B. M. HANSEN.

CENTERING MEANS FOR PHONOGRAPHIC RECORDS AND THE LIKE.

APPLICATION FILED AUG. 21, 1916.

1,253,374. Patented Jan. 15, 1918.

Fig. 1.

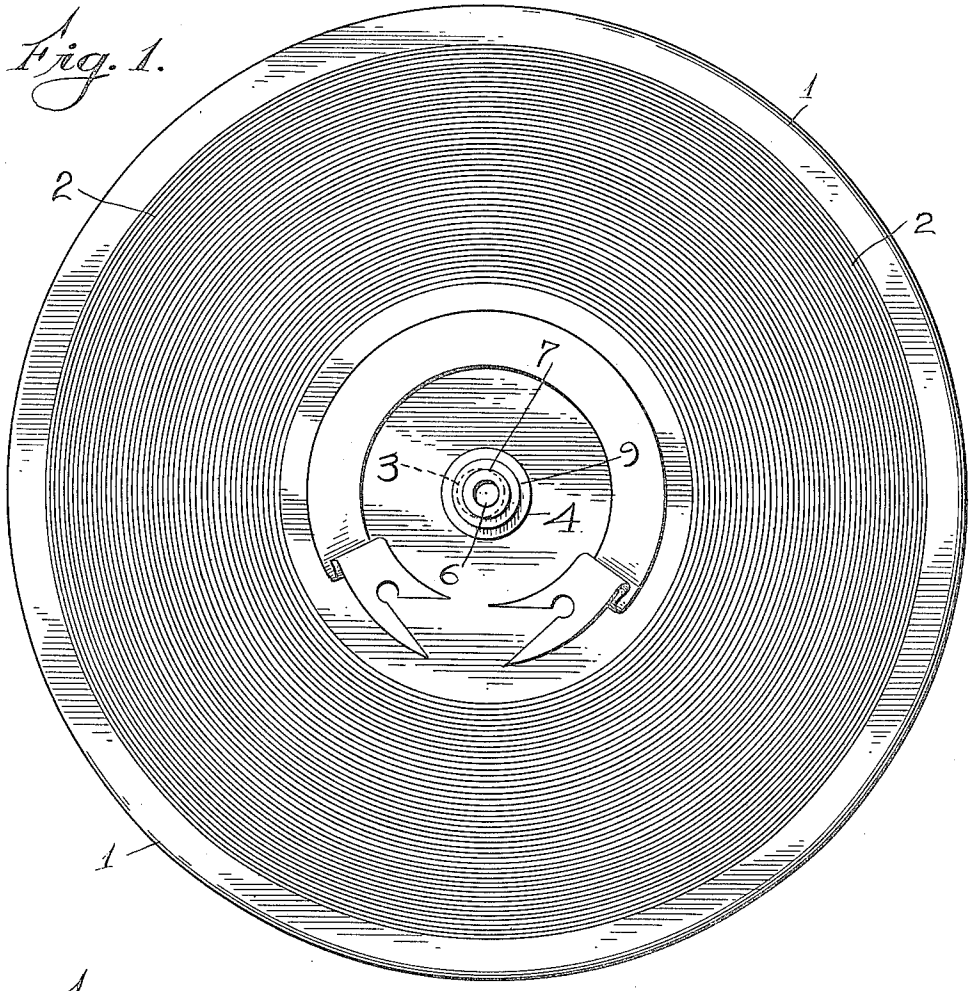
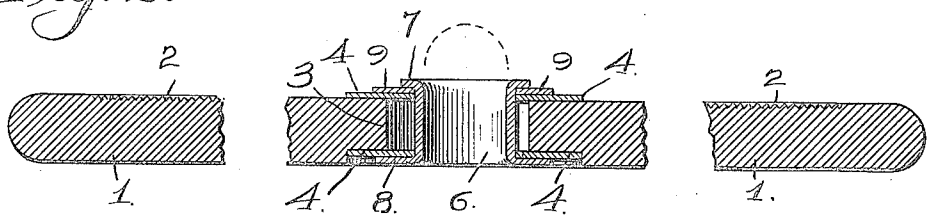


Fig. 2.



Inventor.

Bertram M. Hansen

BY Arthur L. Slee

ATTY.

UNITED STATES PATENT OFFICE.

BERTRAM M. HANSEN, OF SAN FRANCISCO, CALIFORNIA.

CENTERING MEANS FOR PHONOGRAPHIC RECORDS AND THE LIKE.

1,253,374. Specification of Letters Patent. Patented Jan. 15, 1918.

Application filed August 21, 1916. Serial No. 116,202.

