

No. 636,822.

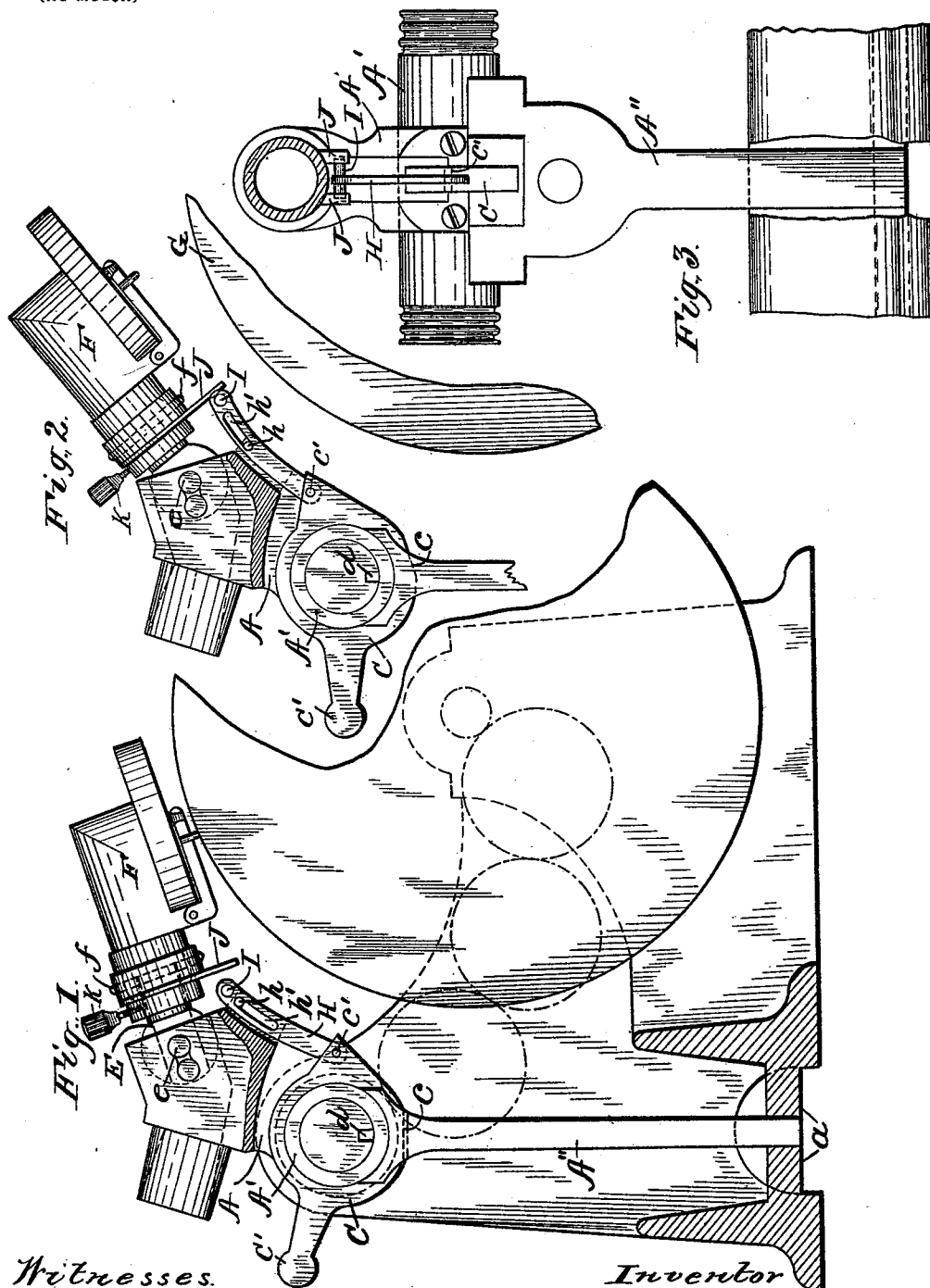
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T. H. MACDONALD.

LIFTING MECHANISM FOR GRAPHOPHONE REPRODUCERS.

(Application filed May 26, 1899.)

(No Model.)



Witnesses.
W. B. Engelen.
[Signature]

Inventor
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by Philip Kaurer,
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UNITED STATES PATENT OFFICE.

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LIFTING MECHANISM FOR GRAPHOPHONE-REPRODUCERS.

SPECIFICATION forming part of Letters Patent No. 636,822, dated November 14, 1899.

Application filed May 26, 1899. Serial No. 718,358. (No model.)

