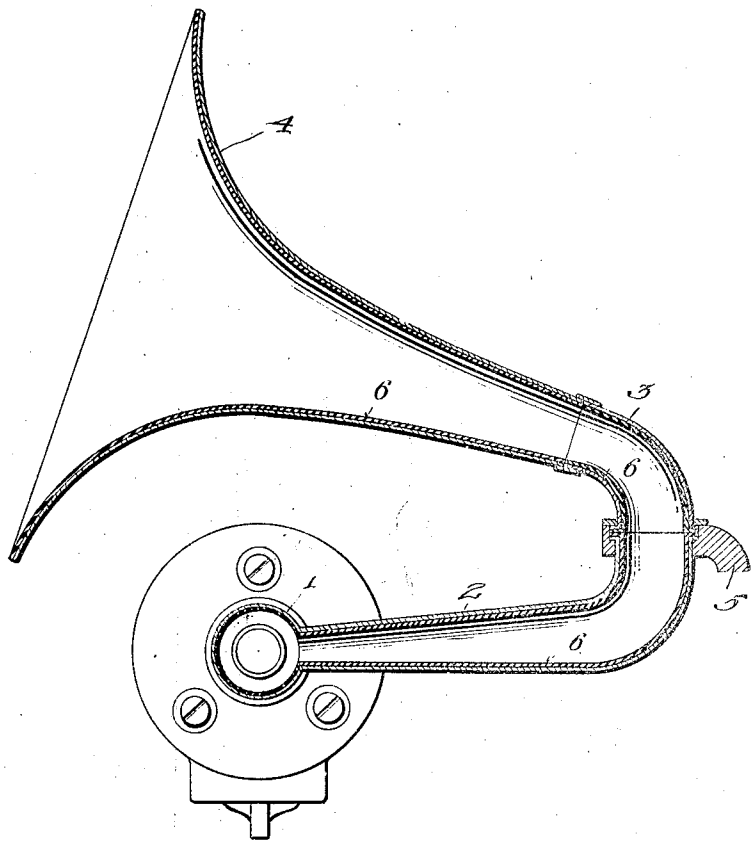
No. 892,520. PATENTED JULY 7, 1908.

J. O. HIRSCHFELDER.

APPARATUS FOR PHONOGRAPHS AND GRAPHOPHONES.

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Witnesses

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APPARATUS FOR PHONOGRAPHS AND GRAPHOPHONES.

No. 892,520. Specification of Letters Patent. Patented July 7, 1908.

Application filed March 7, 1908. Serial No. 420,610.

To all whom it may concern:

Be it known that I, JOSEPH OAKLAND HIRSCHFELDER, citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Apparatus for Graphophones and Phonographs, of which the following is a specification.

My invention relates to improvements in the sound-box, sound-conducting tubes and horns which are used in connection with graphophones, phonographs, talking-machines and the like sound producing instruments, and it has for its object the construction of these several parts in such manner as to prevent their undue vibration by the sound waves passing therethrough.

In the accompanying drawing representing a sectional view of a sound-box, a conducting tube and horn of a graphophone or phonograph there is shown my improved lining applied to said parts.

1 is the sound box, 2 the conducting tube, 3 the elbow, 4 the horn and 5 the bracket or support.

6 designates the lining applied to the interior of the before designated parts.

As the result of my experiments I have found that by providing the conducting tube or elbow of the horn, and the horn with a lining made in one piece, or by making said parts in two pieces and providing each with a separate lining of sound deadening material, I am enabled to avoid all vibrating edges and to produce a structure free from secondary or accessory vibrations, thereby softening or deadening the sound waves, and relieving the instrument from the metallic or harsh effect of such sounds and thus preserving the natural tones either of the human voice or of instrumental music when reproduced thereby.

In the carrying out of my invention I have found that by lining the sound box, as well as the sound conducting tube and horn, with a soft non-sonorous material of a wax-like nature such as wax, or a composition of which wax is an ingredient, I accomplish the desired result. The compound may be heated to a degree of fluidity sufficient to enable me to supply the same as a coating or lining of the desired thickness to the interior of the part, thereby producing a smooth sound-receiving and sound-conducting body of even thickness.

The lining may be applied in one of a number of ways. It may be liquefied by heat or by a solvent and applied by dipping, or by means of a brush, or by pouring the liquefied material into the interior of the parts and turning such parts until the lining material has been evenly distributed over the same and has solidified thereon. The parts may be split and the lining applied thereto, and the parts then reassembled. The lining may also be applied in the form of a sheet of the material instead of coating the same on the parts as described.

In the use of apparatus constructed in accordance with my invention I have found that the sound produced therefrom is free from unnatural vibrations, is sonorous, and a faithful reproduction of the record which is being reproduced, whether the same be that of the human voice in speaking or singing, or that of musical instruments.

Preferably the coating which I have described herein is used in connection with sound-conducting tubes and horns made of papier-mâché, although other material may be employed for the making of these parts.

While I have described herein the preferred embodiment of my invention, it will be understood that various departures may be made therefrom without departing from the scope thereof.

I claim:

1. A graphophone, phonograph, or the like instrument, having its sound receiving and conducting parts coated on the inside with a non-sonorous material of a wax-like nature which is adapted to be applied thereto while in a liquid condition and which will harden and adhere to the surface to which it is applied.

2. A graphophone, phonograph, or the like instrument, having its sound receiving and conducting parts coated on the inside with a non-sonorous material of a wax-like nature that is soluble under heat and will adhere when cold to the surface to which it is applied.

3. The combination with a graphophone, phonograph, or the like instrument, of a

sound receiving and conducting apparatus therefor made from papier-mâché and coated on the inside with a non-sonorous material of a wax-like nature which is adapted to be applied thereto while in a liquid condition and which will harden and adhere to the surface to which it is applied.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH OAKLAND HIRSCHFELDER.

Witnesses:
DANIEL BLOCK,
FRANK MANDEL.