

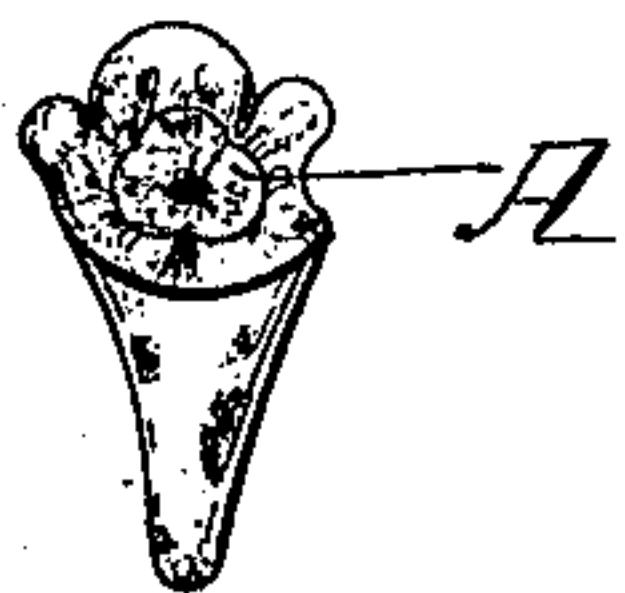
(No Model.)

A. ROBINSON.  
PROCESS OF FILLING TEETH.

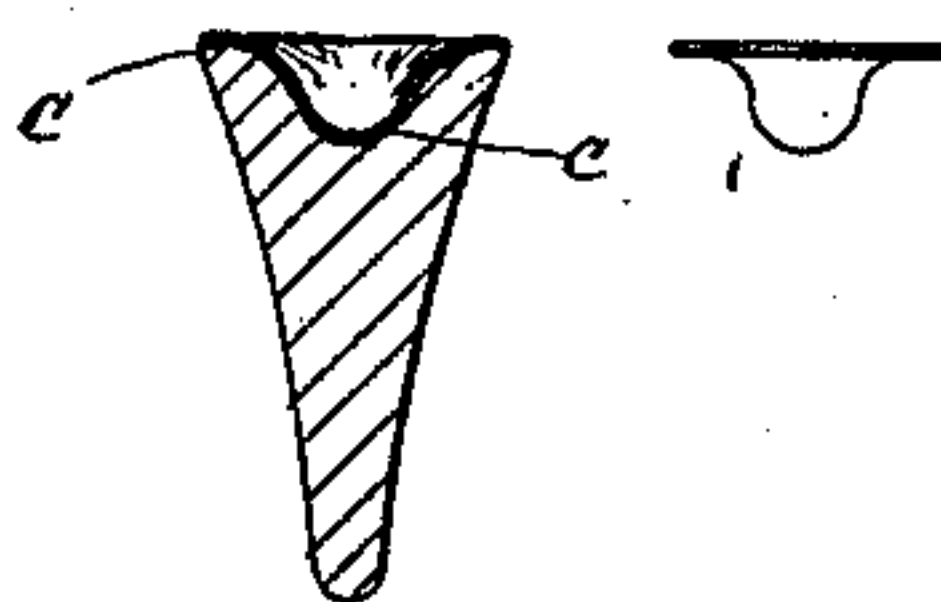
No. 402,352.

Patented Apr. 30, 1889.

