

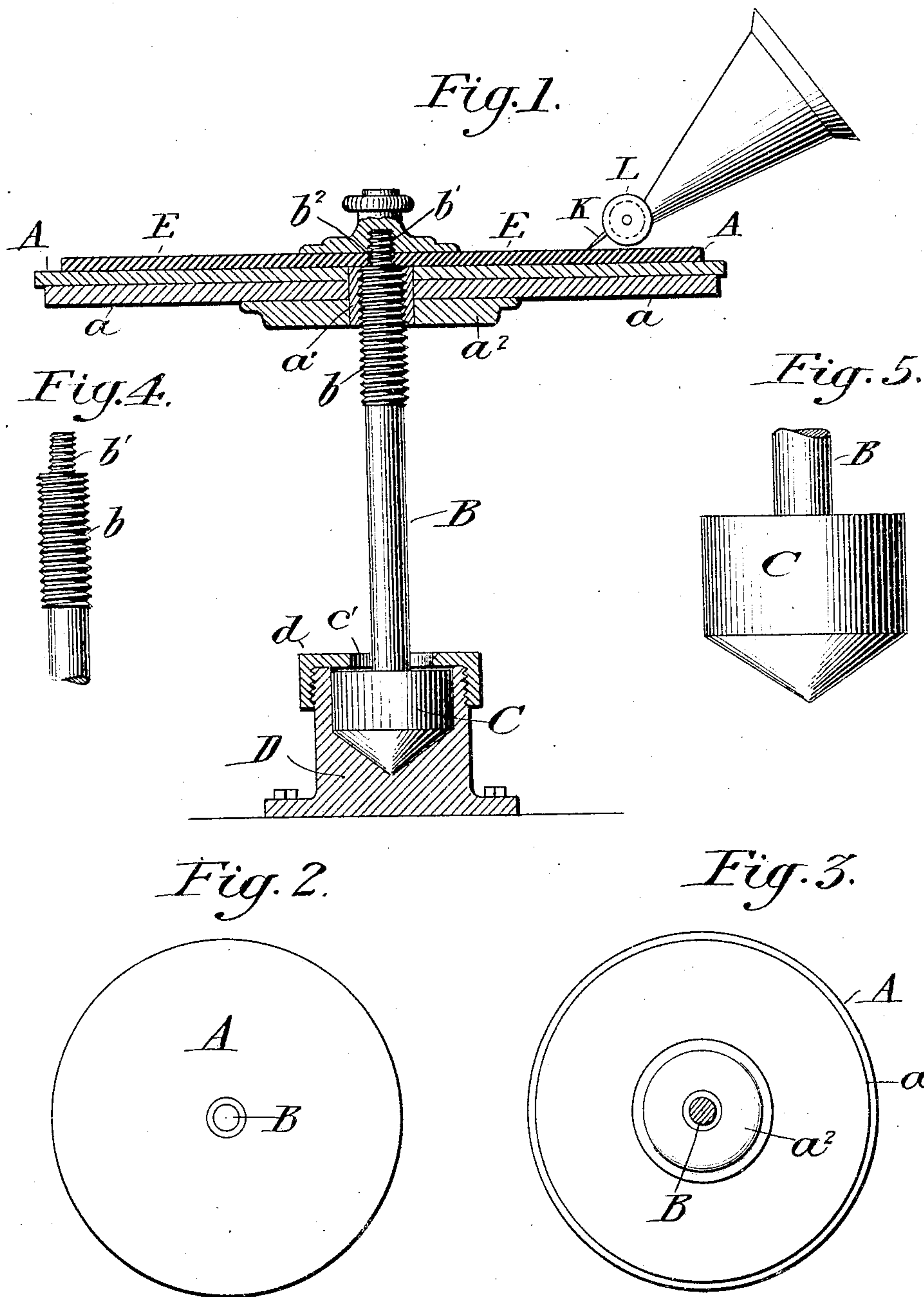
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J. LE MON & F. C. VON HEYDEBRAND UND DER LASA.

DISK TALKING MACHINE.

APPLICATION FILED AUG. 15, 1902.



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UNITED STATES PATENT OFFICE.

JAMES LE MON AND FERDINAND-CHRISTOPH VON HEYDEBRAND UND
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DISK TALKING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 778,543, dated December 27, 1904.

Application filed August 15, 1902. Serial No. 119,774.

To all whom it may concern:

Be it known that we, JAMES LE MON and FERDINAND-CHRISTOPH VON HEYDEBRAND UND DER LASA, citizens of the United States, and residents of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Disk Talking-Machines, of which the following is a specification.

This invention relates to what are known as "talking-machines" of the "disk" variety, such as the gramophone, xonophone, Columbia, Victor, &c.

The object of this invention is to render said machines capable of reproducing the sounds, both vocal and instrumental, recorded on the disks or records with complete fidelity, accuracy, volume, and expression.

