

A. R. DE PASS.
 MEANS FOR PROTECTING DENTAL WORK.
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1,019,733.

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Fig. 1.

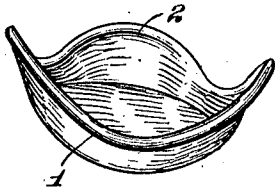


Fig. 2.

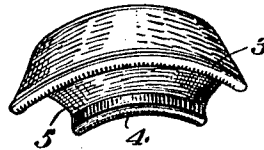


Fig. 4.

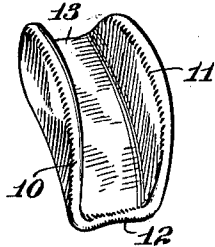


Fig. 3.

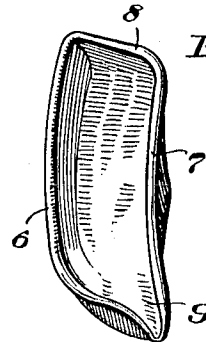


Fig. 5.

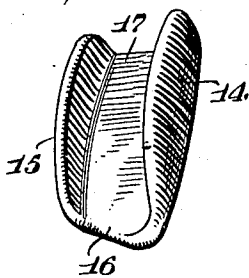


Fig. 6.

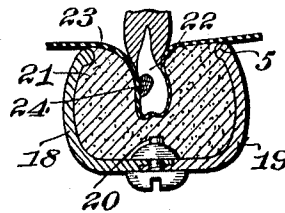
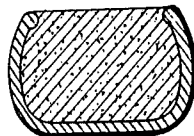


Fig. 7.



Witnesses
 J. Adolph Bishop
 C. S. Brown.

Inventor
 Addison R. De Pass
 By
 Foster, Freeman, Minton & Child
 Attorneys

UNITED STATES PATENT OFFICE.

ADDISON R. DE PASS, OF COLUMBIA, SOUTH CAROLINA.

MEANS FOR PROTECTING DENTAL WORK.

1,019,733.

Specification of Letters Patent.

Patented Mar. 5, 1912.

Original application filed June 24, 1911, Serial No. 635,233. Divided and this application filed September 14, 1911. Serial No. 649,334.

To all whom it may concern:

Be it known that I, ADDISON R. DE PASS, a citizen of the United States, and resident of Columbia, in the county of Richland and State of South Carolina, have invented certain new and useful Improvements in Means for Protecting Dental Work, of which the following is a specification.

This invention has for its object the protection of dental work in the mouth of a patient.

It is a well known fact that fillings and other dental work should be protected from moisture in the mouth of the patient for a certain period of time after the work is done and various means have been used by dentists for this purpose. The patient has been required to keep his mouth open and cotton has been stuffed around the teeth to protect them from saliva, and in addition a rubber sheet or dam is often kept around the tooth. In spite of these precautions, however, it is not always possible to prevent the access of moisture to the work.

My present invention is designed to effectively and absolutely protect the work from moisture, and in addition to this to avoid in a great measure the discomfort to the patient incident to the method and means heretofore used and to reduce to a minimum the exertion on the part of the dentist in protecting the work.

The novel features of the invention will be apparent from the following description taken in connection with the drawings.

In the drawings: Figure 1 is a perspective view of a form or mold adapted to fit over the upper front row of teeth; Fig. 2 shows a similar form adapted to fit over the lower front row of teeth; Fig. 3 is a similar view of a form adapted to fit over the upper right row of teeth; Fig. 4 shows a similar but shorter form adapted to fit over a section of the upper left row of teeth; Fig. 5 shows a similar form adapted for use on the lower right row of teeth; Fig. 6 is a cross sectional view showing the details of construction which may be used in making the mold, and in addition showing the device applied to the teeth as in actual use; and Fig. 7 is a cross section of one of the forms made in one piece.

In the companion application, No. 635,233, which I filed on June 24, 1911, I have claimed the process for protecting the

teeth during work on them and the present application is a division of that case.

