

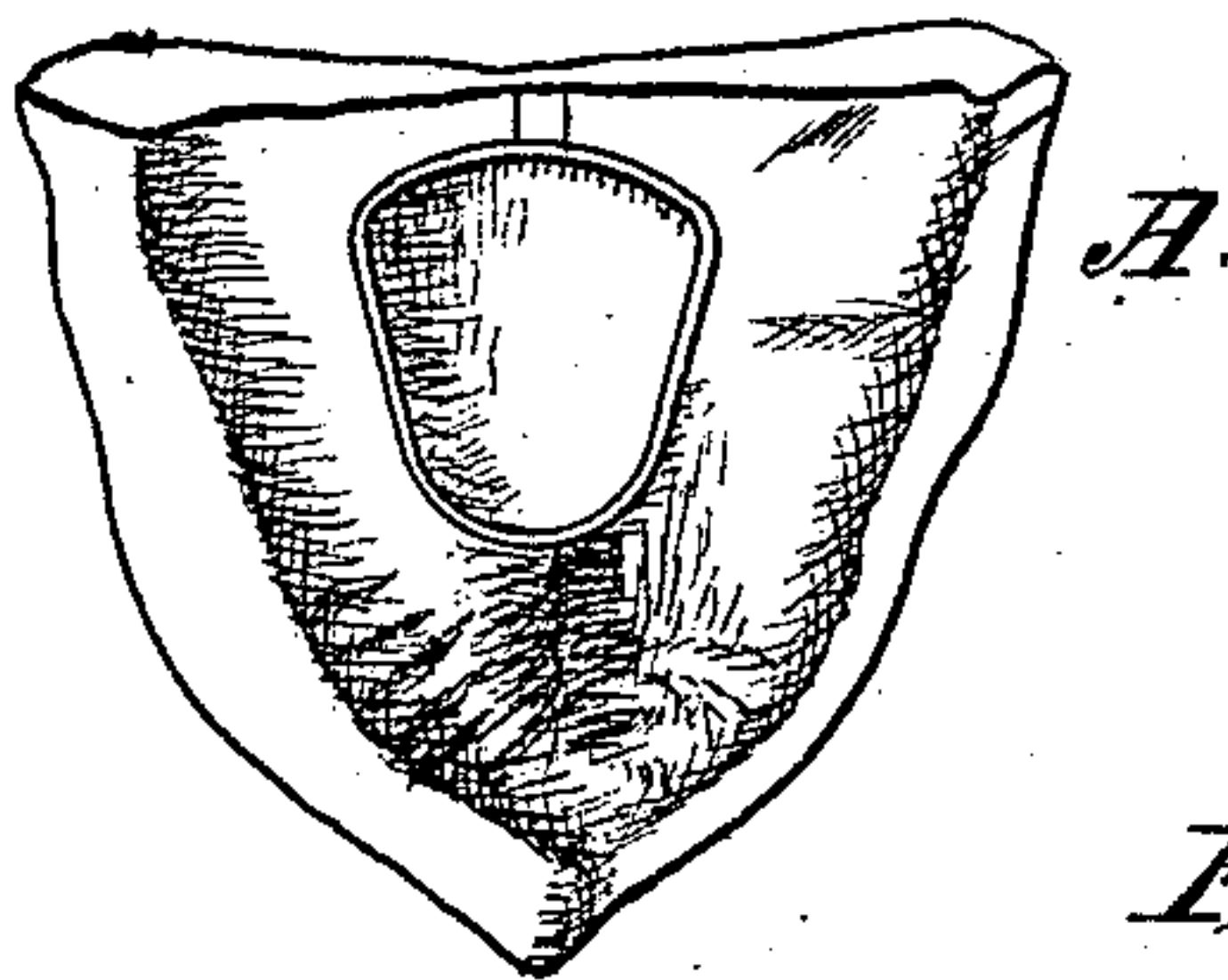
*L. Stick,*

*Dental Mold.*

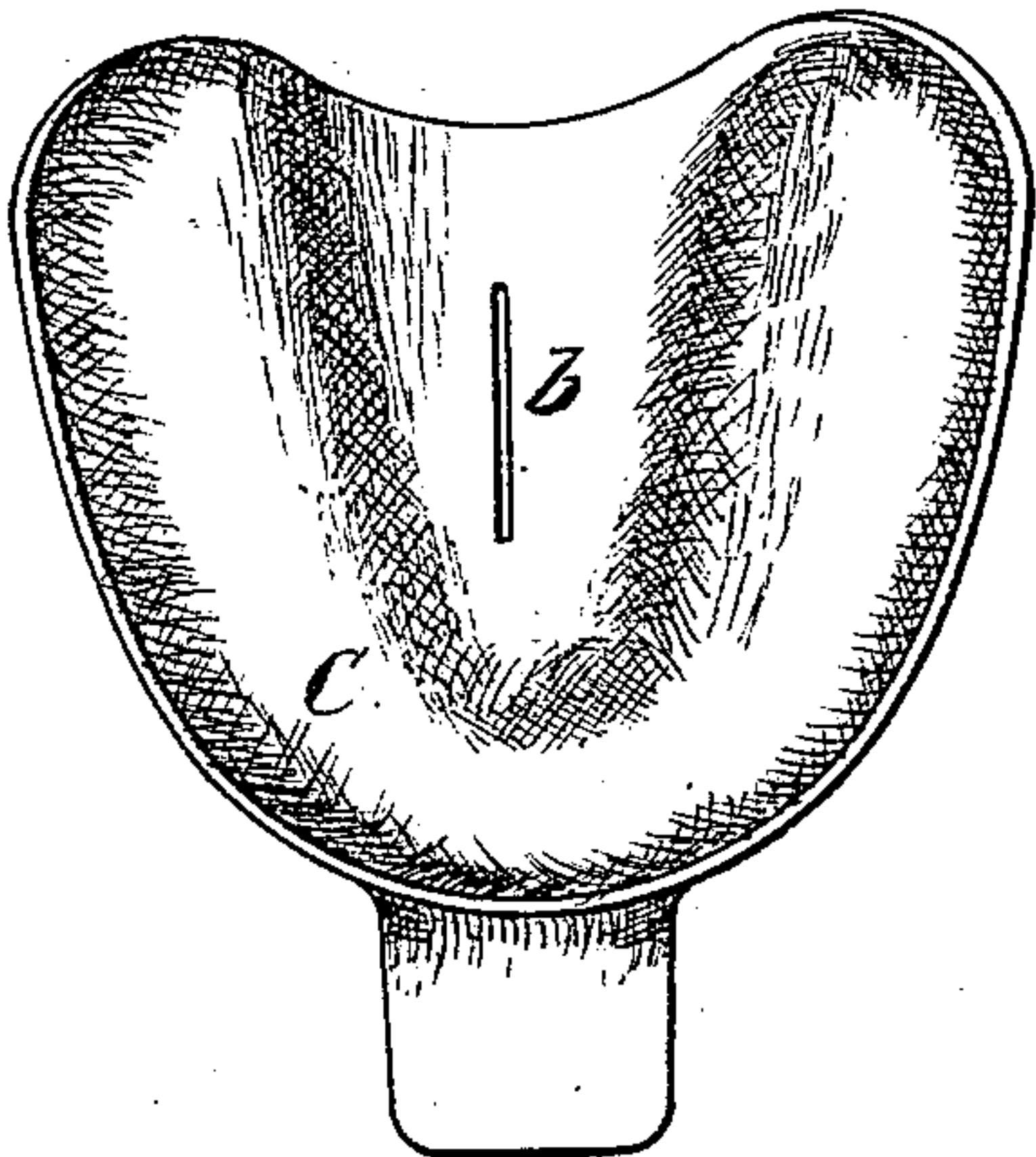
*N<sup>o</sup> 82,563.*

*Patented Sep. 29, 1868.*

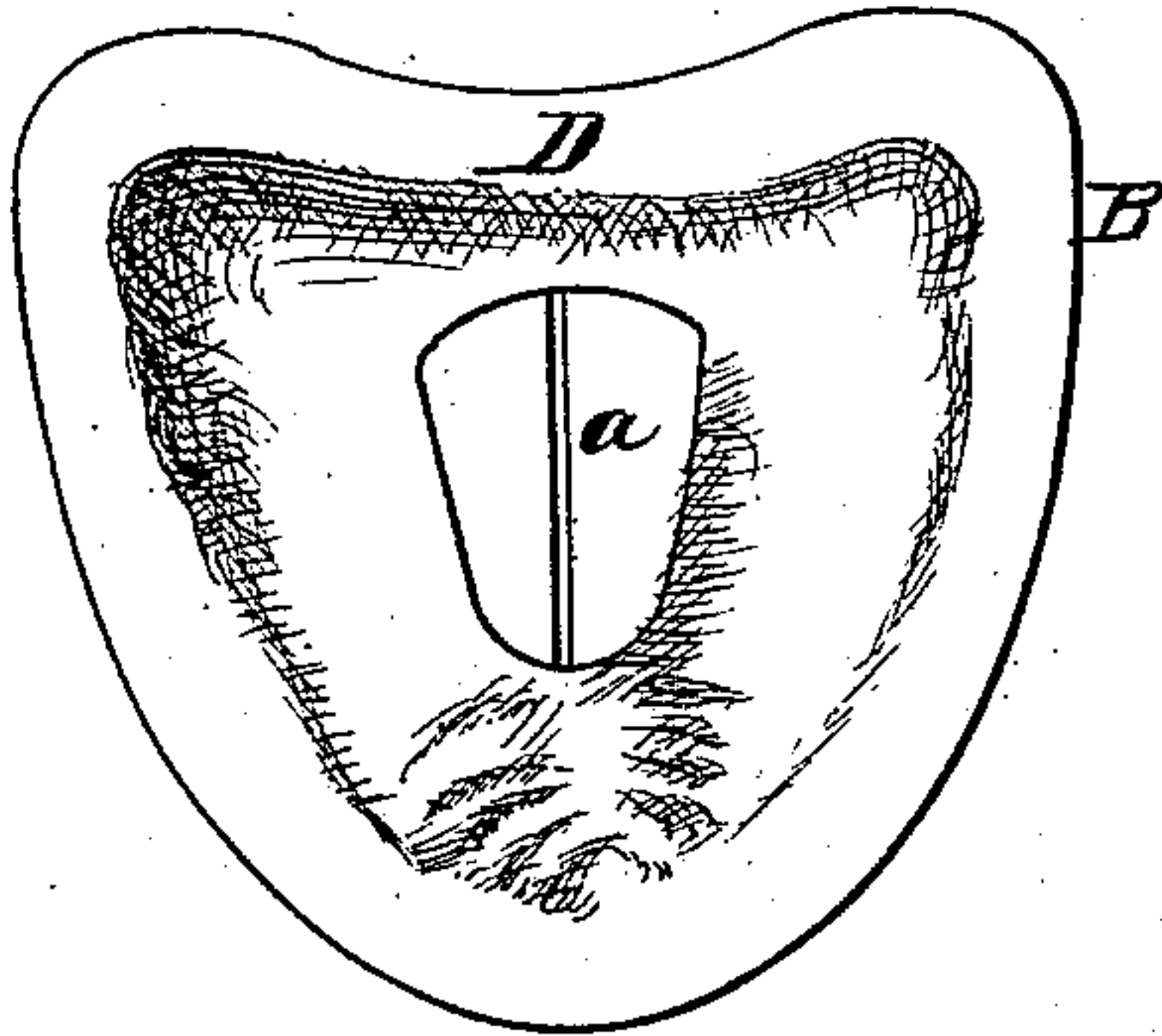
*Fig 1*



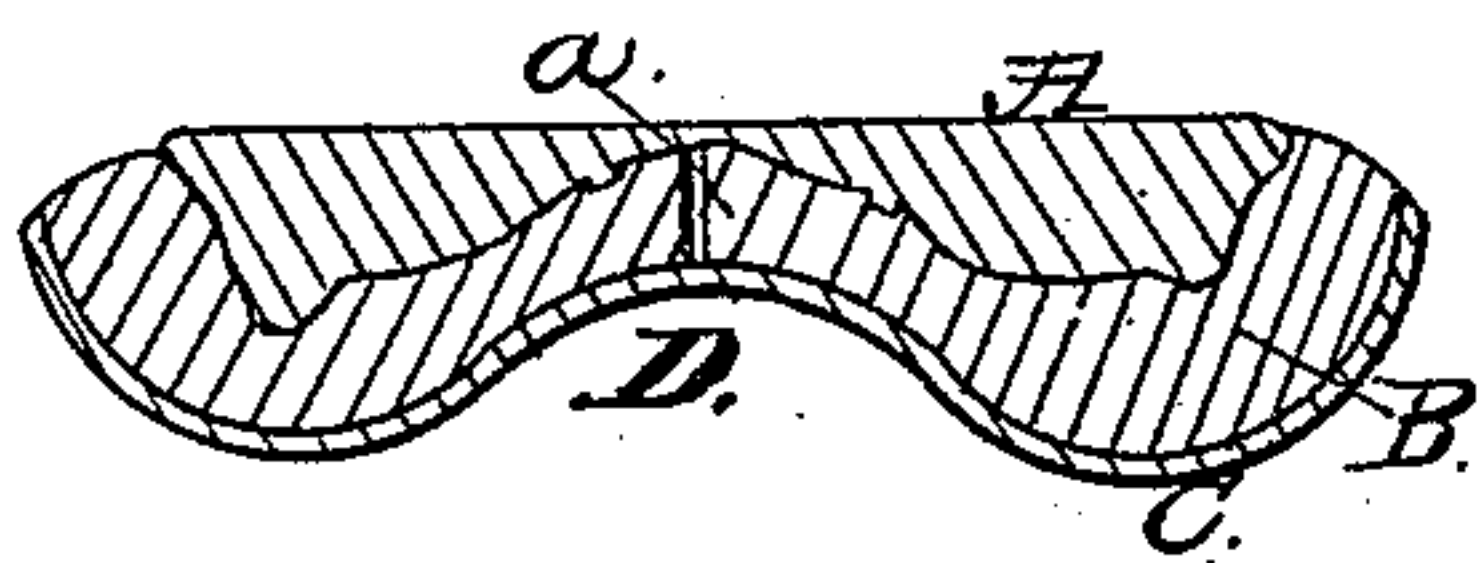
*Fig 3.*



*Fig 2*



*Fig 4.*



*Witnesses:*  
*Wm A Morgan.*  
*W C Cotton.*

*Inventor:*  
*L Stick*  
*per [Signature]*  
*Attorneys*



# UNITED STATES PATENT OFFICE.

LEVI STUCK, OF BRYAN, OHIO.

## IMPROVED METHOD OF OBTAINING DENTAL MODELS.

Specification forming part of Letters Patent No. **82,563**, dated September 29, 1868.

*To all whom it may concern:*

Be it known that I, LEVI STUCK, of Bryan, in the county of Williams and State of Ohio, have invented a new and useful Improvement in Obtaining Dental Model Plates or Dies; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a face view of the metal model-plate. Fig. 2 is a similar view of the plaster mouth-impression from which Fig. 1 is obtained. Fig. 3 is a similar view of the impression-cup. Fig. 4 is a view representing a central cross-section of the impression-cup, plaster impression, and metal model-plate when in place, one within the other.

