

No. 812,512.

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H. S. MILLS.
GRAMOPHONE.

APPLICATION FILED MAY 3, 1905.

Fig. 1.

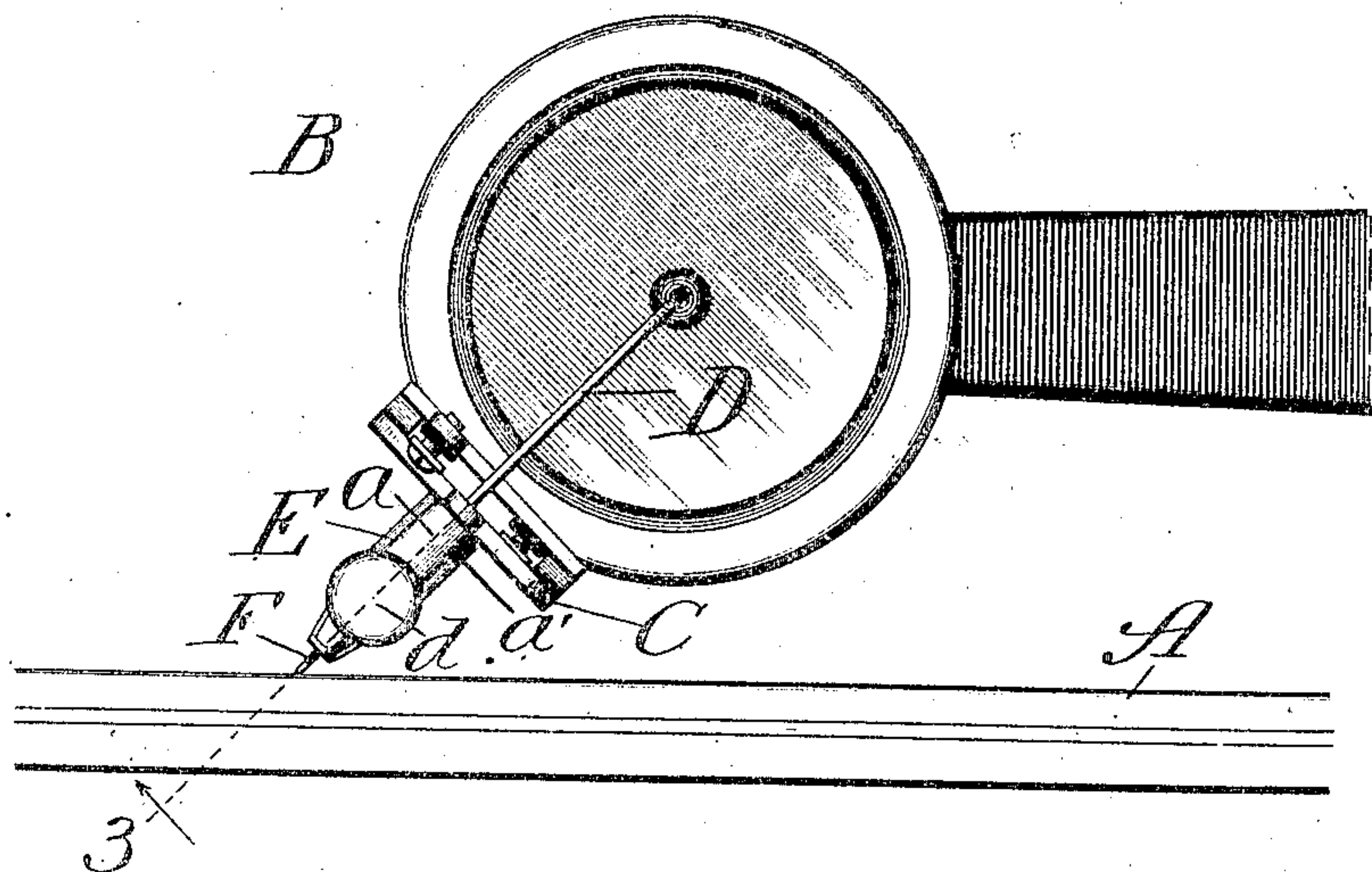


Fig. 2.

