

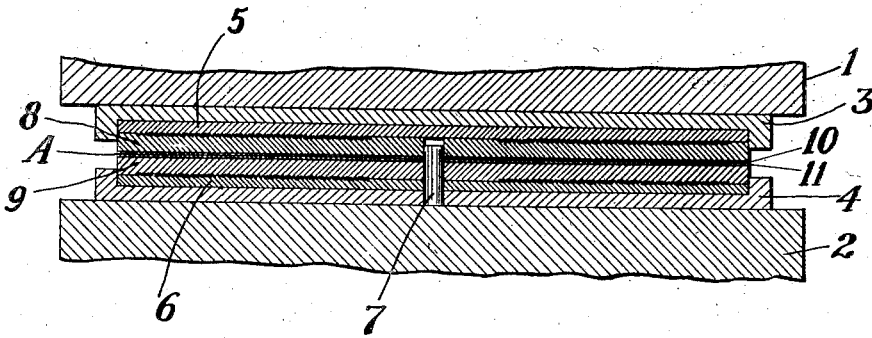
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T. A. EDISON

PRODUCTION OF DISK PHONOGRAPH RECORDS

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PRODUCTION OF DISK PHONOGRAPH RECORDS.

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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, Essex County, New Jersey, have invented certain new and useful Improvements in the Production of Disk Phonograph Records, of which the following is a description.

My invention relates to the production of disk phonograph records, particularly to those of the type which are molded from substantially flat blanks or tablets, as in the case of Edison records. The blanks used in molding Edison disk records are usually in the form of substantially flat disks, each comprising a main body portion formed of a suitable filler, such as a mixture of wood flour and powdered chalk combined with a comparatively small amount of a suitable binder such as a shellac or resin, and a surface layer or coating of a phenolic condensation product for receiving the record impression. The phenolic condensation product is preferably made in the form of a varnish which is applied to the body portion of the blank as by brushing. Blanks of this character are hard and practically non-plastic at normal temperatures, and only slightly plastic when highly heated, and distinguished from the soft "gobs" or lumps of highly plastic material from which the so-called "shellac" records are pressed, such, for example, as disk records of the Victor type.

The majority of disk phonograph records now made are of the double faced type, that is, each face thereof is provided with a record impression. Accordingly, in case the manufacturer finds one side of such a record to be defective, this necessitates the rejection of the record even though the other side may be perfect. Another disadvantage of the double faced record is that frequently both selections represented by the record grooves impressed in the opposite sides of a record do not appeal to a prospective purchaser of such record, with the result that such prospective purchaser either will not buy the record or buys the same only because of the selection represented by the record groove impressed in one face thereof. In the manufacture of sound records as now carried on,

it is also customary both in the case of double faced and single faced records, to produce only a single record at a time in any given mold of a record press. The blanks from which disk records of the Edison type are molded are not always of uniform density, it sometimes being the case that such a blank has portions which are appreciably harder or of greater density than the remaining portions. Where this is the case, it is likely that in molding the blank a clear record impression will be obtained only in the surface portions thereof corresponding to such harder portions, and that the record impression in the surface portions corresponding to the softer or less dense portions of the blank will be so imperfect as to necessitate discarding the molded record.

The principal object of my invention is to provide an improved process for simultaneously producing two single faced records in each mold of a record press upon each molding operation, and wherein the objections and disadvantages indicated above will be obviated.

Briefly described, my process consists in disposing two record blanks having a thin layer of suitable yielding material therebetween, in a record mold between the opposed matrices of the latter, then subjecting the mold with the two record blanks or tablets therein to the molding pressure with the application of heat and then releasing said pressure, removing the molded records from the mold and separating the molded records.

In order that my invention may be more clearly understood, attention is directed to the drawing accompanying and forming a part of this specification, and in which the single figure is a fragmental, cross-sectional view of a record press showing one of the molds of such press and illustrating the manner in which my improved process is carried out.

Referring to the drawing, reference characters 1 and 2 respectively represent two adjacent plattens of a record press between which is disposed a record mold comprising a pair of mold holders 3 and 4 carrying the opposed record matrices 5 and 6. Secured to the mold holder 4 is the usual centering

pin 7 which extends upwardly from the mold holder through an opening in the matrix 6.

