

(No Model.)

J. E. LOW.
ARTIFICIAL DENTURE.

No. 443,144.

Patented Dec. 23, 1890.

Fig. 1.

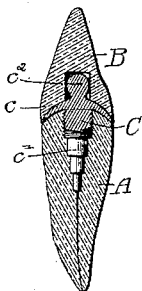


Fig. 2.

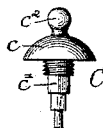


Fig. 3.

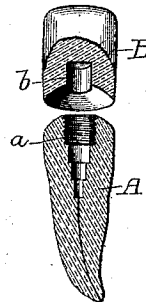


Fig. 4.

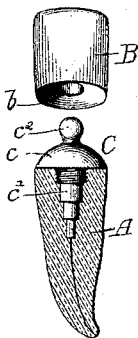


Fig. 6.

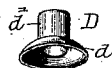


Fig. 5.

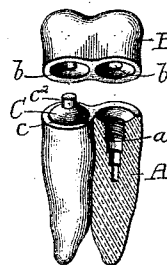
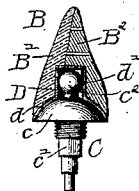


Fig. 7.



Witnesses:

Louis M. Whitehead

Wm. J. Hemming

Inventor:-

James E. Low.

By:- Dayton, Pool & Brown

Attorneys:-

UNITED STATES PATENT OFFICE.

JAMES E. LOW, OF CHICAGO, ILLINOIS.

ARTIFICIAL DENTURE.

SPECIFICATION forming part of Letters Patent No. 443,144, dated December 23, 1890.

Application filed January 31, 1890. Serial No. 338,805. (No model.)

To all whom it may concern:

Be it known that I, JAMES E. LOW, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Artificial Dentures; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in devices for attaching artificial crowns to roots of natural teeth; and it has for its primary object to provide a construction by which the work of applying artificial crowns to natural roots is greatly facilitated and cheapened, and by which the completed denture possesses greatly increased strength and durability as compared with previous constructions of the same general character, while at the same time a crown, if broken, may be easily and quickly replaced.

In the accompanying drawings, illustrating my invention, Figure 1 represents my invention as applied to an incisor tooth, the structure being shown in central vertical section from front to rear. Fig. 2 is a side elevation of the metallic connection by which the artificial crown is joined to the natural root. Fig. 3 represents the natural root and the artificial crown prepared to receive the connecting device illustrated in Fig. 2, said crown and root being shown in section. Fig. 4 represents the natural root in central section with the connecting device applied thereto ready to receive the crown, which is shown in the same figure in front elevation. Fig. 5 represents a bicuspid-root, partly in vertical section, and a corresponding crown ready to be applied thereto, one of the two connecting devices employed in such cases being shown in position on the root. Fig. 6 illustrates a metallic socket-piece intended to be employed with an artificial crown having a metal backing; said socket-piece being adapted to receive the upper projection on the metallic connection shown in Fig. 2, and also to be soldered to the metal backing on the crown. Fig. 7 illustrates a crown having a porcelain front and a metal back attached to the socket-piece shown in Fig. 6.

A represents a natural root, B an artificial crown, and C a metallic connection for uniting the crown B to the root A. Said connection C consists of a cup-shaped disk *c*, from the center of the concaved side of which extends the stepped projection *c'*, and from the center of the convexed side of which projects the irregular-shaped stud *c²*. The projection or shank *c'* enters the root, which will have been drilled, as illustrated in Fig. 3, to give a hole therein of stepped form corresponding with that of the shank *c'* on said connection C. One of the sections of the stepped and tapering shank *c'* is shown screw-threaded, and the corresponding step or section of the orifice *a* in the root will in such case be correspondingly threaded. The top of the root will be rounded to fit the concavity of the disk *c* of the connecting device C.

The crown B is provided with an orifice *b*, adapted to receive closely the stud *c²* on the connection C, and the under face of the crown is concaved to closely fit the convex surface of the disk *c*.

The connection C will be made in quantities and in various sizes, and tools will be provided for dentists adapted to drill the roots and to shape their exposed ends to fit the shank and concaved surface of the disk of the connection C. The crowns will be made in quantities already formed, as indicated, to receive the stud *c²* and to fit the convex surface of the disk *c*.

The root having been fitted to receive a connection C of suitable size, the shank *c'* of the latter will be inserted into the root, cement being applied to the shank, so as to thoroughly close the root off from all action of the fluids of the mouth.

The screw-thread on the shank *c'* and in the root is desirable to more firmly and securely hold the connection C with the root; but it is not absolutely necessary to the broad invention, which consists in the provision of the connection C, having the concavo-convex disk *c* and opposite projections as a means of attaching a recessed root to a recessed crown. When the screw-thread is employed, it will be necessary to first firmly screw the connection C to the root, after which the crown B, having cement applied to its interior and under sur-

faces, will be forced down upon the top of the connection and there held by the cement.

If the connection C is made without the screw-thread, said connection may be first inserted in the crown, if desired, and afterward into the root, or first into the root and afterward into the crown; but ordinarily the screw-threaded construction, which is claimed as a special improvement, will be preferred, and in that case the connection will be first applied to the root and the crown thereto afterward attached, as above described.

In connection with bridge-work and where it is desired to not only apply an artificial crown to a root, but to utilize the crown for the attachment of a bridge or other surface-denture, the artificial crown is required to have a metal back, and for this purpose the socket-piece D (shown detached in Fig. 6) is provided, said socket-piece having a flange d , adapted to fit closely the convex surface of the disk c of the connection C, and having, also, a socket d' to receive the stud c^2 of said connection.

In Fig. 7 the crown B is composed of the front porcelain portion B' and back metal portion B^2 , secured to each other in any suitable way, and between them is placed the socket-piece D. The crown thus constructed answers to the crown B of the preceding figures in its adaptation to receive the upper part of the connection C.

I claim as my invention—

1. The combination, with an artificial crown and a natural root, of a connection C, consisting of a concavo-convex disk c , a stepped shank c' proceeding from the concave surface of the disk and a stud proceeding from the convex surface of said disk, the root and crown being

respectively fitted to receive the shank and stud and to conform to the concaved and convex surfaces of the disk c .

2. The combination, with the natural root and artificial crown, of a connection C, having a stepped shank, one of the sections of which is screw-threaded, a stud c^2 , an intermediate concavo-convex disk having its concaved surface toward the stepped shank, the root having a stepped orifice, one section of which is threaded to fit the shank and its upper end convexed to fit the adjacent surface of the disk of the connection, and the crown having an aperture to receive the stud c^2 and its inner end concaved to fit the convexed surface of the disk c .

3. The combination, with a natural root and a connection C for joining said root to an artificial crown, said connection having a concavo-convex disk c , and projections on opposite sides thereof, of a socket-piece D, provided with a flange d , fitted to the convexed surface of the disk c , said socket-piece being adapted for connection by solder or otherwise with the body of the crown.

4. As an article of manufacture adapted for joining artificial crowns to natural roots of teeth, the metallic connection C, consisting of the concavo-convex disk c , a stepped projection or shank c' for insertion in the root, and the stud c^2 , substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

JAMES E. LOW.

Witnesses:

M. E. DAYTON,
TAYLOR E. BROWN.