

C. RAMUS.
SOUND REPRODUCING MACHINE.
APPLICATION FILED JUNE 17, 1912.

1,061,124.

Patented May 6, 1913.

2 SHEETS—SHEET 1.

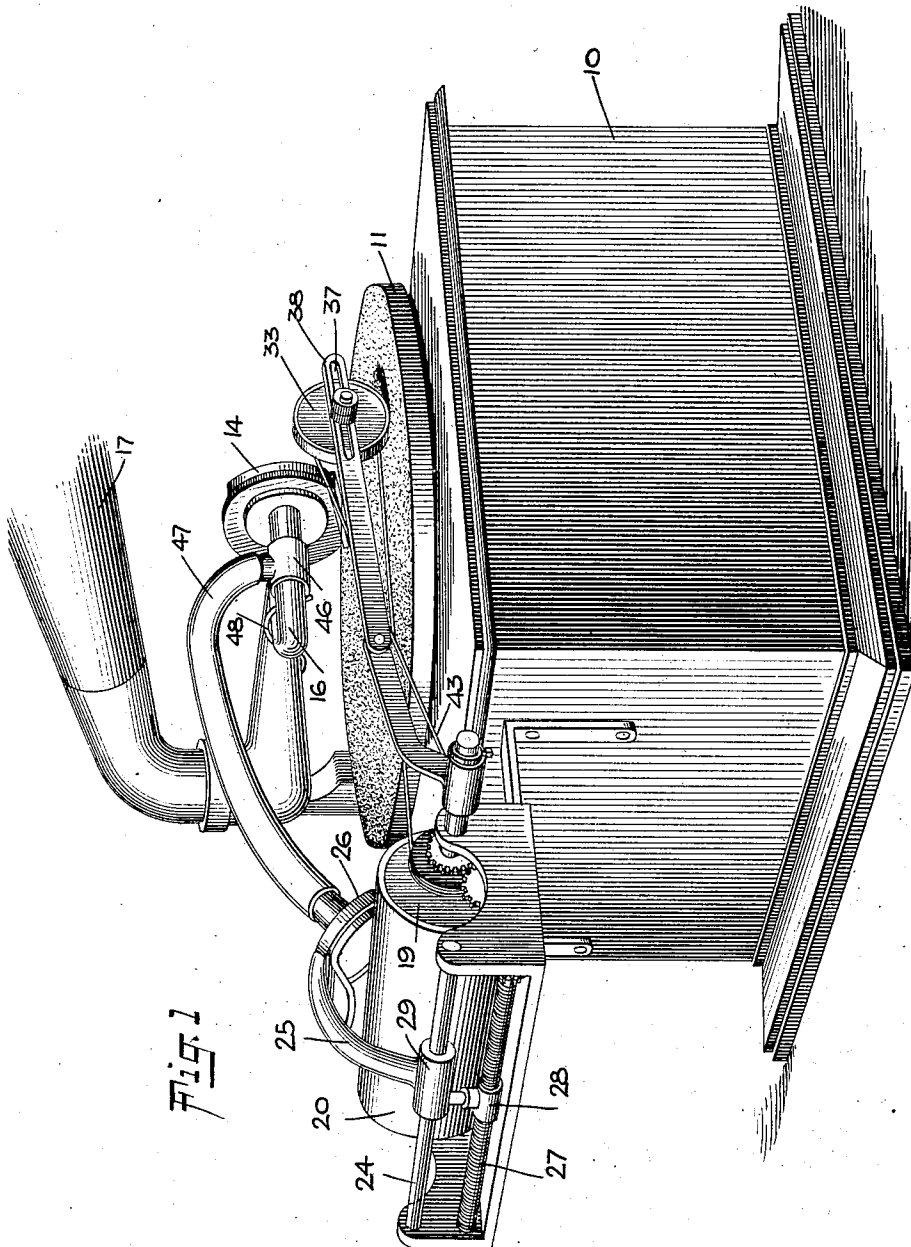


Fig. 1

WITNESSES

William P. Goebel.
E. J. M. M. M. M.

