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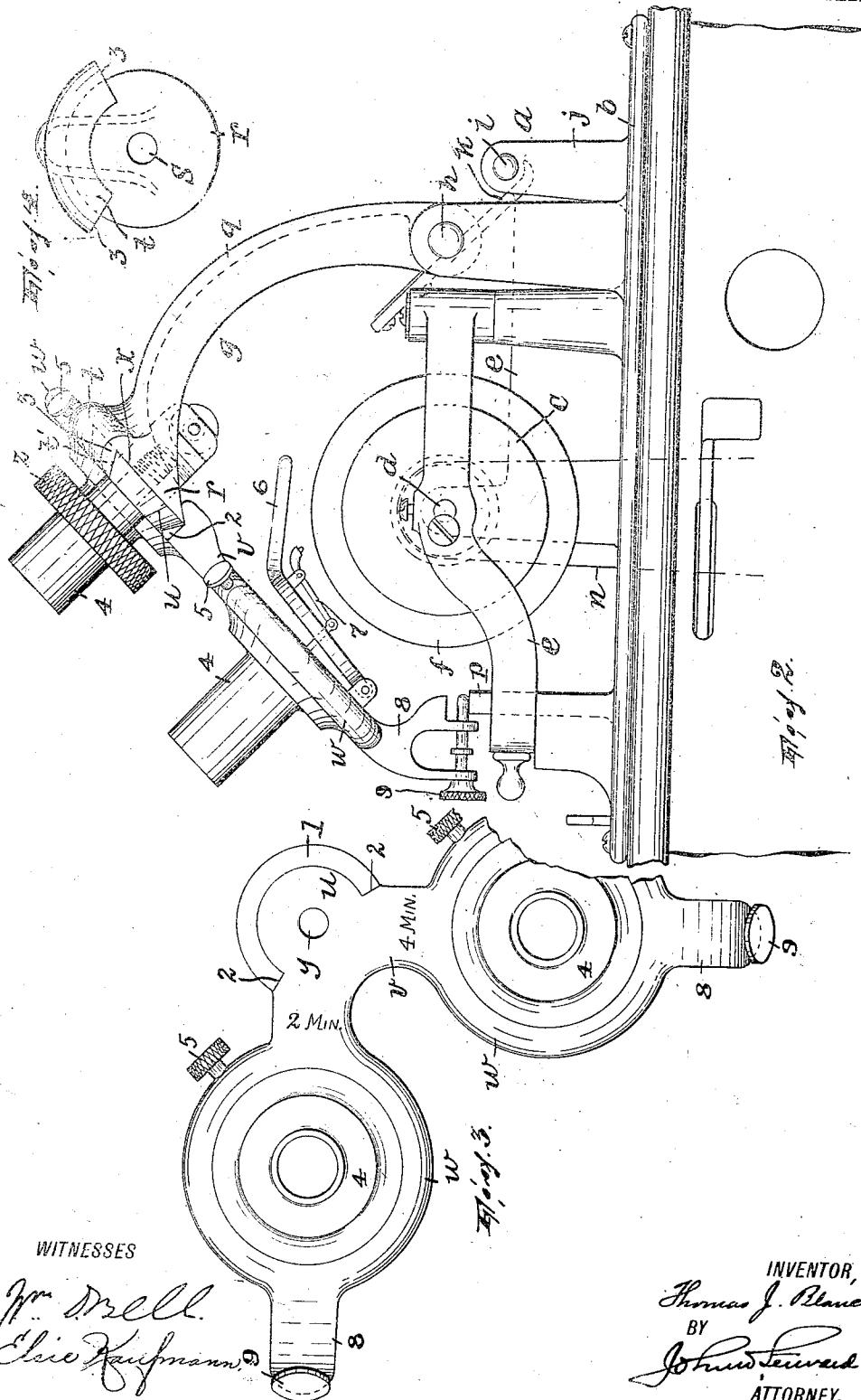
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 PHONOGRAPH MACHINE.
 APPLICATION FILED JAN. 7, 1909.

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Patented Oct. 5, 1909.
 2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

THOMAS J. BLANCH, OF HIGHLAND FALLS, NEW YORK.

PHONOGRAPH-MACHINE.

