UNITED STATES PATENT OFFICE.

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DENTAL POLISHING DEVICE.

1,138,479.


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To all whom it may concern:

Be it known that I, WILLIS L. HOUGH, a citizen of the United States, and resident of Laconia, in the county of Belknap and State of New Hampshire, have invented certain new and useful Improvements in Dental Polishing Devices, of which the following is a specification.

This invention relates to attrition devices employed by dentists to polish the surface of teeth, fillings, crowns, etc., in the mouth of the patient. Such devices are employed in the form of disks to be rotated, and in the form of flexible strips.

For convenience of illustration and brevity of description, I shall hereinafter refer to the device as a strip but it is to be understood that the invention is not limited thereto, as the article may comprise a disk or a sheet to be cut into disk, strip, or other form.

For the purposes of complete utility it is essential that the article shall not be capable of change due to moisture and that it shall retain, during use, the characteristics of flexibility, resilience, and strength or toughness.

The object of my invention is to provide a dental attrition device which will not be affected by moisture and which will retain permanently a high degree of flexibility, resilience and strength, with the grit practically irremovable from the body.

The invention consists in the dental polishing device, substantially as hereinafter described and claimed.

Of the accompanying drawings: Figure 1 represents a perspective view of a polishing strip embodying my invention. Fig. 2 represents an enlarged section on line 2—2 of Fig. 1.

In carrying out my invention, I provide a body layer of sheet celluloid $a$, a layer $b$ of plastic material capable of hardening and of firmly uniting with the sheet celluloid, and a suitable quantity of grit $c$ distributed over and sufficiently embedded in the layer $b$ to not be removed by use.

A suitable material for the layer $b$ may comprise celluloid dissolved or cut with alcohol, ether, and bi-sulfid of carbon. This provides a composition which is capable of hardening, and while doing so of being firmly united with the sheet celluloid layer $a$, and without in any way affecting or detracting from the flexibility, resilience, and strength or toughness possessed by said body layer $a$. In practice, the layer $b$ is applied in any suitable manner, as by flowing it over or brushing it upon the body layer $a$ and immediately the grit layer $c$ is applied as by sifting the grit over the soft layer $b$.

The grit immediately sinks sufficiently into the layer $b$, and the layer $b$ begins to attach itself to the body layer $a$, and as the layer $b$ hardens it firmly and durably unites the grit to said body layer. No heat or pressure is employed, and the body layer $a$ is at no time rendered plastic.

When the grit $c$ is distributed, the layer $b$ solidifies and the grit is firmly attached to and practically becomes a part of the complete article.

As has been stated, it is essential that the complete article shall retain, practically complete, the characteristics of flexibility, resilience, and strength or toughness possessed by the body layer of sheet celluloid.

Heat seriously affects all of these qualities, and to embed particles of grit in such body layer weakens the latter because of the numerous perforations or partial perforations. Particles cannot be embedded directly into sheet celluloid without subjecting the latter to heat, or to the action of a solvent, or both. After such treatment as last mentioned, celluloid never hardens to its original condition. Under my invention, however, the original condition of the body layer $a$ which is depended upon for strength and resilience is never changed.

I claim:

A flexible dental attrition device comprising two celluloid layers intimately united to form a substantially homogeneous piece, one layer being continuous and unbroken, and grit embedded solely in the other layer.

In testimony whereof I have affixed my signature, in presence of two witnesses.

WILLIS L. HOUGH.

Witnesses:

LE ROY M. KARANAN,
JAMES A. PATSON, JR.