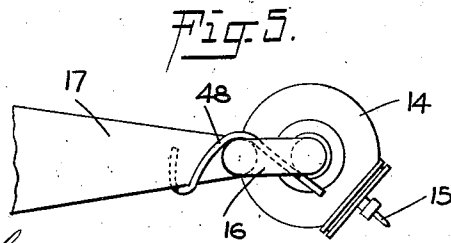
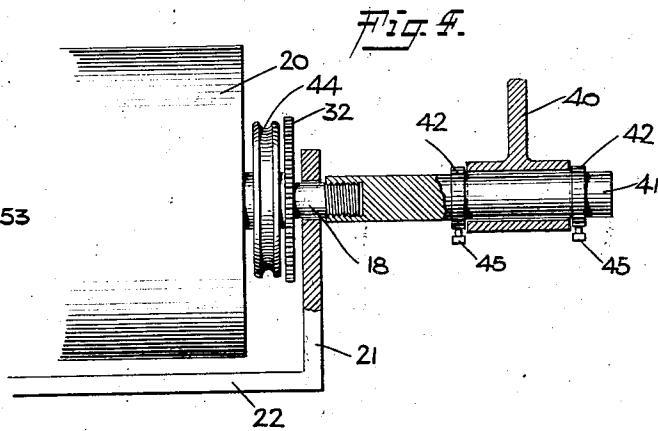
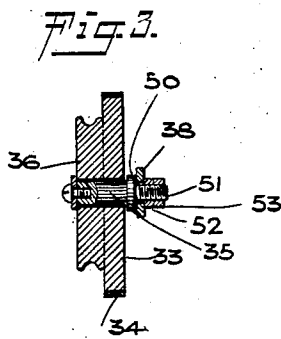
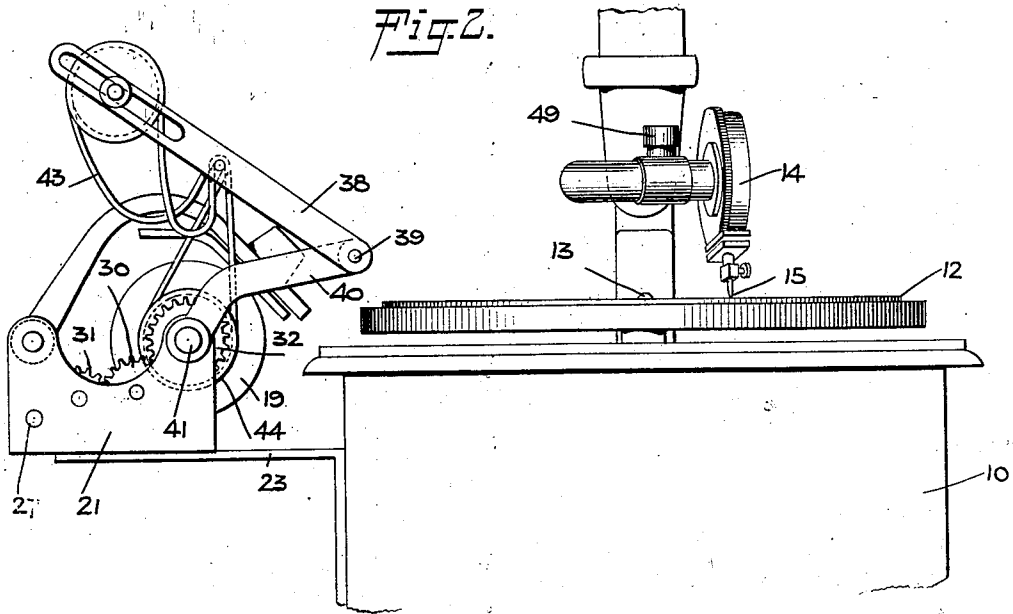
INVENTOR
Carl Ramus
BY *M. M. M. M. M.*
ATTORNEYS

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WITNESSES
William P. Goebel.
E. M. Mark

INVENTOR
Carl Ramus
BY *Mundt*
ATTORNEYS

UNITED STATES PATENT OFFICE.

CARL RAMUS, OF PORT TOWNSEND, WASHINGTON.

SOUND-REPRODUCING MACHINE.

1,061,124.

Specification of Letters Patent.

Patented May 6, 1913.

Application filed June 17, 1912. Serial No. 704,134.

To all whom it may concern:

Be it known that I, CARL RAMUS, a citizen of the United States, and a resident of Port Townsend, in the county of Jefferson and State of Washington, have invented a new and Improved Sound-Reproducing Machine, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a machine of the character mentioned, adapted to be operated by records of different shapes; to provide an attachment whereby the usual disk-operated machine may be utilized for sound-reproduction of cylindrical records; and to provide a simple mechanism for operatively connecting said attachment to the disk machine.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a perspective view of a machine constructed and arranged in accordance with the present invention; Fig. 2 is a front side view of a machine constructed and arranged in accordance with the present invention; Fig. 3 is a detail view, on an enlarged scale, showing in vertical section the friction-driven wheel of the transmission gear employed in the present invention; Fig. 4 is a detail view, on an enlarged scale, showing an end fragment of a cylindrical record and the fixed shaft on which the record and mandrel rotate; and Fig. 5 is a detail view, on an enlarged scale, showing means employed for suspending in inoperative relation the sound-box of the disk machine while operating the cylindrical record.

