No. 676,465. Patented June 18, 1901.

W. LOWENTHAL.

RUBBER DAM HOLDER.

(No Model.) (Application filed Nov. 6, 1900.)

Fig. 1.

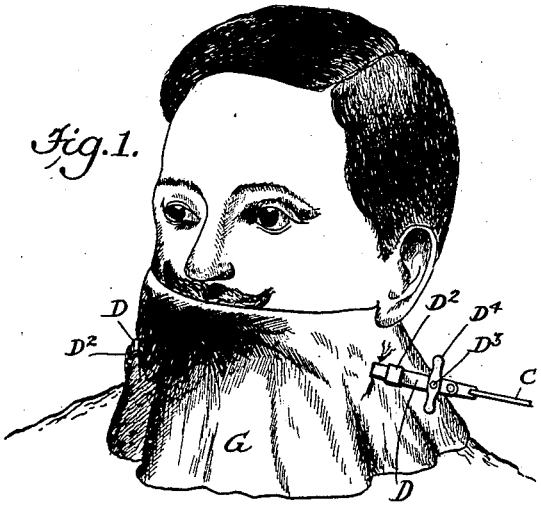


Fig. 2.

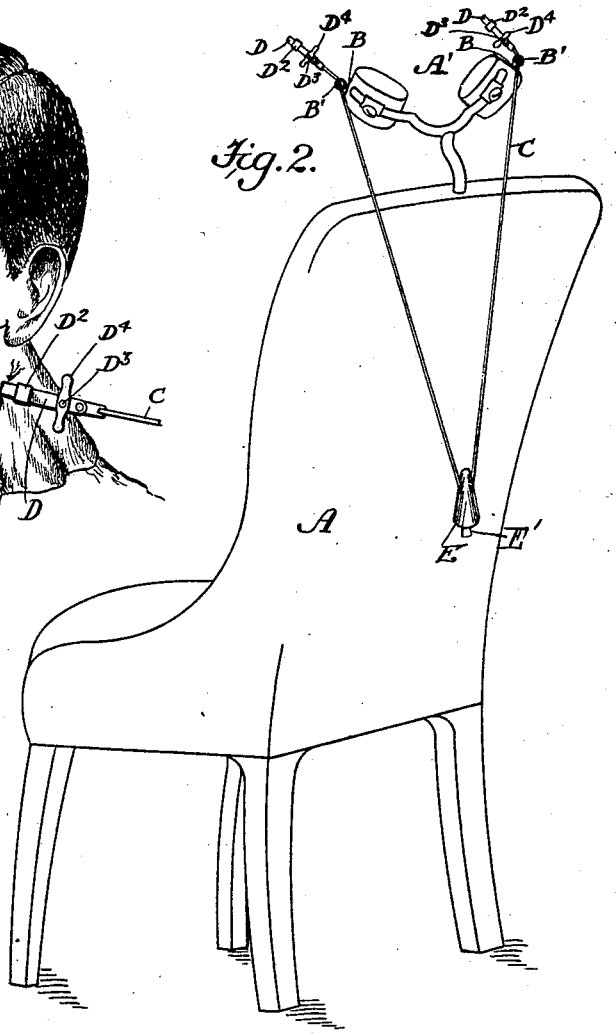
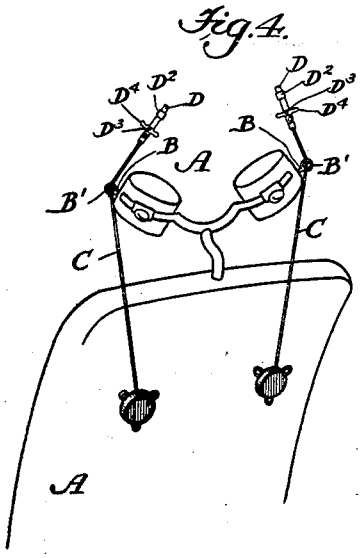


Fig. 4.



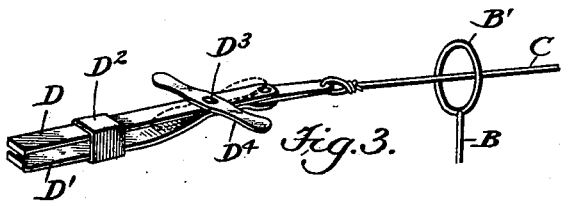


Fig. 3.

Witnesses
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M. F. Boyle.

Inventor
William Lowenthal
By his Attorney
Thomas Drew Stetson

UNITED STATES PATENT OFFICE.

WILLIAM LOWENTHAL, OF SOUTH ORANGE, NEW JERSEY, ASSIGNOR TO HIMSELF AND GEORGE H. HOYT, OF NEW YORK, N. Y.

RUBBER-DAM HOLDER.

SPECIFICATION forming part of Letters Patent No. 676,465, dated June 18, 1901.

Application filed November 6, 1900. Serial No. 35,612. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LOWENTHAL, dentist, a citizen of the United States, residing at South Orange, Essex county, in the State of New Jersey, have invented a certain new and useful Improvement in Rubber-Dam Holders, of which the following is a specification.

