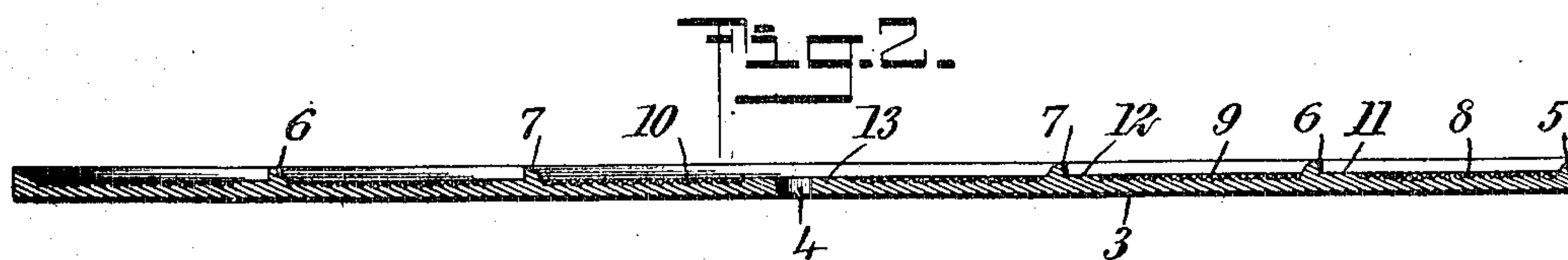
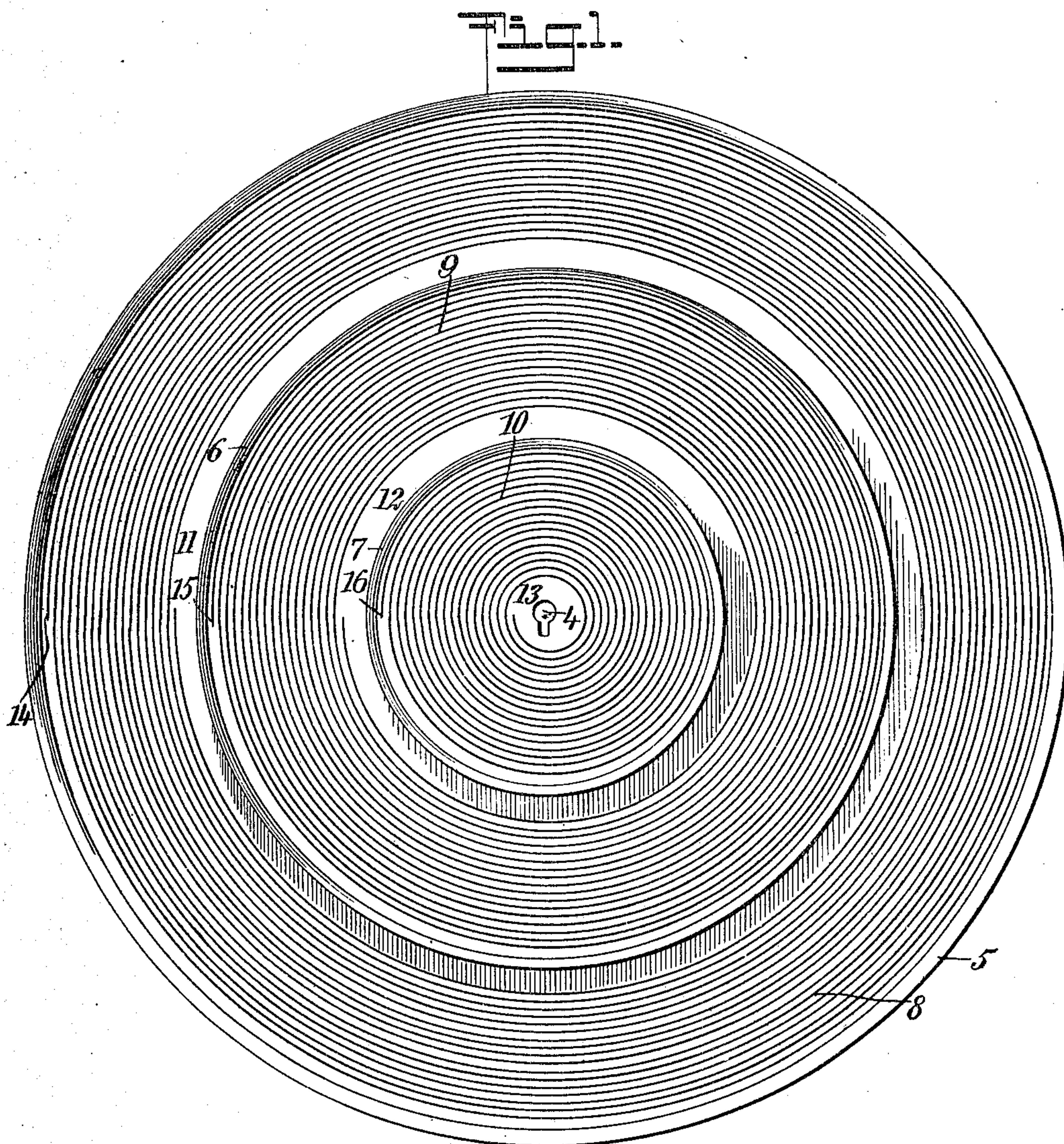


No. 870,961.

PATENTED NOV. 12, 1907.