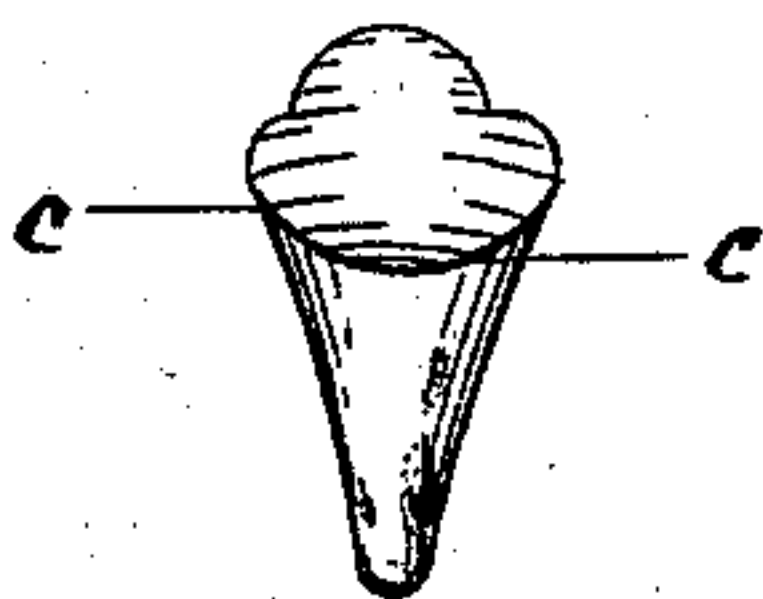
*Fig. 1.*



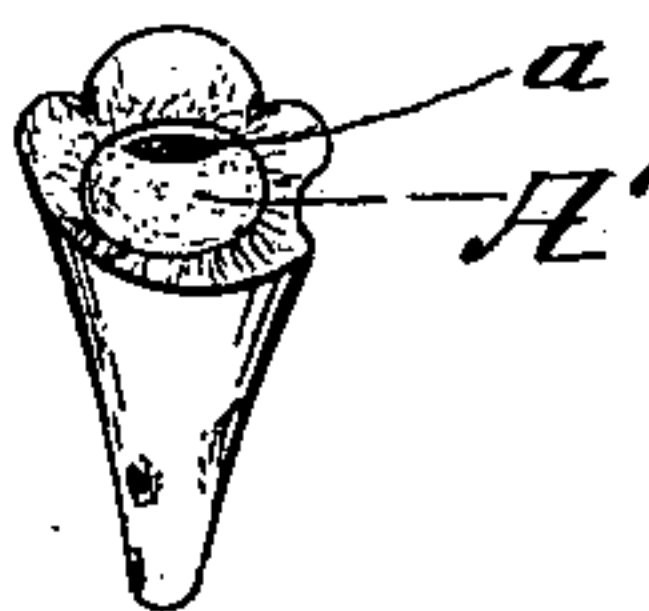
*Fig. 2.*



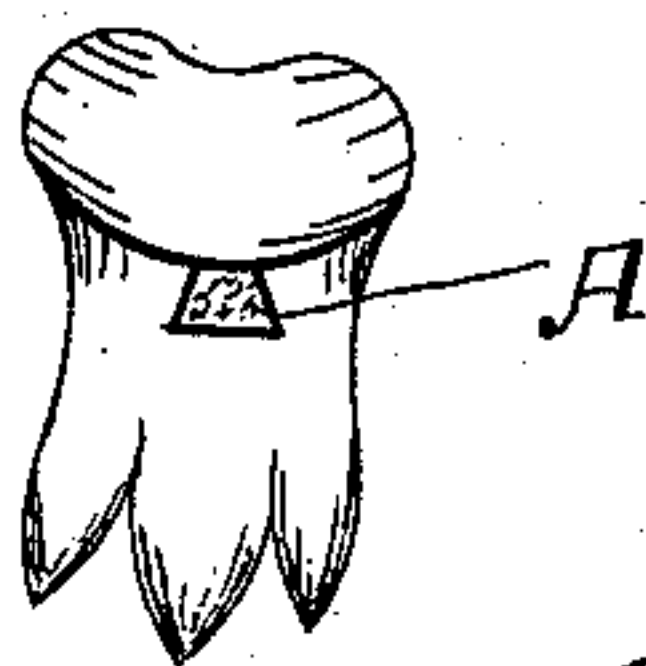
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



WITNESSES,

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# UNITED STATES PATENT OFFICE.

ALBERT ROBINSON, OF GRAND RAPIDS, MICHIGAN.

## PROCESS OF FILLING TEETH.

SPECIFICATION forming part of Letters Patent No. 402,352, dated April 30, 1889.