As seen in the accompanying drawings, the box is the usual case for the motor of what is known as a "disk-record talking-machine" or "graphophone." The motor contained within the box 10 is operatively connected with, to rotate, a table 11, upon which, in its usual employment, a disk 12 is disposed, being centered thereon by a pin 13. To follow the sinuosities of the spiral groove cut in the disk 12, the sound-box 14 is furnished with a stylus or needle 15. The sound-box 14 is pivotally mounted by means of a goose-neck 16 at the small end of a horn 17.

The usual method of operating this class

of machines is so well understood that it is thought unnecessary to describe the operation in the present specification.

Heretofore, the above briefly described sound-reproducing machine has been operated in competition with another style of sound-producing machine, commonly known as the "phonograph," wherein a cylindrical record is provided to operate a sound-box and sound-magnifying devices connected therewith. Desirable records have been produced for both machines. This condition has necessitated that a person, in order to enjoy both classes of records, has been compelled to possess both classes of machines. In the present machine, provision is made for employing both classes of records, the sound being delivered from both through the horn 17. To this end, the fixed shaft 18 is provided with the usual mandrel 19 to receive and hold the cylindrical record 20. The said shaft 18 is fixed in suitable supports provided in end plates 21 of a frame 22, which frame is supported by means of brackets 23 on the box 10.

Suitably mounted in the plates 21 is a supporting rod 24 for carrying the bracket arm 25 of the sound-box 26. The bracket arm 25 is moved over the rod 24 by a feed-screw 27, the fine pitched threads thereof are engaged by a device provided in the sleeve 28 when the arm 25 is dropped to the operative position for the sound-box 26. In the present machine, the screw 27 is rotated in the usual manner by power supplied through transmission gear wheels 30 and 31, as best seen in Fig. 2 of drawings, the former of which is engaged with driving gear wheels 32 fixedly connected with the pulley 44.

A driving mechanism for the mandrel 19 is herein provided, embodying the friction wheel 33. The wheel 33 is furnished with a rim 34 constructed of rubber or other suitable material to frictionally engage the surface of the table 11, or of a disk, such as 12, disposed thereon. The wheel 33 is loosely mounted upon a short shaft 35, and is fixedly connected to a grooved pulley 36, as seen best in Fig. 3 of drawings. The shaft 35 is slidably mounted in a slot 37 formed in the end of a lever arm 38, to rest over the table 11. The lever arm 38 is pivotally connected by a pin 39 to a bracket arm 40 loosely mounted upon a shaft extension 41. The bracket arm 40 is held in position on said

shaft by means of small collars 42. The shaft extension 41 is mounted upon the shaft 18, being bored and tapped to provide a screw-thread in the end thereof to register with the screw-threaded end of the shaft 18 exposed when the setting nut usually provided for said shaft, is removed.

The lever arm 38 is rocked to the position shown in Fig. 2 of drawings when the machine is being operated by a record-disk 12. When the machine is being operated by a record-cylinder 20, the lever 38 is disposed in the position shown in Fig. 1, where the wheel 33 rests firmly upon the table 11, or, as above-mentioned, upon a disk such as 12, disposed thereon. In this latter position, a belt 43 is drawn tightly, to permit the rotation from the driving pulley 36 to a driven pulley 44 mounted on the mandrel 19, as seen best in Fig. 4 of drawings. The rotation imparted by the table 11 is thus transmitted to the said mandrel, and thence to the record 20 when mounted on the mandrel.

The extension shaft 41 is provided to permit the lateral adjustment of the bracket 40 to shift the wheel 33 on the table 11 or disk 12, thereby varying the peripheral speed of said wheel and the consequent rate of rotation transmitted to the mandrel 19.

In order to set the bracket 40 in the adjusted position, the collars 42 are provided with any suitable form of locking devices, such as the set screw 45.

To adapt the disk machine for transmission to the horn 17 thereof, a triple-extension tube 46 is fitted to the goose-neck 16, and between the same and the sound-box 14, two of the extensions of the tube 46 being aligned for this purpose. The third extension of the tube 46 is perpendicular to the other two extensions, and is disposed, when the sound-box is in proper position, to extend above said other extensions, to have fitted thereover one end of a flexible tube 47. The other end of the tube 47 is fitted to the delivery opening of the sound-box 26, as seen best in Fig. 1 of drawings.