To all whom it may concern:

Be it known that I, BERTRAM M. HANSEN, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented a new and useful Improvement in Centering Means for Phonographic Records and the like, of which the following is a specification.

My invention relates to improved center bearings for phonographic records and the like wherein the aperture is brought concentric with the approximately concentric sound convolutions; and the objects of my invention are:

First, to provide an improved central bearing for phonographic records and the like that shall be adapted to resist wear and thereby prevent the enlargement of the record aperture whereby the alinement of the sound convolutions to the axis of rotation may be preserved.

Second, to provide an improved central bearing or centering means whereby the central aperture of the record may be alined or arranged approximately concentric with the sound convolutions of the record.

Third, to provide improved means adapted to reduce the frictional engagement of a reproducing needle with the record and thereby improve the harmony of the selection being rendered.

Fourth, to provide improved means whereby the wear on the sound or impression convolutions or grooves may be eliminated.

I accomplish these and other objects by means of the device disclosed in the drawings forming a part of the present specification wherein like characters of reference are used to designate similar parts throughout the said specification and drawings, and in which—

Figure 1 is a plan view of a phonographic record disclosing my invention applied thereto.

Fig. 2 is an enlarged broken transverse sectional view of a record disclosing more fully in detail the construction and arrangement of my invention.

Referring to the drawings the numeral 1 is used to designate a phonographic record having the usual sound impressions or convolutions 2 arranged approximately concentric with said record 1. Notwithstanding that the said convolutions 2 are spiral, being continuous, the term concentric is applied thereto in an illustrative sense for the reason that the pitch of said spirals is so small in proportion to the diameter of the disk 1 that said convolutions 2 may be said to be approximately concentric.

The disk 1 is provided with the usual approximately central aperture 3 which is provided by the simple process of boring or punching through the approximate center of the disk 1.

In practice it seems to be a rather difficult matter to form the aperture 3 absolutely central to the convolutions 2 and the result is that when the record 1 is rotated for reproducing, the reproducing needle, not shown, instead of having a constant speed in one direction, viz.: toward the center of the disk as is the practice, that a wavering or approximately reciprocating movement is imparted to the needle and box with the result that the said needle is forced alternately against opposite sides of the V-shaped sound convolutions or grooves 2 thereby producing an undue friction which tends to increase the hissing or metallic sound which is generally magnified by the reproducer to the detriment of the harmony of the selection being rendered.

I eliminate or reduce this friction and thereby not only improve the harmony of the selection being rendered but also eliminate the wear on the sides of the convolutions 2 and also the aperture through the softer material of the record by means of the metallic centering means which may be described as follows:

Washers 4 are arranged on each side of the record 1 and adjacent to the aperture 3 therein. These washers 4 may be arranged on the top of the record 1 as disclosed in the upper central portion of Fig. 2 of the drawings, or the record adjacent the said aperture 3 may be countersunk so that the said washers may lie flush with the surface of the record 1 as disclosed in the lower central portion of the figure referred to.

A metallic gromet or sleeve 6 is provided with annular flanges 7 and 8, the flange 8 being larger in diameter than the flange 7 and arranged to engage the outer surface of the lower washer 4 in Fig. 2 of the drawings. The smaller flange 7 of the gromet or sleeve 6 is engaged by a third washer 9 provided for the purpose of providing greater stability to the entire construction when assembled.

Before the smaller annular flange 7 is

spun, punched or otherwise impressed onto the third washer 9 the bore sleeve 6 is alined concentric with the convolutions 2 of the disk 1, thereby eliminating the wavering motion which tends to increase the frictional engagement of the reproducing needle, thereby eliminating wear on the side of the groove.

When said alinement has been accomplished in any suitable manner the flange 7 of the gromet or sleeve 6 is tightly impressed onto the third washer 9 so as to tightly and rigidly secure the entire structure to the disk 1 thereby retaining said alinement.

It is obvious from the foregoing that I have provided an improved centering means for phonographic records and the like wherein the harmony of the selection may be improved as well as means whereby wearing of the centering aperture and grooves may be prevented.

I am aware that the present state of the art discloses gromets of various designs applied to various uses; I do not therefore claim the broad principle of the gromet, but what I do claim as new and desire to secure by Letters Patent is—

The combination with a centrally apertured phonographic record having the usual convolutions thereon, of a metallic gromet comprising a circular washer arranged on each side of the record; a metallic sleeve having an annular flange on each end thereof one of said flanges being of larger diameter than the other and arranged to engage one of the washers; and a third washer arranged to engage the remaining washer and to be in turn engaged by the smaller flange on the end of the sleeve whereby said sleeve may be secured within the central aperture and concentric with the convolutions of the disk.

In witness whereof I hereunto set my signature.

BERTRAM M. HANSEN.