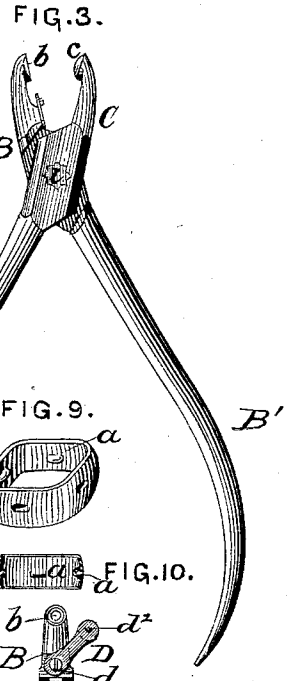


FIG. 8.

FIG. 9.

FIG. 10.

FIG. 4.

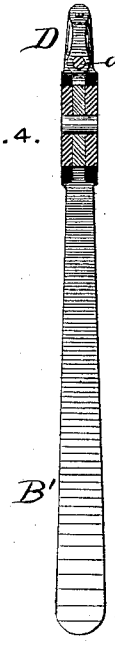


FIG. 5.

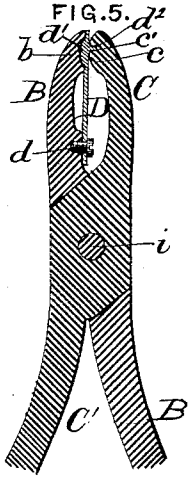


FIG. 7.

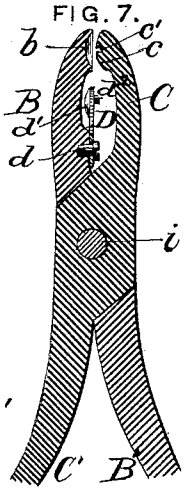
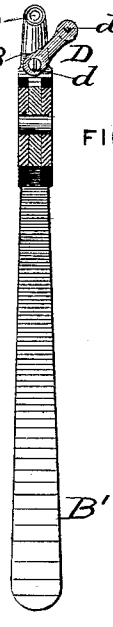


FIG. 6.



WITNESSES:

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Baltus. De Long

INVENTOR:

Eli T. Starr,
by his Attys
Baldwin, Hopkins & Peyton.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

ELI T. STARR, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE S. S. WHITE DENTAL MANUFACTURING COMPANY, OF SAME PLACE.

DENTAL PLIERS.

SPECIFICATION forming part of Letters Patent No. 340,896, dated April 27, 1886.

Application filed January 5, 1886. Serial No. 187,719. (No model.)

To all whom it may concern:

Be it known that I, ELI T. STARR, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Dental Pliers, of which the following is a specification.

My invention relates to pliers more especially for dentists' use.

The object of my invention is more especially to provide improved pliers for shaping and manipulating the gold or other thin metal bands for use as parts of the structure of artificial tooth-crowns.

In replacing lost or destroyed natural tooth-crowns with artificial crowns, so that the natural root is employed as the foundation or base of the structure, metal bands are sometimes employed to encircle the neck or end of the natural root and the adjacent end of the artificial crown. My pliers are especially designed to aid in shaping this metal band and in forming projections thereon to limit the extent of movement of the band upon the end of the root in fitting the artificial crown, or in making the attachment thereto of the artificial denture.

My invention consists, mainly, of a pair of pliers one of the pivoted jaws of which has a depressed or cup-shaped recess and the other jaw of which has an opposing knob or projection to fit or enter said recess in the opposite jaw, in combination with an adjustable punch-plate fitted to convert said pliers from a shaping or contouring implement into a punching implement, to further aid in forming metal bands for use in artificial dentures.

My invention further consists in providing one of said jaws with a pivoted or adjustable plate, whereby the cup of the jaw may be closed and a punch or die brought into action to further aid in shaping or manipulating the metal band or ring.

The subject-matter claimed herein by me is particularly recited at the close of this specification. My present invention relates to the pliers, and does not, of course, include the metal band for the artificial denture when shaped thereby, such a band and denture being claimed by me in another application for Letters Patent.

In the accompanying drawings, Figure 1 is a view in elevation of my improved pliers, showing the punch-plate in position for operation. Fig. 2 is a face view of the jaw having the rounded or equivalent shape projection thereon. Fig. 3 is a view in elevation showing the punch-plate as out of the way and the cup and correspondingly-shaped projection on the opposite jaw as ready for operation. Fig. 4 is a view of the face of the jaw carrying the punch-plate, and showing said punch-plate in position for operation; and Fig. 5 is a longitudinal section through the pliers with the parts in the position last described. Fig. 6 is a view of the face of the punch-plate jaw with the punch-plate turned to one side so as to be out of the way, and Fig. 7 is a section through the pliers with the punch-plate in the position last described. Figs. 8, 9, and 10 are views of the plain-metal band to be operated upon, the contoured or bent band, and a sectional view of the punched-up contoured band in its completed condition, respectively.

After the plain band A, Fig. 8, has been fitted to the end of the root its sides are to be curved, contoured, or concavo-convexed, as shown in Figs. 9 and 10, and it is to do this that my improved instrument was more especially devised. The metal band is first bent, contoured, or curved by means of the cup or depression *b* in the jaw B and a correspondingly-curved knob or projection, *c*, on the end of the jaw C. Said jaws are pivoted together, as usual, at *i*, and are extended to form the handles B′ C′, respectively. By compressing said handles so as to bring the jaws together upon the band properly placed between the operating ends of the jaws, said band will be contoured or curved, as shown in Figs. 9 and 10, and after it has been properly curved all around its periphery it is ready to be punched up, or have the teats *a*, which project inwardly, formed thereon. This is then accomplished by moving a spring-plate, D, which is pivoted at one end at *d*, around so as to cause its rounded end *d′* to snap or spring into the cup *b* of the jaw B, and thereby be held firmly in that position. The punch-plate D may not be a spring-plate, and may be limited in its

movement when turned or moved to its operating position by any suitable means; but I prefer that said plate be a pivoted spring-plate and operate, as above described. The face of the spring-plate D carries a punch or projection, d^2, which is adapted to enter a socket or recess, c' in the knob or projection c of the jaw C. Said recess c' is somewhat larger than the punch d^2, so that when the band is inserted between the jaws and the jaws close, a teat or projection will be punched up on the band, projecting inwardly, while the metal of said band will not be perforated or punched completely out, as is obvious. The use of the aforesaid teats or projections a is to limit the extent of movement of the band upon the tooth-root in fitting the parts together.

I claim as my invention—

1. An improved dental instrument, consisting of a pair of pliers, one of the pivoted jaws of which has a depression or recess, and the other jaw a knob or projection to fit said recess in the opposite jaw, in combination with an adjustable punch-plate fitted to said pliers, substantially as described, whereby the instrument is adapted both for contouring or shaping and for punching up projections on metal bands for artificial dentures.

2. The pivoted or adjustable plate having a locking or holding projection on one side and a punch projection on the opposite side, substantially as described.

In testimony whereof I have hereunto subscribed my name.

ELI T. STARR.

Witnesses:

ALBERT P. ROOT,

W. R. POTTER.