In carrying out my invention, I cover the teeth upon which the work has been done with a mold or casting of plastic material held in a form so shaped as to properly and conveniently fit over the section of the teeth in which the work has been done. The form itself does not come in contact with the teeth, but extends along both sides of the teeth up to a point beyond the exposed portions so that the teeth may sink down in the form and in the plastic material contained in the form until that plastic material closely fits around the teeth and up to the gums of the patient. Plaster of Paris is a suitable material for use as the plastic material in which the teeth are embedded, but it will be understood that any other similar or suitable material may be used. When I make use of plaster of Paris I preferably place sufficient material in the form to fill it and then spread a thin sheet of elastic rubber over the plaster of Paris and press the form up firmly against the teeth until the teeth are embedded in the plaster of Paris with the layer of rubber between the teeth and the plaster of Paris, thus effectively protecting the teeth even from the moisture contained in the plastic material. It will, of course, be understood that the plaster of Paris is moistened and in plastic form when the teeth are embedded, but that it will quickly set forming a rigid cast around the teeth effectively protecting them and keeping out moisture. The forms are so shaped that they will properly fit the various parts of the mouth with as little inconvenience to the patient as possible. When it is desired to remove the cast from the teeth, the mold may be first withdrawn from the cast and the plaster of Paris may then be broken up and removed in sections. I have found, however, that it is not necessary to remove the mold from the cast but the plaster of Paris in position in the form may be removed with the form from the teeth since there will be sufficient give to permit this removal when pressure is applied to pull the cast away. The plaster of Paris may then be removed from the form and yet will be ready for use again with new plastic material.

As shown in Fig. 1 of the drawing, the mold for the upper front row of teeth has a

wall 1 shaped to fit around the outside of the
 teeth and to extend upwardly beyond the
 exposed portions and there is also an inner
 wall 2, fitting around the inside of the row
 5 of teeth. There is between these two walls
 a groove or recess which is to be filled with
 the plaster of Paris and covered with a thin
 coating of water-proof material, such as
 rubber. The mold for the lower front row
 10 of teeth is formed with the front wall 3 and
 the rear wall 4, leaving a groove for the
 teeth between them and as shown in this
 figure the upright walls are preferably under-
 15 shown at 5, so that the upper edges make a
 slightly contracted outlet for the material
 contained in the form, serving to securely
 and firmly hold it in position. I preferably
 20 make use of this undercut arrangement on
 each of the forms since it not only holds
 them in position, but makes the plastic ma-
 terial more firmly press against the teeth
 when they sink into it up around the roots
 so as to make a close water-tight joint.
 25 In Fig. 3 I have shown a form of mold
 embodying the side walls 6 and 7 and a rear
 end wall 8, of such shape that it can be fitted
 over the entire row of teeth on the upper
 right hand side. It has on its forward end
 30 on one side an outlet or opening 9 for the
 passage of the front teeth. It will be un-
 derstood that a similar mold with the parts
 reversed, may be used for the upper left
 hand row of teeth. In Fig. 4 I have shown
 35 a shorter form for the upper left hand row
 of teeth having the inner wall 10 and the
 outer wall 11 so curved and shaped as to
 properly fit over a section of the teeth, but
 in this instance the form is made shorter
 40 than that indicated in Fig. 3 so that it will
 cover only a portion of the teeth on one side,
 and it will consequently not be so much in
 the way of the patient as will the long form
 covering the entire row. In this particular
 45 form the ends are open, except that there are
 upwardly bent or extending portions 12 and
 13, serving as ribs or dams to assist in hold-
 ing the material in the form while the teeth
 are being embedded. It will be understood
 50 that the form for the upper right side will
 be similarly constructed so as to fit on that
 side. The form shown in Fig. 5 has an
 outer side wall 14 and an inner side wall 15
 and, like that shown in Fig. 4, is provided
 55 with open ends with the upward projections
 16, 17 to hold the material in place.

