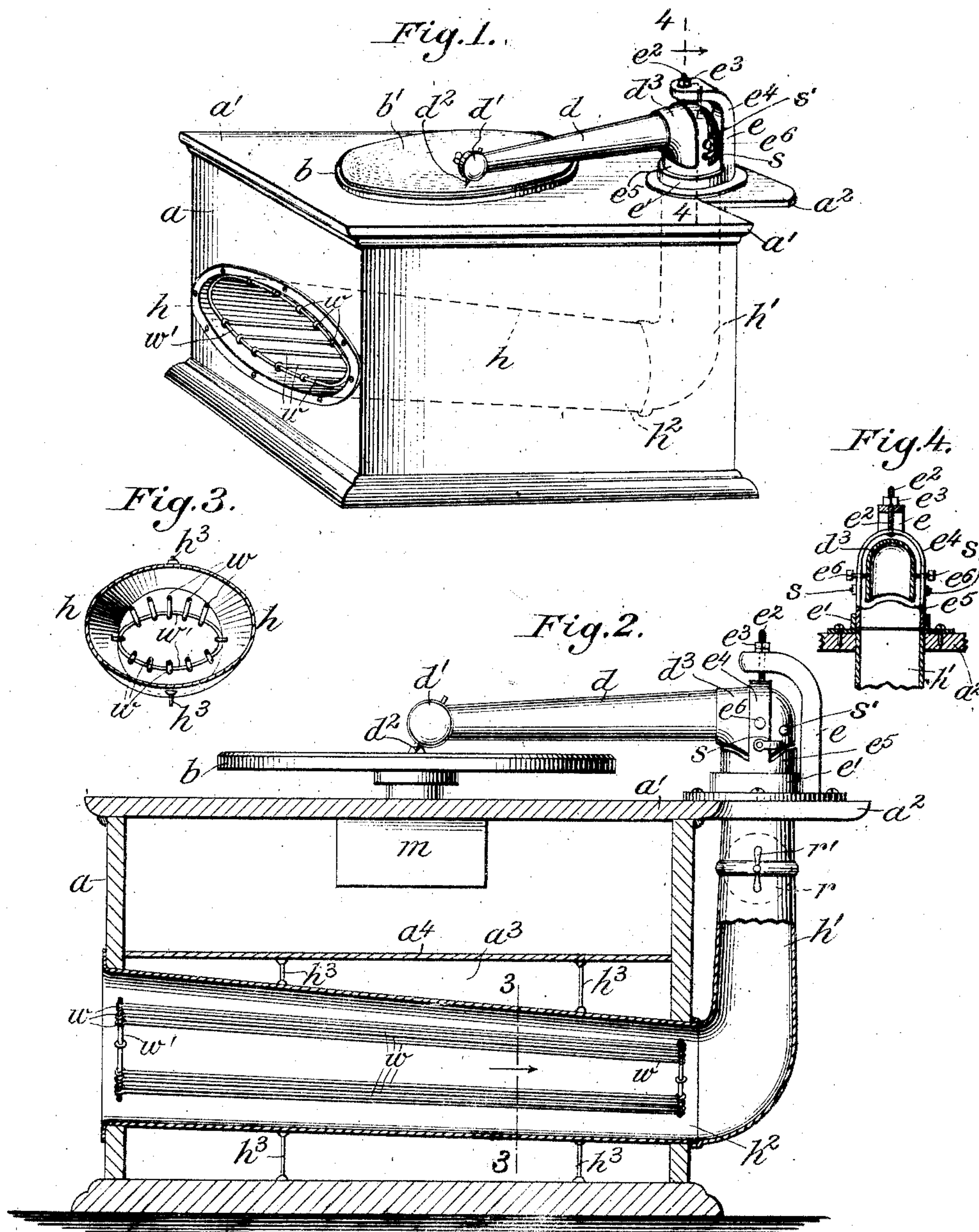


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PATENTED AUG. 27, 1907.

