UNITED STATES PATENT OFFICE.

NELSON B. SLAYTON, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN METALLIC FILLING FOR TEETH.

Specification forming part of Letters Patent No. **201,895**, dated April 2, 1878; application filed September 5, 1877.

To all whom it may concern:

Be it known that I, NELSON B. SLAYTON, of Rochester, New York, but residing at Florence, Italy, have invented a certain new and useful Improved Metallic Filling for Teeth, of which invention the following is a specification:

During many years' experience as a practicing dentist I have been led to fully appreciate the universally-recognized requirements of metallic filling for decayed teeth, and am familiar with the various methods of preparing gold and other metals for such use.

It is sufficient for the present occasion to designate as essential qualities purity of metals as alone compatible with safety to the patient, who would be poisoned by impure metals or base alloys; ductility, malleability, or pliability, as indispensable for the introduction of the filling into cavities, such as occur in teeth; and cohesiveness, as absolutely requisite for the solidity and permanency of the work.

These three properties, in the highest perfection heretofore attained, have been found only in pure gold or pure tin, or in alloys of pure gold and pure tin, hammered, rolled, or beaten into foil, or made into sponge, or more recently into crystals by treatment with chemicals.

In all these products, however, it is my opinion and belief that the filling, when packed, is necessarily laminated, and it is only by subjecting the patient to severe, and generally painful, manipulation that the proper degree of solidity can be produced with either foils, sponges, or crystals.

In addition to this, it is demonstrated by the experience of the entire profession that the metals prepared for filling teeth by any of the mechanical processes heretofore employed, or by any of the chemical treatments resorted to, as above indicated, are impaired by the processes of preparation so materially that the purest gold or tin filling known, as well as the best alloys, are very appreciably inferior to the original metal; or, in other words, the best and purest gold filling lacks the strength, the ductility, and the cohesiveness of pure gold, and the best pure tin filling lacks the strength, the ductility, and the cohesiveness of pure tin. The resort to alloys, to plated foils, and to special modes of preparing both is the result of efforts to measurably retrieve or compensate this degeneration of the qualities of the metals; but it has, so far as I know, been uniformly found that, whatever material or whatever method of preparation is used, the filling lacks in a greater or less degree, but always appreciably, the native properties of the metal.

It is the object of my invention to furnish from pure metals or pure metal alloys, without hammering, rolling, or beating, and without the use of chemicals, a metallic filling not only possessing the original purity and native properties of the metals in their integrity, but affording a filling more ductile, malleable, and pliable, and more cohesive, than any heretofore known, and which, furthermore, while prepared for use in a novel and improved form, affording the greatest possible degree of tractability, also possesses the novel property of resuming, under the operation of filling a cavity, its original form of a homogeneous solid, instead of being compressed into a laminated mass, as is the case with foils, sponges, and crystals.

My invention is based upon the discovery that, if a pure metal, such as gold or tin, or alloys of pure gold and pure tin, is reduced by the action of a cutting-edge to shreds, fibers, shavings, or ribbons, as distinguished from reduction to a granular form, such particles of such metals will, under the simple pressure used in filling teeth, be so reassembled and interwoven as to become reunited into a homogeneous mass, substantially as solid as the original mass from which the particles were reduced, or, so far as can be predicated upon observation and the ordinary tests, as solid as if the metal had been fused and run into the cavity; and my invention consists in a metallic filling for teeth, prepared by reducing the metal to shreds, fibers, shavings, or ribbons, and possessing the properties hereinbefore described, as a new product in the arts.

To prepare the metal for such reduction, I simply cast or otherwise shape it into a mass or ingot, preferably in the form of an annulus, as described in another application filed simultaneously with the filing of this application.

In still another application, filed simultaneously with the filing of this, I have described an improved lathe which I have devised especially for the reduction of the metal; but this forms no part of the invention herein claimed, and therefore need not be particularly described.

While I contemplate using my improved lathe, and refer to it as the best instrument known to me for producing my new product, yet the reduction may be effected by any of the various known means for cutting or shaving different substances; and even a common knife, used with the hand, will reduce the metal with all the essential conditions, though with less than the preferable uniformity in the particles which the lathe will give.

The fibers, shreds, shavings, or ribbons are packed in suitable parcels, packages, or rolls, ready for use by the dentist, who will fill them into the cavity in the ordinary way.

To distinguish my new product from the foils, sponges, crystals, and other forms in which metallic fillings for teeth have heretofore been prepared, and as indicating its preparation by shredding, shaving, or cutting from the mass, as distinguished from hammering, or beating, or rolling processes, and from chemical treatments, as well as to designate its fibrous or filamentous character, and its resumption of a homogeneous solidity, as distinguished from any granular reduction or any lamination under pressure, I have decided to designate my new product as a fibrous and textile filling, and, accordingly—

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

As a new manufacture, a fibrous and textile metallic filling for teeth, consisting of metal shreds cut or shaved from ingots, substantially as described.

In testimony whereof I have hereunto subscribed my name.

NELSON B. SLAYTON.

In presence of—
J. A. B. WILLIAMS,
S. T. JONES.