

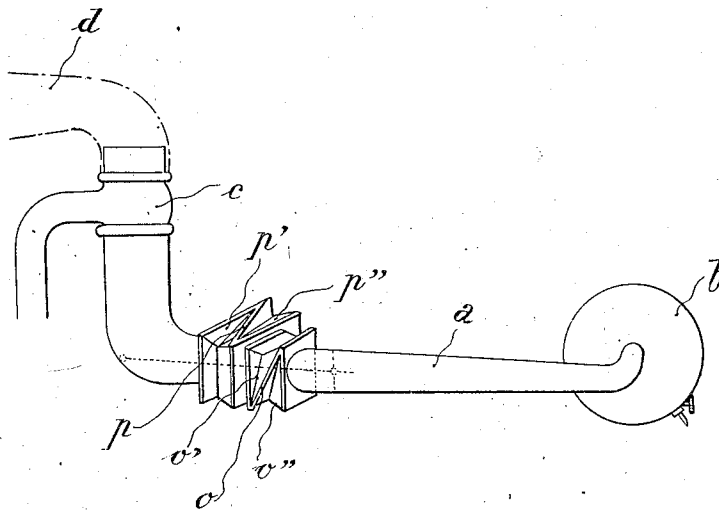
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H. HURM

SOUND ARM COUPLING FOR TALKING MACHINES

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SOUND-ARM COUPLING FOR TALKING MACHINES.

Original application filed April 30, 1920, Serial No. 377,992. Devided and this application filed August 9, 1921. Serial No. 490,997.

To all whom it may concern:

Be it known that I, HORACE HURM, citizen of the French Republic, residing at Paris, France, have invented certain new and useful Improvements in Sound-Arm Coupling for Talking Machines, of which the following is a specification, the subject matter of this application being divided out of my copending application, Serial No. 377,992, filed April 30, 1920.

This invention relates to tone arm couplings for talking machines and has for its object the production of a tone arm which will be at the same time air-tight and flexible in the two planes in which mobility is required.

A further object of the invention is to provide a tone arm coupling comprising two bellows connected together and in communication, one bellows being hinged vertically and therefore swingable in a horizontal plane and the other hinged horizontally and swingable in a vertical plane.

A still further object of the invention is the provision of a tone arm coupling between the tone arm and sound amplifier which comprises two bellows arranged at right angles to one another and a rod passing through said bellows and anchored at its ends to points within said sound amplifier and tone arm to prevent longitudinal extension of said bellows.

A tone arm of a talking machine should be freely movable in the plane of the sound record as well as in a plane perpendicular thereto, the latter movement being necessary in order to remove it from the record. The coupling must also be air-tight in order that the tone produced in the sound box be conducted as little as possible to the outside air on its passage to the sound amplifier.

The tone arm coupling according to the present invention consists of two air-tight bellows arranged at right angles with respect to each other and constructed similarly to ordinary bellows. Such a coupling assures the desired mobility of the tone arm, is none the less completely air-tight and at the same time forms a strong sufficiently rigid attachment.

The single figure of the drawing illustrates in perspective an exemplified modification of the subject of this invention.

In this figure *a* is the tone arm carrying at one end the sound box *b*. Adjacent the other end of the tone arm and connected to it by the flexible coupling forming the subject of the invention is the sound amplifier *d* supported by the bracket *c*.

The tone arm coupling comprises two bellows each having the collapsible portions p^1 and p^2 and o^1 and o^2 respectively. Each of these bellows is formed of a pair of rigid rectangular frames each frame being joined by a frame angularly placed with relation thereto and joined at its opposite edges to said frames forming alternate dihedral angles having the hinged apexes n , n^1 and p , p^1 respectively. The alterable surfaces of said bellows are covered with air-tight flexible material such as leather and the two bellows are arranged at right angles to one another, the bellows adjacent the sound amplifier being positioned with its hinges vertical and the bellows next to the tone arm with its hinges horizontal. This arrangement permits the tone arm *a* to be swung laterally in either direction through the hinge motion of the bellows *p* and swung vertically by the hinge motion of the bellows *o*.

In order to prevent longitudinal extension of said bellows the rod *t* is provided passing through said bellows pivotally secured at its opposite ends to pins or similar means *v* and *w* located in said sound amplifier and tone arm respectively.

Obviously, changes in the details of construction may be made without departing from the spirit of the invention and I do not wish to limit myself to any particular form or arrangement of parts.

Having described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. A tone arm coupling including a pair of bellows each comprising a frame arranged in the form of alternate dihedral angles hingedly joined at their apexes, a flexible covering for the alterable surfaces

of said bellows, said bellows being rigidly secured to each other, the hinges of one bellows being arranged at right angles to those of the other.

- 5 2. A tone arm coupling comprising a pair of bellows arranged at right angles each having rectilinear hinged joints, a sound amplifier secured to one bellows and a tone arm to the other, a rod running through

said bellows and anchored at its ends in said 10 amplifier and tone arm respectively.

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

HORACE HURM.

Witnesses:

J. E. MENCHES,
GASTON ROSE.