

UNITED STATES PATENT OFFICE.

JOSEPH M. STROUT, OF PORTLAND, MAINE.

DENTAL CLAMP.

SPECIFICATION forming part of Letters Patent No. 514,289, dated February 6, 1894.

Application filed April 8, 1893. Serial No. 469,614. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. STROUT, of Portland, in the county of Cumberland and State of Maine, have invented a new and Improved Dental Clamp, of which the following is a full, clear, and exact description.

My invention relates to an improvement in dental clamps, and it has for its object to provide a device of exceedingly simple, durable and economic construction, capable of being used upon any tooth of an upper or lower set, and capable also of being expeditiously and conveniently applied and removed.

Another object of the invention consists in so constructing the clamp that it will be out of the way of the operator, and whereby the clamp will effectually hold the rubber dam in position, and at the same time will press the gum from the neck of a tooth in such manner as to expose a cavity well down in the neck, and thus enable the said cavity to be conveniently operated upon.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a partial inner plan view of an upper set of teeth, illustrating the application of the invention thereto. Fig. 2 represents a section through a mouth, showing a portion of the lower set of teeth in elevation, and the application of the invention thereto. Fig. 3 is a detail view, illustrating the clamp in position upon a tooth. Fig. 4 is a partial vertical section through the clamp; and Fig. 5 is a perspective view of the extension arm of the clamp.

In carrying out the invention the clamp consists of a body A, an extension arm B and a fastening device C, whereby the arm is adjustably connected with the body. All of the parts are preferably made of metal, but any other material may be employed. The body consists of a plate of metal bent upon itself to form essentially a U in cross section, and the members of the body are carried inward in direction of each other, forming side flanges

10. The side and bottom portions of the body are therefore entirely open. The metal employed in the construction of the body is a spring metal, and the body of the clamp is adapted to be fitted over a tooth, covering the crown thereof and extending down opposite sides of the tooth to the gum, as shown in Fig. 3; and since the body is constructed of a spring material, it may be attached to a molar with as much facility as it can be applied to a bicuspid.

Upon one side of the body of the clamp a threaded stud 11, is located, extending preferably at a right angle from the body, and upon this stud a nut 12, is screwed, which nut may be roughened so as to be turned by hand, or it may be provided with a number of apertures 13 to receive a small drill, a pin, or like object, whereby it may be more expeditiously handled and more securely fixed to place.

The arm B forming the extension of the body of the clamp, consists of a flat body 14, provided with a longitudinal slot 15, which slot is ordinarily of nearly the full length of the body. From the body a finger section 16, is projected, the two parts being preferably integral, and the finger section is more or less curved in an outwardly direction, and the outer extremity of the finger section is made to terminate in two claws 17 and 18, the claws being bent in opposite directions so as to stand at angles to the finger, or diagonally thereof, and the surface of the finger connecting the two claws is rendered more or less concave, as illustrated at 19 in Fig. 5.

The extension arm is connected with the body of the clamp by causing the screw 11 to pass through the slot 15 in the body of the arm; and when the nut 12, is turned in one direction the arm may be freely moved upon the screw 11 in a manner to lengthen or shorten it, or to adjust it vertically or laterally; when the proper adjustment is made the arm is held firmly in position by turning the nut 12 until it firmly engages with the arm and clamps it to place.

In the operation of the clamp the rubber dam 20, is placed in the mouth of the patient, and the body of the clamp is passed over a tooth removed a convenient distance from the tooth to be operated upon. The arm is then

adjusted in a manner which will cause the claw portion of the finger section of the arm to engage with the rubber dam at the neck of the tooth A' to be operated upon, and the arm is then pressed downward until the dam and the gum have been pressed downward a sufficient distance from the neck of the tooth to expose the cavity a' to be operated upon. The nut 12, is then screwed up until the extension arm is held firmly in the position in which it was placed, and consequently the dam and gum will be held away from the cavity until the clamp is removed. The inner face 20^a of the claw section of the arm is concaved, the said concavity removing the arm the greatest possible distance from the cavity and permitting the free use of the instruments.

It will be observed that the clamp is in no manner in the way of the operator, and that it may be expeditiously and conveniently applied to any tooth of the upper or the lower set; furthermore, that the shape of the extension arm may be changed in order that the outer faces of the teeth may be treated. In fact, extension arms of various shapes may be used in connection with the same body; or a screw and nut may be attached to both sides of the body of the clamp, in order that two arms may be attached at the same time, to be used for example in setting artificial crowns on natural roots.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. The combination with a clamp to engage one tooth, of an arm extending laterally from the clamp to engage a tooth with its free end other than the one engaged by said clamp, substantially as set forth.

2. As an improved article of manufacture, a dental clamp, the same consisting of a yoke-like spring body, and an extension arm adjustably attached to the body and projecting laterally therefrom, the outer extremity of the said arm being at an angle to the body and shaped to embrace the neck of a tooth other than the one engaged by the clamp, as and for the purpose specified.

3. As an improved article of manufacture, a dental clamp, the same consisting of a yoke-like spring body, a locking device carried by the body, and an arm adjustably located between the clamping device and the body and projecting laterally therefrom, adapted to be acted upon by the same, the outer extremity of which arm is at an angle to the body and shaped to embrace the neck of a tooth other than the one engaged by the clamp, as set forth.

JOSEPH M. STROUT.

Witnesses:

HENRY B. WEAVER,
LLEWELLYN BARTON.