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G. H. HALL.

SOUND RECORDING AND REPRODUCING MACHINE.

APPLICATION FILED JAN. 7, 1902.

NO MODEL.

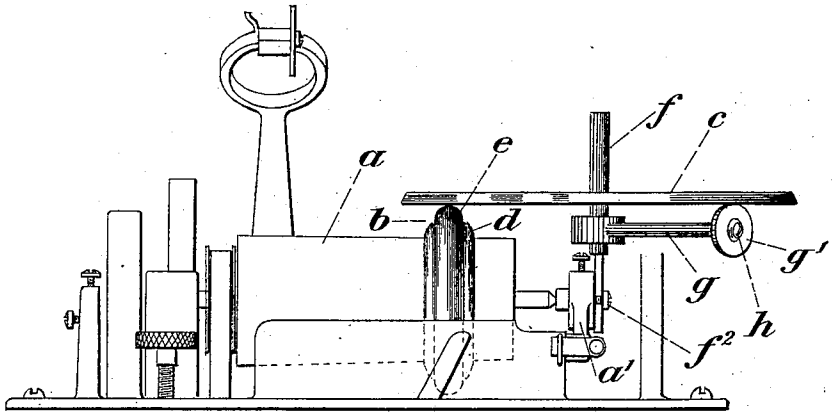


Fig. 1.

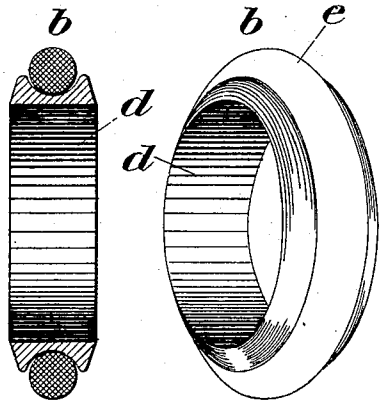


Fig. 2.

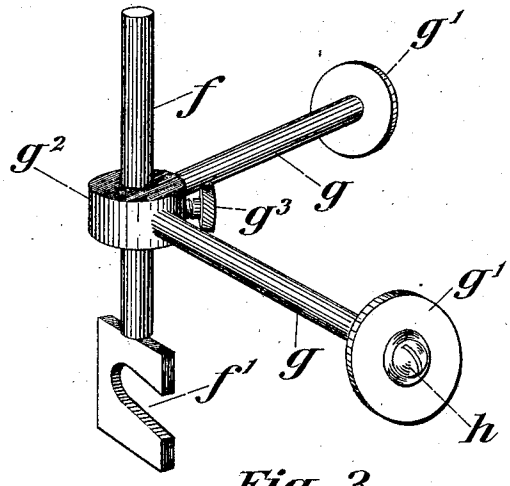


Fig. 3.

WITNESSES:

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SOUND RECORDING AND REPRODUCING MACHINE.

SPECIFICATION forming part of Letters Patent No. 722,977, dated March 17, 1903.

Application filed January 7, 1902. Serial No. 88,735. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. HALL, of the city and county of Philadelphia, State of Pennsylvania, have invented an Improvement in Sound Recording and Reproducing Machines, of which the following is a specification.

My invention relates to sound recording and reproducing machines; and it consists of the improvements and devices which are fully set forth in the following specification and are shown in the accompanying drawings.

Owing to the distinctive character of phonographs and graphophones or those machines in which recording and reproduction are effected by means of cylindrical sleeves carried on a rotating cylinder as compared with gramophones or those machines in which recording and reproduction are effected through disks the records of the one class of machines are useless for the other.

It is one of the objects of my invention to adapt the ordinary mechanism of a phonograph or graphophone to use with gramophone-records, so that the machine may be used with either the cylindrical records appropriate to that class of machines or with the disks now adapted for use only with gramophones.

It is also an object of my invention to effect this result without making any change or alteration in the regular mechanism of the phonograph or graphophone, so that the temporary conversion of the machine can be effected without removing any of its parts or changing their adjustment.

It is also an object of my invention to enable this conversion to be effected by simple attachments, which can be easily and quickly applied or removed without the exercise of more than common intelligence.

In carrying out this part of my invention I employ two attachments—first, a power-transmitter, which is applied to the phonograph-cylinder or other rotating part of the machine and is adapted to transmit power to the gramophone-disk, and, second, a disk-support, which is applied to a stationary part of the machine and is adapted to support the disk or its table in driving connection with the power-transmitter. In my preferred construction these attachments are very simple and may be applied or removed with great facility.

In the accompanying drawings, Figure 1 is a front elevation of a phonograph having my gramophone attachment applied thereto. Fig. 2 is a transverse section and a perspective view of the power-transmitter, and Fig. 3 is a perspective view of the disk-support.

a is the rotary cylinder of the phonograph or graphophone, which is operated in the usual manner.

b is the power-transmitter for transmitting motion from the cylinder *a* to the gramophone-disk *c*. As shown, the power-transmitter consists of a ring *d*, adapted to fit the rotary cylinder *a* and having its periphery provided with a frictional driving-surface *e*, which is preferably formed of a ring of soft rubber set in an annular groove in the ring.

f is an upright adapted to be attached to any stationary part of the machine or its frame. I have shown it provided at the lower part with a notch *f'*, adapted to engage the screw f^2 in the end support *a'* of the cylinder-shaft; but any suitable means of attachment may be employed.

g g are radial arms carried by the upright *f* and provided with loose rollers *g'*. These preferably consist of rubber disks loosely supported on the ends of the arms *g g* by screws *h*. To permit the radial arms to be adjusted vertically on the upright *f*, I have shown them carried by an adjustable collar g^2, provided with a set-screw g^3.

