No. 749,857. PATENTED JAN. 19, 1904.

E. GILMAN

PHONOGRAPH.

APPLICATION FILED FEB. 4, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1

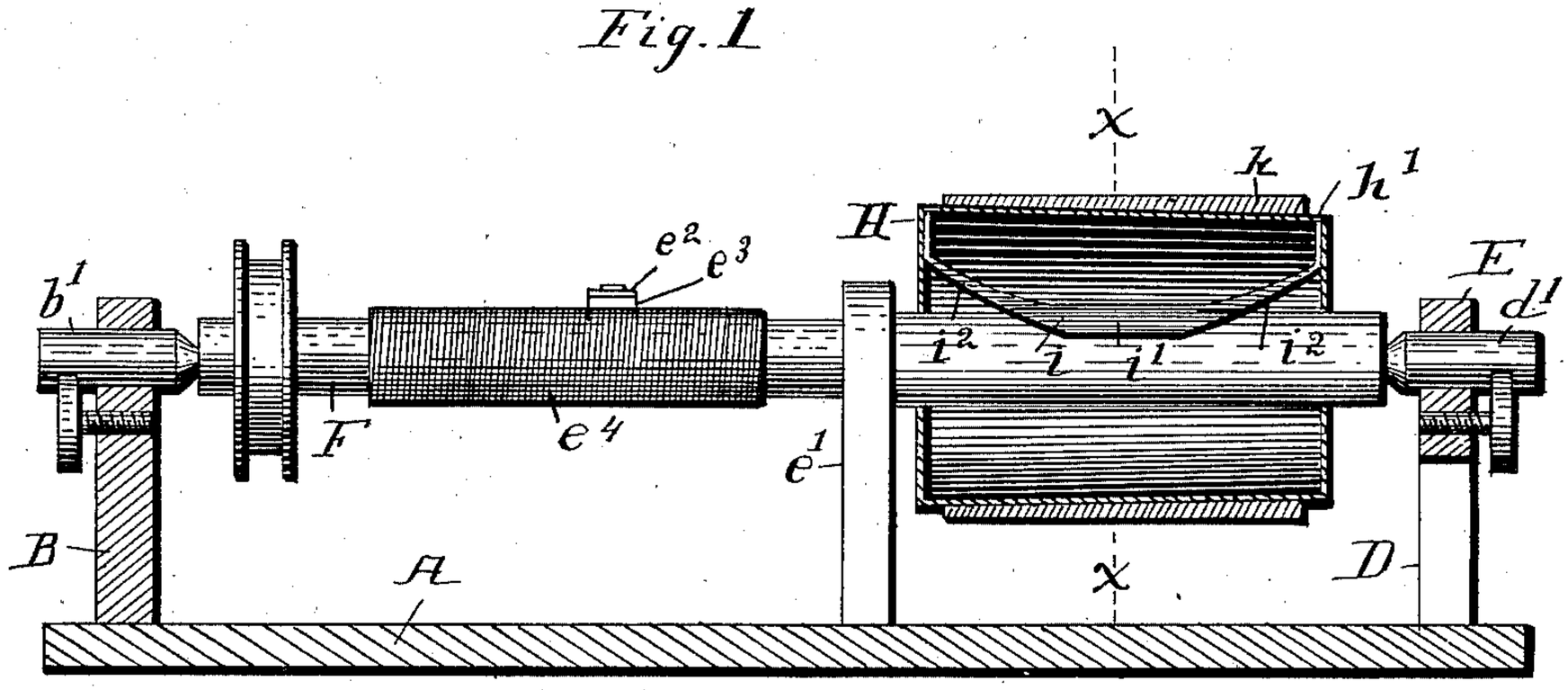


Fig. 2.

