

No. 762,904.

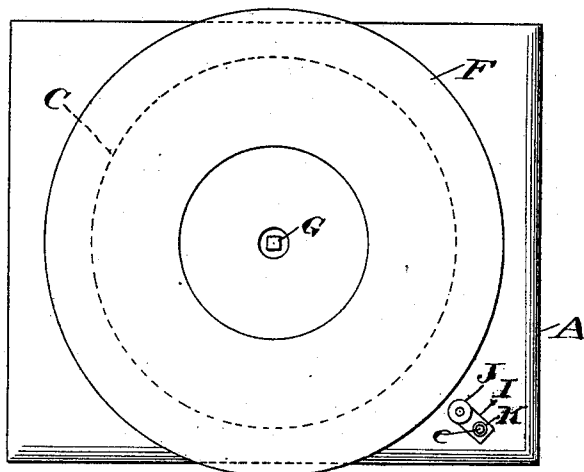
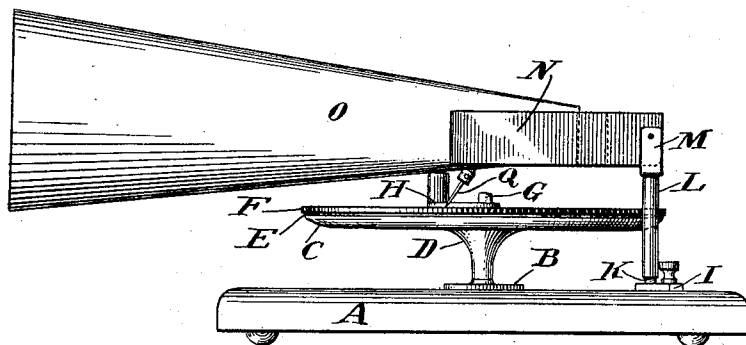
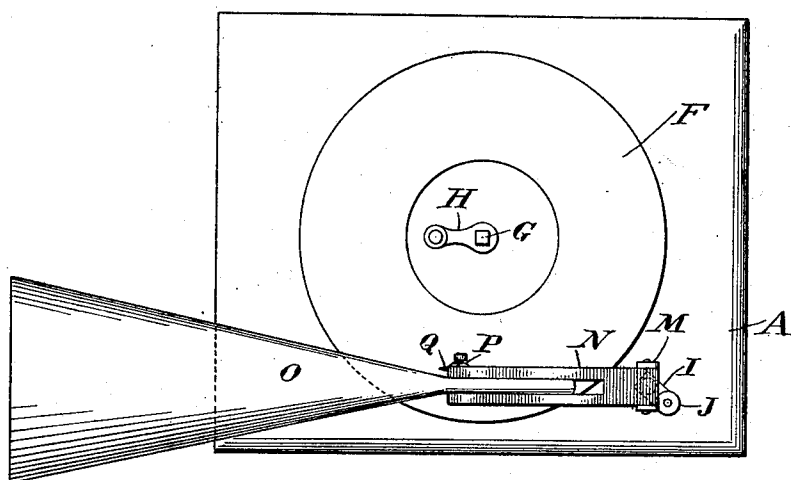
PATENTED JUNE 21, 1904.

G. C. HOLDEN.
GRAPHOPHONE.

APPLICATION FILED SEPT. 29, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

Witnesses:
H. H. Hullock
L. H. Morrison

Inventor:

