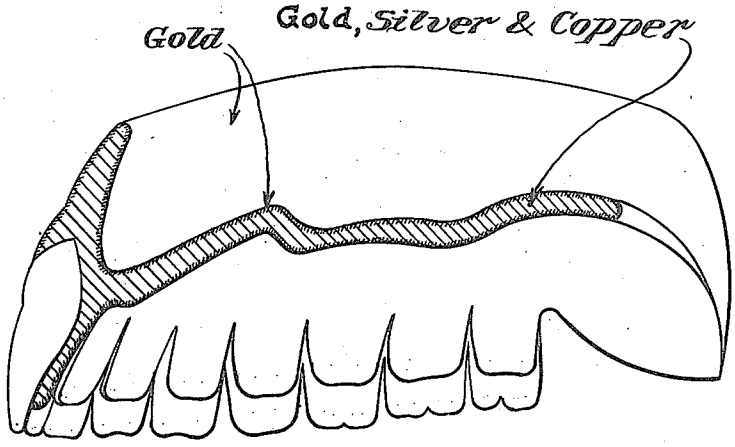
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COMPOSITION OF MATTER TO BE USED FOR THE MANUFACTURE OF PLATES FOR ARTIFICIAL TEETH.

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1,090,939. Patented Mar. 24, 1914.



Witnesses:
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UNITED STATES PATENT OFFICE.

RICHARD HENRY NEWTON, OF MONTPELIER, VERMONT.

COMPOSITION OF MATTER TO BE USED FOR THE MANUFACTURE OF PLATES FOR ARTIFICIAL TEETH.

1,090,939. Specification of Letters Patent. Patented Mar. 24, 1914.

Application filed June 16, 1913. Serial No. 773,865.

To all whom it may concern:

Be it known that I, RICHARD HENRY NEWTON, a citizen of the United States, residing at Montpelier, in the county of Washington and State of Vermont, have invented a new and useful Composition of Matter to be Used for the Manufacture of Plates for Artificial Teeth.

This invention relates to a new and useful article of manufacture and particularly to a composition dental plate for holding artificial teeth.

Ordinarily plates for artificial teeth are composed of rubber, vulcanite, celluloid, aluminum, platinum, or gold. Rubber, vulcanite, or celluloid make cheaper plates than metal but such plates cause inflammation of the mouth, puffing of tissues, heat underneath the plate, and formation of abscesses, known as "rubber sore mouth," often necessitating the substitution of a metal plate. Aluminum plates are preferable to rubber, vulcanite, or celluloid, but have the disadvantage of leaving a metallic taste in the mouth and of not being as durable as gold or platinum plates. Gold or platinum plates are desirable but the expense of the same renders them prohibitive to many people.

The object of my invention is to provide a metallic dental plate which will have the durability of gold or platinum but which will be cheaper than either of these metals and which, furthermore, will not leave a taste in the mouth. To this end I provide a plate formed of an alloy in which a comparatively small amount of gold is used and in which some other metal of a less ductile nature is present to give strength and rigidity to the plate. The plate thus formed is treated to remove the other metals from the surface of the plate leaving the pure gold as an exterior film. In practice I have found that the metals may be used in the following proportions: gold 34.64%, silver 55.36%, copper 10.00%. These percentages may obviously be varied somewhat, although the percentages given have been found very successful in practical use.

Although from its very nature my invention is difficult of illustration, I have shown in the single figure of the annexed drawing as an illustrative embodiment a dental plate made in accordance with my invention.

The single figure of the drawing represents a combined perspective view and cross section of a plate with the elements greatly exaggerated in thickness and marked with the names of the metals as they are in the finished plate.

In practising my invention the above stated elements, in substantially the proportions given are first melted in a crucible, a slight amount of borax being used as a flux. After melting, the composition is cast into an ingot, which is next rolled into a sheet. The dental plate is then made out of this sheet. After the plate is made, I remove the silver and copper from the outer surface so that this surface will appear as a layer or exterior film of substantially pure gold. This may be done by treating the plate with a removing agent having the property of eating off the silver and copper without acting on the gold. In practice I find that nitric acid is especially efficient in producing this action. I therefore immerse the plate in a bath of nitric acid and allow it to remain there until the silver and copper have been completely removed from the surface, leaving the pure gold as an exterior film. Obviously however, I do not limit myself to the use of nitric acid alone as a removing agent but reserve the right to use any other agent having the property of acting on silver and copper but not on gold.

The dental plates made of this composition are more durable than aluminum and possess all the wearing qualities and appearance of gold with the added features of cheapness and strength and rigidity due to the presence of the less ductile, baser metals.

Having described my invention, what I claim is:

1. As an article of manufacture an integral dental plate having an interior of gold alloy and an exterior surface of substantially pure gold.

2. As an article of manufacture a dental

plate consisting of an alloy of gold with a baser metal and having the baser metal removed from the surface and leaving a layer of substantially pure gold.

3. As an article of manufacture a dental plate consisting of an alloy composed of gold 35 parts; of silver 55 parts; and of copper 10 parts, and having the silver and copper removed from the surface leaving a layer of substantially pure gold.

RICHARD HENRY NEWTON.

Witnesses:

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