To all whom it may concern:

Be it known that I, THOMAS H. MACDONALD, a citizen of the United States, residing at Bridgeport, Connecticut, have invented a new and useful Lifting Mechanism for Graphophone-Reproducers, which is fully set forth in the following specification.

This invention relates to graphophones, and more particularly to improvements in the mechanism for lifting the reproducer. In the present construction (of which Letters Patent No. 569,290, granted to me October 13, 1896, may be taken as an illustration) the reproducer-head is connected to its carriage by an intermediate tubular piece or neck on which it is mounted by a vertical pivot, so as to have lateral play, while the tubular neck is itself secured to the carriage by a horizontal pivot, so as to have vertical play, these pivots providing the "universal joint" essential to practical reproducers. Depending from this intermediate neck is a projection adapted to be raised by a cam on the stop-ring, thus lifting the reproducer-head. When the reproducer is lifted, it is still free to play on its vertical pivot, and has a tendency to swing to one side, so that when it is dropped back on the sound-record the reproducer-point does not lie in the center of its play or rest truly on the record. The present invention obviates this defect; and it consists in lifting the reproducer-head itself instead of the intermediate neck and in supporting the head at more than one point.

A preferred form of my invention is shown in the annexed drawings, in which—

Figure 1 is a partly-broken side elevation of the carriage and adjacent parts. Fig. 2 is a similar view showing the reproducer lifted away from the sound-record, and Fig. 3 is an elevation.

Referring to the drawings, A is the carriage, and A' its sleeve sliding on the slotted tube that surrounds the feed-screw. (Not shown.)

A'' is a depending arm fast to sleeve A' and sliding between guides a. C is the stop-ring seated in a slot in the carriage and turning on sleeve A'. The usual Y-shaped piece, seated in arm A'' and spanning ring C, is pressed upward by a spring and provided on

its upper faces with partial nuts d d for engaging the feed-screw. On ring C is the usual cam c. The tubular neck E is pivoted at e in the sound-conveying tube of the carriage, and the reproducer-head F engages neck E by the substantially vertical pivot f, pivots e and f permitting universal movement for the reproducer-head. G is the (cylindrical) sound-record. All this construction is old.

Describing now the novel features, a lifting-bar or plunger H is connected with ring C, as by pivot c', and slides in a recess in the carriage, in which it is held by pin h and slot h'. At the upper end of plunger H is a horizontal pin I, projecting on each side of the plunger. Two substantially parallel arms J J, fast on the reproducer-head, project downward, being so located as to straddle the end of plunger H and be engaged simultaneously by the ends of pin I, as indicated by Fig. 2.

K is a catch for holding head F to neck E.

The operation is as follows: In Fig. 1 the cam c allows partial nuts d d to engage the feed-screw while the reproducer-point is in operative contact with the sound-record G. When the handle C' of the stop-ring C is depressed, Fig. 2, the thick portion of the ring forces nuts d d down out of engagement with the feed-screw and at the same time the plunger H is moved upward, pin I engaging arms J J, which it pushes up, lifting the whole reproducer from the pivot e. The reproducer-head being supported directly and at two points, there is no tendency for it to swing to either side, so that when handle C' is raised and the reverse of the operation just described takes place the reproducer is lowered truly and accurately upon the sound-record.

I do not wish to limit myself to the exact construction and arrangement shown, as any construction that lifts the reproducer-head itself or that supports it at the middle of its lateral play is within the spirit of my invention.

Having thus described my invention, I claim—

1. In a graphophone, the combination with the reproducer-head, with a mounting therefor that permits it both vertical and lateral play, of mechanism for lifting the said repro-

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ducer-head and supporting the same at two points, substantially as described.

2. In a graphophone, the combination of the reproducer-carriage, the tubular neck secured thereto by a horizontal pivot, the reproducer-head engaging said neck by a substantially vertical pivot, and lifting mechanism adapted to hold said head (when lifted) at the center of its lateral play, substantially as described.

3. In a graphophone, the combination with the reproducer-carriage, the intermediate tubular neck secured thereto by a horizontal pivot, the reproducer-head engaging said neck by a substantially vertical pivot, and the stop-ring seated in the carriage, of a plunger actuated by said ring, two parallel arms depending from said reproducer-head, and a

transverse pin in the end of said plunger adapted to engage with said arms to lift the reproducer-head and support it in the center of its lateral play, substantially as described.

4. In a talking-machine, the combination with the reproducing-stylus, and a mounting therefor that permits it both vertical and lateral play, of a single mechanical part for lifting said stylus and holding it (when lifted) at the center of its lateral play, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOMAS H. MACDONALD.

Witnesses:

ALBERT C. KNAPP,
W. R. MILLER.