

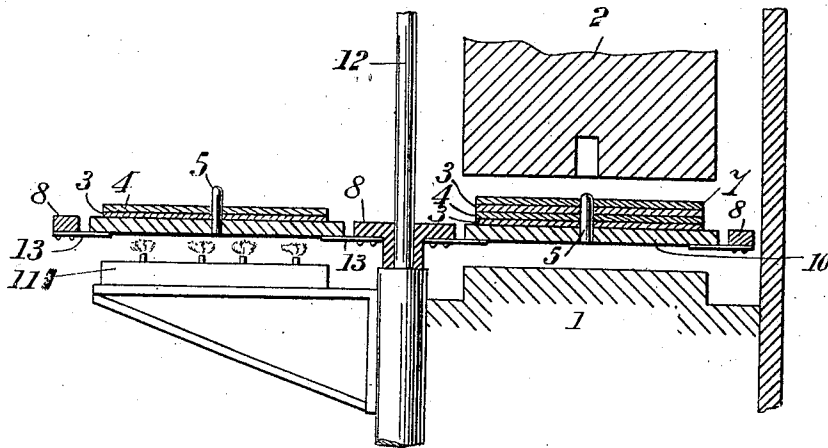
No. 824,710.

PATENTED JULY 3, 1906.

E. DESGRANDCHAMPS.

MULTIPLE DUPLICATING APPARATUS FOR SOUND PRODUCING RECORDS.

APPLICATION FILED JULY 22, 1905.



Witnesses:

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UNITED STATES PATENT OFFICE.

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MULTIPLE DUPLICATING APPARATUS FOR SOUND-PRODUCING RECORDS.

No. 824,710.

Specification of Letters Patent.

Patented July 3, 1906.

Application filed July 22, 1905. Serial No. 270,867.

To all whom it may concern:

Be it known that I, EMILE DESGRANDCHAMPS, a citizen of the French Republic, and a resident of Paris, France, have invented certain new and useful Improvements in Multiple Duplicating Apparatus for Sound-Producing Records, of which the following is a specification.

This invention relates to the manufacture of plate or disk records for graphophones; and its object is the impression of such plate-records for sound-producing instruments, which records are made of hard but elastic material when in a cold state and which softens when heated, the impression of these plates being performed by means of a press provided with a movable device or a turntable carrying the disk and which allows simultaneously or not the heating of the disks or of the material previously to the compression or to the cooling of the disks or the corresponding plates, disk, and the like during or after the compression.

The annexed drawing given by way of example shows a vertical section of a special form of this press.

A table 8, which may be rotated round a vertical shaft, carries, by means of springs 13, plate-forms 10, which may be lowered by the action of the pressure and rest upon the lower plate-form 1 of the press, which is cooled by circulating water or in any other preferred manner, as well as the plate 2 of the press, which is movable. The plate-form 10, carrying a die or electroblock 3, has previously been heated over burners 11 or otherwise. Afterward the rotation of the movable table 8 carries under the plate-form of the press the previously-heated die, as well as the plate 4 to be impressed, upon which is arranged a second also previously-heated die 3 and an auxiliary plate 7, which is compressible and made of felt, asbestos, tin, zinc, and the like if the impression is to be obtained on both sides at a time or simply the compressible plate if the impression is only to be done on the under side of the disk-record. This compressible plate 7 may also be previously heated if the nature of the disk to be impressed requires that. It may also be wedged up under the movable plate 2. Then different superposed plates may be kept in place by a cen-

tering-pin 5 or by the walls of a kind of mold. The turn-table may be composed of a plurality of disks 10, so that while one die is under pressure another one is heated and a third one cooled. A press of this kind permits any loss of time to be avoided, as simultaneously one disk-record may be under pressure while another die intended to receive the pressure is heated and while a third disk-record which has just been compressed may be separated from its cooled die.

The compressible plates 7 are intended to render the pressure uniform on the whole area of the pressed surface and to control the cooling, which is very useful, as the materials which are hard and elastic at ordinary temperature generally soften but difficultly when hot and as the cooling under pressure rapidly leads to the limit temperature at which the plasticity ceases and the elasticity begins.

It has been noticed that with plate-records made of hard and elastic material a sapphire or glass point would be very convenient for producing purposes even if the record has been made by sinuosities, (record of a gramophone.) The points need not be changed after each reproduction and the record wears very little, as the spiral of the record is even polished by the successive passages of the point. Besides this, the obtained disk-records are practically unbreakable. They may be homogeneous if the thickness of the elastic material is sufficient to allow the impressed layer to remain plane without the aid of a layer of any material (cardboard and the like) upon which it is usually mounted.

Having now fully described my said invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device of the character described the combination with a heat source and press, a rotatable table acting in conjunction therewith, said table being provided with a plurality of matrix-plate holders yieldingly mounted upon a rotatable table and a securing means carried by each of the plates.

2. In a device of the character described, in combination with a heat source and a press, a rotatable table acting in conjunction therewith, said table being provided with a plurality of compressible plate-forms.

3. In a device of the character described,

the combination with a heat source and a press, a rotatable table acting in conjunction therewith and a series of matrix-plate holders yieldingy mounted upon a rotatable table
5 arranged within the table.

4. In a device of the character described, in combination with a heat source and a press, a rotatable table acting in conjunction there-

with, plate-forms, and springs for securing the forms to the table. 10

In testimony whereof I have hereunto set my hand in presence of two witnesses.

EMILE DESGRANDCHAMPS.

Witnesses:

ADOLPH STURM,
HANSON C. COXE.