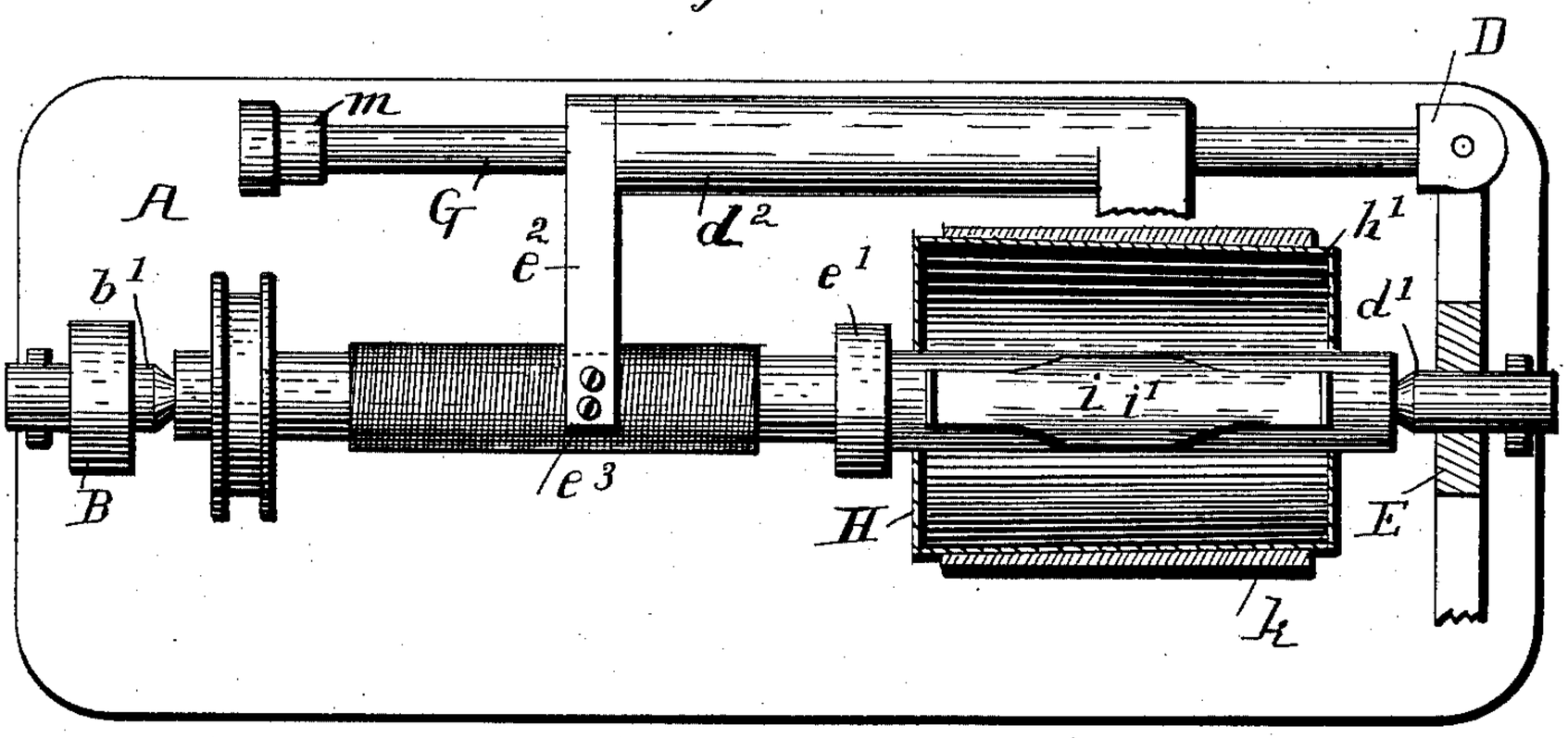
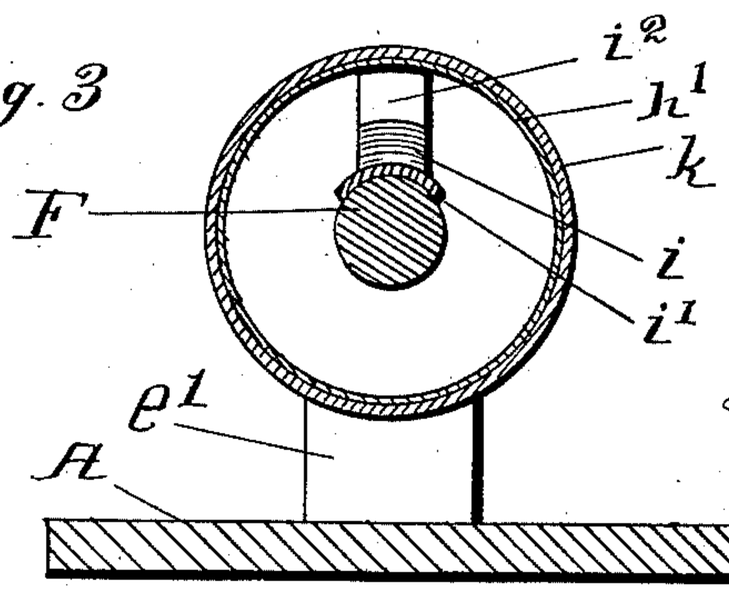


