

UNITED STATES PATENT OFFICE.

GEORGE J. PACK, OF NEW YORK, N. Y.

IMPROVEMENT IN PREPARING GOLD FOR DENTISTS' USE.

Specification forming part of Letters Patent No. **103,227**, dated May 17, 1870.

I, GEORGE J. PACK, of the city, county, and State of New York, have invented an Improved Method of Preparing Gold for the Use of Dentists, of which the following is a specification:

It is the object of my invention to prepare gold for filling teeth in such a manner as to preserve its crystalline structure unbroken and uniform, by which it compacts more readily and with more perfect homogeneity; and it consists in the method of working hereinafter described, and also in the form which better adapts it to the purpose, and which is, in part, a sequence of its mode of production.

I take gold which is of the purest quality which can be obtained, and cast it in long and narrow ingots, which are of a shape adapted to rolling in a mill without forging, which is to be strictly avoided, as beating has a tendency to crush the crystals and destroy that equality of structure which it is the principle of my invention to preserve. Having passed the ingot through rollers until its size is sufficiently reduced, I then draw it through a plate to form a wire of suitable size for my purpose—viz., to make a ribbon of such width and thickness as is best adapted for insertion in the cavities of teeth. During these operations of rolling and drawing, two conditions are to be observed—viz., the ingot should always enter the rolls the same end foremost, so that the order of the crystalline structure will not be disturbed by applying the compressive force in reverse directions; second, it should be kept cold by a stream of water running over it, both in rolling and drawing, to prevent its becoming hot by friction and compression, such heating having an injurious effect by rendering it brittle. For convenience the wire is then wound upon a spool, which is placed on supports in front of a pair of very fine rollers, through which it is passed, and reduced to a ribbon of the thinness of foil and of the required width, which is usually about one-eighth to three-sixteenths of an inch. Between the spool and the rolls the wire is passed through a flame to anneal it; but the rollers

are kept cold by a constant stream of water flowing upon them. If a thinner ribbon is required, the rolling may be repeated, and the same care observed to roll in the same direction as before rolled and drawn. The ribbons are then corrugated, twisted into spirals, or formed into pellets for use.

In my improved mode of working I prefer to avoid cutting as well as beating, and depend entirely on rolling and drawing in the manner described, whereby the crystals are not broken or disarranged, but elongated, producing a structure which is fibrous, tough, and wiry, but of extreme fineness, and capable of working freely and uniformly, while it condenses with the greatest homogeneity and consequent solidity.

In using sheet-foil it is necessary to cut into strips convenient for filling, and it is known to scientific dentists that the cohesive properties are changed and impaired by cutting, rendering the density of the filling unequal and liable to fail. My improvement wholly obviates this objection by the ribbons being formed of the requisite width without cutting.

The strip or ribbon form offers great advantages over the sheet-foil heretofore used, in that it obviates the trouble and necessity of cutting, being ready-made to the most convenient shape for use. The ribbon may in some instances be rolled, and the wire-drawing dispensed with.

What I claim as my invention is—

1. The herein-described method of preparing gold for dentists' use, either by rolling or drawing, substantially as set forth.

2. An article of gold for filling teeth, prepared as herein described, in ribbon form, either corrugated, coiled, or formed in pellets, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

GEO. J. PACK.

Witnesses:

JONA. AUSTIN,
J. FRASER.