

F. F. DOUDS.

BAND FORMING PLIERS.

APPLICATION FILED OCT. 17, 1911.

1,034,591.

Patented Aug. 6, 1912.

Fig. 1.

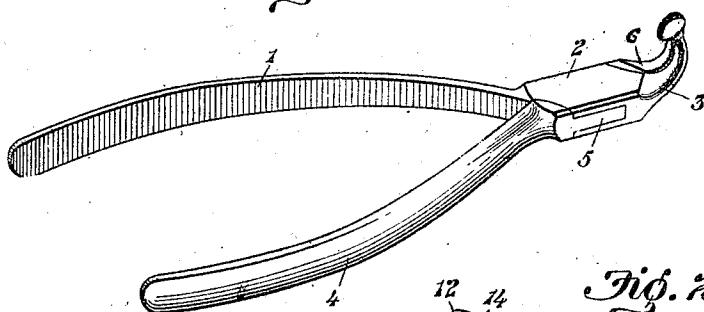


Fig. 2.

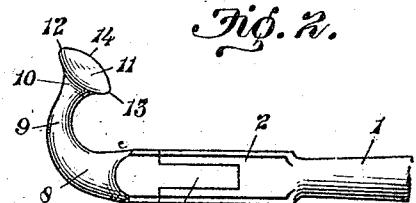


Fig. 3.

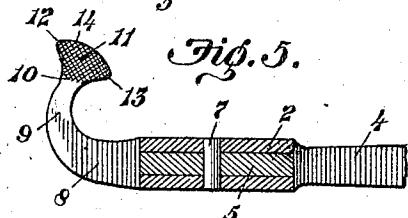
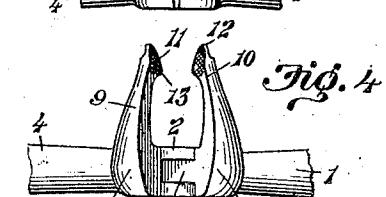
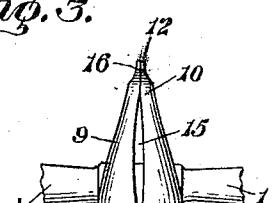


Fig. 6.

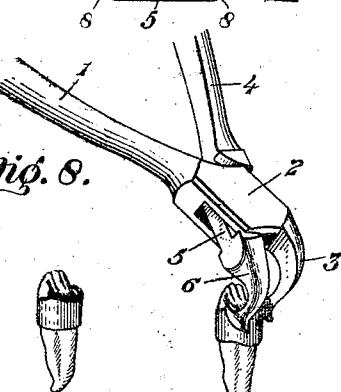


Fig. 9.

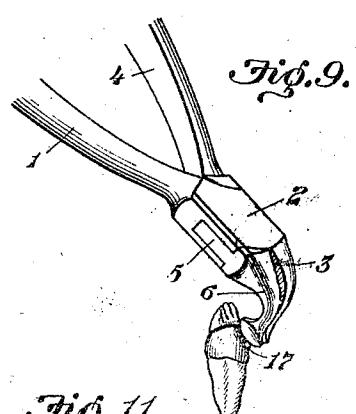


Fig. 10.



Fig. 7.

Witnesses

J. P. Bishop
Irene L. J.

Fig. 8.



Fig. 11.

Frank F. Douds.

By

Bond + Miller

Attorneys

UNITED STATES PATENT OFFICE.

FRANK F. DOUDS, OF CANTON, OHIO.

BAND-FORMING PLIERS.

1,034,591.

Specification of Letters Patent. Patented Aug. 6, 1912.

Application filed October 17, 1911. Serial No. 655,238.

To all whom it may concern:

Be it known that I, FRANK F. DOUDS, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented new and useful Band-Forming Pliers, of which the following is a specification.

This invention relates to improvements in band forming pliers, for use in the practice 10 of dentistry, and especially to a plier peculiarly adapted for the forming of bands on teeth in the mouth of a patient for the application of bridges and the like.

The objects of the invention are to generally improve devices of the character mentioned and to provide a plier of such form and shape that the operator may be enabled to bring the plier into operative engagement with a band on the tooth of a patient, 20 and may readily draw and form said band by the use of said plier in a positive and effectual manner, and thus to accomplish better results in bridge work and the like for which said bands are formed.

In the drawings—Figure 1 is a perspective view of a plier embodying my invention. Fig. 2 is a side elevation of the plier, the handles being broken away. Fig. 3 is a front end elevation of the head of the plier. 30 Fig. 4 is a similar view, the jaws of the plier being open. Fig. 5 is an elevation of the interior side of one of the jaws, showing a part of the head in section. Fig. 6 is a perspective view of one of the bands before its application to the tooth. Fig. 7 is a perspective view of the band arranged on the tooth and before being formed. Fig. 8 is a perspective view of the band on the tooth and a plier in proper operative position to 40 form the same. Fig. 9 is a similar view, showing the position of the jaws of the plier and the band at the end of the forming operation. Fig. 10, is a perspective view of the tooth with the formed band thereon. 45 Fig. 11 is a perspective view of the formed band removed from the tooth.

