Patented May 5, 1931 1,803,386

UNITED STATES PATENT OFFICE

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PROCESS FOR PRODUCING AMALGAMS TO BE USED IN DENTISTRY

No Drawing. Application filed December 28, 1927, Serial No. 243,202, and in Germany January 10, 1927.

This invention relates to an improved process for producing amalgams to be used in dentistry and more particularly to a specially prepared powder to be used in said process.

Tooth cement has hitherto been prepared by mixing a metal powder, for instance tin, or more commonly an alloy such as silver and tin, with mercury by energetically stirring this mixture until an amalgamation has taken place. As such cement becomes hard in a short time, it must be prepared immediately before its use. But as mercury only slowly attacks such alloy powder, the mixture has to be stirred a rather long time before amalgamation occurs so that the preparation of the cement has caused the dentist a considerable loss of time. By use of the common alloy powder the amalgamation continues after the amalgam has hardened which causes undesirable changes in the volume of the completed plug or filling.

This invention relates to the manufacture of a metal or alloy powder to be used for the production of amalgams for dentistry by means of which said disadvantages are avoided or substantially lessened. The improved results are obtained by providing the powder particles, in advance of use, with a thin superficial skin of mercury on their surface. This results in the amalgamation being considerably facilitated and accelerated so that the use of such a prepared powder reduces the time required in mixing and kneading a quantity of powder in preparing fillings. The amalgamation will also be complete, or more nearly so, whereby when the amalgam is filled into the cavities no changes in volume of the plugs occur.

The treatment of the metal or alloy powder with mercury may suitably be carried out in the wet state and preferably in such a way that the powder is treated with finely divided mercury and a weakly corroding solution. The powder may for instance, preferably during the application of heat, be treated with a mercury salt such as mercuric chloride, and with an acid which dissolves tin but does not cause oxidation, for instance hydrochloric acid. Another way is to treat the powder, also while heated, with finely divided mercury and diluted acid, the mercury being obtained by boiling a solution of mercuric formiate. As an example of carrying out the process the following is mentioned. 250 cm^3 of a 5% solution of mercuric chloride are mixed with about 100 cm^3 of hydrochloric acid and about 500 cm^3 water whereupon the mixture is heated to boiling. The hot solution is then poured over 1 kg. of the alloy powder and the mixture energetically stirred during a short time, about five minutes. Immediately thereupon the acid solution is poured off and the powder washed with water until the wash water no longer shows any acid reaction. The powder is then dried at low heat and when dry, is ready for use, although it may be kept for a considerable time before using without deterioration.

We claim:—

1. An improved process for the production of silver alloy powder subsequently to be completely amalgamated in the production of dental fillings, consisting in treating the silver alloy particles with mercury in a quantity insufficient to produce complete amalgamation.

2. A powdered substance for use in preparing dental amalgam, comprising finely divided silver alloy particles treated with mercury to form a thin superficial skin only of amalgam thereon.

3. A powdered substance for use in preparing dental amalgam, comprising finely divided silver alloy particles and a relatively small amount of mercury forming a thin superficial skin only of amalgam on said particles.

4. The method of producing a material for use in preparing dental amalgam, which consists in subjecting finely divided silver alloy powder to the action of a heated solution of mercuric chloride and hydrochloric acid so as to produce on the powder particles a thin superficial skin only of amalgam.

In testimony whereof we have hereunto set our hands.

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