935,773.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed January 7, 1909. Serial No. 471,147.

To all whom it may concern:

Be it known that I, THOMAS J. BLANCH, a citizen of the United States, residing in Highland Falls, Orange county, New York, have invented certain new and useful Improvements in Phonograph-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

This invention relates to phonograph machines, and particularly to that class of such machines in which are used cylindrical records, and it has for its object to provide a practical and novel construction of carriage or slide whereby either of two reproducers or "speakers" arranged therein may be quickly and readily thrown into, and the other out of, working position relatively to the record.

It being predicated that there are now in use two general kinds of records, to wit, one having one number of threads to the inch, say 100, and the other having another number of threads to the inch, say 200, and that these two kinds of records require distinct kinds of styluses, the advantages gained in associating the two different speakers or reproducers in a single structure so that the change from the one to the other may be accomplished quickly and conveniently will be apparent.

In the accompanying drawings, in which my invention is fully illustrated, Figure 1 is a front view of a phonograph machine constructed in accordance with this invention; Fig. 2 is a side view thereof; Fig. 3 shows the pivoted reproducer support in plan; and, Fig. 4 is a plan of the end of the arm of the carriage or slide.

a in the drawings designates an Edison phonograph machine, *b* being its base, *c* its mandrel having its shaft *d* journaled in the brackets *e*, *f* the cylindrical record, *g* the carriage pivoted and also movable laterally on the guide *h*, *i* the rotating feed-screw journaled in brackets *e* and *j* (the feed-screw being adapted to be engaged by the arm *k* of the carriage when the latter is lowered to its extreme or working limit), *l* a change-speed transmission mechanism connecting the shaft *d* with the screw *i* and *m* its con-

trolling lever, and *n* and *o* the belt and pulley for transmitting power to shaft *d*; *p* designates the auxiliary carriage guide. The arm *q* of the carriage is or may be constructed substantially as such part is now commonly constructed, except at the end thereof I provide a substantially circular table or bearing *r* having a screw-hole *s* formed centrally therein with its axis lying approximately in a radius from the axis of the guide *h* which, as usual, is parallel with the mandrel shaft; said bearing or table has at the back thereof, integral with the arm, an arc-shaped abutment *t* formed concentric with the bearing and having the side thereof adjoining the bearing cut back at an acute angle with reference to the face of the bearing, thereby producing an overhang *t'*. Against this bearing contacts the bearing-portion *u* of the reproducer supporting member *v*, comprising said bearing portion and the open or annular arms *w* extending in directions at right angles to each other from the bearing portion. The bearing portion is formed with an under face *x* adapted to lie in square contact with the bearing or table of arm *q* and it has a hole *y* which receives a screw *z* having a milled head whereby the supporting member may be firmly secured in either of its two limits of motion on the screw as a pivot. The bearing-portion *u* has an arc-shaped peripheral portion of the same radius as the overhang *t'*, such portion (1) being beveled so as to contact squarely with the inner inclined face of the overhang. The arms *w* are formed with shoulders 2 adapted to contact with the shoulders 3 formed at the ends of the abutment *t*.

The arms *w* are adapted to receive the speakers or reproducers 4 which may be held therein by the set-screws 5, said speakers having different types of styluses so that either of the records referred to may be used in the machine when desired. These speakers or reproducers are preferably provided with so-called tail-weights 6 controlling their stylus arms 7. Each arm has an extension 8 carrying a longitudinally movable detent 9, which when pressed in rests on the auxiliary guide *p* and supports the carriage at the front, and which when drawn out allows the carriage to fall so that the extension bears directly against said guide in the working position of the carriage. I preferably inscribe on each of the arms *w* suitable mark-

ings such as "4-minute" and "2-minute" so that the operator can see at a glance that the proper stylus for the record at that time on the mandrel is in position. The speed-controlling lever *m* also has adjoining it markings of a similar import.