In applying my attachment to a phonograph or graphophone the sound-box or lever is lifted and the power-transmitter *b* is slipped on the cylinder *a*. The upright *f* is secured in place, and the disk *c* is placed over the upright, resting on the frictional driving-surface *e* of the power-transmitter and the rollers *g g*. Now when the cylinder *a* is operated the disk will be rotated by the power-transmitting connection *b* acting frictionally on the under side of the disk. While I have spoken of the disk as being in frictional driving contact with the power-transmitter, it is to be understood that the disk may be placed on a rotary table, and this table may be supported on the power-transmitting surface *e* and the radial arms *g* and driven by frictional contact.

I do not mean to limit myself to the particular form of power-transmitter shown, as my invention includes any form of power-

transmitting devices operated by the phonograph or graphophone and driving the gramophone-disk or its supporting-table by frictional contact. The manner of supporting and driving the disk enables it to rise and fall in conformity with any irregularities in its plane, so that the uniformity of the driving action is not affected by irregularities in the plane of the disk. Any suitable sound-box may be used with the gramophone-disk.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. A gramophone attachment for sound recording and reproducing machines, consisting of a power-transmitter adapted to be attached to a driven part of the sound recording and reproducing machine, and a disk-supporter adapted for attachment to a stationary part of the machine having means for supporting the disk in driving connection with the power-transmitter.

2. A gramophone attachment for sound recording and reproducing machines, consisting of a power-transmitter adapted to be attached to a driven part of the sound recording and reproducing machine, and a disk-supporter adapted for attachment to a stationary part of the machine having means for supporting the disk in frictional contact with the power-transmitter.

3. A gramophone attachment for sound recording and reproducing machines, consisting of a power-transmitter adapted to be attached to a driven part of the sound recording and reproducing machine and provided with a frictional driving-periphery, and a disk-supporter adapted for attachment to a stationary part of the machine having means for supporting the disk in frictional driving contact with the power-transmitter.

4. A gramophone attachment for phonographs and the like, consisting of a power-transmitting ring adapted to be applied to the rotating cylinder of the phonograph and provided with a frictional driving-periphery, and a disk-supporter adapted for attachment to a stationary part of the machine having means to support the disk in frictional driving contact with the periphery of the power-transmitting ring.

5. A gramophone attachment for phonographs and the like, consisting of a power-transmitter adapted to be attached to a driven part of the phonograph, and a disk-supporter consisting of an upright adapted to be attached to a stationary part of the machine provided with radial supports adapted to support the disk in driving connection with the power-transmitter.

6. A gramophone attachment for phonographs and the like, consisting of a power-transmitter adapted to be attached to a driven part of the phonograph, and a disk-supporter consisting of an upright adapted to be attached to a stationary part of the machine provided with radial arms g having rollers g' adapted to support the disk in driving connection with the power-transmitter.

7. The power-transmitting attachment for transmitting power from the cylinder of a phonograph and the like, to a gramophone-disk, consisting of a ring d adapted to be applied to the phonograph-cylinder provided with a frictional driving-periphery e.

8. The disk-supporting attachment for applying a gramophone-disk to a phonograph and the like, consisting of an upright f adapted for attachment to a stationary part of the machine, provided with radial supporting-arms g.

9. The disk-supporting attachment for applying a gramophone-disk to a phonograph and the like, consisting of an upright f adapted for attachment to a stationary part of the machine, provided with radial supporting-arms g carrying rollers g'.

10. The disk-supporting attachment for applying a gramophone-disk to a phonograph and the like, consisting of an upright f adapted for attachment to a stationary part of the machine, provided with a vertically-adjustable collar carrying radial supporting-arms g.

11. In a sound recording and reproducing machine, the combination with a rotating driving-ring having a frictional driving-periphery, of a disk-support having radial supporting-arms adapted to support the disk in frictional driving contact with the periphery of the driving-ring.

12. The herein-described improvement in graphophones comprising a mandrel, means for rotating the same, a disk plate, and means carried by said mandrel for rotating said disk plate.

13. The herein-described improvement in graphophones comprising a mandrel, means for rotating the same, a disk plate, a pivoted base-plate supporting the same, and means carried by said mandrel for rotating said disk plate.

14. The herein-described improvement in graphophones comprising a mandrel, means for rotating the same, a base-plate having a bearing-sleeve, a disk plate having its shaft mounted in said sleeve, and means carried by said mandrel for rotating said disk plate.

15. The herein-described improvement in graphophones comprising a mandrel, means for rotating the same, a disk plate, and a removable member carried by said mandrel arranged to engage and rotate said disk plate.

16. The herein-described improvement in graphophones comprising a mandrel, means for rotating the same, a removable ring for said mandrel, and a disk plate arranged to have frictional engagement with said ring.

In testimony of which invention I have hereunto set my hand.

GEORGE H. HALL.

Witnesses:
J. L. APPLETON,
H. F. MILLER.