

# UNITED STATES PATENT OFFICE.

CHARLES McLEAN, OF BOSTON, MASSACHUSETTS.

## DENTISTRY.

SPECIFICATION forming part of Letters Patent No. 363,904, dated May 31, 1887.

Application filed December 27, 1886. Serial No. 222,652. (Specimens.)

*To all whom it may concern:*

Be it known that I, CHARLES McLEAN, of Boston, in the county of Suffolk and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in the Art of Dentistry, of which the following is a full, clear, and exact description.

In the manufacture of dentures of vulcanized india-rubber the mold in which they are vulcanized is usually formed of plaster, that being the most convenient material for obtaining the counterpart of the wax model which is obtained directly from the mouth. In vulcanizing in plaster molds it frequently happens that the rubber and plaster so adhere to each other that portions of the plaster are torn from the mold in the act of separation and adhere to the vulcanized plate with great tenacity. Hitherto it has been exceedingly difficult to separate the plaster from the plate without injuring either the plate or the teeth.

My invention consists of a process by which plaster is readily and quickly disintegrated and may be removed with great rapidity.

I take the plate with adhering plaster, and, the fingers of the operator being protected from casual spattering by an india-rubber glove or finger-cots, I brush upon the plaster with a small brush a solution of hydrofluoric acid, which can now be obtained commercially, the principal use of which hitherto has been in the etching of glass. I have discovered that the commercial solution has very slight effect upon the enamel of artificial teeth, the fact being that a contact of several hours

hardly does more than to affect the surface polish. I use for this purpose a small common bristle or camel's-hair brush. The hydrofluoric acid immediately disintegrates the plaster, as if by a process of wet calcination, and the dental plate being taken to a sink and scrubbed with an ordinary tooth-brush and washed, preferably with running water, the plaster is immediately removed, much as if it were simply adherent dust or mud, and the polish and color of the vulcanized plate are not interfered with. Something which will do this has long been a desideratum with dentists.

It is obvious that for any purpose where the disintegration of plaster is desirable substantially the same process can be employed.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. That improvement in the art of dentistry, which consists in the rapid disintegration and removal of the plaster which adheres to vulcanized dental plates after vulcanization, by disintegration caused by the application of an aqueous solution of hydrofluoric acid and subsequent washing and scrubbing in water, substantially as described.

2. The process of removing adherent plaster-of-paris from objects to which it adheres, by means of an application of hydrofluoric acid to the plaster, substantially as described.

CHARLES McLEAN.

Witnesses:

THOS. WM. CLARKE,  
FRED. B. DOLAN.