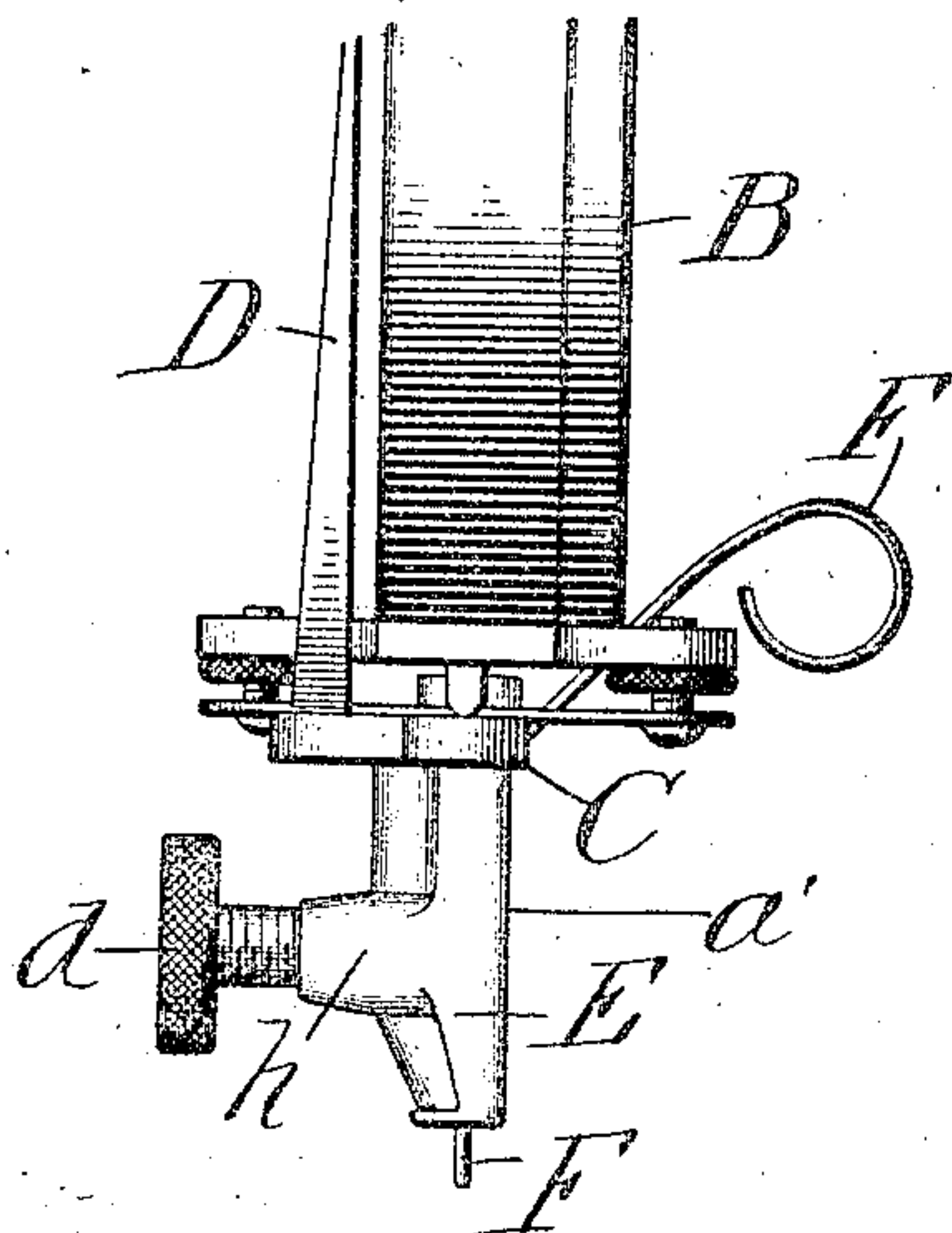


Fig. 3.