Fig. 3



Witnesses:

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Willis Barnes

Inventor.

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By George L. Barnes

Atty

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4

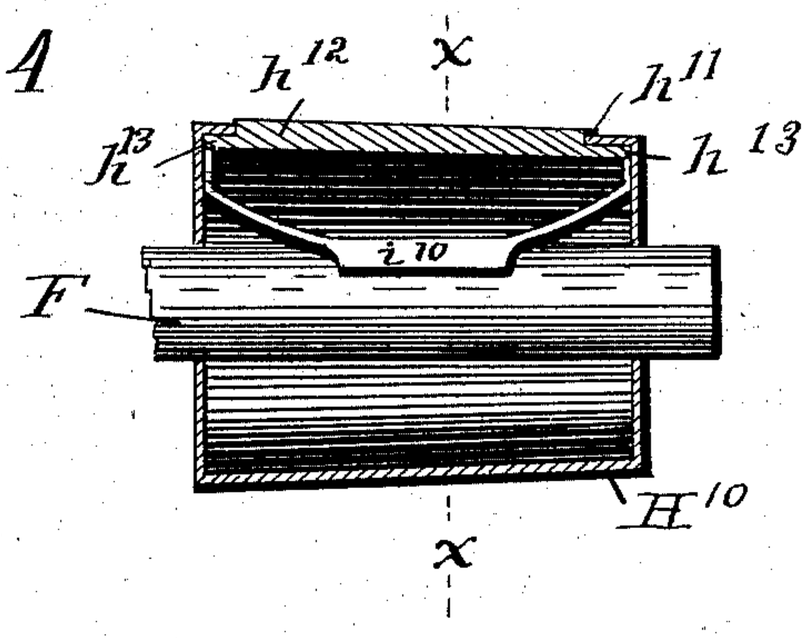


Fig. 5

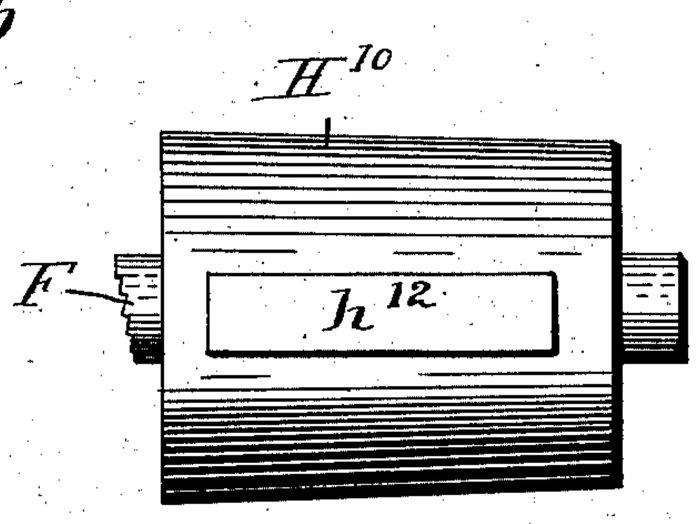
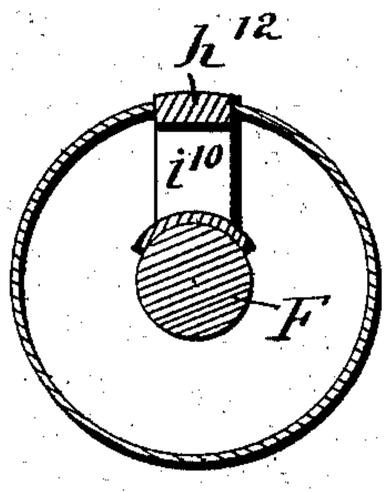


Fig. 6



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No. 749,857. Patented January 19, 1904.