Each of the forms used in carrying out
 my invention may be made of any suitable
 material, such as rubber or metal. When
 60 made of rubber or similar material, the side
 walls may have sufficient resiliency to per-
 mit the form to be withdrawn from the
 hardened plaster of Paris, notwithstanding
 the fact that the form may have its side
 65 walls slightly contracted toward the top.

Instead of making the forms with the resili-
 ent sides, however, I may make them of
 more rigid material and in that case I pre-
 fer to make them in sections, as indicated
 in Fig. 6, whereby they may be divided to
 70 release the hardened plastic material. It is
 not necessary, however, to make the forms
 in sections so that they may be divided,
 since I have found that even where the plas-
 75 ter of Paris is held in a rigid form, it may
 be removed from the teeth while in the
 form, by a pull in the line of the teeth, so
 that it is possible to use a form which does
 not give so as to be removed from the cast
 or one which is divided. In the particular
 80 structure shown in Fig. 6, the form is made
 up of two longitudinal metal sections 18
 and 19, divided longitudinally at the bot-
 tom, the two sections overlapping or fitting
 85 together and being held by screws or bolts
 20. The bolts may pass through slots in the
 overlapping portion so that when screwed
 tight they will hold the two sections firmly
 together, forming a proper mold, but when
 the bolts are released the sections may
 90 be separated and removed from the material
 contained in the form. As shown in Fig. 6,
 the side walls are inclined slightly toward
 each other at the top and have the undercut
 portions 5, so as to firmly hold the plaster
 95 of Paris, wax or other materials 21, and to
 make that material fit closely around the
 teeth 22, when they are embedded in it.
 The thin sheet of rubber 23 is placed across
 the top of the plastic material and when the
 100 teeth are embedded in that material, the
 rubber sheet will be pressed closely around
 the teeth and up around the gums so as to
 form a tight fit, effectively keeping out any
 moisture. The rubber is not only water-
 105 proof, but is elastic and, consequently, will
 make a perfectly water-tight joint. As
 shown in this figure, 24 represents a filling
 which is being protected by the plastic ma-
 terial and rubber coating. 110

I prefer to use plaster of Paris in carrying
 out my invention, but it will be understood
 that other materials may be used and this is
 true also of the water-proof lining or coat-
 115 ing over the tooth when it is embed-
 ded in the plastic material, which is pref-
 erably of rubber, although my invention is
 not limited to the use of that material. My
 invention, furthermore, is not confined to
 the specific details of construction of the
 120 forms for holding the plastic material.

Having thus described my invention, what
 I claim is:—

1. The combination with a form shaped
 to fit in the human mouth over a row of
 125 teeth and having an open top, of a filling of
 plastic material in said form, and a thin
 layer of flexible water-proof material on the
 exposed surface of said plastic material.

2. The combination with a form shaped 130

to fit in the human mouth over a row of teeth and having an open top, of a filling of plastic material in said form, and a thin layer of flexible water-proof material on the exposed surface of said plastic material, the side walls of said form being undercut and so constructed as to hold said material firmly therein and capable of removal from said material even when hardened without breaking said material.

3. In a device of the class described, a form adapted to contain plastic material having an open top and shaped to fit in the human mouth over a row of teeth without touching them, the side walls of said form extending up along the sides of the row of teeth, the side walls of said form being so constructed as to be capable of movement away from each other to permit removal from the plastic material when hardened.

4. In a device of the class described, a form adapted to contain plastic material having an open top and shaped to fit in the human mouth over a row of teeth without

touching them, the side walls of said form extending up along the sides of the row of teeth, the said form being divided longitudinally between said sides, and means being provided for detachably securing the divided sections together.

5. In a device of the class described, a form adapted to contain plastic material having an open top and shaped to fit in the human mouth over a row of teeth without touching them, the side walls of said form being sufficiently high to extend beyond the exposed portions of the teeth when in position and being undercut along their inner top edges, and the said form being divided longitudinally between said side walls and the divided sections being detachably held together.

In testimony whereof I affix my signature in presence of two witnesses.

ADDISON R. DE PASS.

Witnesses:

A. C. DE PASS,

J. E. BELSER.