

No. 765,084.

PATENTED JULY 12, 1904.

S. E. KNOWLES.
DENTAL MATRIX.

APPLICATION FILED NOV. 5, 1902.

NO MODEL.

Fig. 1.

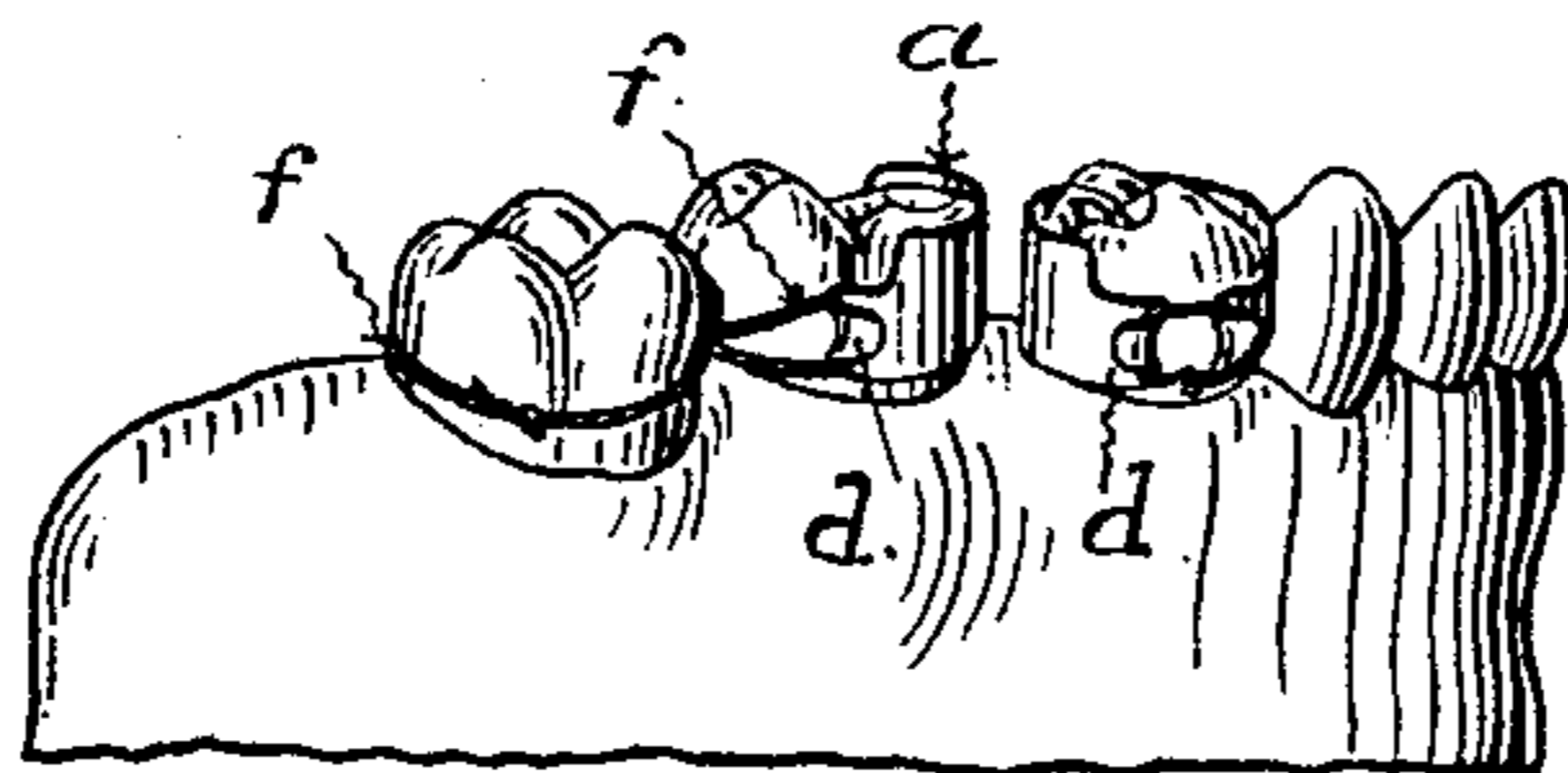


Fig. 2.

