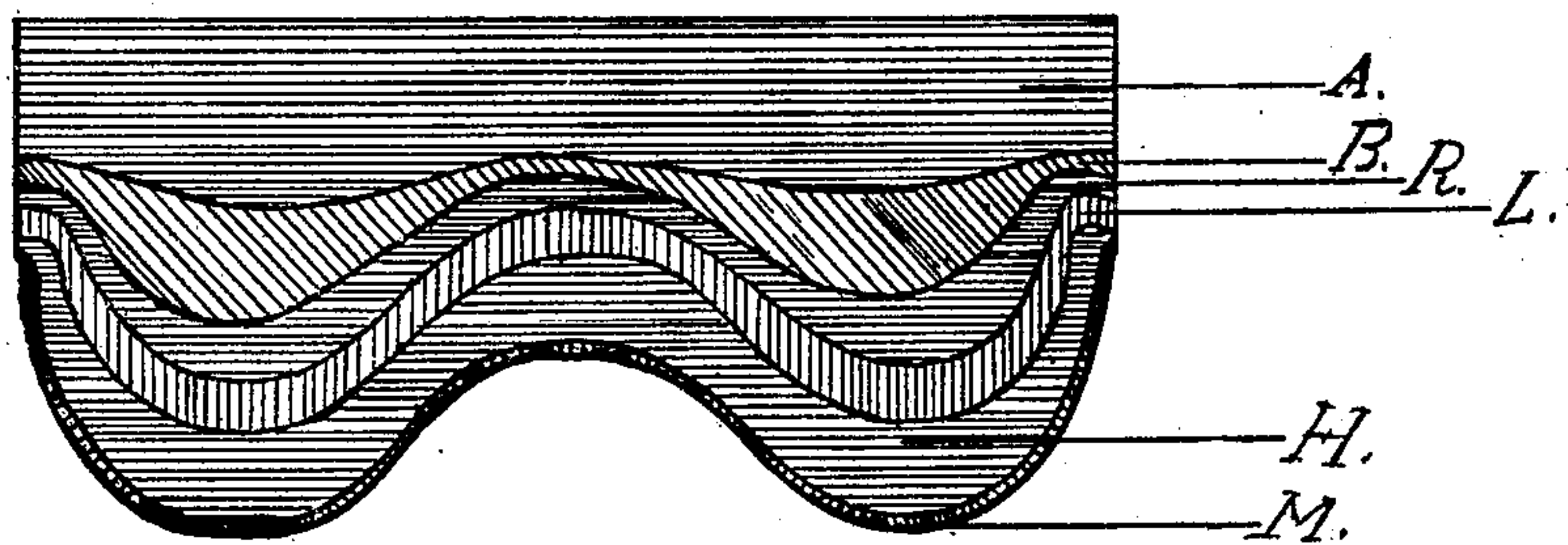


W.C. Smith,

Dental Mold.

No. 105,008.

Patented July 5, 1870.



Witnesses,
Myron C. Simpson
A. L. Briggs,

Inventor
W. C. Smith

United States Patent Office.

WILLIAM CAMERON SMITH, OF WARRENSBURG, MISSOURI.

Letters Patent No. 105,008, dated July 5, 1870.

IMPROVEMENT IN CONSTRUCTION OF DENTAL IMPRESSION-MOLDS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern :

Be it known that I, WILLIAM CAMERON SMITH, of Warrensburg, in the county of Johnson and State of Missouri, have invented certain new and useful Improvements in the Mode of Constructing Dental Impressions and Casts; and 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.

The nature of my invention consists in putting the plaster in the mold in small quantities or thin layers, allowing each layer to harden before the next one is put on, whereby the plaster is allowed to expand in a vertical direction, instead of horizontally, thus avoiding the warping of the impression or cast.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe the manner in which the same is or may be performed, referring to the annexed drawings, which form a part of this specification, and which represent a rear view of an impression-cup containing an impression and cast.

M represents the rear margin of the ordinary impression-cup, upon which is placed the bees-wax, H. This is made by taking a bees-wax impression of the jaw, and afterward cutting away the wax to the depth of one-fourth of an inch from its surface, to make room for the plaster with which the impression of the mouth is taken, and which occupies the space marked by the letter L. The next space, designated by the letter R, is the first layer of plaster composing the cast, the plaster impression L having first been oiled, to make them separate. Then a sufficient amount of prepared plaster is poured into the impression, and flowed over its entire surface to the depth of an eighth of an inch at the highest points, and one-fourth of an inch at the lower points. When the first layer becomes hard, a second layer, B, is poured on in the same manner. If the palatine arch is very high, still another thin layer should be added before the last pouring, A, is made.

The object of my improvement is to prevent the warping of impression and cast caused by the expansion of the plaster in hardening.

In the ordinary process of taking an impression of the jaw, the plaster occupies the entire space between the dividing-line between the impression of the mouth and the cast, and the ordinary impression-cup in com-

mon use, except in cases where the palatine arch is very high.

A piece of wax is placed in the center of the impression-cup, to support the soft plaster at that point against the roof of the mouth; but this has no reference to the effect produced by the expansion of the plaster, nor does it prevent the warping, but rather favors it.

The cause of warping of impressions in the ordinary process is the horizontal or lateral expansion of so thick a body of plaster being confined between the side walls of the impression-cup, causing the impression to bow up at or about the center.

This difficulty is obviated in my process by lessening the actual expansion, by decreasing the thickness of the plaster impression, which necessarily changes the direction of the expansion from horizontal to a vertical, or a direction at right angles with its base of wax, on which it rests, thus entirely preventing the possibility of warping. The same principle holds good in the construction of the cast as in the impression.

In the ordinary process, the whole cast is formed at one pouring. As the plaster hardens in so thick a body, it expands in horizontal direction, the lower margin or alveolar ridge being confined within the outer walls of the impression. The effect produced is to warp the cast, so as to separate it from the impression at or about the center, whereas, when the cast is constructed by a succession of thin layers of plaster, made by applying the plaster in a batter sufficiently thin to flow over the surface of the impression, by tipping it from side to side, until it begins to harden, forming a layer about an eighth of an inch in thickness, more or less, a little thicker at the lower points than elsewhere, and by continuing the process until the cast has become of a proper thickness, the direction of the expansion will be so changed as to prevent the possibility of warping.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

The dental cast, when formed of thin successive layers of plaster, substantially as described.

W. C. SMITH.

Witnesses:

MYRON C. SIMKINS,

A. C. GRIGGS.