

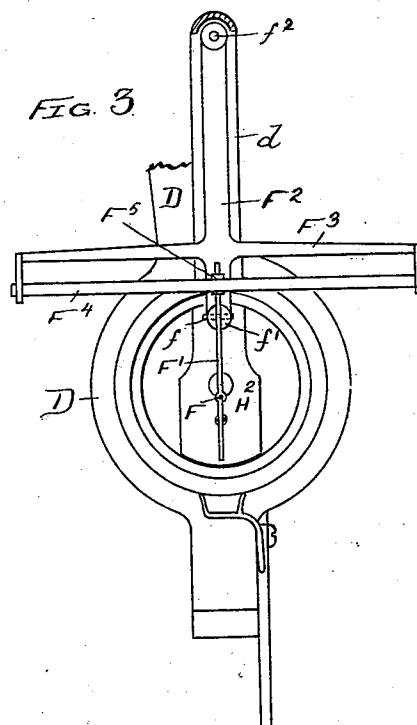
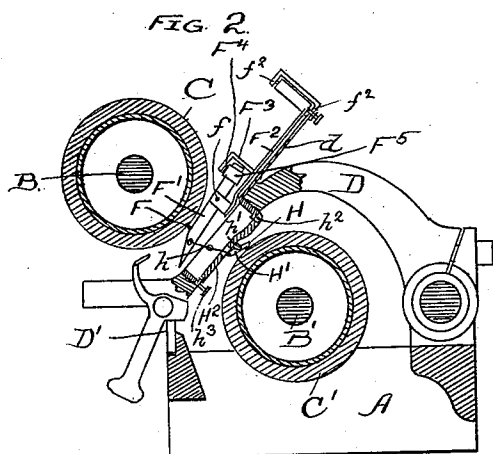
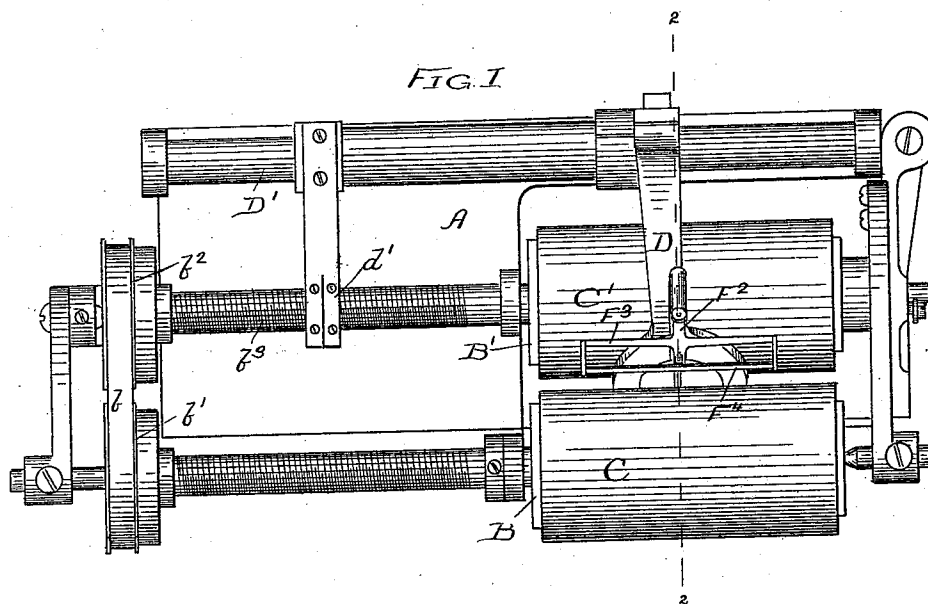
(No Model.)

E. H. AMET.

APPARATUS FOR REPRODUCING PHONOGRAMS.

No. 545,439.

Patented Sept. 3, 1895.



WITNESSES:

Sew. C. Curtis.
H W Munday,

INVENTOR:
EDWARD H. AMET

By Monday, Parts Adcock.

HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

EDWARD H. AMET, OF WAUKEGAN, ASSIGNOR TO CHARLES DICKINSON,
OF CHICAGO, ILLINOIS.

APPARATUS FOR REPRODUCING PHONOGRAMS.

SPECIFICATION forming part of Letters Patent No. 545,439, dated September 3, 1895.

Application filed June 7, 1895. Serial No. 551,984. (No model.)

To all whom it may concern:

Be it known that I, EDWARD H. AMET, a citizen of the United States, residing in Waukegan, in the county of Lake and State of Illinois, have invented a new and useful Improvement in Apparatus for Reproducing Phonograms, of which the following is a specification.

My invention relates to machines for copying or reproducing phonogram or sound writings on wax or other cylinders.

The object of my invention is to provide a machine of a simple and durable construction by means of which phonograms on wax or other cylinders may be accurately and perfectly reproduced on other like cylinders and without any disagreeable modifications in sound or tone due to the action of the mechanism.

In my invention the reproducing or following stylus is secured to or carried by a lever having a direct link or mechanical connection with the lever carrying the recording or engraving stylus, and a light flexible diaphragm-like-acting spring is employed to press against the opposite end of the lever carrying the reproducing or following stylus, and a rubber cushion is inserted between the lever and this flat spring, by which means I find that the engraving-stylus is caused to copy or reproduce very accurately and perfectly the original phonogram, so that the copy cannot be distinguished from the original when placed in a graphophone.

