

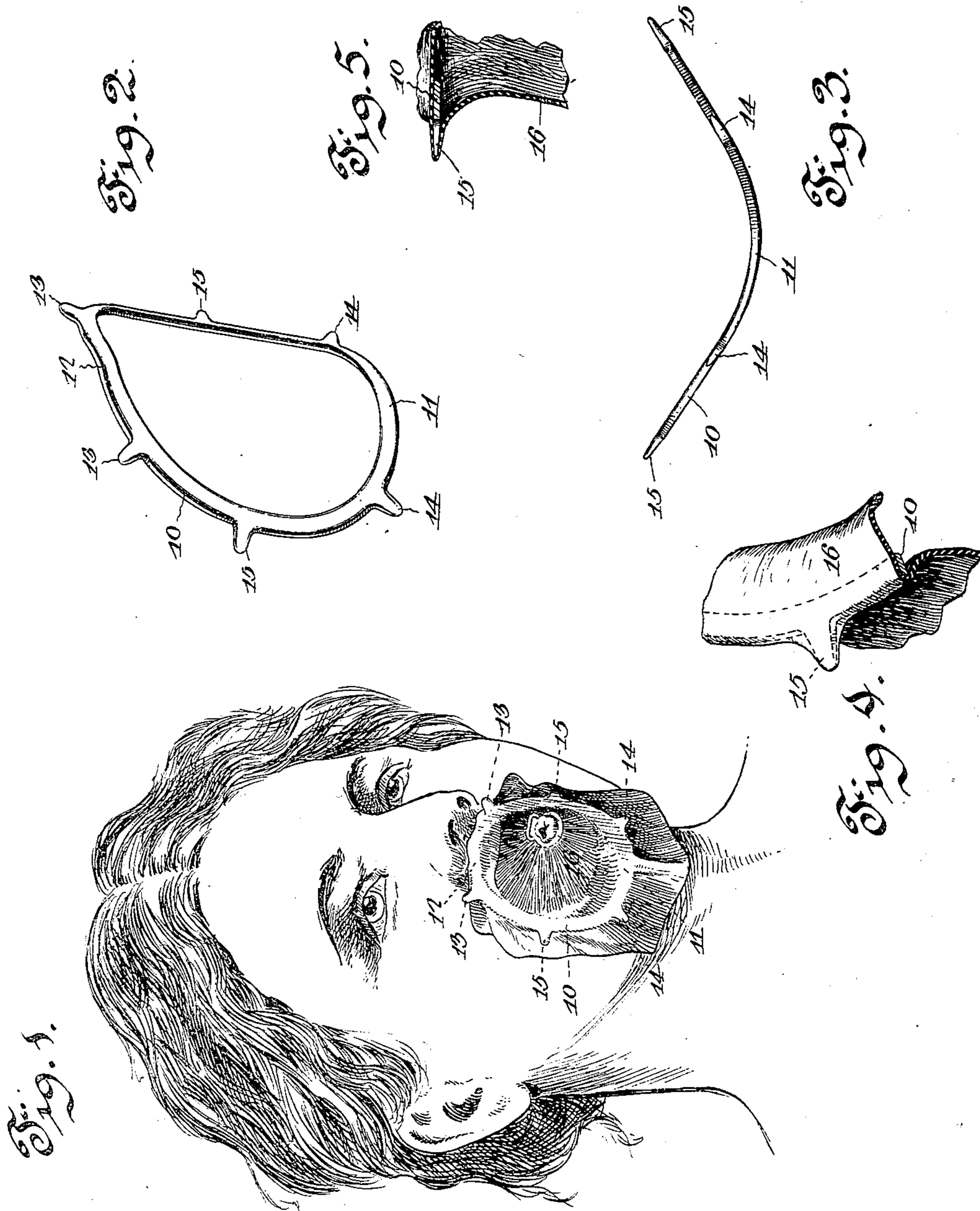
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C. W. MEGUIAR,
DENTAL RUBBER DAM HOLDER.

(Application filed Aug. 24, 1899.)

(No Model.)



Witnesses
J. H. Culverwell,
H. J. Berchard

Charles W. Meguiar, Inventor.
By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

CHARLES W. MEGUIAR, OF FRANKLIN, KENTUCKY.

