

No. 855,761.

PATENTED JUNE 4, 1907.

J. H. ELFERING.
TALKING MACHINE.
APPLICATION FILED SEPT. 1, 1903.

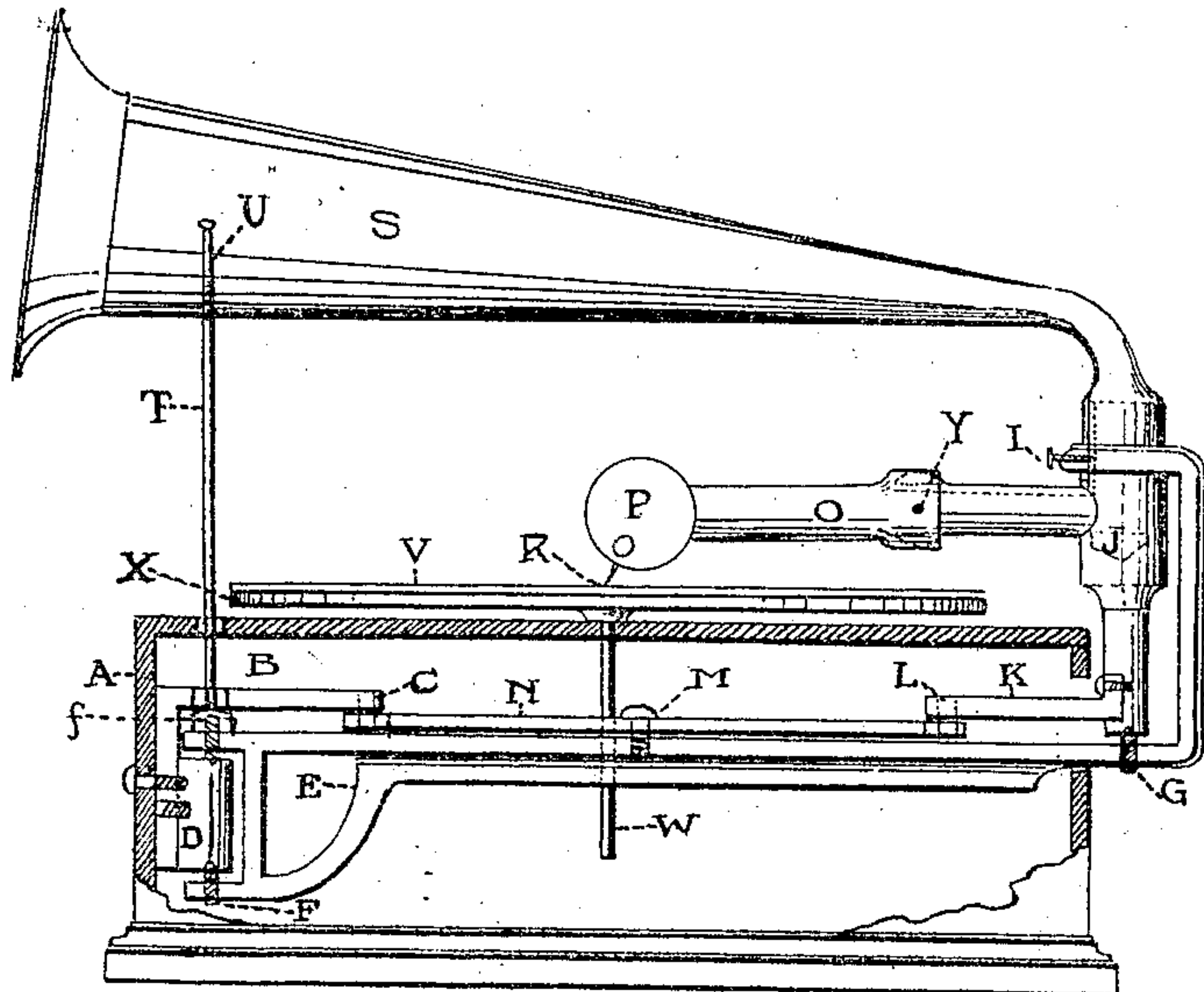


FIG. 1.