In producing records in accordance with my invention, I superimpose two disk record blanks or tablets 8 and 9 with a thin layer A of suitable yielding material disposed therebetween. While various materials may be used for the layer A, the same preferably comprises two separate and readily separable, non-adherent, flexible sheets 10 and 11, these sheets preferably being formed of thin tissue paper. The superimposed blanks 8 and 9 with the sheets of paper 10 and 11 therebetween, are now disposed in the mold between the opposed matrices 5 and 6 with the center pin 7 engaging openings which extend through said blanks and paper sheets at the centers thereof, to maintain the same properly positioned in the mold. The mold and the superimposed record blanks therein, are now subjected to the molding pressure and heat. The molding pressure is then released and the mold removed from the press, whereupon the molded records are removed from the mold and separated. By reason of employing the two sheets of paper 10 and 11, the separation of the molded records may be easily effected at the adjacent opposed faces of such sheets. During the molding operation, the paper sheets which are substantially of the same diameter as the blanks 8 and 9, become affixed to the said blanks respectively to form a part thereof. It will be apparent that as a result of the process described, I obtain two single faced records in place of each double faced record obtained by the methods which are now generally employed in molding phonograph records.

As stated above, a blank from which a disk record of the Edison type is molded, is in the form of a slightly thermo-plastic disk having a surface coating adapted to receive the record impression, such coating preferably being formed of condensite varnish. In my process as applied to the production of records of the Edison type, while this is not essential, I preferably apply a light coating of wax or condensite varnish to the faces of the blanks which are not to receive record impressions, in order to prevent the absorption of moisture by the blanks. Accordingly, when two such blanks with the paper sheets 10 and 11 disposed therebetween are disposed in a mold as shown, and the molding pressure and heat are applied, these paper sheets respectively become firmly affixed to the wax or condensite varnish coatings on the adjacent opposed faces of the blanks and provide finished facings for one side of the completed records. The record blanks, as stated above, sometimes have hard spots or portions. However, when two such blanks are superimposed, there is little likelihood of hard

spots in one blank registering with any hard spots which may be present in the other blank. Therefore, in my process when the two superimposed blanks are disposed in a mold and subjected to the molding pressure and heat, the material of the blanks will, because of the fact that the latter are separated only by a very thin layer of yielding material, flow better under such heat and pressure with the result that all surface portions of the blanks adjacent the matrices 5 and 6 will be forced firmly against the matrices so that a complete and substantially perfect record impression will be made in each blank. In this connection, it is highly important that the separating layer disposed between the record blanks be formed of thin yielding material.

It will be obvious that in case one of two single faced records simultaneously produced in a mold in accordance with my invention, is so defective as to necessitate rejection thereof, this will not render it necessary to reject the other record. Moreover, I find that my improved process renders unnecessary the rejection of any records produced thereby because of imperfect record impressions due to hard spots in the record blanks.

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

1. The process which consists in disposing two thin sheets of paper between two record blanks, disposing the blanks with the two sheets of paper therebetween in a record mold between the opposed matrices thereof and then subjecting the mold and blanks therein to the molding pressure, substantially as described.

2. The process which consists in superimposing two hard slightly thermo-plastic record blanks with two sheets of paper disposed therebetween, disposing the superimposed blanks in a record mold between the opposed matrices of the latter and then subjecting said mold with the superimposed blanks therein to the molding pressure with the application of heat, substantially as described.

3. The process which consists in disposing two readily separable sheets of flexible material between two record blanks, disposing the blanks with the said sheets therebetween in a record mold between the opposed matrices thereof and then subjecting the mold and blanks therein to the molding pressure, substantially as described.

4. The process which consists in disposing two thin and readily separable sheets of flexible material between two record blanks, disposing the blanks with said sheets therebetween in a record mold between the opposed matrices thereof, subjecting the mold and blanks therein to the molding pressure

with the application of heat and then removing the blanks from the mold and separating such blanks, substantially as described.

5 5. The process which consists in superimposing two hard, slightly thermo-plastic record blanks with two readily separable sheets of flexible material disposed therebetween, disposing the superimposed blanks

in a record mold between the opposed matrices of the latter and then subjecting said mold with the superimposed blanks therein to the molding pressure with the application of heat, substantially as described.

This specification signed this 23d day of May, 1923.

THOS. A. EDISON.