

UNITED STATES PATENT OFFICE.

RICHARD S. WILLIAMS, OF NEW YORK, N. Y.

IMPROVEMENT IN DENTAL FOIL.

Specification forming part of Letters Patent No. **183,998**, dated October 31, 1876; application filed September 26, 1876.

To all whom it may concern:

Be it known that I, RICHARD S. WILLIAMS, of the city, county, and State of New York, have invented a new and Improved Dental Foil, and that the following is a full, clear, and exact description of the same.

This invention is in the nature of an improvement in dental foil; and the invention consists in dental foil, to which a small percentage of cadmium has been added, to take from it its cohesive properties after annealing, and therefore be more easily manipulated by the dentist.

The well-known property inherent in pure gold, of cohering after it is annealed, renders it difficult for dentists in some cases to properly prepare it for use, since the cohering of the surface, when it is folded and rolled, renders the gold stiff, or, as it is termed, "hard." To prevent this, and to enable the gold to fold or roll up soft, I take pure gold, and add to it a small proportion of pure cadmium—say, one grain of pure cadmium to nine hundred and ninety-nine grains of pure gold. These proportions may be slightly altered; but the proportions I have named will give excellent results. The gold being in this way alloyed seems to have its tenacity increased; but the chief result obtained is, that the surfaces of foil prepared from such alloyed gold, after it is annealed, will not cohere, but will, as it were, slide on each other, unless considerable pressure is used. Hence foil made from gold in this way alloyed may be readily folded or rolled, and yet the rolls or folds will be pliable and easily worked. This result is

produced by the heat used in annealing the foil, this heat slightly oxidizing the cadmium on the surface of the foil. This oxide is sufficient to keep the surfaces the gold from coming in such close contact as to adhere, and therefore give all the advantages of annealed gold without the disadvantage of its adhering. But when it is desired that this gold shall adhere, as when filling a cavity, then the force with which it is pressed into the cavity will be sufficient to cause it to cohere, forming a solid mass, the same as the ordinary annealed gold.

The gold and the cadmium both being pure when in use, nothing deleterious can come from the use of the alloy, and hardly any perceptible change of color is perceivable in the gold from the addition of the cadmium.

It is obvious that the proportions of gold and cadmium above given may be varied to some extent without departing from the spirit of my invention, and I therefore do not wish to limit myself to the proportions above given; but

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

As a new article of manufacture, dental foil, alloyed with cadmium, substantially as described.

RICHD. S. WILLIAMS.

Witnesses:

H. L. WATTENBERG,
M. LOVELL.