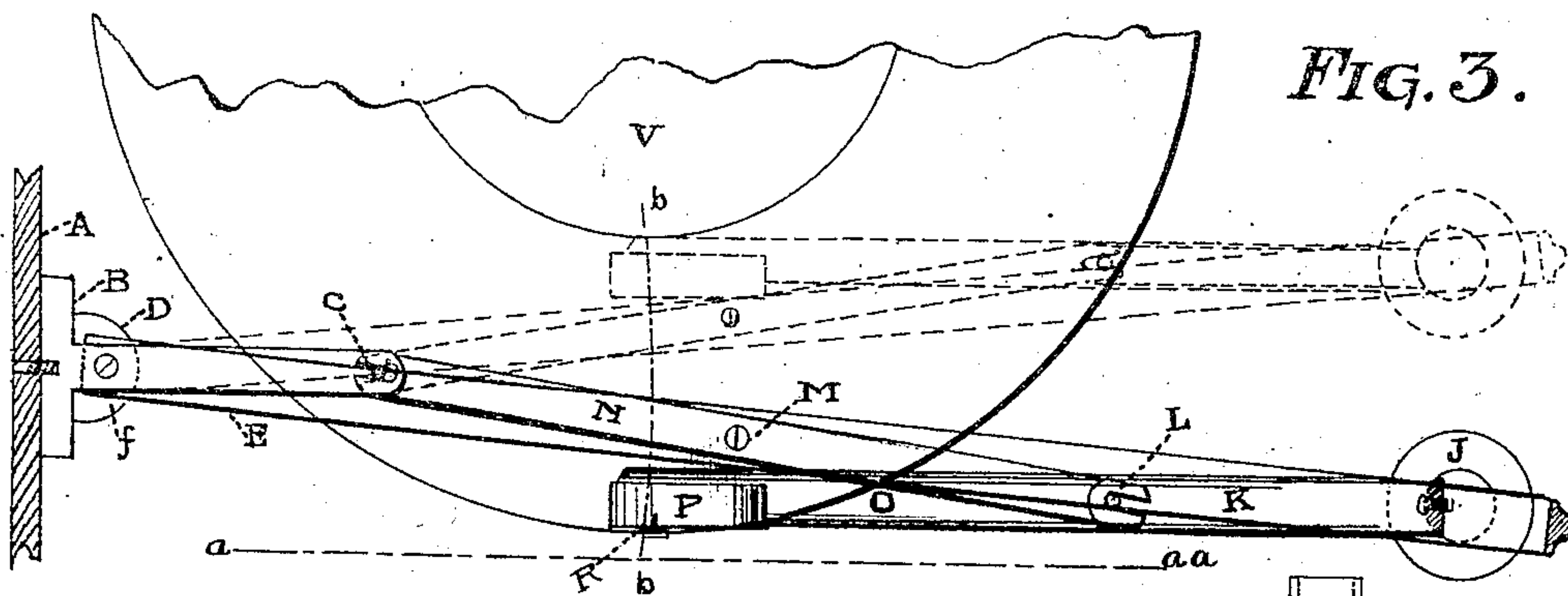


FIG. 3.

