

H. S. MILLS.
PHONOGRAPH.
APPLICATION FILED DEC. 21, 1904.

Fig. 1.

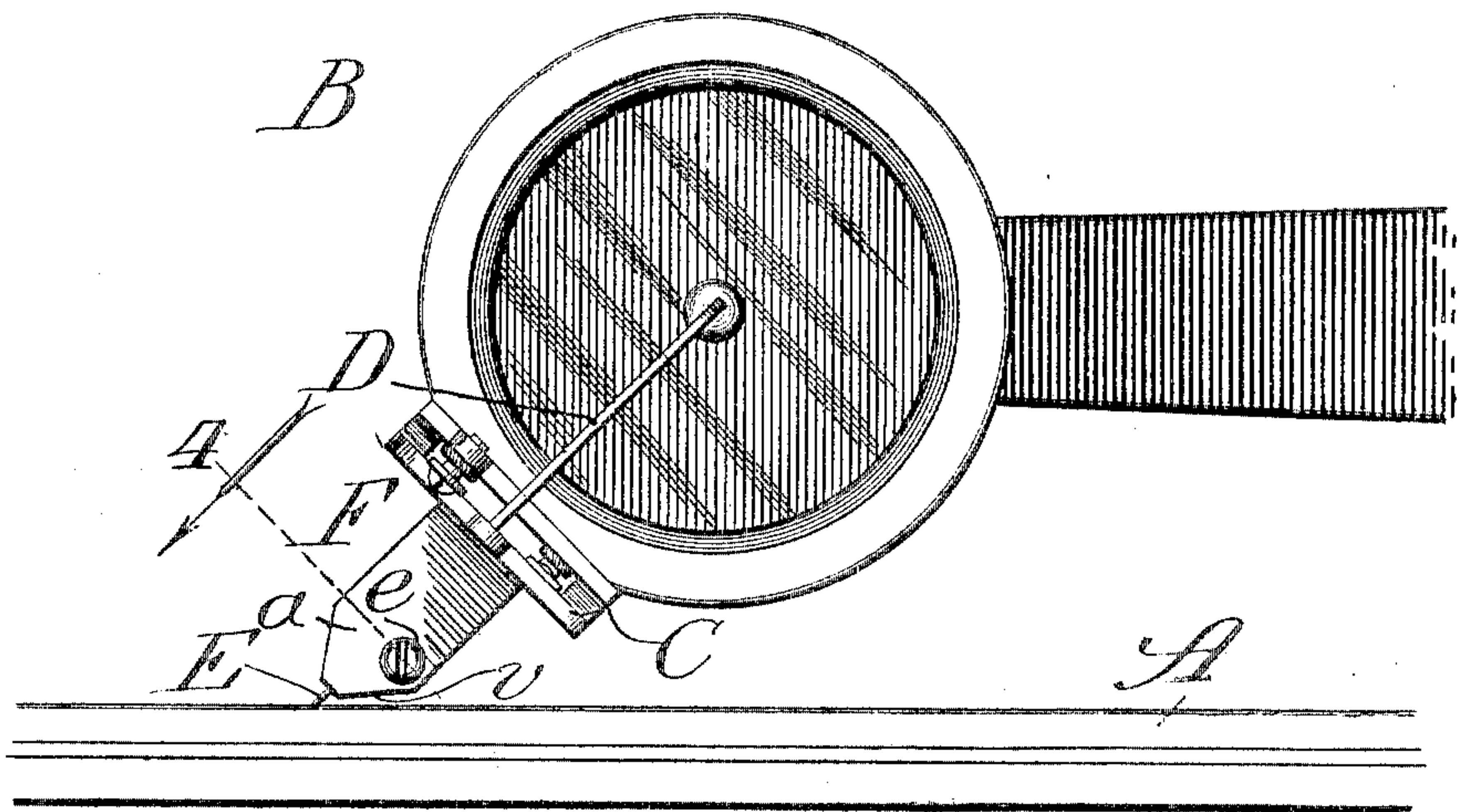


Fig. 3.