A. HOFFMAN.
MULTOGRAM RECORD.
APPLICATION FILED JAN. 7, 1907.



WITNESSES

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MULTOGRAM RECORD.

No. 870,961.

Specification of Letters Patent.

Patented Nov. 12, 1907.

Application filed January 7, 1907. Serial No. 351,140.

To all whom it may concern:

Be it known that I, AUGUST HOFFMAN, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Multogram Record, of which the following is a full, clear, and exact description.

My invention relates to records used for talking machines, my more particular object being to provide a record with a multiplicity of record tracks for the purpose of increasing the amplitude and volume of the sound vibrations.

My invention further relates to means for separating the various record tracks from each other, so as to prevent a stylus from one of these record tracks moving into another.

My invention further relates to means for increasing the physical strength of the record and for protecting the record track against injury when the record is handled or shipped.

My invention further relates to providing the revoluble record member with improved means, whereby the operator is made aware of the proper portions of the revoluble member upon which to place the stylus needles in order to bring into registry the various record tracks.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in both figures.

Figure 1 is a plan view of a disk-record embodying my improvements; and Fig. 2 is a central cross-section through the same, showing the form and disposition of the annular beads used for strengthening the record and for protecting the record-tracks.

The record is shown at 3 and is provided with a central aperture 4 having the form of a key-hole slot. The stem or spindle of the talking-machine is of a conformity mating that of the key-hole slot, and fits neatly thereinto so as to prevent any lost motion as between the stem or spindle and the disk. A number of annular beads 5, 6, 7, integral with the disk 3, are disposed concentrically thereupon and have, in cross-section, the forms indicated in Fig. 2.

A number of separate record-tracks 8, 9, 10 are spaced apart and disposed concentrically, each record-track being inside of a bead 5, 6, 7. These record-tracks are of the usual spiral form and are exact duplicates of each other in so far as the acoustical effect is concerned. Inside of each record-track 8, 9, 10 is an annular space 11, 12, 13 which, for the purpose of convenience, I designate as an "idle" space.

It will be noted that each bead 5, 6, 7 is provided with a beveled surface or in other words that its top sur-

face slopes downwardly and inwardly. The purpose of this arrangement is to provide for guiding the several stylus needles into the proper alinement with the outer ends of the several record-tracks. The beads 5, 6, 7 thus serve as distinguishing marks whereby the operator can judge with great exactness the several locations which should be occupied by the stylus needles. In practice, all that is necessary is for the operator to place approximately in position the several stylus needles so that the latter, upon engaging the beveled surface of the beads 5, 6, 7, glide downwardly and into proper position, to simultaneously engage the outer ends of the several record-tracks when the disk is set in motion.

In making the record above described, the record-tracks 8, 9, 10 are so arranged that the parts thereof representing the same sound are in alinement with each other. This can be conveniently done by forming the record-tracks by the action of a number of different stylus needles acting simultaneously, there being as many needles as there are record-tracks 8, 9, 10 to be made. If desired, a master record can be made and other records reproduced therefrom.

In order to use the completed record it is placed upon the machine, the key-hole slot 4 being fitted over the stem or spindle of similar shape, as above described, and this stem is set in motion in the usual manner.

A number of stylus needles corresponding to the number of record-tracks 8, 9, 10 is now brought into use, each needle resting upon one of these record-tracks. The needles may be started from the outer ends of the tracks and moved gradually inward. When each needle finishes its work it is released by its record-track 8, 9 or 10, and then lodges against one or the other of the annular beads 5, 6, 7; no matter how long the disk now turns, no needle can do any damage nor can there be any admixture of sounds due to a needle operating upon the wrong record.

It will be observed that the several record-tracks 8, 9, 10 begin outwardly at the points 14, 15, 16, these points being substantially in alinement with each other with reference to an imaginary line passing radially outward from the center of the disk. This is to stop all of the various records at the same instant and to insure that various parts of the several records, related acoustically to each other, occupy the same position relatively to imaginary lines passing radially outward from the center. It will thus be noted that in all of the records the parts which are acoustically related are in alinement with each other, and this is essential in order that sounds controlled by the various record-tracks shall be made simultaneously.

As the record-tracks are in registry with each other in the acoustical sense of the expression, and as the sounds

reproduced from each record-track are duplicates of sounds represented simultaneously from the other record-tracks, it follows that the sounds are made considerably louder and clearer. It will also be noted that the wear and tear attending this increased volume of sound, upon any part of any record-track, is no greater than usual. The destruction of any part of the record need not be any greater than in the ordinary system.

I do not limit myself to the use of a disk, for the reason that any known equivalent therefor may be employed, without departing from the spirit of my invention.

Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. A multogram record, comprising a revoluble member provided with a plurality of record tracks in acoustical registry with each other and further provided with raised portions disposed intermediate said record tracks.

2. A multogram record, comprising a member provided with a plurality of record tracks, and further provided with a raised portion disposed intermediate said record tracks for protecting the latter from injury.

3. A multogram record, comprising a revoluble disk provided with record tracks, and further provided with raised portions disposed intermediate said record tracks.

4. A multogram record, comprising a revoluble disk provided with annular beads integral therewith and disposed concentrically, and further provided with record tracks disposed intermediate of said annular beads.

5. A multogram record, comprising a revoluble disk provided with a plurality of record tracks disposed concentrically, and further provided with an annular bead disposed intermediate said record tracks.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AUGUST HOFFMAN.

Witnesses:

WALTON HARRISON,
EVERARD B. MARSHALL.