

(No Model.)

W. L. MASON.

DETACHABLE PORCELAIN CROWN FOR BRIDGE WORK.

No. 559,185.

Patented Apr. 28, 1896.

Fig: 1.

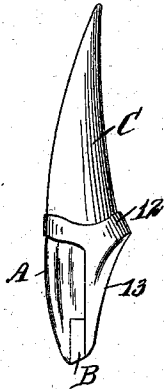


Fig: 2.

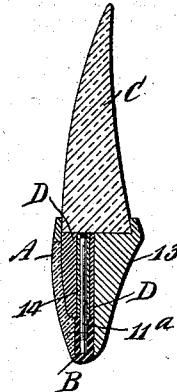


Fig: 3.

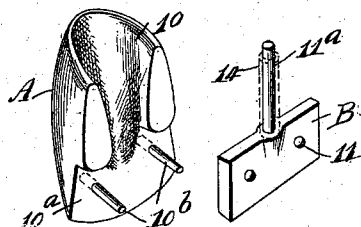


Fig: 4.

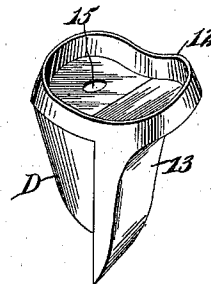


Fig: 6.

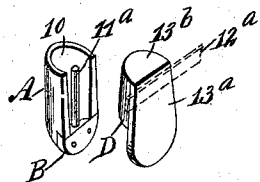


Fig: 5.

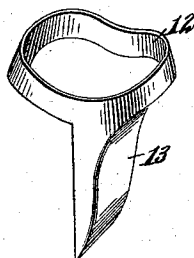
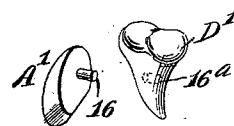


Fig: 7.



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DETACHABLE PORCELAIN CROWN FOR BRIDGEWORK.

SPECIFICATION forming part of Letters Patent No. 559,185, dated April 28, 1896.

Application filed July 26, 1895. Serial No. 557,192. (No model.)

To all whom it may concern:

Be it known that I, WALTER L. MASON, of Red Bank, in the county of Monmouth and State of New Jersey, have invented a new and Improved Detachable Porcelain for Crown and Bridge Work, of which the following is a full, clear, and exact description.

My invention relates to an improvement in dentistry, and especially to an improvement in detachable porcelains for crown and bridge work, the object of the invention being to provide a porcelain which may be employed as a finish for a tooth, or as a single tooth, or may be used as a portion of bridgework, and which may be conveniently and expeditiously removed from its support and replaced in as convenient and ready a manner, the operation of removing, returning, or replacing the porcelain being accomplished without the necessity of interfering in the slightest degree with the support therefor.

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 characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a tooth having the improved detachable porcelain applied. Fig. 2 is a vertical section through the root of a tooth upon which the porcelain and its support are mounted, together with a vertical section through the support and the porcelain. Fig. 3 is a perspective view of the porcelain and anchor-plate for the pivot-pin therefor. Fig. 4 is a perspective view of the complete support for the porcelain viewed from its upper side. Fig. 5 is a perspective view of a portion of the backing for the porcelain and a cap or band to surround the root of the tooth. Fig. 6 is a perspective view of the porcelain and support, adapted either for bridgework or for kindred uses, the support differing slightly from that shown in Figs. 4 and 5; and Fig. 7 is a perspective view of a porcelain for a molar and backing, being likewise adapted for use in bridgework.

In carrying out the invention the porcelain A is provided with a chamber 10 in the back

portion thereof and a transverse recess 10^a at the bottom portion of this chamber, and in the recessed portion of the porcelain preferably two metal pins 10^b are laterally projected in a rearwardly direction, and the bottom of the chamber 10 is formed through the medium of an anchor-plate B, which is preferably of metal and is adapted to fill the recess 10^a in the back of the porcelain. The anchor-plate is provided with apertures 11, corresponding in number and location to the horizontal pins 10^b, since when the anchor-plate is in position on the back of the porcelain the said pins extend through the apertures 11, and are soldered, riveted, or otherwise manipulated to render the anchor-plate and porcelain virtually integral.