The dentist's rubber dam has been long and favorably known for use in filling teeth either on the upper or lower jaw. A sufficiently large piece of thin rubber is extended across the mouth, allowing the tooth to be operated on to extend through an aperture therein. The means which have been heretofore employed for drawing the ends of such rubber backward have been open to objection. I have devised means which allow the tension to be always right, avoid marking the face, allow the head of the patient great liberty in turning and in making forward and backward movements, and allow the tension to be more uniform and more gentle than any means previously known to me.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is a perspective front view of the head and shoulders of the patient with the device in use. Fig. 2 is a perspective rear view showing all the novel parts on a smaller scale, the patient and rubber dam being omitted. Fig. 3 is a perspective view of a clasp and a portion of the cord and the guiding-pin on a larger scale. Fig. 4 is a rear view corresponding to Fig. 2, but showing a modification.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

A is a chair, which may have any ordinary or suitable provision for tilting and turning in various positions.

A′ is a good form of well-known head-rest. Two pins B B, inserted at will in the upholstery, are each equipped with a sufficiently large smooth ring B′ to serve as a pulley through which the cord may "render" to accommodate changes of position of the patient.

C is the cord, extending continuously from a clasp at one edge of the ordinary rubber dam G rearward through the rings B′, down through a smooth double-flared hole in the weight E, thence upward and forward through the other ring A′, and is joined at the other extremity to the opposite clasp.

D D′ are the two parts of the clasp; D^2, a slide which compresses its jaws; D^3, a loose rivet, and D^4 a cross-bar, which latter when the device is in use should be set, as shown in strong lines in Fig. 2, about crosswise of the parts D D′. In this position it holds the clasp against ever being drawn rearward through the corresponding ring B′. If we turn the cross-bar into the position shown in dotted lines, the entire clasp, with its cross-bar, can be inserted or removed through the ring at pleasure.

When the patient turns his or her head, the cord is drawn forward on one side and relaxed and allowed to be drawn backward on the other side, the cord extending down the back of the chair and through the weight is correspondingly changed in position, so that the weight bears and forms its slightly-rounded angle at a new place in the cord. When the patient moves forward or to one side to expectorate or for any other purpose, both parts of the cord move forward through their rings B′ to equal extents or to any varied extent which is required. The cord should be of such length as to allow ample motion for the patient for all purposes required while in the dental chair.

To facilitate the change of tension on the cords, I make the weight E hollow and provide a close-fitting plug E′, which may be an ordinary cork, to close the aperture, and by removing this shot may be added or subtracted to vary the weight within wide limits.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. The materials may be varied. I prefer fine catgut for the cord, precious metals for the clasps and for the rings on the pins, and brass for the body of the pins and for the weight.

The pins B B′ may be set nearer together or wider apart, with the effect to strain the edges of the rubber dam in correspondingly diverging or contracting lines. It will usually be preferred to set them wide apart, so that the cords will extend away clear without press-

ing on and involving any risk of marking the face or neck.

Making the cord continuous and running loosely through a single weight, as shown, gives important advantages, maintaining the conditions uniform when the head is changed in position; but I may have two cords and a weight for each, with the inconvenience of the weights being a little more in the way of the operator in his movements about the chair. Instead of the weights I can use springs. Fig. 4 shows a form of the invention in which two independent cords are thus used with springs instead of weights to allow the requisite yielding and maintaining the required gentle and nearly uniform tension.

For a child whose head comes too low for the head-rest the guides B B′ may be set directly in the upper edge of the back of the chair.

I claim as my invention—

1. In combination with a chair, an upholstered head-rest, two guides B B′ set adjustably therein, cords extending through such guides, means for maintaining gentle yielding tension thereon, and clasps D D′ attached to such cords, all adapted to serve substantially as herein specified.

2. In a dentist's rubber-dam holder, two guides B B′ adapted to be set adjustably in portions of a head-rest, in combination with a rubber dam and with a cord extending rearward through such adjustable guides, means for maintaining a gentle yielding tension thereon, and clasps D D′ attached as shown, each equipped with a turnable cross-bar D^4 adapted to prevent the passage of the clasp through the guide except when intentionally adjusted therefor, all substantially as herein specified.

3. In a dentist's rubber-dam holder, two guides B B′ adapted to be set adjustably in a head-rest, in combination with a rubber dam and with a cord extending rearward through each of such adjustable guides, and a single weight G receiving such cord, the cord being arranged to work pulleywise not only through the guides but also through the weight, all substantially as herein specified.

4. In a dentist's rubber-dam holder, guiding means set in a dental chair, in combination with a rubber dam and with a cord extending therefrom directed by said guiding means, and means for maintaining a gentle yielding tension on the cord, all substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

WILLIAM LOWENTHAL.

Witnesses:
FREDERIC B. TAYLOR,
IRA T. REDFERN.

Correction in Letters Patent No. 676,465.

It is hereby certified that the name of the assignee in Letters Patent No. 676,465, granted June 18, 1901, upon the application of William Lowenthal, of South Orange, New Jersey, for an improvement in "Rubber-Dam Holders," was erroneously printed at the head of the specification "George H. Hoyt," whereas said name should have been printed *Charles H. Hoyt;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 9th day of July, A. D., 1901.

[SEAL.]

F. L. CAMPBELL,
Assistant Secretary of the Interior.

Countersigned:

F. I. ALLEN,
Commissioner of Patents.