**H. SCHRÖDER.
GRAMOPHONE.**

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Witnesses:

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UNITED STATES PATENT OFFICE.

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GRAMOPHONE.

No. 864,758.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HERMANN SCHRÖDER, a citizen of Germany, residing at Newark, in the county of Essex and State of New Jersey, United States of America, have invented certain new and useful Improvements in Gramophones, of which the following is a specification.

This invention contemplates certain new and useful improvements in that type of talking machine or gramophone in which the megaphone instead of being arranged separately and detachably above the supporting casing of the sound record, is arranged in a permanent position within the casing so as to be more conveniently shipped with the casing, to require no adjustment, and to avoid any damage to a record which is liable to occur with the megaphone detachably supported above it.

The object of my invention is to provide an improved construction of talking machine of this type, the horn or megaphone of which is provided with means designed to increase the clearness and mellowness of the reproduced sound and which is composed of comparatively few and simple parts that are not liable to get out of order, but that will operate efficiently so as to allow the sound box at the end of the tapering arm which carries it to follow easily the grooves or depressions in the sound disk or record while the megaphone is permanently mounted without movement, in a sound box within the casing of the machine and is effectively connected to the tapering arm carrying the sound box, in such a manner as to interfere in no wise with the free movement thereof in a lateral direction to reproduce the record and also to interfere in no wise with the proper limited movement of the said arm in a vertical direction for the purpose of removing one disk and replacing it by another.

With these and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts hereinafter described and aimed, reference being had to the accompanying drawing in which:

Figure 1 is a perspective view of my improved gramophone; Fig. 2 is a vertical longitudinal sectional view of the same upon a slightly larger scale; Fig. 3 is a detail transverse sectional view, the section being taken approximately on the line 3—3 of Fig. 2 and looking in the direction of the dart; and, Fig. 4 is a detail vertical sectional view on the line 4—4 of Fig. 1, looking in the direction of the dart.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the letter *a* designates the casing of my improved talking machine or gramophone, and *a'* the top of said casing, said top being provided with a rear extension constituting a ledge *a*².

m designates the box designed to receive the motor and adapted to revolve the table *b* which is supported or journaled upon the top *a'* of the case *a* and which is intended in turn to support the sound disk or record *b'*.

An opening is formed through the ledge *a*² and encircling this opening is an upright ring *e'* from which there extends upwardly a bracket *e*, the said bracket and ring *e'* being preferably integrally connected. The upper end of the bracket *e* curves forwardly and is apertured to receive a threaded pin *e*² which is held at different vertical adjustments therein by means of nuts *e*³. The lower end of the pin *e*² projects below the forwardly extending upper end of the bracket *e* and into engagement with the upper end of an inverted U-shaped band *e*⁴ which is integrally connected at its lower end to an annulus *e*⁵ preferably provided with a curved upper edge as shown best in Figs. 1 and 2. The annulus *e*⁵ fits within the ring *e'* and is guided by the said ring, it being permitted to turn freely in a horizontal plane therein, and the band or bar *e*⁴ also turns with the annulus *e*⁵ and is held to move in a true horizontal plane about the contacting end of the pin *e*² as an axis. The bar *e*⁴ and annulus *e*⁵, together constitute a stirrup, which is adapted to receive an elbow *d*³ suspended within the stirrup, as best seen in Fig. 4 by means of two inwardly projecting set screws as seen at *e*⁶ which impinge upon it at opposite sides. Hence, it will be seen that the elbow *d*³ may be turned freely about the pins *e*⁶ in a vertical plane and may also be turned in a horizontal plane and freely, with the stirrup in which it is mounted. To limit the rocking movement of the elbow *d*³ in a vertical plane, I provide any desired form of stop device. In the present instance, I have shown for this purpose spring latches *s* which are secured at one end to the bar *e*⁴ and are adapted to contact with recesses or studs *s'* on the elbow, as is evident from inspection of Fig. 2.