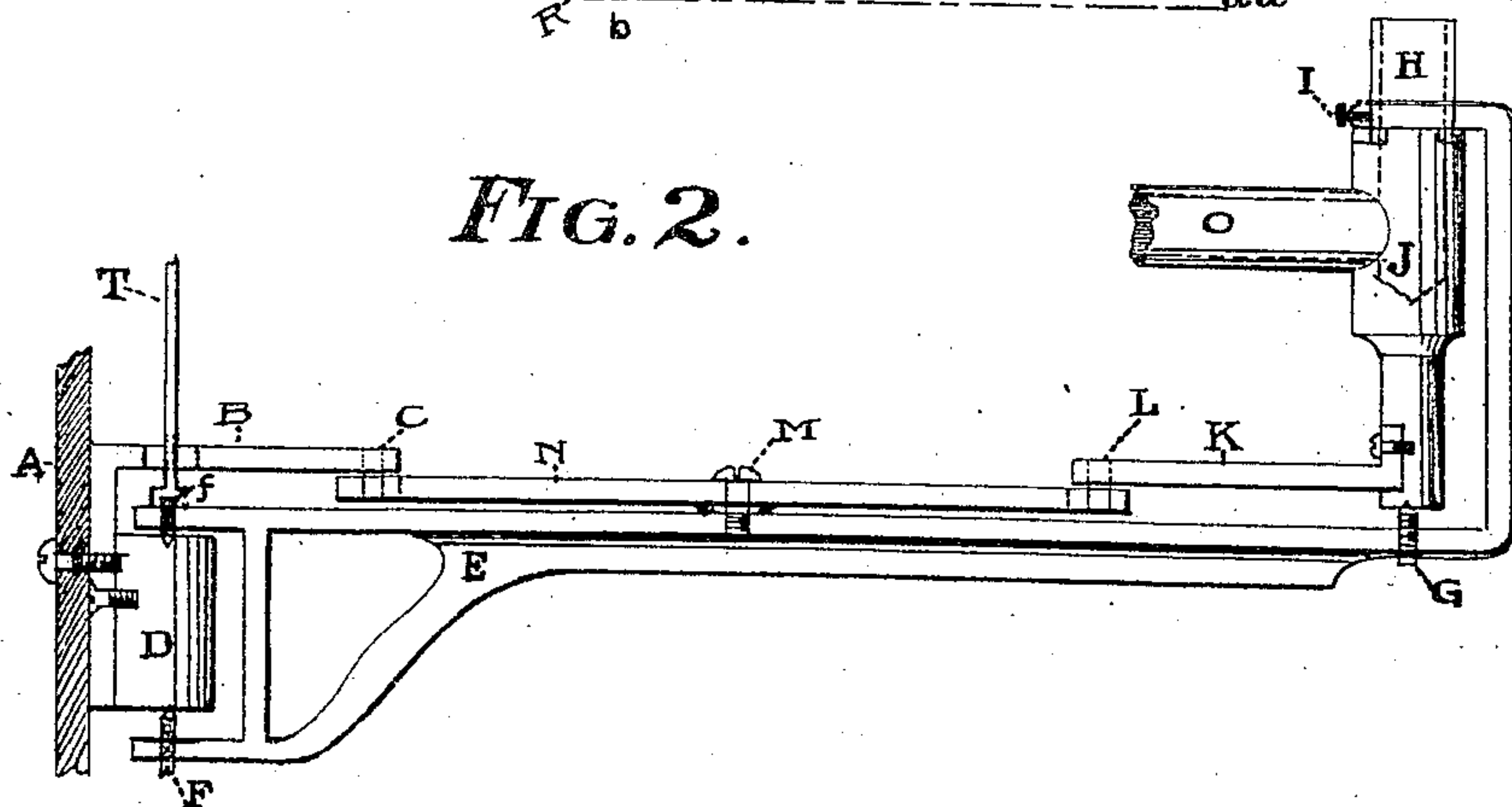


FIG. 2.

WITNESSES
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JOHN H. ELFERING, OF CAMDEN, NEW JERSEY, ASSIGNOR TO VICTOR
TALKING MACHINE COMPANY, A CORPORATION OF NEW JERSEY.

TALKING-MACHINE.

No. 855,761.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed September 1, 1903. Serial No. 171,485.

To all whom it may concern:

Be it known that I, JOHN H. ELFERING, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Talking-Machines, of which the following is a specification.