DENTAL RUBBER-DAM HOLDER.

SPECIFICATION forming part of Letters Patent No. 663,507, dated December 11, 1900.

Application filed August 24, 1899. Serial No. 728,337. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. MEGUIAR, a citizen of the United States, residing at Franklin, in the county of Simpson and State of Kentucky, have invented a new and useful Dentist's Dam-Holder, of which the following is a specification.

In operative dentistry it is customary to employ a rubber dam which is stretched over and clamped on the tooth under treatment. It is necessary to support the free margins of the dam in a taut condition and in such manner about the mouth as will permit easy access; but in some devices which have preceded my improvements the rubber dam has been punctured or mutilated by hook or gripper devices, and in other dam-holders the patient is compelled to assume a position of the mouth and jaws which in prolonged work causes the patient to suffer considerable distress, besides which the dam holder or clamps attached to either end of the cord or ribbon which encircles the head sometimes presses so forcibly on the face as to leave a well-defined crease or depression across the cheeks, which crease does not disappear until fifteen or twenty minutes shall have elapsed after the removal of the holder.

I have devised a simple cheap and practicable type of dental dam-holder which overcomes all these objections and which is primarily designed to be worn with a maximum degree of comfort, so that a dentist may operate on a tooth for a prolonged period without the patient being exposed to any appreciable degree of discomfort, because the dam-holder does not press upon the face to such an extent as to be objectionable, and such holder enables the patient when the operator is not at work to move the jaws and the tongue while the dam is in position, thus relaxing the muscles of the face.

My invention consists of a rubber-dam holder comprising an open dished or deflected continuous frame having blunt projections and adapted to be held in position on the face upon both sides adjacent to the mouth solely by the tension of a stretched elastic rubber dam which is engaged with and stretched over the frame and the projections thereon.

The dam-holder of my invention is fashioned to fit the face around the mouth and

lips, and it is provided with blunt rounded spurs or prongs which are disposed in radial positions and substantially in the plane of the ring-like holder, over which prongs the rubber dam may be stretched or drawn so tightly as to press the holder against the face and also to connect the dam to the holder by the stretching or strain of the dam itself, thus obviating the employment of head-straps and dam-gripping devices and minimizing the liability of mutilating or tearing of the dam.

To enable others to understand the invention, I have illustrated the same in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a view showing a dentist's dam and holder applied to the mouth as contemplated by my invention. Fig. 2 is a detail perspective view of the dam-holder removed from the rubber dam. Fig. 3 is an edge view of the holder, illustrating the curvature thereof. Fig. 4 is a fragmentary view, on an enlarged scale, showing a portion of the holder-ring with one tooth or prong and illustrating the rubber dam drawn tightly over said prong. Fig. 5 is a cross-section of the parts shown by Fig. 4, illustrating the reduction in the thickness of the rubber dam due to stretching the latter around the prong in order to hold the dam in place solely by frictional contact between the parts and the tension of the stretched dam.

Like numerals of reference are used to indicate like and corresponding parts in each of the several figures of the drawings.

The holder 10 of my invention consists of a metallic ring or annulus and a series of blunt rounded prongs which are integral with the ring and project radially in different directions therefrom, said prongs being disposed in positions peculiar to my invention for the purpose of enabling the rubber dam to be stretched in either of several different directions, so that the dam may be drawn or stretched tightly after its application to the tooth.

The entire holder which I have invented may be economically and rapidly manufactured by stamping the same from a single piece of sheet metal through the medium of proper dies; but I would have it understood

that my invention is not restricted in its manufacture to stamping the same from sheet metal, because it is evident that other materials may be employed in the fabrication of the holder and that it may be made by other means than by dies.

One of the peculiar features of my dental dam-holder is that the ring is fashioned to conform to the contour of the face, and in the embodiment of the invention represented by Figs. 2 and 3 the ring is bent or curved at opposite sides to provide the receding portions 11 12, which lie out of the plane of the ring. As hereinbefore indicated, this holder has a plurality of prongs disposed in radial positions to the axis of the ring previous to bending the same to produce the receding portions therein, and the prongs at the top edge of the holder are indicated by the numeral 13, those at its bottom edge by the numeral 14, and the side prongs are indicated at 15. Although I have shown the holder as provided with a series of six prongs, it is evident that the number thereof may be varied; but according to my invention it is necessary to make the prongs quite blunt and to round the edges thereof, so that the rubber dam may be stretched over and around the prongs without mutilating the dam.

