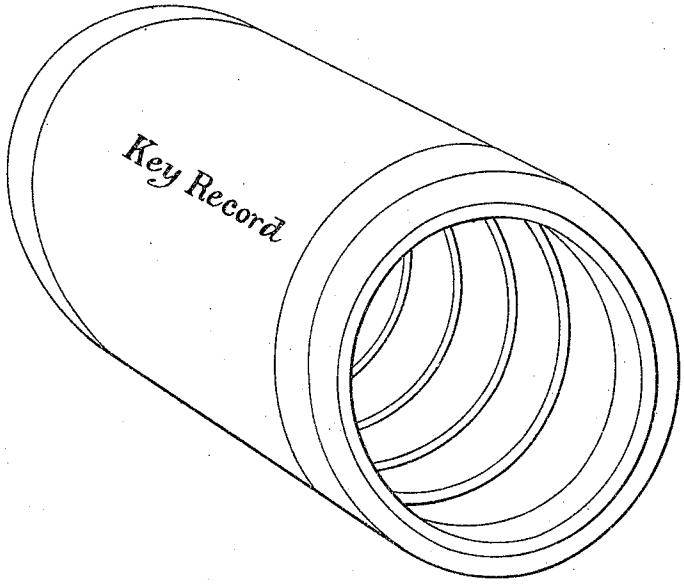
No. 788,927. PATENTED MAY 2, 1905.

W. H. MILLER.

METHOD OF TUNING PHONOGRAPH CYLINDERS.

APPLICATION FILED MAY 10, 1904.



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No. 788,927. Patented May 2, 1905.

UNITED STATES PATENT OFFICE.

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METHOD OF TUNING PHONOGRAPH-CYLINDERS.

SPECIFICATION forming part of Letters Patent No. 788,927, dated May 2, 1905.

Application filed May 10, 1904. Serial No. 207,233.

To all whom it may concern:

Be it known that I, WALTER H. MILLER, a citizen of the United States, residing at Orange, in the county of Essex and State of New Jersey, have invented a certain new and useful Method of Tuning Phonograph-Cylinders, of which the following is a description.

In making phonograph-records for sale it is important that the masters from which duplicates are obtained should be secured at a standard surface speed, which at the present time with Edison records is about one hundred and sixty-four revolutions per minute. In this way when the reproducing-machine is properly adjusted musical selections can be reproduced in the exact key in which the original music was played in order that the best effects may be secured. If there is a relatively small difference in the surface speed of the masters, a perceptible variation in the key of the reproduction is observed, and to secure the best effect therefor a separate adjustment of the reproducing-machine would be required for each selection. Consequently it is commercially important that the masters should be obtained at the same surface speed, and it is therefore necessary that some effective way should be suggested by which the tuning of any phonograph or other talking-machines can be readily effected, whether for the taking of the masters or for the reproduction of the complete record.

My present invention presents a method of this character which has been successfully used in practice for some time.

Reference is hereby made to the accompanying drawing, which illustrates a key-record such as is herein described.

In carrying the invention into effect I first take a standard phonograph, for example, and adjust its regulating mechanism so that its mandrel will turn at the desired speed. This adjustment may be effected by timing the mandrel-shaft in the usual way and by carefully adjusting the regulating mechanism until the desired speed is obtained. I now place on this standard machine as so regulated an ordinary blank and record thereon a certain selected sustained note—for instance, B-flat—which may be produced by a simple reed or in any other way. This note as so recorded is preferably sustained at a continuous volume and for a considerable time and may occupy substantially the entire record in order that the reproducer may be engaged with the record at any point to sound the standard note. The record so formed constitutes a key by which the tuning of other phonographs can be effected, and, if desired, it may be duplicated in any suitable way to obtain a large number of copies. When a phonograph has to be tuned, whether for recording or reproducing, one of the key records or duplicates thereof is placed on the phonograph and a reproducer engaged therewith, so as to sound a single continuous note. A reed keyed to the same pitch—for example, B-flat—is now sounded, and the adjusting mechanism of the phonograph is so regulated as to bring the note sounded by the phonograph in exact equality with the note sounded by the reed. When these two notes are exactly the same, the speed of the phonograph will correspond exactly to the standard speed of the original phonograph. This tuning can be effected with great accuracy, owing to the delicacy of the ear, and with great rapidity. Prior to my invention the tuning of phonographs was effected by counting the revolutions of the mandrel; but such an operation was tedious and relatively uncertain.

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

1. The method of tuning phonographs or other talking-machines, which consists in adjusting a recording-machine to a standard speed, and then in recording on a blank operated by such talking-machine, a note of standard pitch sustained for a considerable time without interference with other notes to thereby obtain a key-record, as and for the purposes set forth.

2. The method of tuning phonographs or other talking-machines which consists in ad-

justing a recording-machine to a standard speed, then in recording on a blank operated by such talking-machine a note of standard pitch sustained for a considerable time without interference with other notes to thereby obtain a key-record, then in engaging a reproducing device of another talking-machine with the key-record, and in adjusting the latter talking-machine so that the pitch sounded by the key-record corresponds with the original recorded note, as and for the purposes set forth.

Signed this 7th day of May, 1904.

WALTER H. MILLER.

In presence of—
FRANK L. DYER,
MINA C. MACARTHUR.