Throughout the several views similar reference numerals indicate similar parts.

Referring now to the construction of my 50 improved plier as shown in the drawings, it will be noted that the same comprises two principal members, the one constituting the handle 1, portion 2 of the head and jaw 3 and the other constituting the handle 4, portion 5 of the head and jaw 6. The portions

2 and 5 are pivotally joined by the pin 7, and in so far as the handles and head portions of the device are concerned no particular invention is herein claimed.

The invention principally resides in the 60 peculiar shape and formation of the jaws. A description of one of said jaws will now be given, it being understood that the two jaws are alike.

Extending from the head the body of the 65 jaw projects forwardly a short distance constituting a substantial trunk portion 8 in the general plane of the instrument. From the trunk portion 8 the jaw is preferably tapered and is curved in a plane vertical to 70 the general plane of the instrument, producing the sidewise-curved stem portion 9, which not only curves to the vertical position with reference to the general plane of the instrument, but passes beyond the vertical position, returning slightly backwardly and terminating at the point 10, at which point arises the integral band engaging portion 11. Said band engaging portion 11 is 75 much broader in the said vertical plane than the stem portion 9 and extends outwardly and forwardly producing the forward tip 12 and rearwardly and inwardly, producing the rear tip 13. From the tip 12 to the tip 13 the outer edge 14 of the band engaging 80 portion is elliptic in side elevation as clearly shown in Fig. 5, the major axis of the ellipse passing through the tips 12 and 13, and in the preferable form of the device cutting the general plane of the instrument at 85 90 an angle of, say, from thirty to forty-five degrees.

Considering the various portions of the jaw in cross-section it will be noted that the inner sides of the base stem 9 and band engaging portion 10 are preferably 95 flat. The inner face of the portion 11 lying in the median plane vertical to the general plane of the instrument when the jaws are in the closed position as shown in Fig. 3, 100 while the inner sides of the remaining portion of the jaw is curved outwardly away from said plane as shown at 15 in Fig. 3, thus permitting the band engaging portions 11 to be brought closely and firmly together. The outer sides of the trunk 8 and stem 9 may be rounded in cross-section, the jaw tapering gradually from the trunk 8 to the point 10 as hereinbefore mentioned. The band engaging portion 11, however, is 105 110

preferably flattened externally at 16 to produce the comparatively thin elliptic edge 14, as clearly shown in Fig. 3.

The inner or band engaging face of the portion 11 is preferably serrated as shown in the drawings, so as to securely grip the metallic bands, as hereinafter explained.

As shown the jaws not only curve to the side of the general plane of the instrument, but that said jaws also curve slightly backwardly or are returned so as to bring the working edge 14 of the band engaging portion 11 into a somewhat backwardly disposed position so that the jaws of the plier may be entered into the mouth of the patient and the said working edges brought into operative position on the lingual side of the tooth, while the handle portion of the instrument is in convenient position for the operator.

In Fig. 3 is shown the position of the jaws when fully closed, and it will be seen that the oppositely disposed inner faces of the portions 11 are brought firmly together, the remaining portions of the jaws being separated from each other by reason of the curved inner surfaces at 15. When the jaws are opened, as shown in Fig. 4, the curvature of the inner faces of the jaws just mentioned is perhaps even more noticeable and this feature of construction is advantageous in permitting the operator to see the work between the jaws.

The return-curved formation of the jaws permits the operator to bring said jaws into sufficiently firm engagement with the band so that the band forming portions 11 will properly engage the same and at the completion of the operation the fold in the band

normally presents the appearance shown at 17 in the drawings. The band may then be removed from the tooth, whereupon it will present the appearance shown in Fig. 11. From the inner side of the band the said band may be soldered along the edges of the fold and the said band connected to the bridge or other dental work in the usual manner. In finishing the work before placing same in the mouth of the patient the fold 17 may be cut away and polished down in a very convenient and satisfactory manner.

I claim:

1. A dentist's pliers for contracting and fitting an endless band around a tooth, comprising a pair of pivoted handles having laterally extending backwardly curved jaws, the extremities of the jaws having approximately elliptically-shaped outer thin band engaging portions adapted to operate on an endless band as described.

2. A dentist's pliers for contracting an endless band around a tooth, comprising a pair of pivoted handles having laterally extending backwardly curved jaws, the extremities of the jaws having approximately elliptically shaped outer thin band engaging portions with roughened inner surfaces adapted to operate on an endless band as described.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

FRANK F. DOUDS.

Witnesses:

JOHN H. BISHOP,
WILLIAM H. MILLER.