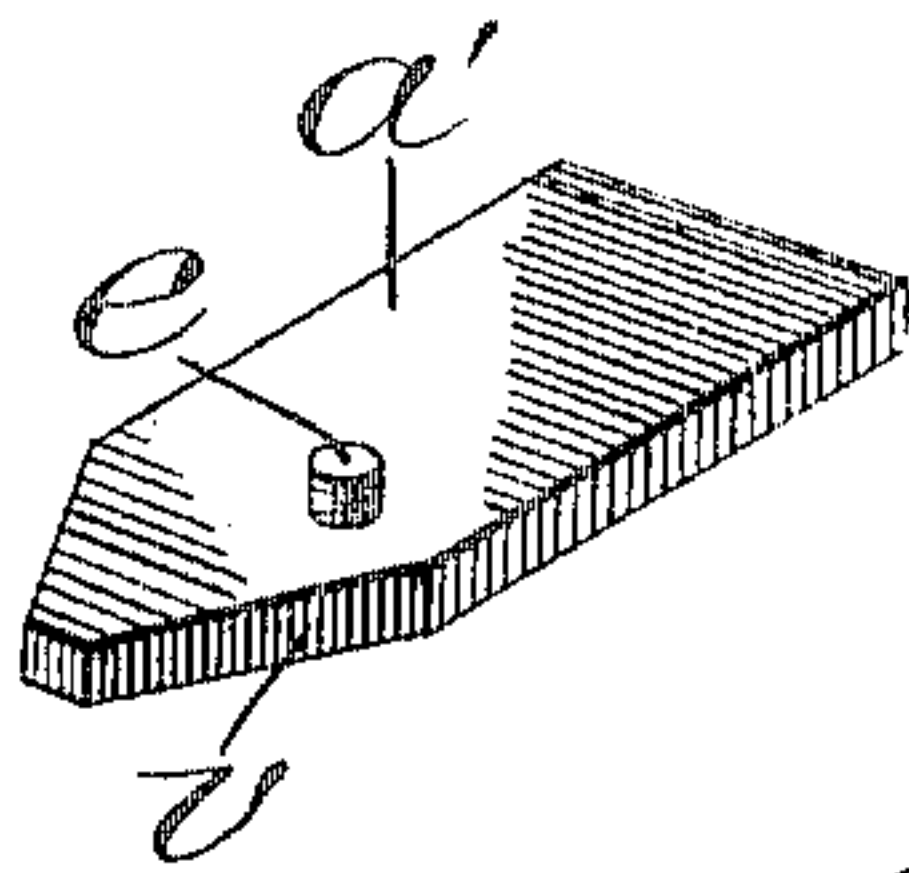


Fig. 2.

