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METHOD OF MAKING MASTER PHONOGRAPH RECORDS.

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FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.



FIG. 5.

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METHOD OF MAKING MASTER PHONOGRAPH RECORDS.

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To all whom it may concern:

Be it known that I, WILLIAM H. COLE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented a certain new and useful Method of Making Master Phonograph Records, of which the following is a specification.

The principal objects of the present invention are, first, to simplify the process or method of producing master records by reducing the number of steps involved; second, to produce an improved and more accurate master record; and third, to produce the master record direct from the wax record. Other objects of the invention will appear from the following description and the invention will be pointed out and claimed at the end hereof.

In the practice of my invention metal is deposited by precipitation from solution distributed upon the wax or like record by the action of alcohol, and one or more of the same or of different kinds of metal are electro-plated upon the metal first deposited from solution, so that the removal of the wax exposes the metal first deposited from solution, and this metal exactly and faithfully conforms to the grooves in the wax record with which it directly contacted; accordingly my invention comprises the process above outlined.

In additionally describing the invention reference will be made to the accompanying drawings in which—

Figures 1, 2, 3 and 4, diagrammatically and schematically represent steps into which the process may be divided, and

Fig. 5 similarly represents the master record.

In connection with the drawings it will be assumed that the face 1, of the master record is of silver and that the back 2 of the master record is of copper. The backing as of leaden material usually applied to the copper 2 is not shown. I will now describe the manufacture of such a silver faced copper backed master record by the process of this invention.

The wax record 3 is made in the usual or in any preferred way. An ammonical silver solution is made, for example, by dissolving silver nitrate in aqua ammonia and this solution along with alcohol is applied to the face of the wax record. From this solution

silver is deposited as at 5 by means of an aldehyde, preferably formaldehyde. The alcohol plays an important part in that it insures proper distribution of the solution of silver salts over the surface of the wax. This deposit 5 is electro-plated with a coating or layer of metal 6, in the present instance silver, so that the deposit from solution and the electroplating 6 of silver thereon together constitute a layer of silver, and upon this composite layer of silver is electroplated copper 7. The finished product is shown in Fig. 5, in which 1 is silver and 2 is copper and the exposed face of the silver 1 is the deposit from the solution, Fig. 2, which was in direct contact with the face 3 of the wax record 4, and therefore it faithfully and accurately corresponds with that face.

The invention being chemical and electro-chemical in its nature, I reserve the benefit of the doctrine of equivalents allowed in such cases.

I claim:

1. The method of making master records from wax and like records, which consists in depositing metal directly onto and in contact with the face of the wax record by applying an admixture of a solution of salts of the metal and alcohol to the surface of the record and precipitating the metal therefrom, and then electro-depositing metal upon the metal first deposited from solution, substantially as described.

2. The method of making master records from wax and like records, which consists in depositing silver directly onto and in contact with the face of the wax record by applying an admixture of alcohol and a solution of nitrate of silver in aqua ammonia to the face of the wax record and precipitating silver therefrom by formaldehyde, electroplating silver upon the silver deposited from solution, and electro-plating copper upon the electro-plated silver, substantially as described.

3. In the method of making master records from wax and the like the improvement which consists in depositing metal directly onto and in contact with the surface of the wax record by precipitating it from a solution containing alcohol, and then applying additional metal to the back of said deposit which latter becomes the face of the master record,

WILLIAM H. COLE.