George C. Holden,

By

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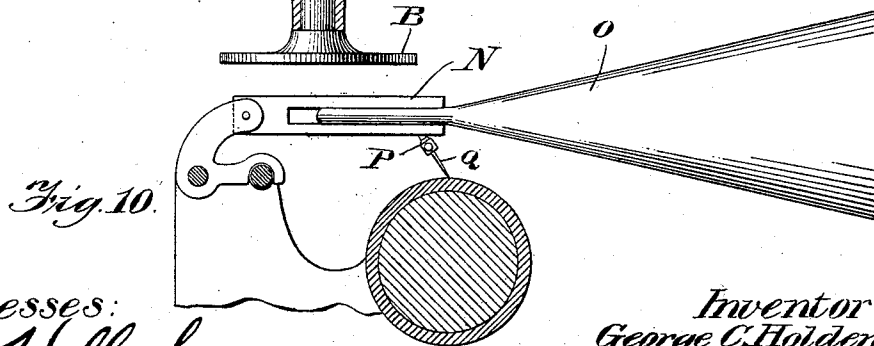
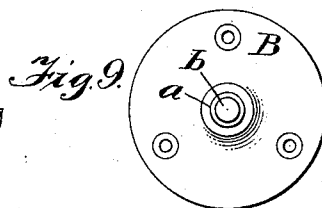
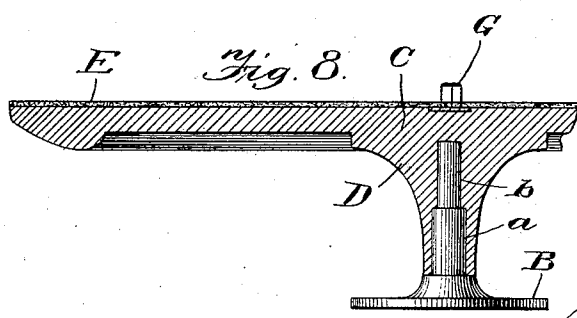
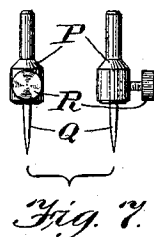
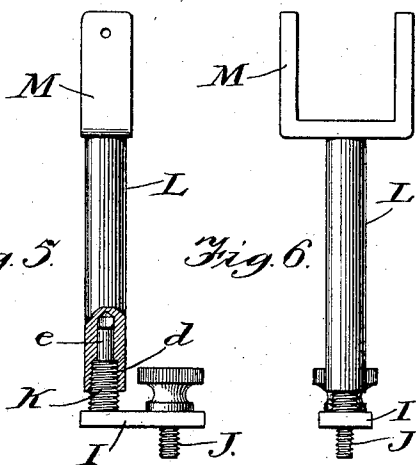
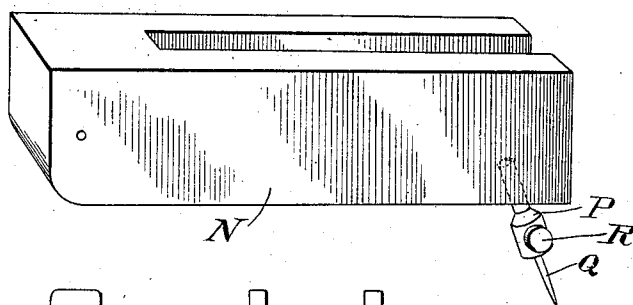
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GRAPHOPHONE.

APPLICATION FILED SEPT. 29, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE C. HOLDEN, OF WAYNE, PENNSYLVANIA.

GRAPHOPHONE.

SPECIFICATION forming part of Letters Patent No. 762,904, dated June 21, 1904.

Application filed September 29, 1903. Serial No. 175,098. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. HOLDEN, a citizen of the United States, residing at Wayne, county of Delaware, and State of Pennsylvania, have invented a certain new and useful Improvement in Graphophones, of which the following is a specification.

My invention relates to a new and useful improvement in talking-machines, and has for its object to provide a machine for reproducing sounds from records in a simple and effective manner by the use of a vibratory fork and to provide for such adjustments as will permit of the use of various sizes of record-disks.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan view of my improvement; Fig. 2, a side elevation of the same; Fig. 3, a view similar to Fig. 1, the vibratory fork, horn, and record-disk being removed; Fig. 4, an enlarged perspective of the vibratory fork, showing the needle-socket and needle in place; Fig. 5, an enlarged view of the adjustable block and swinging post, the lower end of the latter being broken away to show the threaded stud on which the post is mounted; Fig. 6, a similar view taken at right angles to Fig. 5; Fig. 7, a detail view of the needle-socket and needle; Fig. 8, an enlarged section of a portion of the turn-table, showing how the latter is mounted upon the central stud; Fig. 9, a plan view of the central stud, and Fig. 10 a modification of the adaptation of my improvement to a cylinder talking-machine.