In use, it will be understood that the reproducer support is provided with reproducers having the two different kinds of styluses, as indicated. If a record of the four-minute kind is placed on the mandrel, the controlling lever *m* is moved to the four-minute position and member *v* is shifted to bring the arm marked "4-minute" or otherwise squarely in vertical disposition whereby the reproducer of that arm is in proper alinement with the record while the reproducer of the other arm is entirely out of position; at this time the shoulders 2 and 3 will be in contact. If a record of the two-minute kind is now placed on the mandrel, the controlling lever and reproducer supporting member *v* are simply shifted to their other limits of movement. The plane of movement of the supporting member *v* being at right angles to a line approximating a radius from the guide *h*, which is parallel to the mandrel shaft, the raising and lowering of the carriage on the guide as an axis can be effected without the styluses engaging the record and damaging it or themselves or disturbing their adjustment. Further, the peculiar bearing afforded between the arm and member *v* insures against any disturbance of the proper relative positions of these parts, effecting, as such change in their relation would, an undesirable alteration of the point of contact of the stylus with the record.

By arranging the arms *w* of the member *v* at substantially right angles to each other it is found that the tail-weights are perfectly free to act without the one which is for the time being idle interfering with the proper action of the other.

It will be understood that any other suitable form of device corresponding to the screw *z* may be employed in the place of such screw.

Having thus fully described my invention, what I claim and desire to secure by Letters Patent is:

1. In a carriage for a reproducer or reproducers in a phonograph machine, the combination of an arm, and a reproducer supporting member pivoted in said arm, said arm and the supporting member having an interlocking portion confining the supporting member against axial movement in the arm, substantially as described.

2. In a carriage for reproducers in a phonograph machine, the combination of an arm, and a reproducer supporting member having reproducer receiving portions off-set with relation to each other, said member

being pivoted in the arm, and the arm and the supporting member having an interlocking portion confining the supporting member against axial movement in the arm, substantially as described.

3. In a carriage for a reproducer or reproducers in a phonograph machine, the combination of an arm, and a reproducer supporting member pivoted in said arm, said arm and the supporting member having a tongue-and-groove connection confining the supporting member against axial movement in the arm, substantially as described.

4. In a carriage for a reproducer or reproducers in a phonograph machine, the combination of an arm having a bearing seat at its free end, and a reproducer supporting member pivoted in said arm in contact with the seat thereof, said arm and the supporting member having tongue-and-groove connection confining the supporting member against axial movement in the arm, substantially as described.

5. In a carriage for a reproducer or reproducers in a phonograph machine, the combination of an arm having a bearing seat at its free end, a reproducer supporting member arranged in pivotal contact with said seat, and a screw affording the pivot for said member and clamping the same against the seat, said arm and the supporting member having tongue-and-groove connection confining the supporting member against axial movement in the arm, substantially as described.

6. In a carriage for a reproducer or reproducers in a phonograph machine, the combination of an arm having a bearing at its free end, and a reproducer supporting member having a bearing portion and pivoted to the arm with its bearing portion in contact with the bearing of said arm, said bearing portion having a part of its periphery concentric with the pivot of said member and said bearing having an overhang overlying the concentric peripheral part of said bearing portion, substantially as described.

7. In a carriage for a reproducer or reproducers in a phonograph machine, the combination of an arm having a bearing formed with an overhang, and a reproducer supporting member having a bearing portion and pivoted to the arm with its bearing portion in contact with the bearing of said arm, said overhang and a part of the periphery of said bearing portion affording surfaces contacting with each other and concentric with the pivot of said member, substantially as described.

8. In a carriage for a reproducer or reproducers in a phonograph machine, the combination of an arm having a bearing at its free end, and a reproducer supporting member having a bearing portion and pivoted to the arm with its bearing portion in contact

with the bearing of said arm, said bearing having an overhang overlying the bearing portion of said member and forming a stop limiting the pivotal movement of said member, substantially as described.

9. In a carriage for reproducers in a phonograph machine, the combination of an arm, and a reproducer supporting member pivoted in said arm and having its reproducer-receiving portions disposed substantially at right angles to each other and being limited by the arm to move pivotally

through approximately 90 degrees, said arm and the supporting member having interlocking portions confining the supporting member against axial movement in the arm, substantially as described.

In testimony, that I claim the foregoing, I have hereunto set my hand this 5th day of January, 1909.

THOMAS J. BLANCH.

Witnesses:

JOHN W. STEWARD,
WM. D. BELL.