J. C. GRAFT.

ABRASIVE COATED MATERIAL.

APPLICATION FILED MAR. 27, 1912.

1,217,593. Patented Feb. 27, 1917.

Fig. 1

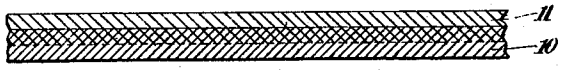


Fig. 2

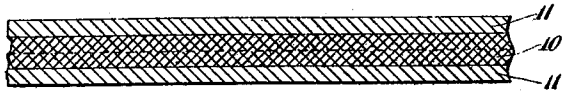


Fig. 3

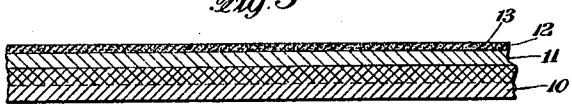


Fig. 4

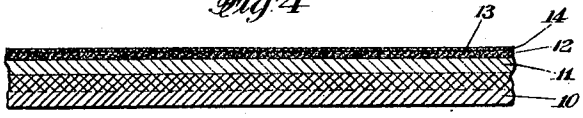
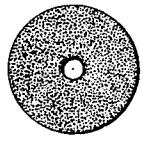


Fig. 5



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN C. GRAFT, OF EAST ORANGE, NEW JERSEY.

ABRASIVE-COATED MATERIAL.

1,217,593. Specification of Letters Patent. Patented Feb. 27, 1917.

Application filed March 27, 1912. Serial No. 686,514.

To all whom it may concern:

Be it known that I, JOHN C. GRAFT, citizen of the United States, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Abrasive-Coated Material, of which the following is a specification.

The invention relates to the manufacture of abrasive coated material and to a novel form of such material.

It has for its object to render the body of the material water-proof and to more securely hold the pulverulent attrition substance thereon. A further object of the invention is to give the abrasive coated material the necessary body and to render the same sufficiently resilient.

The nature of the invention will best be understood when described in connection with the accompanying drawings, in which—

Figure 1 is an enlarged sectional view of the backing material coated on one side with the water-proofing compound.

Fig. 2 is a similar view illustrating a modification in which both sides of the backing material are thus coated.

Fig. 3 illustrates the second coating and the attrition substance applied.

Fig. 4 illustrates the final coating applied.

Fig. 5 is a face view of a dental attrition disk embodying my invention.

Similar characters of reference designate corresponding parts throughout the several views.

Referring to the drawings, 10 designates a suitable backing material of metal, wood, paper, cloth or any desired fabric and which, in accordance with my improved process, is rendered water-proof by coating one or both sides with, or dipping the backing material in a solution of a cellulose ester, such as cellulose nitrate (collodion). It is extremely desirable, particularly in the case of dental attrition disks as shown in Fig. 5, to employ material such as paper because of its pliability; but it has heretofore been extremely difficult to render the same water-proof. By applying the aforesaid coating, the material is rendered perfectly water-proof, remains sufficiently flexible for the purpose in view and at the same time provides a base into which the attrition substance may be forced. To this end, after the first coating 11 is dry, a second coating 12 of the cellulose ester is applied and the pulverulent attrition substance 13 such as emery, sand, quartz, corundum, carborundum, and the like, sprinkled on or otherwise applied while the said coating is still in moist and adhesive condition. The material may be brought through suitable rollers, preferably heated, to securely fix the pulverulent substance. After this, the final coating 14 is applied as a thin layer forming a finish and serving, moreover, to further retain any of the attrition substance which may not have been securely fixed to the backing material. In this connection, it is to be noted that the material employed as adhesive is the same as that employed for water-proofing the backing material and for giving body to the same, whereby a thorough incorporation of the attrition substance is effected. Different thicknesses of the various coatings may be employed to vary the thickness of the finished material, which may be cut into any desired shape, for example, in the form of a dental attrition disk as shown in Fig. 5. Its water-proof features are particularly valuable in this connection, as the attrition substance is not so readily loosened from its backing material when exposed to the moisture of the mouth. Dental attrition disks of the usual type are very quickly rendered useless due to this loosening of the attrition substance as well as to the destruction of their property of resiliency when becoming moist. The article herein set forth may be made extremely thin and yet have sufficient body, and its resiliency will be preserved; and furthermore, in view of the particular coating material employed, presents an agreeable, finished appearance.

I claim:—

1. A flexible dental attrition device comprising two moisture-proof layers intimately united to form a substantially homogeneous piece, the base layer being continuous and unbroken to impart strength to the device, and grit embedded solely in the second layer.

2. A dental attrition device comprising a moisture-proof flexible body layer having a grit-carrying coating of moisture-proof flexible material intimately combined therewith to form a substantially homogeneous piece, the grit being embedded solely in said coating, whereby the original strength of the body layer is not affected by the grit and the device is capable of continued use wet or dry until the grit is worn away.

3. A flexible dental attrition device comprising a moisture-proof base layer having one of its surfaces provided with grit united thereto by a cement which is a partial solvent of the surface of the material of the base layer.

Signed at Newark, in the county of Essex and State of New Jersey, this 25th day of March, A. D. 1912.

JOHN C. GRAFT.

Witnesses:
ROBERT B. STOUTENBURGH,
LYDON E. STOUTENBURGH.