My improvement is applicable especially to disk talking machines, and the object of my invention is to provide means for presenting the reproducing sound box to the record in the most advantageous position for the production of sound, and the preservation of the record and needle. The manner in which I attain these objects is illustrated in the accompanying drawings, in which:—

Figure 1 is a side view of the mechanism attached to a machine. Fig. 2 a side view of the same separate from the machine, and, Fig. 3, a plan showing the movement accomplished by the mechanism.

Similar letters refer to similar parts in the several views.

To the cabinet A is secured the angle piece B, the projecting part of which is adapted to hold the downwardly extending pin C. To the angle piece B is secured the block D. The arm E is fitted with two pointed screws F and f, and is thereby pivoted upon the block D. Near the other end of the arm E another pointed screw G is located. The upwardly extending part of the arm E, is provided with a ring E' which is fitted with the tube H, held in place by the set screw I. Resting upon the pointed screw G, and having the upper end pivotally supported in place by the tube H, is the hub J. To the hub J is secured the arm K, to the projecting end of which is secured the downwardly extending pin L. Pivoted to the central portion of the arm E by the screw M is the lever N, slotted at each end, to loosely engage the pins C. and L.

Attached to the hub J is the tube O, supporting at its end the sound box P, the needle point being shown at R. The tube O is in two parts, the extending part being pivoted upon the part attached to the hub J by the pin Y. The tube H is also adapted to serve as the support for the small end of the amplifying horn S. A further support for the horn S is the rod T, screwed to the arm E above its pivoted center by means of the

screw f', and fitted with a bent wire U upon which the horn rests. A spindle W is shown supporting the turn table, upon which is placed the record V.

The operation of the devices described is as follows:—The tube O, pivoted at Y, allows the needle R to rest upon and in the spiral groove of the record V. The record being revolved by the motor of the machine, the needle point is continually being moved toward the center of the record a distance equal to one groove for each revolution. This movement of the needle turns the attached hub J upon the pivots, screw G and tube H, and causes the pin L, in the attached arm K to engage with the slotted arm N, moving the end engaged with the pin L in the same direction as the arm K tube O and sound box needle R. The other end of lever N engages with the pin C, and is held at its fixed point but for the slight end movement the slot compensates for. There is therefore a relative movement established by the lever N between the arm E and arm O, so that the arm O and attached sound box P maintain a position parallel with the line a—aa throughout the course of movement; the needle at the same time moving in the arc of a circle b—b, of which the distance from the pivot screw f' to the pivot screw G is the radius. The spiral grooves in the record V being approximately tangent to the line a—aa at the point of contact with the needle, the sound box is held tangent to them and the needle in a fixed relative position throughout the movement.

The amplifying horn S incases at one end the tube H for the reception of the sound, and is supported by the rod T above the center of the pivot screws F, f, to minimize the tendency to prevent the easy movement of the mechanism. A passage for the sound into the horn S is provided by the chamber of the tube O, hollow hub J and tube H.

Types of talking machines employing the sound box P attached to the tube O, pivoted upon the pin Y fixed in the part of the tube O attached to a hub similar to hub J, pivoted between pivot screw G and tube H, the screw G and tube H being attached to an arm rigidly held by the cabinet, thereby allowing the needle R to move in a circular path, of which the pivot G would be the center, have been made. I do not claim these devices

as new. I select this form of machine as being one to which my improvements are applicable. Modified to suit conditions, they are also applicable to other types.

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

1. In a talking machine, the combination of a sound box carrying arm, a sound box, means for guiding the stylus in an arc across the record surface and means for maintaining the stylus substantially tangent with the record groove.

2. In a talking machine, the combination with a sound box carrying arm mounted on a pivot the axis of which is perpendicular to the plane of the record and sound box, of means for keeping the stylus of the reproducer substantially tangent with the record groove as the said sound box moves across the record.