In carrying out my invention as here embodied A represents a base or block of suitable design for supporting the various parts of the device, and in the socket of this base is secured a stud B, which projects upward and consists of two sections *a* and *b* of different diameters, as clearly shown in Fig. 8.

C represents the turn-table, having a downwardly-projecting hub D with a central opening therein adapted to fit the two diameters of the stud B. The object of this construction is to give the turn-table an extended bearing which will permit it to turn true on its axis. The turn-table is preferably of cast metal, so as to have sufficient weight to act as a balance-wheel when the device is in operation.

A layer of felt E or other suitable material is secured to the upper surface of the turn-table, and the record-disk F is laid loosely thereon. A crank-pin G extends through a central hole in the disk to receive the crank H, whereby the turn-table is revolved and with it the record-disk.

I is an adjustable block secured to the base A by means of a suitable set-screw J, and projecting upward from the outer end of this block is a stud K, the lower portion *d* being screw-threaded, while the upper portion *e* thereof terminates in the form of a pin.

The post L has its lower end drilled and threaded, so as to screw onto the section *d* of the stud K and snugly fit the section *e* thereof, and this arrangement permits the post L to oscillate back and forth on the stud K and at the same time prevent the accidental displacement of the post. The upper end of the post L terminates in the fork M, between which is pivoted the vibratory fork N, as clearly shown. This vibratory fork is preferably made of wood, but of course may be made of any suitable material, and is adapted to receive the inner end of the horn O, which may be made of any suitable material for amplifying the sound generated in the vibratory fork. One prong of the vibratory fork has secured therein the needle-socket P, in which the needle Q is secured by a set-screw R.

In operating the device a record-disk is placed upon the turn-table and the needle properly located thereon, after which the turn-table is revolved by means of the crank, and the vibrations which the needle receives from the various lines and the record-disk are transmitted to the vibratory fork, by which they are converted into sound vibrations, the horn being utilized to amplify the latter. By ex-

periment I have found that this form of vibratory fork is essential to the proper reproduction of sound from the record-disks, its function being to give tone and harmony to the sound vibrations and transmit the same to the horn, and I have also found by experiment that by the use of wood as a vibratory fork a metallic sound attained upon the use of diaphragms is overcome and a true tone is produced.

Another important feature of my improvement is the adjustable block I, which permits the use of various-size record-disks by simply swinging this block inward or outward, so as to carry the post L toward or away from the center of the turn-table, as will be readily understood, and still another important feature of my improvement is the manner in which the post L is secured to the block I, which permits it to freely swing upon its axis and yet prevent it being accidentally displaced therefrom.

In Fig. 10 I have shown a slight modification in the adaptation of my improvement, in which the vibratory fork N is pivoted at right angles to the position shown in the preceding figures and the needle-socket P projects downward from the lower prong of the fork, thus adapting my improvement for use in a talking-machine using cylindrical records.

Having thus fully described my invention, what I claim as new and useful is—

1. In a sound-reproducing machine, a suitable base, a stud projecting upward therefrom having two sections of different diameters, a

turn-table having a downwardly-projecting socket adapted to fit the two diameters of the stud, means for revolving the turn-table, an adjustable block secured upon the base, a stud projecting upward from the outer end of the block, said stud having two sections, one of which is threaded, a post having a socket in its lower end adapted to fit the plain portion of the stud whereby said post is permitted to oscillate on its axis, the lower portion of said socket being threaded so as to screw upon the screw-threads of said stud, a wooden vibratory fork pivoted to the post, said vibratory fork carrying a needle-socket, and a horn secured between the prongs of the vibratory fork whereby the sound vibrations generated in said fork are amplified, as and for the purpose specified.

2. In a sound-reproducing machine, an adjustable block secured to the base of the machine, a stud carried by the outer end of said block, said stud having one section thereof screw-threaded and the other section plain, a post having a socket in its lower end adapted to fit the plain section of the stud, the lower portion of said socket being threaded so as to screw upon the screw-threads of said stud, as and for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

GEORGE C. HOLDEN.

Witnesses:

MARY E. HAMER,
L. W. MORRISON.