My invention consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described and specified in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a section on line 2 2 of Fig. 1. Fig. 3 is a detail plan view of the mechanism carrying and connecting the reproducing-stylus and the engraving-stylus.

Similar letters of reference indicate like parts in all the figures of the drawings.

In the drawings, A represents the frame of the machine; B and B', the revolving shafts or holders for holding and revolving synchronously the original phonogram-cylinder C and

the similar cylinder C', upon which the copy is to be made.

D is the traveling head frame or slide, upon which the reproducing or following stylus F and the recording or engraving stylus H are both mounted and carried from end to end of the two cylinders.

The reproducing or following stylus F is secured to a vertically or radially vibrating lever F', which is pivoted at f to a stud f' , secured to a laterally-vibrating lever F², that is pivoted, by pivot-bearings ff^2f^2 , to an arm d , attached to the traveling frame or slide D. Attached to the laterally-vibrating lever F² is a yoke F³, between the arms of which extends a flat diaphragm-like-acting spring F⁴, that bears against the outer or free end of the stylus-carrying lever F'. Interposed between this spring F⁴ and the stylus-lever F' is a rubber or elastic cushion F⁵, which serves to prevent or to aid in preventing the communication of any harsh strident or disagreeable action to the engraving-stylus H. The flat spring F⁴ has a bearing at each end against the yoke F³ and presses at its middle against the stylus-lever F'. It thus serves not only to hold the stylus yieldingly against the phonogram-cylinder C, but by reason of its diaphragm-like form and action causes the lever F' to very faithfully copy the movement and action of the stylus-carrying lever of a phonograph, and as the movement and action of this stylus-carrying lever F' are communicated to the lever H', carrying the engraving-stylus H, a very accurate and perfect copy is produced upon the cylinder C'. The stylus F' is connected to the engraving-stylus lever H' by a link or links h , preferably of wire. The lever H' is pivoted at h' to a pivoted arm H², which itself is pivoted at h^2 to the traveling frame or slide D. At the free end of the pivoted arm or lever H² is an adjustable stop h^3 to limit the movement of said arm H².

The two shafts B B' are rotated synchronously by a belt b on the pulleys $b'b^2$. The traveling frame or slide D is fed or reciprocated by a feeding-screw b^3 on the shaft B' engaging a threaded nut or arm d' , secured to the head or frame D. The frame or slide D travels back and forth on a suitable guide D'. The spring F⁴ is soldered or secured rigidly at one

end to one arm of the yoke F^3 and simply pressed against the other arm of the yoke without being secured or attached thereto.

I claim—

- 5 1. In a machine for copying and reproducing phonograms, the combination with a reproducing stylus secured to a vertically vibrating lever, a laterally vibrating lever upon which said first mentioned lever is mounted,
10 a yoke on said laterally vibrating lever, a spring extending between and bearing against the arms of said yoke and also against said stylus carrying lever, substantially as specified.
- 15 2. In a machine for copying and reproducing phonograms, the combination with a reproducing stylus secured to a vertically vibrating lever, a laterally vibrating lever upon which said first mentioned lever is mounted,
20 a yoke on said laterally vibrating lever, a spring extending between and bearing against the arms of said yoke and also against said stylus carrying lever, and a cushion between said spring and stylus carrying lever, substantially as specified.
- 25 3. In a machine for copying and reproducing phonograms, the combination with a reproducing stylus secured to a vertically vibrating lever, a laterally vibrating lever upon which said first mentioned lever is mounted,
30 a yoke on said laterally vibrating lever, a spring extending between and bearing against the arms of said yoke and also against said stylus carrying lever, an engraving stylus, a lever carrying the same and means for connecting said engraving stylus carrying lever with said reproducing stylus carrying lever, substantially as specified.
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4. In a machine for copying and reproducing phonograms, the combination with a reproducing stylus secured to a vertically vibrating lever, a laterally vibrating lever upon which said first mentioned lever is mounted, a yoke on said laterally vibrating lever, a spring extending between and bearing against the arms of said yoke and also against said stylus carrying lever, and a cushion between said spring and stylus carrying lever, an engraving stylus, a lever carrying the same and means for connecting said engraving stylus carrying lever with said reproducing stylus carrying lever, substantially as specified.

5. In a machine for copying or reproducing phonograms, the combination with a reproducing stylus F , a lever F' on which it is mounted, a flat spring F^4 supported at both ends and bearing at its middle against said lever F' , an engraving stylus H , a lever H' on which it is mounted, and a connection between said levers F' and H' , substantially as specified.

6. In a machine for copying or reproducing phonograms, the combination with a reproducing stylus F , a lever F' on which it is mounted, a flat spring F^4 supported at both ends and bearing at its middle against said lever F' , an engraving stylus H , a lever H' on which it is mounted, and a connection between said levers F' and H' , and a rubber cushion F^5 between said lever F' and spring F^4 , substantially as specified.

EDWARD H. AMET.

Witnesses:

EDMUND ADCOCK,
H. M. MUNDAY.