3. In a talking machine, the combination with a sound box, of a swinging sound box arm mounted on a pivot the axis of which is perpendicular to the plane of the record, to which said sound box is attached, and means for moving said sound box so as to keep the plane of the stylus substantially tangent to the record groove as the sound box moves across the record.

4. In a talking machine, the combination with a sound box, of a swinging sound box arm mounted on a pivot the axis of which is perpendicular to the plane of the record, to which said sound box is fixed, and means for moving said sound box and carrying arm so as to keep the plane of the sound box stylus substantially tangent to the record groove as the sound box moves across the record.

5. In a talking machine, the combination with a sound box, of a hollow swinging sound box carrying arm mounted on a pivot the axis of which is perpendicular to the plane of the record, communicating with the interior of said sound box and to which said sound box is fixed, and means for moving said sound box and carrying arm so as to keep the plane of the stylus of the sound box substantially tangent to the record groove as the reproducer moves across the record.

6. In a talking machine, the combination of a pivoted arm, a sound box carrying arm pivotally mounted on said first named arm and means connecting the pivot of the sound box arm with a fixed point for keeping the axis of said sound box arm substantially tangent to the record groove as the sound box moves across the record.

7. In a talking machine, the combination of a pivoted supporting arm, a sound box arm pivotally mounted on said arm and means carried by said supporting arm and connecting the pivot of the sound box arm to the pivoted supporting arm for keeping the axis of said sound box arm substantially

tangent to the record groove as the sound box moves across the record.

8. In a talking machine, the combination of a pivoted supporting arm, a sound box arm pivotally mounted on said supporting arm, a lever carried by said supporting arm and connection between said lever and the pivot of said supporting arm and a fixed point for keeping the axis of said sound box arm substantially tangent to the record groove as the sound box moves across the record.

9. In a talking machine, the combination of a pivoted supporting arm, a sound box arm pivotally mounted on said supporting arm, a projection connected with said sound box arm, a fixed projection and a lever carried by said supporting arm and connecting said projections for keeping the axis of said supporting arm substantially tangent to the record groove as the sound box moves across the record.

10. In a talking machine, the combination of a hollow sound box arm, a hub with which said hollow arm connects, a pivoted arm upon one end of which said hub is mounted and means connecting said hub and a fixed point for keeping the axis of said hollow arm substantially tangent to the record groove as the sound box moves across the record.

11. In a talking machine, the combination of a hollow sound box arm, a hub communicating with one end thereof, a pivoted arm adjacent the end of which said hub is pivotally mounted, a projection fixed to said hub and a lever connecting said projection with a fixed point for keeping the axis of said hollow arm substantially tangent to the record groove as the sound box moves across the record.

12. In a talking machine, an arm mounted to swing across the record and carrying a sound box on its swinging end in combination with means to maintain the stylus of said sound box in a plane tangent to the groove of the record.

13. In a talking machine, a sound conveying arm mounted to swing across the record and carrying a sound box on its swinging end in combination with means for maintaining the stylus in a plane tangent to the groove of the record.

14. In a talking machine, an arm mounted to swing across the surface of the record and carrying a sound box on its swinging end in combination with means for maintaining the engaging extremity of the reproducing needle in a plane tangent to the groove of the record.

15. A talking machine, comprising a vertically and laterally swinging sound conveying arm carrying a sound box on its swinging end in combination with means for maintaining the engaging extremity of the

stylus needle tangent to the groove of the record.

16. In a talking machine, the combination with a reproducer and pivoted reproducer arm swinging in a plane parallel to the face of the record, of means for keeping the stylus of said reproducer substantially tangent with the record groove as the said reproducer moves across the record.

17. In a talking machine, the combination with a reproducer, of a swinging reproducer arm to which said reproducer is pivoted, and

means for moving said reproducer about its pivot so as to keep the plane of its stylus substantially tangent to the record groove as the reproducer moves across the record.

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

JOHN H. ELFERING.

Witnesses:

HORACE PETTIT,
LEWIS H. VAN DUSEN.