The elbow *d*³ is adapted to receive in its horizontal end, the larger end of the tapering arm *d* which carries the sound box *d'* and the stylus *d*², these forming by themselves no part of my invention.

h designates the megaphone or horn of my invention, the same embodying a vertically disposed portion *h'* which is fitted at its upper end within the opening of the ledge *a*² and which is adapted to support the annulus *e*⁵, as best seen in Fig. 4. The megaphone also embodies a tapered horizontally disposed portion *h*² which is connected at its lower end to the portion *h'*, (the latter having its end formed into an elbow to receive the smaller end of the portion *h*²), and the portion *h*² of the horn extends completely through the case *a*, from the rear side to the front and is preferably flanged outwardly at its larger front end, as best seen in Fig. 1, the said flange being secured by screws, or any desired fastening means to the front of the case. The said portion *h*² is located within a compartment

a^3 which is produced by the bottom of the case a and the horizontal partition a^4 and to hold the said portion h^2 rigidly in place, upper and lower supporting plates h^3 may be provided. The vertically disposed portion h' of the megaphone is located entirely without the case as shown, although it is practically protected from injury in shipping by means of the ledge a^2 , and this portion of the megaphone is provided with a sound regulator r which may be set by a handle r' so as to regulate the opening for the passage of the sound waves from the diaphragm and the tapering arm to the lower part of the horn.

In the lower, enlarged, conical portion h^2 of the horn are arranged thin longitudinal wires w which are supported at their ends by oval wires w' which are attached to the side-walls of the horn and which serve for vibrating with the sound-waves as they are conducted from the vertical portion of the horn to the horizontal portion, said wires exerting a softening influence on the sounds and delivering the same in a clear and distinct manner at the outgoing end of the horn.

The advantages of my improved phonograph are that the horn is not arranged as a separate detachable portion of the same, but is arranged in permanent connection with the lower part of the casing, so that the same can be packed and shipped with the casing, the phonograph being immediately on unpacking the shipping box ready for use, all that is necessary being to arrange the sound-record on the rotary table or disk, regulate the stylus for the same, and adjust the suspension-pivot of the upper hollow tapering arm of the horn. The lower enlarged part of the horn remains always stationary in the box, while the upper part with the sound-box follows the motion of the depressions in the sound-record as it is capable of swinging on the suspension-pivot in lateral direction, while the vertical motion of the sound-box and its tapering arm

necessary for removing and replacing the sound-record is permitted by the pivotal connection of the elbow with the holder. The sound-box in the lower part of the casing for the enlarged part of the horn and the longitudinal wires in the same improve the softness and clearness of the sounds which are emanating from the same and render the sounds more pleasing and agreeable.

Having thus described the invention, what is claimed as new is:

1. In a talking machine, the combination with a case, a record table journaled upon said case, a sound box and supporting arm therefor, of a ring mounted upon said case, a bracket extending upwardly and forwardly from said ring to a point over the same, a stirrup consisting of an inverted U-shaped bar, and an annulus connected to the lower ends of said bar, the said annulus being fitted to turn within the said ring, a pivot pin mounted in the upper end of said bracket and extending through the same into contact with the said bar, an elbow received within the stirrup and pivoted to the bar thereof to rock in a vertical plane, one end of said elbow receiving the said supporting arm for the sound box, a megaphone having a stationary portion disposed horizontally within the case and extending therethrough, said megaphone also embodying a vertically disposed portion extending from one end of the stationary portion up to the elbow.

2. In a talking machine, the combination of a case, a record table mounted to revolve on said case, a sound-box and supporting arm therefor, the top of the case being provided with a rearwardly projecting ledge having an opening formed therein, of a stationary megaphone disposed within said case and provided with an elbow extending outside of the case and up into the ledge, a universal joint connected between the supporting arm and said elbow, and a sound regulator mounted in the said elbow, outside of the case.

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

HERMANN SCHRÖDER. [L. S.]

Witnesses:

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