

No. 649,385.

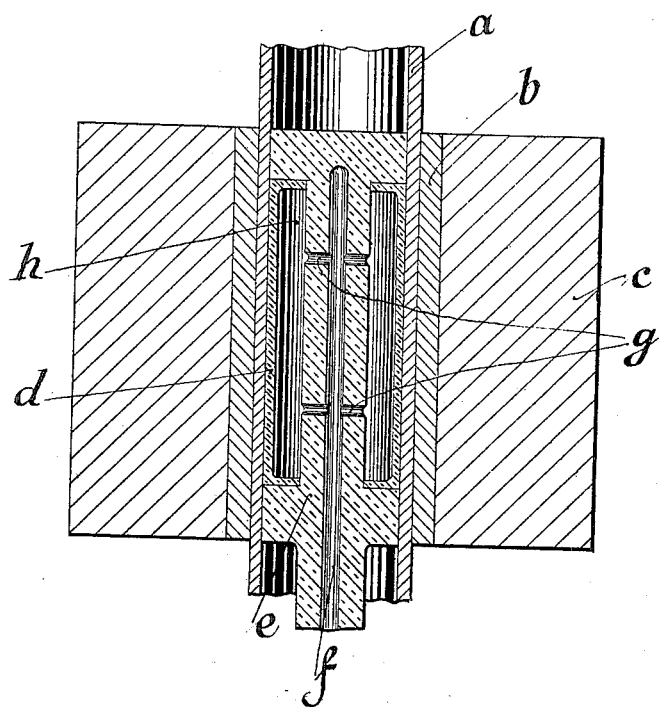
Patented May 8, 1900.

H. G. WOLCOTT.

APPARATUS FOR MAKING PHONOGRAM DUPLICATES.

(Application filed July 25, 1899.)

(No Model.)



Witnesses

J. B. Keefe
Bruce S. Elliott

Inventor

Henry G. Wolcott

By

James L. Norris
att'y

UNITED STATES PATENT OFFICE.

HENRY GOODRICH WOLCOTT, OF FISHKILL-ON-THE-HUDSON, NEW YORK.

APPARATUS FOR MAKING PHONOGRAM-DUPPLICATES.

SPECIFICATION forming part of Letters Patent No. 649,385, dated May 8, 1900.

Application filed July 25, 1899. Serial No. 725,060. (No model.)

To all whom it may concern:

Be it known that I, HENRY GOODRICH WOLCOTT, a citizen of the United States, residing at Fishkill-on-the-Hudson, in the county of Dutchess, State of New York, have invented a certain new and useful Improvement in the Manufacture of Phonogram-Duplicates, of which the following is a specification.

This invention relates to an improvement in the manufacture of phonogram or gramophone or graphophone duplicates; and its object is to produce from the negative copy taken from a wax cylinder upon which the record has first been produced any number of duplicates capable of use for a lengthy period; and it consists, mainly, in evenly pressing by means of a liquid or fluid medium a cylinder or tubing (of plastic material or of a material capable of being rendered plastic by the application of a gentle heat) embedded between said negative copy of the record and a circumferentially-recessed metallic cylinder or piston toward and against said negative copy, thus taking an exact impression therefrom, so that all projections on the inner surface of the latter, forming the "record," properly speaking, will be reproduced on the outer surface of said plastic cylinder or tubing in reversed order, so as to form correspondingly-shaped small impressions which are an exact duplicate of the original record.

In order to carry my invention into effect, I put the negative copy, which preferably is an electro taken from the wax cylinder upon which the record has first been produced, in a housing of cylindrical form, and, further, I place the plastic cylinder or tubing into said electro, whereupon the metallic cylinder or piston, circumferentially recessed to an extent corresponding to the surface of the record to be copied, is introduced into the plastic cylinder. The said piston is provided with an axial bore and with radial or lateral bores extending therefrom toward and into the recessed part of the piston. By introducing compressed air or by pressing a liquid into the recessed part of the piston by way of said bores the plastic cylinder is gently and evenly pressed up to and against the face of the metallic copy or electro, so as to take an exact impression therefrom.

In the accompanying drawing, forming part

of this specification, *b* designates the electro or negative copy of the wax cylinder or record first taken. The outer diameter of said electro exactly corresponds with the inner diameter of the housing or strong-walled cylinder *c*, so that on inserting the electro into said cylinder the former will smoothly fit or adhere to the latter. The plastic cylinder or tubing *a*, preferably consisting of vulcanite, celluloid, or the like, is then placed in the electro, and into the latter the metallic piston *e* is introduced, the recessed part of which having previously been furnished with a kind of a rubber bag *d*, so that the air or liquid which then is to be pressed through the piston-bores *f* and *g*, respectively, into the recessed part or chamber *h* of the piston will act upon the plastic cylinder *a* without finding a way to escape through from the annular chamber *h*, formed by the recessed part of the piston. The pressure thus prevailing in said chamber will evenly and gently act upon the plastic cylinder, pressing the latter against the face of the electro, thereby taking an exact impression therefrom, so that even the most minute projections of the latter will afterward be found on the plastic cylinder in reversed order and with all their delicate details just as found in the original record. As the plastic cylinder is to be chosen a little smaller in size than the internal room of the electro, the former on subsequently reducing the pressure can be removed readily from the latter owing to its yielding capacity and to the diametrical difference existing between both. In order to attain the result aimed at by using merely a moderate pressure in the chamber *h*, either the electro or the plastic cylinder, or both of them, may be gently heated before they are placed into working position, so that the plastic cylinder, and especially its outer surface, will be capable of more readily taking up the impressions from the electro. It is obvious that without departing from the nature of my invention I may introduce the plastic tubing into the electro before the latter has been placed in the housing *c*.

What I claim as my invention, and desire to secure by Letters Patent, is—

The herein-described apparatus for producing phonogram-duplicates consisting of a housing having a cylindrical chamber, an axi-

ally-bored and circumferentially - recessed
piston adapted to be inserted in, and of less
diameter than, said chamber, an impression-
cylinder inserted in said chamber and a plas-
5 tic cylinder, to be impressed, may be inserted
between the piston and said impression-cyl-
inder, and a rubber tube inclosing said cir-
cumferential recess in a manner to afford an
annular chamber, said piston being provided
10 with ports leading from its bore into said

chamber, the combination being and operat-
ing substantially as and for the purpose set
forth.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit- 15
nesses.

HENRY GOODRICH WOLCOTT.

Witnesses:

ALBERT MASCHKE,

FRIEDRICH WEGNER.