The open or chambered portion 10 of the porcelain is, as heretofore stated, at the back and likewise at that portion of the porcelain which is placed next to the gums. The anchor-plate B has secured thereto or formed integral therewith a vertical pivot-pin 11^a, which is centrally located within the aforesaid chamber 10 of the porcelain, and is usually of sufficient length to extend from the base of the chamber substantially flush with the edge of the porcelain that is to contact with the gum, or beyond this edge, as occasion may demand.

When the porcelain is to be applied to a root C, as shown in Figs. 1 and 2, a band 12 is provided, adapted to encircle the root and to be cemented or otherwise secured thereto, the band being shown particularly in Figs. 4 and 5, and, preferably, the said band is provided at the back with a plate 13, having one of its sides more or less curved or beveled and its other side practically straight, the curved or beveled side being that which is to be presented to the tongue, and constituting the lingual face of the tooth or of the bridge-work.

A backing D is provided for the porcelain, being secured to the back plate 13, and in order that this backing may perfectly fit the porcelain a tube 14 of a very thin metal is placed around the pivot-pin 11^a of the porcelain. The porcelain is then placed against the straight face of the back plate 13, or against any other flat surface, and the material from which the

backing is to be made is poured into the chamber 10 of the porcelain around the tube 14, adhering to this tube. In this manner the porcelain is used as a mold for its backing, and the tube is made an integral portion of the backing, it then being adapted to receive the pivot-pin of the porcelain at any time. The backing after it has been cast or molded is removed from the porcelain and secured in any suitable or approved manner to the straight surface of the back plate 13, and is carried upward within the band 12 to rest against the upper or lower face of the root, according to whether the said root is in the upper or the lower jaw.

It is evident that the backing, back plate and band having been secured to the root the porcelain may be quickly placed in position by sliding it over the backing, its pivot-pin entering the opening 15 in the backing formed by the inserted tube 14, and the pin may be cemented or otherwise secured in the said opening or socket 15.

It is further evident that should anything happen to the porcelain—that is, should it become broken or otherwise damaged—it may be readily removed and replaced by another without disturbing the backing or the attaching devices to the root or to the bridgework if used in that connection.

It is also evident that the porcelain will not be injured by contact with the fire, since under this new and improved process the porcelain is not soldered, as under the old process, nor is it held in any metal binding which must be soldered while the porcelain is in place.

In Fig. 6 I have illustrated a slight modification in the formation of the backing, being especially adapted for use in connection with bridgework, and therefore the back plate 13^a is straight on both of its faces, and is provided with a cap or flange 13^b at the top, the band 12^a being shown in dotted lines.

In Fig. 7 I have illustrated a porcelain A' for a molar, in which the porcelain is provided with a horizontal pivot-pin 16, adapted to enter an opening 16^a in the backing D', the inner face of the porcelain being beveled, as is likewise the outer face of the backing adapted to engage with the porcelain.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. A detachable porcelain for crown and bridge work, provided with a pivot-pin, a backing shaped to fit the inner face of the porcelain, and having a socket to receive the pivot-pin, and means for securing the said backing to a root or to the structure of bridge-work, whereby the said porcelain may be removed or replaced without disturbing the backing or the support therefor, as and for the purpose specified.

2. A detachable porcelain for crown and bridge work provided with a chamber, and a pin in the said chamber, extending from the base-wall thereof in direction of the edge to be presented to the gum, a support adapted to be secured to a root or to a portion of the structure of bridgework, and a backing secured to said support and having a socket to receive the pin on the detachable porcelain, as and for the purpose set forth.

3. As an improved article of manufacture, an artificial tooth consisting of a back plate having a backing secured thereto, a vertical tube secured in the said backing, a band for securing the said back plate to a root or to the structure of bridgework, and a porcelain shell provided with a chamber at its back adapted to fit the said backing and having a vertical pivot-pin adapted to enter the tube in the said backing, substantially as shown and described.

4. The herein-described method of applying detachable porcelains for crown and bridge work, which consists in forming a chamber in the back of the porcelain, placing a pin in said chamber, surrounding said pin loosely with a tube, molding the backing for the porcelain in the chamber of the latter, whereby the tube will adhere to the backing and will be withdrawn from the porcelain with the backing, and finally securing the backing to a back plate or support adapted for attachment to a root, or to a portion of the structure of bridgework, as and for the purpose set forth.

WALTER L. MASON.

Witnesses:

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