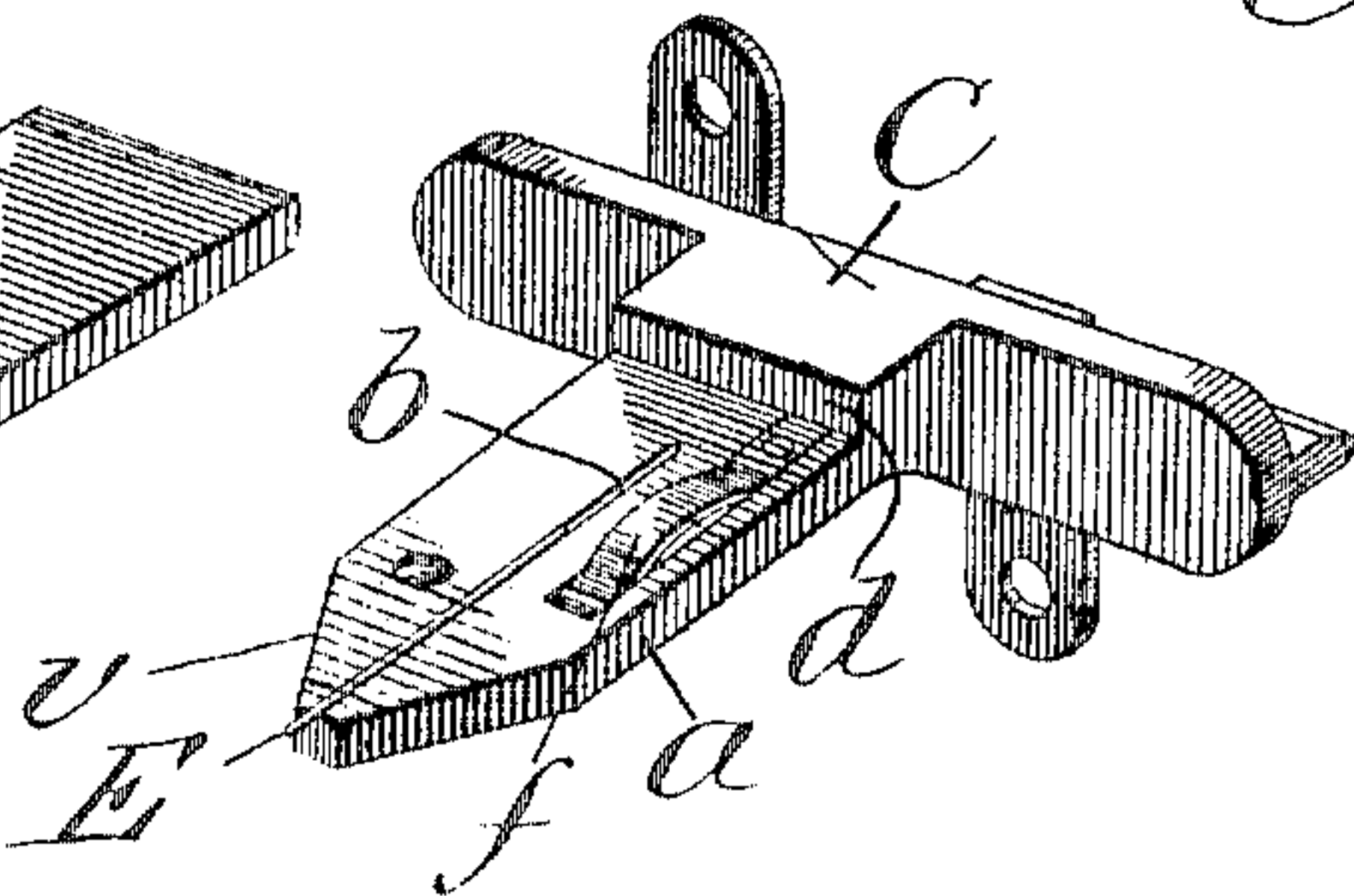
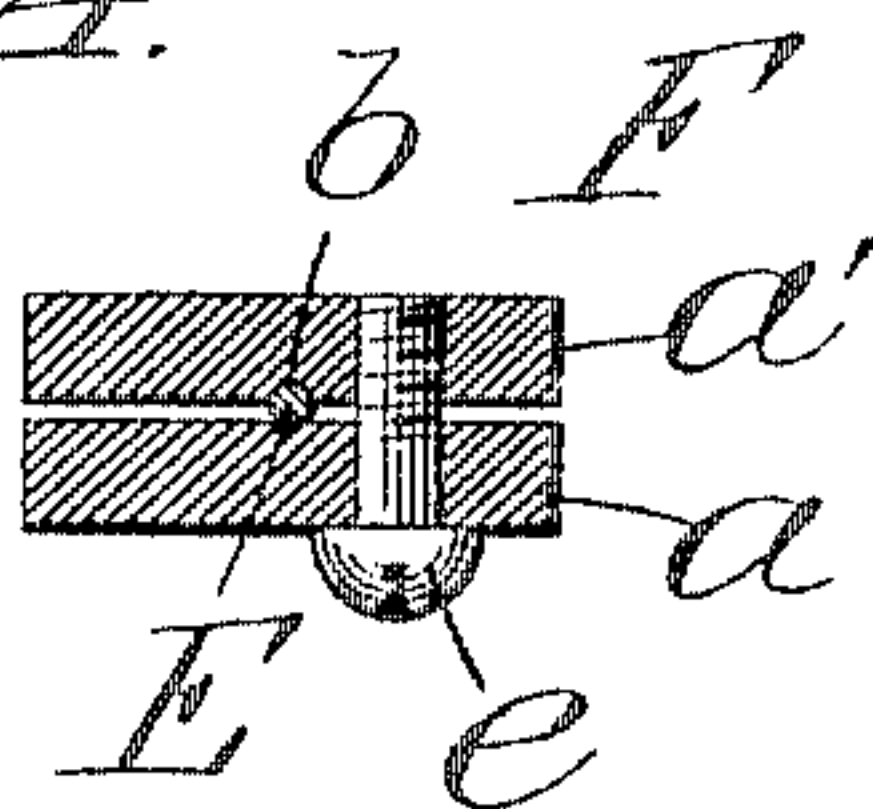


Fig. 4.



Witnesses:
Ed. Chayford.
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UNITED STATES PATENT OFFICE.

HERBERT S. MILLS, OF CHICAGO, ILLINOIS.

PHONOGRAPH.

No. 797,813.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed December 21, 1904. Serial No. 237,796.

To all whom it may concern:

Be it known that I, HERBERT S. MILLS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Phonographs, of which the following is a specification.

My invention relates more particularly to means for supporting the stylus proper in the form of an attenuate length of wire on the reproducer of the type of phonograph or analogous instrument under different names, employing for the record a rotary disk, the degree of attenuateness of the wire, which is of uniform or substantially uniform thinness throughout, being such as to cause it to present always to the record-grooves an adequately fine point as it wears away with use by frictional contact with the grooves. This fine wire is too yielding to adapt it for use without support, since by undue bending in traversing the record it mars the reproduction and renders it indistinct. For supporting the wire I have provided a species of rigid clamp on the reproducer, the function of which is to hold the wire in a manner to permit protrusion thereof at one end to the desired short distance beyond the clamp for engagement with the record and to hold the wire throughout the remainder of its extent so firmly and uniformly as to render it practically an integral part of the rigidly stable clamp, and thus prevent any independent vibration or movement of the wire which would tend to mar or destroy its stylus action.