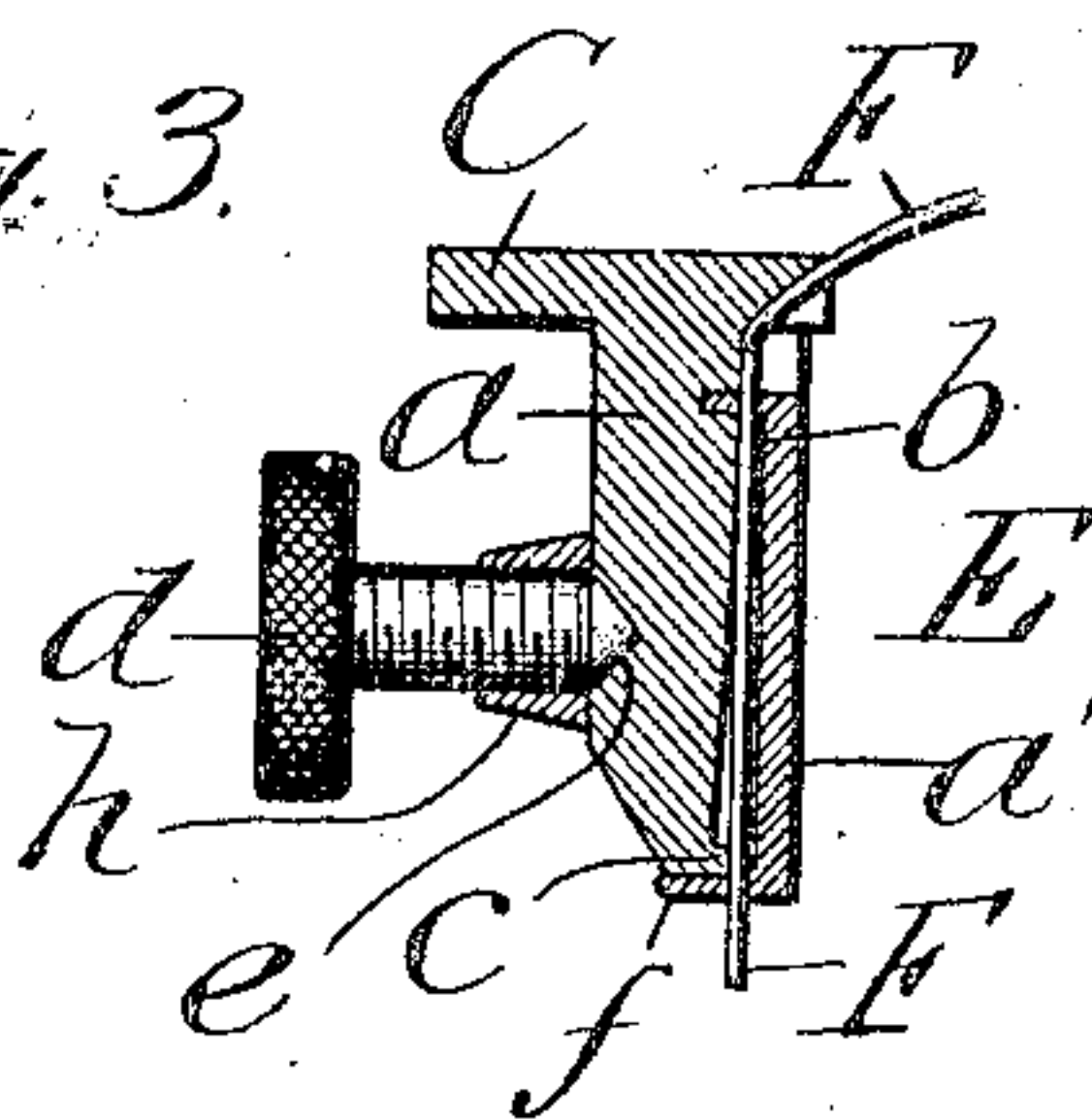
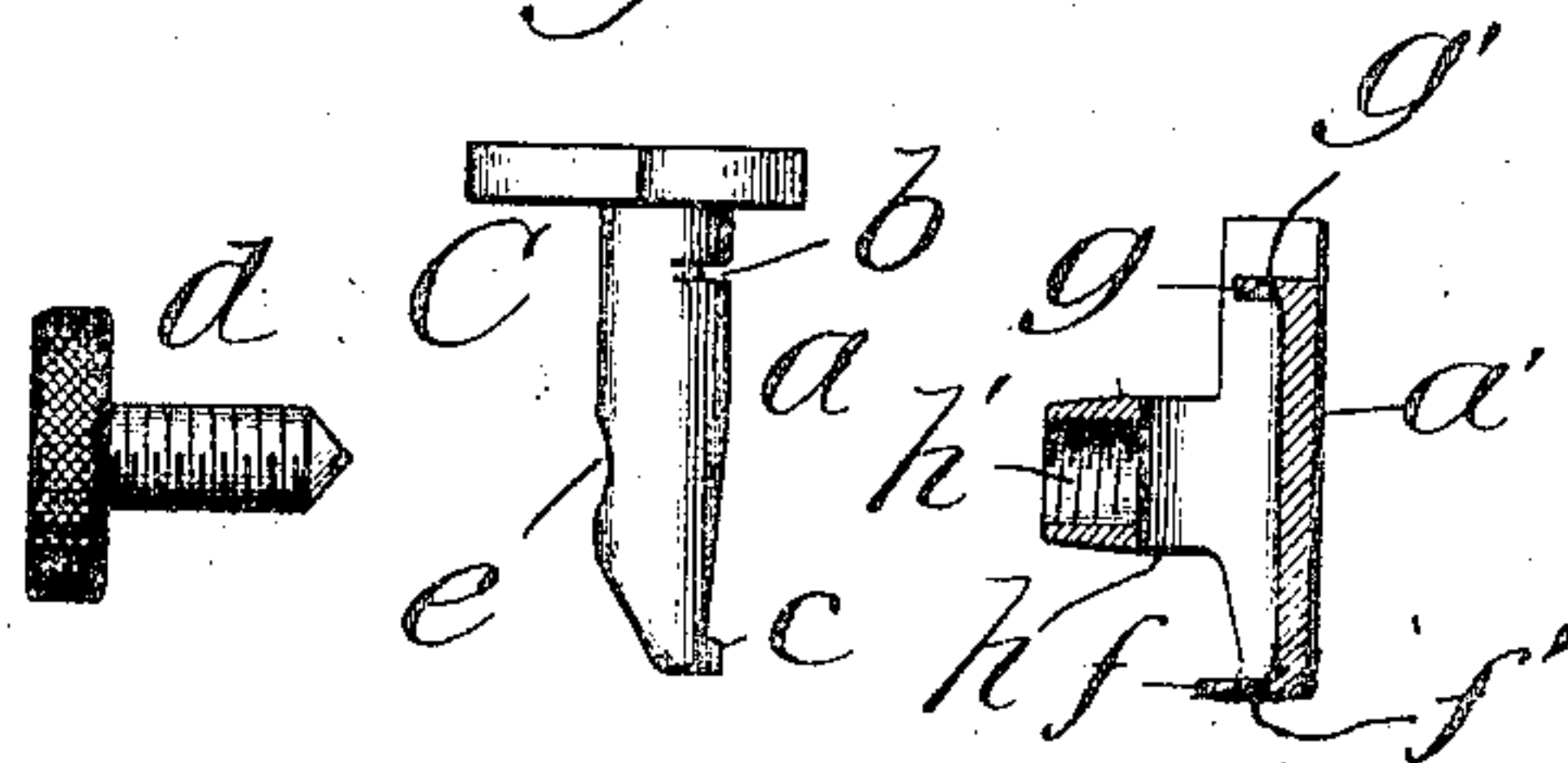