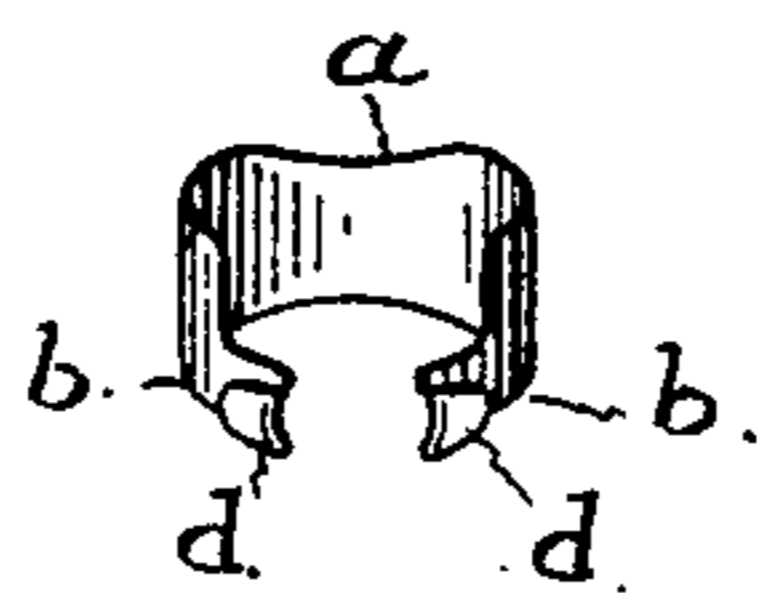
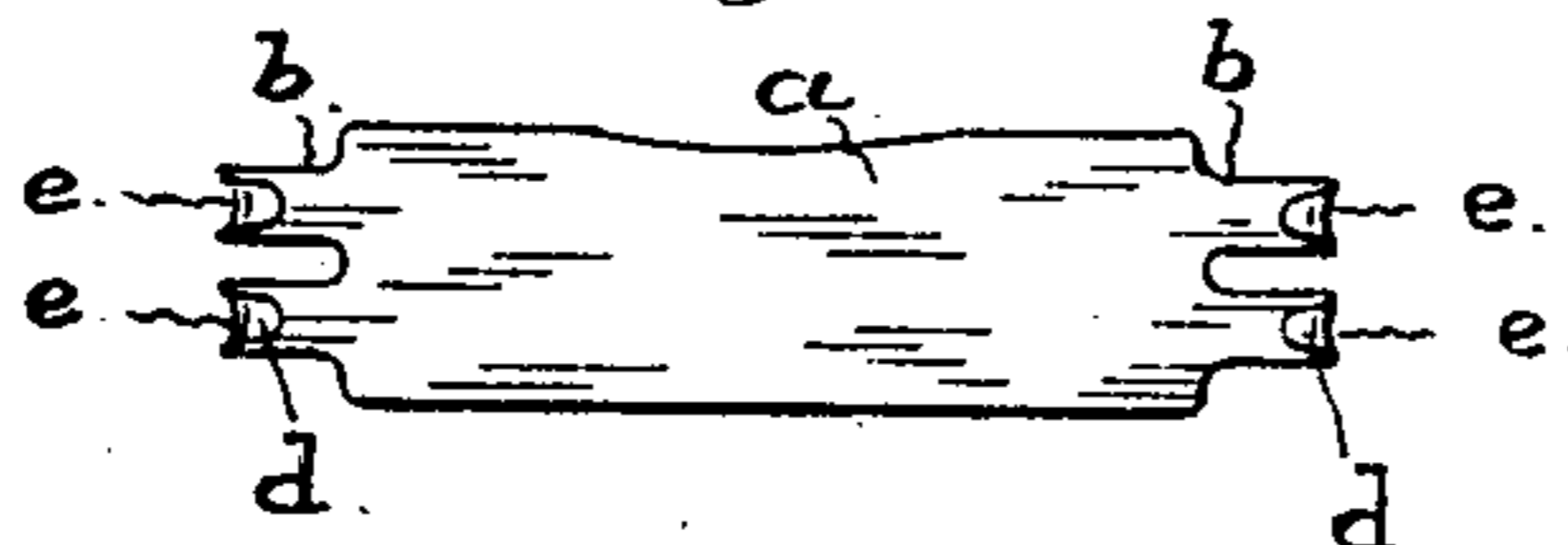


Fig. 3.



Fig. 4.



Witnesses.

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DENTAL MATRIX.

SPECIFICATION forming part of Letters Patent No. 765,084, dated July 12, 1904.

Application filed November 5, 1902. Serial No. 130,165. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL E. KNOWLES, a citizen of the United States, and a resident of the city and county of San Francisco and State of California, have invented a new and useful Improvement in Dental Matrices, of which the following is a specification.

