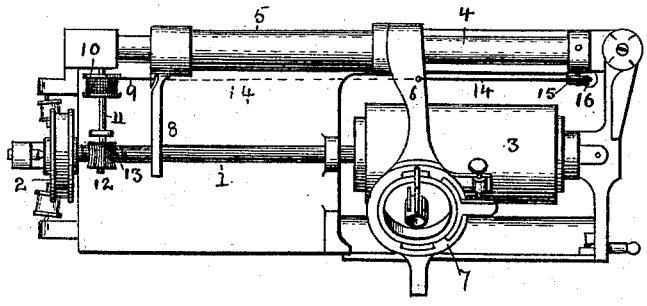
(No Model.)

T. A. EDISON.

PHONOGRAPH.

No. 541,924. Patented July 2, 1895



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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF LLEWELLYN PARK, NEW JERSEY.

PHONOGRAPH.

SPECIFICATION forming part of Letters Patent No. 541,924, dated July 2, 1895.

Application filed December 3, 1890. Serial No. 373,410. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ALVA EDISON, a citizen of the United States, residing at Llewellyn Park, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Phonographs, (Case No. 893,) of which the following is a specification.

My invention relates to feeding devices for phonograph recorders or reproducers, that is, to devices for moving said recorders or reproducers slowly along over the phonogram blank, at the same time that the blank revolves. The ordinary way to accomplish this is by means of a screw shaft, equal in length to the phonogram blank, and connected to the recorder or reproducer by means of a suitable nut and arm. This arrangement is simple and efficient, but is somewhat objectionable owing to the large expense of a screw shaft of the length, and fineness of thread required, viz., one-hundred or more threads to the inch.

The object of the present improvement is to provide novel means for the purpose above mentioned, and the invention consists in the apparatus hereinafter described and claimed.

The accompanying drawing illustrates in plan so much of a phonograph as is necessary to make the improvement clear.

1 is a phonograph shaft, which may be provided with the pulley 2, by means of which the shaft may be driven in the usual manner.

3 is the phonogram blank or recording surface.

4 is a rod, called the guide rod, supported in suitable posts or bearings, and on this rod slides a sleeve 5, which carries the arm 6, at the end of which the recorder and reproducer 7 are held.

8 is an arm corresponding in position to the feed arm in my old form of phonograph. To this arm is attached a fine steel wire 9 (or a cord or other filament generically included in the term "wire" as hereafter used herein), which wire is wound on a drum or reel 10, supported on the shaft 11. This shaft is provided with a worm wheel 12, which engages with a worm screw 13 on the shaft 1. To the arm 8, or to some other part of the sliding carrier, is attached a second wire or cord 14 which passes over a pulley 15, suitably located, and is connected to a weight or other motor 16.

The apparatus thus described is used in the following manner: The arm 8 and connected parts being at their extreme position toward the left the phonogram is turned by means of the pulley 2 and a suitable motor. At the same time the worm wheel 12 is turned in a direction—and at a speed to slowly uncoil the wire 9 from its reel, and the weight 16 pulls the carriage and the recorder lengthwise of the blank. By these two movements, viz., the rotary movement of the blank, and the longitudinal movement of the recorder, the usual spiral track is made on the blank, it being understood that the operator speaks against the recorder diaphragm at the same time that the phonograph is moving as above described.

I do not confine myself to the exact arrangement shown and described, since it is possible to vary the apparatus in some particulars without departing from the invention. It would not be impossible to draw the carriage and recorder along by winding the wire 9 upon the reel, instead of unwinding it and providing a weight to draw the carriage.

Having thus described the improvement, what I claim is—

1. The combination of a phonograph recorder or reproducer, a drum, a wire on the drum and connected to the recorder or reproducer, and means for turning the drum at a speed corresponding to the speed desired for the recorder or reproducer, substantially as described.

2. The combination with a phonograph shaft, a recorder or reproducer and supporting device therefor, of a drum, a wire thereon and connected with the supporting device, and a gearing between the phonograph shaft and drum, substantially as described.

3. The combination with a phonograph shaft, a recorder or reproducer and supporting device therefor, of a drum, a wire thereon and connected with the supporting device, a gearing between the phonograph shaft and drum, and means for moving the recorder and reproducer as the wire is unwound from the drum, substantially as described.

4. The combination of a phonogram blank and means for moving the same, a drum

driven with the blank, a wire wound on the drum, a movable recorder or reproducer to which the wire is connected, and means for moving the recorder or reproducer as the wire is unwound from the drum, substantially as described.

5. The combination of a phonograph shaft, a recorder or reproducer, a supporting arm and sleeve, a guide rod on which the sleeve is movable, a drum, a wire on the drum, and connected with the recorder or reproducer, and a connection between said drum and phonograph shaft, substantially as described.

6. The combination of a phonograph shaft, a recorder or reproducer, a supporting arm and sleeve, a guide rod on which the sleeve is movable, a drum, a wire on the drum, and connected with the recorder, or reproducer, a connection between said drum and phonograph shaft, and a weight or other motor tending to move the recorder or reproducer in one direction, substantially as described.

This specification signed and witnessed this 17th day of November, 1890.

THOS. A. EDISON.

Witnesses:
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