Application filed February 8, 1889. Serial No. 299,135. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT ROBINSON, a citizen of the United States, residing at Grand Rapids, in the county of Kent, State of Michigan, have invented certain new and useful Improvements in the Process of Filling Teeth, of which the following is so full, clear, and exact a description as will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 is a view of a tooth before filling, showing the cavity. Fig. 2 is a front view of the metal matrix after it has been swaged into the cavity. Fig. 3 is a view of the tooth after filling, showing the line along which the tooth and filling meet. Fig. 4 is a view of a tooth, showing the cavity prepared for filling, with the key-notch for holding the gold. Fig. 5 shows the completed filling.

The object of my invention is to provide a process of filling teeth which shall present the maximum security in the complete filling with the least possible discomfort to the patient during the operation.

In Fig. 1, A shows the cavity in a tooth which has been cleaned and prepared to receive the filling material. Upon the completion of the process of preparation a piece of thin metal foil is placed over the cavity, and by means of proper instruments pressed carefully down against the various convolutions of its walls. By this means an exact reproduction of the shape of the prepared cavity is obtained, which reproduction is used as a matrix or mold for the completion of the process. The foil used in this operation is preferably a thin sheet of platinum, as this metal possesses various qualities which render it eminently fit for use in this connection. It is evident, however, that other non-corrosive metals may be used for this purpose. The mold having been thus formed by swaging in the cavity, the next step in the process is to fill this mold with gold or other metal melted by the aid of the blow-pipe or otherwise. The matrix thus filled up with gold is next grooved on its under surface in such a manner that the open edge of the grooves corresponds to small under-cuts previously prepared in the walls of

the cavity. These grooves and under-cuts are then filled with any of the well-known forms of cement used in dentistry, and the filling is inserted into the tooth, making of course an exact fit. The cement, upon hardening in the grooves and under-cuts, becomes a secure fastening for the filling, which is superior in efficacy to the usual plugged gold filling. The main point of superiority, however, in this mode of attachment is the comparatively-slight discomfort which it occasions to the patient. It is evident that it requires no more pressure than just sufficient to bring the surface of the mold into accurate contact with the walls of the cavity, and the painful hammering in of the gold, rendered necessary by the nature of the ordinary method, is entirely obviated by my process.

Fig. 3 exhibits the appearance of the tooth after filling in the above-described manner, the line *c* representing the edge of the mold as it appears between the gold and the tooth. After the insertion of the filling thus prepared the outer surface of the gold or other metal is trimmed into conformity with the original surface of the tooth, and the edge of the mold at its intersection with the edges of the cavity is carefully finished and burnished in order to exclude the advent of all accidental moisture.

In case of very deep cavities and where the excavation and cleaning have necessarily brought the bottom of the cavity very near to the pulp, it will be best to make a preliminary under filling of cement, the foil being afterward swaged into the residuum cavity and made to conform to the top surface of the cement and the edges of the original cavity. The filling as thus finished will present a platinum and gold superstructure surmounting a cement foundation.

I have found it expedient, in the case of shallow cavities in sensitive teeth in which under-cuts near the bottom of the cavity would occasion extreme discomfort, to make instead a key-notch upon the outer edge of the cavity, as represented at *a* at the edge of the cavity A', Fig. 4. The cavity being thus prepared, the mold is made by swaging the foil as well into this key-notch as into the cavity itself. The finished filling is thereby provided with



an extension fitting accurately into said notch and dovetailing with it in such a manner as to secure the filling without the aid of undercuts and cement.

5 It will be readily appreciated that the above-described process is more expeditious as well as less painful than that by the use of the plugger, since the gold or other metal, on being molded into the platinum matrix, solidi-  
10 fies into a homogeneous pellet almost immediately, and nearly the whole time hitherto consumed in forcing the gold-foil or other metal into the cavity is saved.

15 Having now described the objects, uses, and advantages of my invention, what I believe to be new, and desire to secure by Letters Patent, and what I therefore claim, is—

1. The process of filling teeth by first making a mold by swaging metal foil into the cavity and then filling said mold with melted 20 gold or other metal, substantially as described.

2. The process of filling teeth by first making a mold by swaging metal foil into the cavity, filling said mold with melted gold or other metal, grooving the bottom of the filling thus 25 prepared, and fastening said filling into said cavity by means of cement inserted in said grooves, substantially as described.

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

ALBERT ROBINSON.

Witnesses:

JOHN MURRAY,  
S. E. DODSON.