The requisite uniformly-level rotation of the record is obtained by assuring the perpendicularity of the main carrying-plate spindle and so boxing it in at its base as to prevent any tendency to lift while rotating and giving the carrying-plate an increased gravity to annul its centrifugal tendency to undulate at the periphery and by properly supporting the said heavy carrying-plate rigidly upon its driving-spindle. The increased gravity of the carrying-plate is obtained by the addition to the present plate of a disk, plate, segment, ring or rings of (preferably) non-resonant material or metal, preferably lead, attached to or cast with or upon said carrying-plate, or said plate may be made of an integral lead casting or sheet centrally bushed with a threaded bushing through which the spindle passes and is screwed in.

When our invention is adapted to old machines with the usual carrying-plate, the additional weight may be in a form of a disk or disks, ring or rings, plate or plates, segment or segments, so attached to either (preferably the "lower") face of the present carrying-plate as to cause a proper distribution of balance in same, or peripheral rings or segments may be cast onto or attached to the said carrying-plate. As regards the material used to increase the gravity of the carrying-plate we prefer to use lead on account of its great

weight per area and its lack of resilience which prevents any vibration which may arise from the use of resonant metal for this purpose. The gravity of the carrying-plate may be increased up to any practical degree according to the size of the instrument for the desired result. Any tendency which the main spindle which drives the rotating carrying-plate may have to lift while rotating is prevented by placing an overhang cover on the step-box in which the spindle-pivot revolves, the overhang in the step-box cover forming contact with a shoulder made on the pivot to prevent its leaving the box or rising beyond the lower face of the overhang cover. This arrangement in combination with the greatly-increased gravity of the carrying-plate prevents all ill effects from radial centrifugal action or undulatory motion of the carrying-plate and the record fastened thereon.

In the accompanying drawings, wherein our invention is shown as applied to the carrying-plate of a disk talking-machine as at present constructed by the addition of weight thereto and also to a new machine wherein the carrying-plate is made originally or cast of sufficient weight, similar parts are always denoted by similar letters.

Figure 1 is a vertical section of the parts of the instrument showing our invention; Fig. 2, a top plan of carrying-plate and spindle; Fig. 3, a bottom part of carrying-plate and boss; Fig. 4, a vertical section of upper end of spindle; Fig. 5, a vertical section of lower end of spindle.

A indicates the carrying-plate for the disk record. Said carrying-plate is made heavier by the addition thereto of a disk or disks, plate or plates, ring or rings, segment or segments, block or blocks *a* of a preferably non-resonant metal—lead, for instance—and is fitted with an internally-threaded passage, bushing, or socket *a'* for the passage and attachment of spindle B. The plate A has cast onto or affixed to it on its under side a balancing internally-threaded boss *a''* to insure level rotation on spindle B, said boss forming a vertical extension of plate A.

B indicates the driving-spindle for carrying-

plate A, which spindle has thereon a main screw-thread b , running from the level of the upper face of the carrying-plate down to and below the under side of said carrying-plate 5 and its threaded boss or extension and also a smaller threaded top portion of less diameter, b' , for the internally-threaded knob or clamp plate b'' , which secures the record to the face of the carrying-plate A, and said spindle B has 10 at its lower extremity a pivot C, upon which it rotates.

C indicates the pivoted lower end of driving-spindle B. This pivot is formed of greater diameter than the rest of the spindle above it, 15 so as to form a shoulder c' to prevent its lifting in the step-box D, and it finishes at the extreme lower end in cone form turned true to fit and work in its step-box D.

D indicates the step-box for pivot of spindle 20 B, having thereon an overhang removable cover d , screwed to its upper end, to overhang the shoulder c' on the pivot C, and thus prevent it from rising in its step while revolving.

25 E indicates the disk-record, containing the groove or music-track for the reception and guidance of stylus K, actuated by sound-box L.

Having thus described our invention and 30 the method of carrying same into effect, we claim as follows:

1. In a disk talking-machine, a weighted-disk-record support, a vertical shaft upon which said support is mounted, a box-step for 35 the lower end of said shaft, and a cap for said box-step engaging said shaft to prevent vertical movement of said shaft, as described.

2. In a disk talking-machine, a weighted-disk-record support, a shaft upon which the support is mounted, a supporting-disk beneath 40 said weighted disk and adjustable upon said shaft and a clamping-cap to clamp against the weighted-disk support.

3. In a disk talking-machine a weighted-disk-record support, a vertical shaft upon 45 which said support is mounted, the lower end of said shaft being fitted with a shoulder and turning in a box-step and a cap to prevent vertical movement of said shaft.

4. In a disk talking-machine, a weighted-disk-record support, a vertical shaft upon 50 which said support is mounted, the lower end of said shaft being fitted with a larger cylindrical portion terminating in an inverted cone forming a shouldered pivot and turning in a 55 box-step and a cap overhanging said shoulder and box-step to prevent vertical movement of said shaft, which said shaft is at its upper end properly threaded for securing thereon the weighted-disk support, and a supporting-disk 60 beneath said weighted disk, and a clamping-cap above said weighted disk for clamping the music-record to the said weighted-disk-record support.

Signed at New York, in the county of New 65 York and State of New York, this 14th day of August, A. D. 1902.

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