Fig. 4.



Witnesses:
Ed. J. Gaylord.
John E. Sanders.

Inventor:
Herbert S. Mills,
By Pyunforth, Pyunforth & See,
Att'ys.

UNITED STATES PATENT OFFICE.

HERBERT S. MILLS, OF CHICAGO, ILLINOIS.

GRAMOPHONE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HERBERT STEPHEN 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 Gramophones, of which the following is a specification.

My invention relates to an improvement in the means for supporting the stylus in the form of an attenuate length of wire on the reproducer of the instrument to cooperate with the rotary record-disk, the degree of attenuation 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 for use without support, since by undue bending in traversing the disk it wears the record and renders it indistinct.

The object of my invention is to provide a novel construction of rigid clamp on the reproducer which shall serve to hold the wire in a manner to permit one end to protrude to the desired short distance beyond the clamp for engagement with the record and to confine the wire throughout the remainder thereof contained in the clamp, so firmly and uniformly as to render it practically an integral part of the rigid clamp, and thus prevent any independent vibration or movement of the wire therein which would tend to mar or destroy the stylus action.

In the accompanying drawings, Figure 1 is a broken view showing in side elevation the reproducer equipped with my improvement and in operative position relative to the record-disk. Fig. 2 is a view of the reproducer in front elevation, shown broken and provided with my improvement. Fig. 3 is a section taken at the line 3 on Fig. 1 viewed in the direction of the arrow and enlarged; and Fig. 4 shows the parts of my improved clamp separated and ready to be assembled, the removable jaw being in section and the other parts in elevation.