When the cylindrical record 20 is to be used, it is necessary to lift the sound-box 14 away from the table 11 or disk supported thereon, and for this purpose, I use a bracket member 48 formed from wire twisted to the desired shape. As seen in Fig. 5 of the drawings, the bracket member 48 is provided with a looped end to extend under the horn 17, and with a straight end to extend under the forward length of the goose-neck 16, the intermediate part of the bracket member 48 passing over, and anchoring upon, the inner length of the goose-neck 16. The member 48, as seen in Fig. 5 of the drawings, operates to raise the box 14 and to lift the stylus or needle 15 from contact with the table 11 or disk 12 carried thereon. When, now, the table 11 is rotated by the driving mechanism

with which the disk machine is provided, the wheel 33 is correspondingly rotated, and through the transmission mechanism described, the mandrel and the cylindrical record 20 carried thereon are rotated. A stylus carried by the box 26 now receives the necessary vibrations from the cylindrical record, which vibrations are transmitted through the flexible tube 47 to the goose-neck 16, and thence to the horn 17, where, being magnified in the manner peculiar to constructions of this character, the vibrations are delivered to the surrounding atmosphere to produce sound.

When it is desired to discontinue the use of the cylindrical record 20, and to use the disk record 12, the lever 38 is lifted to remove the wheel 33 from the table 11, and the flexible tube 47 is disconnected from the triple-extension tube 46, the opening in the end of said tube 46 to which said tube 47 has been attached being now closed by a suitable metal cap 49, as seen best in Fig. 2 of the drawings. The bracket 48 is removed from engagement with the goose-neck 16, and thereafter the disk reproducing mechanism is operated independently of the cylinder reproducing mechanism.

When it is desired or found practical to operate both records simultaneously, this is accomplished by removing the bracket member 48 to allow the needle 15 to engage the disk 12. In this conjunction, the wheel 33 will be permitted to track on the disk 12, operating the box 14. To successfully and practically consummate the double use of the records requires that the lever arm 38 or the wheel 33 be adjusted to harmonize and synchronize the two records or sounds produced thereby.

The slot 37 is sufficiently elongated to provide an adjustment sometimes found necessary for the wheel 33. To clamp the shaft 35 upon the lever 38, a collar 50 is formed on said shaft, and the end 51 of said shaft is threaded to receive a clamping nut 52 and a lock nut 53. By means of the nuts 52 and 53, the shaft 35 is locked rigidly in any desired position in the slot 37.

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

1. A sound reproducing machine, comprising a rotary record-disk supporting table; a record-cylinder supporting mandrel; a plurality of sound boxes, one adapted for operation by a record disk on said table and the other for operation by a record cylinder on said mandrel; a resonator permanently in open communication with one of said boxes; means for temporarily establishing the communication between said resonator and the other of said boxes; a friction wheel adapted to engage said table or disk mounted thereon; a pulley operatively

connected with said wheel; and transmission means operatively connecting said pulley and mandrel.

2. A sound reproducing machine, comprising a rotary record-disk supporting table; a record-cylinder supporting mandrel; a plurality of sound-boxes, one adapted for operation by a record disk on said table and the other for operation by a record cylinder on said mandrel; a resonator permanently in open communication with one of said boxes; means for temporarily establishing communication between said resonator and the other of said boxes; a friction wheel adapted to engage said table or disk mounted thereon; a pulley operatively connected with said wheel; transmission means operatively connecting said pulley and mandrel; and a supporting arm for said wheel, adapted to be moved to vary the operating distance of said wheel relatively to the center of said table.

3. A sound reproducing machine, comprising a rotary record-disk supporting table; a record-cylinder supporting mandrel;

a plurality of sound boxes, one adapted for operation by a record disk on said table and the other for operation by a record cylinder on said mandrel; a resonator permanently in open communication with one of said boxes; means for temporarily establishing communication between said resonator and the other of said boxes; a friction wheel adapted to engage said table or disk mounted thereon; a pulley operatively connected with said wheel; transmission means operatively connecting said pulley and mandrel; a supporting arm for said wheel adapted to be moved to vary the relative rotation of said table and mandrel and means for locking said arm to prevent lateral movement.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL RAMUS.

Witnesses:

P. I. CARTER,

A. M. THOMAS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."