In the accompanying drawings, Figure 1 is a broken view showing in side elevation the reproducer of the class of instrument hereinbefore specified equipped with my improvement and in operative position relative to the record-disk; Fig. 2, a perspective view showing one jaw of my improved clamp projecting from the bracket of the reproducer which carries the vibration-transmitting finger; Fig. 3, a similar view of the other jaw of the clamp, and Fig. 4 a section taken at the line 4 on Fig. 1 and viewed in the direction of the arrow.

A denotes a disk-record, and B the reproducer-head of a known type of phonograph. On the bracket C, which is fastened, as usual, to the edge of the reproducer-head and carries the transmitting contact-finger D, is formed a flat jaw *a*, shown beveled at *v* toward the end on the edge which comes adjacent to the record-surface and also shown

beveled correspondingly on the opposite edge for the sake of symmetrical appearance. A groove *b* is formed in the longitudinal center of the face of the jaw *a* to extend from the outer end thereof, (shown as an apex because of the beveled edges,) the depth of the groove being preferably about one-half the thickness of the wire E, forming the stylus proper. The companion jaw *a'*, which is shown to be of the same shape as the jaw *a* to cooperate therewith and form the clamp F, fits at its butt-end against a shoulder *d* on the face of the bracket C and carries a screw *e* to enter a screw-hole *e'* in the jaw *a* for securing the jaws flatwise together with a spring *f* interposed between them and shown to be provided on the jaw *a*. The purpose of the spring is to tend to separate the jaws when their fastening-screw *e* is loosened for the purpose hereinafter explained in the event of their surfaces adhering together.

With the jaws *a* and *a'* secured together they clamp the wire E in its groove so firmly and uniformly between them as to render it solid with the clamp and preclude the possibility of any movement of the extent of wire between the jaws, while the protruding section thereof permits the point to engage the record-surface. As the protruding section, which need not project more than about one thirty-second of an inch beyond the clamp, wears down with use the jaws may be separated by loosening the screw *e* to permit the wire to be drawn out far enough to compensate for the wear, when the jaws are to be fastened together again, or the same opening of the jaws sufficiently exposes the entrance end of the groove to facilitate the introduction into place in the clamp of a new wire E to be fastened in position as described. If it is not intended that the user shall have opportunity to draw out the wire to compensate for wear on the point, but that a new one shall be substituted for the old when worn down in its initial setting, the replacing to be left to a repairer, the screw may be immovably secured by means of solder or otherwise, requiring the use of a suitable tool for opening the jaws.

In practice I have used a single setting of the stylus-wire in the clamp several hundred times in a music-producing phonograph of the type herein represented without deterioration in the sound of the instrument. In fact, my device seems to improve the tone quality of the instrument by rendering it more mellow

and softer, the latter quality being particularly desirable in a coin-operated phonograph, for which connection I have more especially devised my improvement.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the reproducer-head of a phonograph, a clamp comprising a flat-faced jaw connected with said head to project therefrom and containing in its face a longitudinal groove extending to its outer extremity to receive the attenuate wire forming the stylus, and a companion jaw removably fastened flatwise on said first-named jaw to hold said stylus rigidly in place with one end protrudingly presented to the record.

2. In combination with the reproducer-head of a phonograph, a clamp comprising a flat-faced bevel-edged jaw connected with said head to project therefrom and containing in its face a longitudinal groove extending to the extremity of the bevel to receive the attenuate wire forming the stylus, and a bevel-edged companion jaw removably fastened flatwise on said first-named jaw to hold said stylus rigidly in place with one end protrudingly presented to the record.

3. In combination with the reproducer-head of a phonograph, a clamp comprising a flat-faced bevel-edged jaw connected with said head to project therefrom and containing in its face a longitudinal groove extending to the extremity of the bevel to receive the attenu-

ate wire forming the stylus, a bevel-edged companion jaw removably fastened flatwise on said first-named jaw to hold said stylus rigidly in place with one end protrudingly presented to the record, and a spring compressible between said jaws tending to separate them.

4. In combination with the reproducer-head of a phonograph, a bracket on said head a clamp comprising a jaw forming an integral part of the bracket from which it projects and provided with a beveled edge and a longitudinal groove extending to its outer end to receive the attenuate wire forming the stylus proper, and a jaw secured on said first-named jaw to clamp said wire rigidly in place.

5. In combination with the reproducer-head of a phonograph, a bracket thereon a stylus composed of an attenuate wire, and a clamp on the head-bracket comprising a flat-faced metal jaw, provided with a shoulder on its face side, bevel-edged toward its outer end and containing a longitudinal groove in which said wire lies to project at one end beyond said jaw, and a removable flat-faced metal jaw conforming to said first-named jaw and fitting against the shoulder thereon, and means for securing the jaws together to hold said wire rigidly between them.

HERBERT S. MILLS.

In presence of—

L. HEISLAR,

J. H. LANDES.