A denotes the disk record, and B the reproducer-head, of a gramophone. On the bracket C, which is fastened, as usual, to the edge of the reproducer-head and carries the transmitting contact-finger D, is provided as an integral or permanent part of the bracket one member *a* of a stylus-clamp E. The clamp member *a* is a finger, preferably solid, of substantially cylindrical form, extending parallel

with the finger D, as shown, and provided with a transverse recess *b* in its rear side near the junction with the bracket. On the same side at the outer end of the finger is formed a lip *c* toward which the finger tapers on its face side, and in the last-named side near the tapered end a depression *e* is formed in the clamp-finger to receive the pointed end of a set-screw *d*. The other clamp member, shown at *a'*, is longitudinally channeled on its inner side or is substantially U-shaped in cross-section and tapers toward its forward end, where it terminates in a lip *f*, extending at a right angle to the body of the member, this lip containing a minute perforation or eye *f'*, the rear end of the clamp member *a'* being bifurcated and provided at the base of the bifurcation with a lip *g*, parallel with the lip *f* and containing a minute perforation or eye *g'* in line with the perforation *f'*, and between the ends of this clamp member there extends across its concave side a yoke *h*, provided with a threaded opening *h'*, in which the set-screw *d* works.

The fine wire forming the stylus F is inserted through the eyes *g'* and *f'* of the clamp member *a'*, and the latter is applied to the member *a* in a manner to cause the yoke *h* to surround the latter and introduce the lip *g* into the recess *b* to position the movable member, whereby the lip *f* thereon overlaps the outer face of the lip *c*. The wire is then adjusted to protrude it to the desired extent beyond the lip *f*, when the screw *d* is turned in its bearing to tighten the members *a* and *a'* together and clamp between them the stylus-wire rigidly. With the clamp members thus tightly secured together they grip the wire F so firmly 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 wire 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 *d* to permit the wire to be drawn out far enough to compensate for the wear, when the jaws will be fastened together again to grip the wire, which may be slightly kinked at the lip *c* if the clamp members are fastened as tightly as possible. The wear is so slight, however, that a single setting of the stylus-wire suffices for use of the point several hundred

times, and the device improves the tone quality of the instrument by rendering it more mellow and softer, the latter quality being particularly desirable in a coin-operated gramophone, 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 gramophone, a clamp adapted to hold an attenuate wire forming a stylus, comprising as one member, a finger on said head, and, as the other member, a body, longitudinally channeled on its inner side, fitting about and cooperating with said finger and provided with means for fastening it thereon.

2. In combination with the reproducer-head of a gramophone, a bracket on said head, and a clamp adapted to hold an attenuate wire forming a stylus, comprising, as one member, a finger projecting from said bracket, and, as the other member, a body longitudinally channeled to cooperate with said finger and provided with eyes through which to insert said wire, and with means for fastening the two members together.

3. In combination with the reproducer-head of a gramophone, a bracket on said head, and a clamp adapted to hold an attenuate wire forming a stylus, comprising, as one member, a finger projecting from said bracket and provided on its outer end with a lip, and, as the other member, a body longitudinally channeled to cooperate with said finger and provided with lips containing eyes through which to insert said wire and with means for fastening the two members together.

4. In combination with the reproducer-head of a gramophone, a bracket on said head, and a clamp adapted to hold an attenuate wire forming a stylus, comprising, as one member, a finger projecting from said bracket and provided on its outer end with a lip, and,

as the other member, a body longitudinally channeled to cooperate with said finger and provided with eyes through which to insert said wire and with a yoke forming a bearing containing a set-screw and surrounding said finger to connect therewith the channeled member.

5. In combination with the reproducer-head of a gramophone, a bracket on said head and a clamp adapted to hold an attenuate wire forming a stylus, comprising, as one member, a finger projecting from said bracket and provided with a recess near its inner end and a lip on its outer end, and, as the other member, a body longitudinally channeled to cooperate with said finger and provided with a lip near one end to enter said recess and with a lip on its opposite end to overlap the lip on said finger, the lips on said channeled member containing eyes through which to insert said wire, and means for fastening the two members together.

6. In combination with the reproducer-head of a gramophone, a bracket on said head, and a clamp adapted to hold an attenuate wire forming a stylus, comprising, as one member, a finger projecting from said bracket and provided with a recess near its inner end and a lip on its outer tapered end, and, as the other member, a body bifurcated at one end and longitudinally channeled to cooperate with said finger and provided with a lip near said end to enter said recess and with a lip on its opposite end to overlap the lip on said finger, the lips on said channeled members containing eyes through which to insert said wire, and a yoke forming a bearing containing a set-screw and surrounding said finger to connect the members together.

HERBERT S. MILLS.

In presence of—

L. HEISLAR,
J. H. LANDES.