As is usual in the art, the dam consists of a thin sheet of highly-elastic rubber, which is indicated by the numeral 16 in the drawings, and this dam has an opening through which the tooth may project.

In using the invention the sheet of rubber is fitted in the mouth so that the tooth to be operated on will pass through the opening therein, after which the usual clamp is fitted around the tooth to hold the sheet of rubber in place thereon. The holder which I have invented is applied or fitted laterally against the face around the mouth and lips of the patient, and the rubber sheet is then passed through the holder, so that the upper and lower portions of the rubber may be drawn and stretched over the prongs 13 14 at the top and bottom edges of the holder. I now proceed to draw the side portions of the rubber sheet outwardly and to fit them over the prongs 15 at the sides of the holder.

In the practical service of my holder in connection with a rubber-sheet dam the dam is stretched tightly in the mouth and is engaged with the prongs of the holder, so that the only portion of the mouth which is exposed to view is the crown of the tooth adapted to be treated.

The holder of my invention does not present its edge to the face of the patient; but a broad lateral face of the holder bears on the patient's face around the mouth and lips. The tension of the stretched sheet of rubber which is clamped to the tooth holds the stiff unyielding metallic holder against the face; but the pressure of this holder due to the stretching of the sheet-rubber does not annoy the patient.

One of the most noticeable advantages in the practical service of my dental dam-holder is the freedom of the patient from distress during prolonged dental operations, and this is due, primarily, to the fact that the patient is able to move the jaws and the tongue during the periods when the dentist is not operating on the tooth, thus relaxing the muscles of the face so as to rest the same and without requiring removal of the dental dam during such relaxation of the muscles.

By reference to Figs. 4 and 5 of the drawings it will be observed that the thickness of the rubber is reduced quite materially at the point where said rubber is stretched tightly around the blunt rounded prong of the holder, and this sheet of rubber is thus held firmly by the prongs of the holder and solely by frictional contact between the rubber sheet and the holder-prongs. This frictional engagement between the parts and the tension of the rubber sheet, which is stretched between the holder and the tooth, cause the rubber sheet to be held by the prongs without the employment of gripper devices or any other means to overcome slipping of the rubber dam on the holder, whereby puncturing or mutilation of the rubber sheet is almost, if not wholly, overcome.

One of the important advantages of my dam-holder is the rapidity of removal of said holder and the rubber dam from the mouth and face of the patient in the event of the patient being seized with coughing, fainting, strangling, &c. It is to be recalled that the dam is held on the tooth by a clamp and is engaged near its marginal edges with the prongs of the holder, the rubber dam being stretched in a very taut condition and the holder resting simply against the face, said holder being unconfined by straps or analogous devices. To remove the dam and the holder, it is necessary simply to release the clamp from the tooth, whereupon the elasticity of the stretched dam causes the holder, with the dam attached thereto, to fly outward and away from the patient.

The advantages of my invention may be summarized briefly as follows: Simplicity of construction, cheapness of manufacture, ease of application, rapidity and ease of removal, economy in the quantity of high-priced rubber dam, comfort to the patient, accessibility to the mouth, and freedom from marking the face.

Slight changes may be made in the form and proportion of parts without departing from the spirit of the invention.

Having thus described the invention, what I claim is—

1. A rubber-dam holder comprised of an open dished or deflected continuous frame adapted to embrace the face upon both sides adjacent to the mouth and having blunt projections adapted to hold the dam over the said holder and projections, said frame adapt-

ed to be held on the face solely by the tension of a stretched rubber dam, substantially as described.

2. A rubber-dam holder comprised of an
5 open dish continuous frame adapted to embrace the face on both sides adjacent to the mouth, and having blunt projections formed integral with the frame and adapted to hold the dam when stretched over said projections,
10 said holder adapted to be retained in place

solely by the tension of a stretched rubber dam, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES W. MEGUIAR.

Witnesses:

E. N. WATERS,

THEODORE DALTON.