UNITED STATES PATENT OFFICE

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CELLULOID RECORD-BLANK.

1,234,450. Specification of Letters Patent. Patented July 24, 1917.

No Drawing. Application filed September 16, 1912. Serial No. 720,472.

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, a citizen of the United States, and a resident of Llewellyn Park, West Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Celluloid Record-Blanks, of which the following is a description.

My invention relates to celluloid articles such as record blanks, and more particularly, but not exclusively, to those of cylindrical form. The object of my invention is to provide an improved record blank of the above type which is provided with a true and suitably colored surface capable of receiving an accurate impression from a sound record mold.

Celluloid may be obtained in the market in desired form and of desired thickness for the manufacture of sound records and blanks, the commercial celluloid for cylindrical record blanks being in the form of long tubes which may be readily cut into sections of desired length. Records as heretofore molded from these tubes are defective in that upon reproduction they emit surface noises foreign to the selections recorded. I have discovered that this defect is due to the fact that the surface of the commercial celluloid is filled with small pits and other defects which are not effaced and thereby prevent the accurate molding of the celluloid when, as has heretofore been done, the surface of the celluloid in its commercial condition is pressed against the record surface of the mold. In order to obviate this objection, I remove the defective outer portion of the commercial celluloid, as by abrasion or turning. In practice, I find that the removal of an outer portion to a depth of .001 of an inch is sufficient to produce a true surface which is capable of receiving a true impression of the record undulations without the defects producing the surface noises hereinbefore referred to.

The next step in the formation of my improved record blank consists in dyeing the outer surface of the celluloid cylinder or other blank in such a manner as not to injure the elasticity, molding qualities, and other desired properties of the celluloid. The dyes I prefer to use, that is, anilin dyes, are soluble in alcohol and acetone; but as camphor, which is one of the ingredients of celluloid, is soluble in alcohol and acetone, a solution of these dyes in either of the above solvents would, if applied to the surface of the celluloid blank, partly dissolve the camphor from the celluloid and injure the elasticity of the blank and the capability of the latter to be accurately molded. I obviate this objection by adding to a solution of the dye in alcohol or acetone sufficient water to prevent the camphor in the celluloid from going into solution when the dye is applied to the surface of the celluloid. I have obtained good results with a solution containing about two parts by weight of water to one part by weight of alcohol solvent and three parts by weight of water to one part by weight of acetone solvent. Such solutions as those specified above, soften the celluloid sufficiently to permit proper absorption of the dye and at the same time prevent an injurious dissolution of the camphor.

In dyeing a record cylinder, I take a blank, the outer surface of which has preferably been prepared as described above and dip the same into the water containing solution described above for a suitable length of time, the depth of the color of the cylinder depending upon the strength of the solution and the time the cylinder remains in the same. I have obtained good results by leaving a record in a solution such as those specified above for about three minutes. I next remove the cylinder from the solution and wash the same with water until all of the surplus solution on the cylinder is removed. This washing insures the uniform dyeing of the cylinder. Finally, I dry the cylinder in the atmosphere or in any other suitable way.

The improved record blank obtained as described above has a true outer surface capable of receiving an accurate record impression. It has its outer surface suitably colored; and its elasticity and molding qualities are unimpaired. Accordingly, when the record undulations are impressed therein it produces a sound record of greatly improved acoustic properties.

Having now described my invention, what I claim as new and desire to protect by Letters Patent is as follows:

1. The process of making record blanks or the like which comprises applying to the surface of a celluloid blank an acetone solution of dye which will not dissolve the cam-

phor in the celluloid, then washing the blank, and finally drying the same, substantially as set forth.

2. The process of making record blanks or the like which comprises applying to the surface of a celluloid blank a solution of dye containing acetone as a solvent for the dye and sufficient water to prevent the acetone from dissolving the camphor in the celluloid during the dyeing operation, then washing the blank, and finally drying the same, substantially as set forth.

3. The process of making record blanks or the like which comprises applying to the surface of a celluloid blank or the like a solution of anilin dye containing one part by weight of acetone solvent and three parts by weight of water, then washing the blank or the like and finally drying the same, substantially as set forth.

4. The process of making celluloid sound record blanks or the like which comprises removing a thin surface portion of the celluloid and then dyeing the surface of the celluloid with a solution of dye which will not dissolve the camphor in the celluloid, the said solution comprising an anilin dye, a solvent therefor other than water, and a quantity of water in excess of the solvent, substantially as described.

5. The process of making celluloid record blanks or the like, which comprises removing the surface portion of the celluloid, and then dyeing the surface of the celluloid with a solution which will not dissolve the camphor in the celluloid, substantially as set forth.

This specification signed and witnessed this 12th day of September, 1912.

THOS. A. EDISON.

Witnesses:
FREDERICK BACHMANN,
MARY J. LAIDLAW.