Similar letters of reference indicate like parts.

The object of this invention is to obtain a perfect dental model-plate or die of metal by casting the same in the plaster mouth-impression.

The attempt to obtain a suitable metal mold or die directly from the plaster mouth-impression by casting the metal in the said mouth-impression has been repeatedly made by mechanical dentists, but without success; for, heretofore, it was found that the gas evolved from the plaster when heated by the melted metal would collect at the central raised surface, or palatal surface, so called, and blow out through the metal at that point. Many expedients have been resorted to to prevent this blowing out, but without success, and, until my invention, a plaster model was taken from the plaster mouth-impression, and the said plaster model was used to obtain a metal die in common molding-sand, on which die the gold dental plates were swaged, or the plaster model was used to vulcanize the plate on which dental plates of rubber were vulcanized.

The metal model-plate, when molded in sand, was always more or less distorted and rough, for the sand used in this art must be of a coarse quality. The plates were therefore rough; and the dental plates of gold which were swaged by them required to be smoothed by a tedious hand-process, and were frequently very imperfect.

The mouth-impression being imprinted or

transferred a number of times, (as, first, the plaster model; second, the sand impression; third, the metal model in the sand; and, finally, the swaged impression on the gold plate,) any original defects in the first impression were exaggerated, and more or less distortion on the final dental plate of gold was the result.

By my invention I obtain a metal mold-plate directly from the mouth-impression in the plaster, (plaster-of-paris,) which answers as a die for swaging gold dental plates, or which answers as a model-plate on which to vulcanize the rubber and give it the proper form when so vulcanized. This I accomplish by preparing the plaster mouth-impression so that it will vent the molten metal contained by it at the palatal surface and by employing an impression-cup properly perforated at the central raised part, corresponding to the palatal surface of the mouth-impression.

The plaster mouth-impression I prepare by repeatedly passing a fine needle through it at the palatal surface, thus obtaining a number of minute perforations, which vent or liberate the gas at that point, or by slitting the said palatal surface, as shown at *a*, Figs. 3 and 4, with one or more fine slits, which will not admit the metal, but will vent the mold at that point the same as if perforated by the needle.

In the drawings, *A* is the metal model, obtained from the mouth-impression *B*. *C* is the impression-cup, having one or more vent-slits, *b*, in the same, below the palatal surface of the plaster. The back wall, *D*, is added to the mouth-impression after the latter is obtained, and thus completes the cavity of the mouth-impression, so that it will hold the molten metal.

Tin, tripe-metal, or any other suitable metal or alloy may be used for the model or die, taking care, however, that the model when to be used for swaging up gold plates must be of metal having sufficient hardness.

The mouth-impression should be dried for an hour or more before casting in it, so as to expel the surface-moisture from the plaster. The metal model thus obtained is an exact counterpart of the mouth-impression, and is, as has been practically proved by repeated experiments, far superior to a model obtained in any other manner.

When the model is used as a plate on which to vulcanize rubber dental plates, the plate

thus obtained is a more exact fit for the wearer than when vulcanized on a plaster model, which latter has many disadvantages, which those skilled in the art are familiar with.

Having described my invention, I claim as new and desire to secure by Letters Patent—

1. The method of obtaining dental model-plates of metal directly from the mouth-impression, by casting the metal in a perforated or slitted mouth-impression, B, substantially as described.

2. The employment of a slitted or perforated

impression-cup, C, substantially as described, in combination with a plaster mouth-impression, B, vented through the raised surface *a*, substantially as described.

3. As a new article of manufacture, a metallic dental model plate or die, A, when obtained in the manner substantially as herein described.

LEVI STUCK.

Witnesses:

GEORGE T. HOBBY,  
SELWYN N. OWEN.