This invention relates to improvements in dental matrices such as are employed in the operation of filling cavities with a plastic composition to furnish a temporary retaining-wall for the filling until the material has become set. The matrices provided for this purpose are made generally of a strip of thin sheet metal having the required pliability and of proper length to pass entirely around the tooth and bring the ends in position to be seized and drawn toward each other by a clamping device of some kind. With the devices heretofore made, so far as I am aware, a mechanical clamp of suitable character to seize and draw the ends of the band together is employed to draw the band around the tooth and hold the same under the required tension, and as long as the matrix remains on the tooth the clamping device necessarily must be retained in the mouth. In those constructions also wherein the matrix is directly attached to the tension device by means of hooks or angular bends formed on the ends of the band the metal from which the band was made required a certain degree of stiffness and thickness in order to prevent the hooks from straightening or bending outward under a strong tension. In my present improvement I produce a hook or angular bend on the end of the band that will stand all strain or tension that may be thrown on the band even when the band is made of such soft and pliable material as German silver, and in connection therewith I provide a matrix that can be drawn around a tooth and secured at any required tension by means of dental floss, fine wire, or similar fastening means.

To such end and object my said invention consists in a hook or angular bend of novel construction on the end of the band or matrix, and in a matrix having on each end a hook with a convex bearing-surface for a fastening thread or wire, all as hereinafter fully de-

scribed, and pointed out in the claims at the end of this specification.

In the following description reference is had by letters to the accompanying drawings.

Figure 1 of the drawings is a side elevation of a cast of the lower jaw, showing my improved matrix and fastening on two teeth. Fig. 2 is a perspective view of the matrix bent to shape and before it is secured in place. Fig. 3 is a view of a band or strip of narrow metal before it is bent to conform to the shape of the tooth on which it is to be placed. Fig. 4 is a band or strip to form a wide matrix and having two hooks on each end.

That portion of the band *a* which is to extend around the side of the tooth where the cavity is located to form a retaining-wall thereto is made of proper width for that purpose; but for the remainder of its length the band is usually reduced in width at the ends, as seen at *b b*, Figs. 3 and 4. On the ends of these narrow portions are formed small hooks *d* by bending the end portion of the metal back upon itself; but instead of making a straight bend in the metal, so that the bottom of the recess or space between the hook and the strip from which the hook is formed will lie in a vertical plane or perpendicular to the length of the band, I bend the fold or angle in an outward curve *e*, that gives the back of the recess or space a convex shape. The hook at its junction with the band then has substantially the shape seen in Figs. 2, 3, and 4. The result of this construction is, first, to furnish a curved or rounded surface on which a thread or a fine wire can be laid and drawn with considerable degree of tensile strain without breaking, and, secondly, to form a hook that will not bend outward or straighten under any strain that will be brought to bear on the band in the operation of securing it in place on the tooth. This construction is of advantage also in furnishing a surface that will not cut a thread when drawn tightly against it, thereby enabling the matrix to be secured in place on the tooth by a few turns of dental floss or fine wire. This fastening means being much simpler and more comfortable to the patient than the mechanical clamp and tension devices heretofore used is equally as effective and durable,

enabling the matrix to be retained in position for a considerable length of time without discomfort to the patient and without interfering with or being displaced by the movements of the jaws, lips, and tongue in performing their accustomed functions. The construction is of advantage, furthermore, in enabling a strong and reliable hook to be formed on a band of soft and pliable material, thereby enabling a matrix to be made of very thin and pliable metal capable of being inserted in confined spaces between the teeth.

Having thus fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. As an improved article of manufacture a band of soft pliable material having at each end a narrowed portion and each narrowed portion formed with a hook, each hook bent back on the band and substantially in a plane therewith and having a convex face at the bottom of the recess between the hook and the band, said band being designed to serve as a

dental matrix and the convex faces of the hooks to receive the thread and prevent cutting thereof and the tendency to straighten out the hook by strain on the thread, as set forth.

2. As an improved article of manufacture, a dental matrix comprising a band of thin soft pliable material reduced in width at its ends and having at each end a plurality of separated hooks integral with the band and bent toward each other with a convex face at the back of the recess between the hook and the band to receive a pliable fastening means bearing on said convex face and prevent cutting of said fastening means, as and for the purpose set forth.

In testimony whereof I have signed my name in the presence of two subscribing witnesses.

SAMUEL E. KNOWLES.

Witnesses:

EDWARD E. OSBORN,
HARRY J. LASK.