UNITED STATES PATENT OFFICE.

EDWARD GILMAN, OF NEW HAVEN, CONNECTICUT.

PHONOGRAPH.

SPECIFICATION forming part of Letters Patent No. 749,857, dated January 19, 1904.

Application filed February 4, 1903. Serial No. 141,823. (No model.)

To all whom it may concern:

Be it known that I, EDWARD GILMAN, a citizen of the United States, and a resident of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Phonographs, of which the following is a full, clear, and exact specification.

My invention relates to an improvement in phonographs; and it has for its object to provide means for the axial adjustment of the record on its driving-shaft. In phonographs which are fitted with automatic return-carrier or repeating actions it is desirable that the cylinder or drum which carries the record should be capable of lengthwise adjustment on the arbor or shaft which revolves it for the purpose of accommodating or timing the period of phonographic action to the movement of the return-carrier, so as to avoid rotating the record beneath the speaker before the commencement of the piece or after the completion thereof and producing a disagreeable scratching noise or other discordant result.

The invention consists in the novel method of securing the record-cylinder upon the driving-shaft, and particularly in the novel spring-friction holder for clamping the cylinder to the shaft, while permitting free lengthwise movement of the same thereon and the parts of the mechanism, as hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional elevation of a phonograph provided with my improved method of securing the record-cylinder to the driving-shaft. Fig. 2 is a plan view, partly in section, of Fig. 1; and Fig. 3 is a cross-section on the line X X of Fig. 1. Figs. 4, 5, and 6 are substantially similar views of a modification.

Referring to the drawings, A designates the base-plate of the phonograph provided with the fixed standard B, having the center b' and the frame D, to which is hinged the gate E, having the center d', which centers, in connection with the intermediate bearing e', support the driving-shaft F.

G represents the guide-rod upon which the reproducer-frame d^2 travels and to which frame is attached the usual arm e^2, carrying the section of a nut e^3, adapted to engage and be driven by the screw-threaded portion e^4 of the driving-shaft. These elements are all old and well known and here require no further description, the improvement comprising my invention being as follows: The hollow drum or cylinder H instead of being rigidly secured on the driving-shaft F is loosely fitted thereon, and a curved spring i, extending the entire length of the interior of the cylinder, is interposed between the shaft and the cylinder-shell and adapted to exert spring-pressure and provide frictional engagement between them. The central part i' of the spring is curved to fit the shaft, and the ends i^2 are bent upward therefrom and impinge against the outer shell h' of the cylinder. The spring is of such width that it can easily be inserted through the hole in the cylinder-head, through which the shaft F passes, and in assembling the parts it is first slipped into the cylinder and the shaft afterward inserted to place. In operation the spring will hold the cylinder upon the shaft with sufficient friction to cause its rotation therewith, but will permit it to be readily moved lengthwise thereon, thereby enabling the record k upon the cylinder to be so adjusted with relation to the movement or travel of the repeating mechanism of the phonograph when the machine is provided with such that it will commence playing when the reproducer-frame commences to reverse or stop coincident with the return of the frame, as desired. Excellent results are obtained with this improvement by adjusting the cylinder so that the reproducer-frame will be carried back to the starting-point just at the end of a piece played and timing the commencement by placing a suitable washer m upon the guide-rod G to stop the reproducer-frame at the initial point of the piece.

The yield of the cylinder on the shaft as the record is placed upon it also prevents the record from being fractured by crowding it too hard upon the taper surface of the cylinder.

Figs. 4, 5, and 6 are views showing a modification in which the drum H^{10} has a longitudinal opening h^{11}, extending nearly throughout

its length, which receives a block h^{12}, fitted therein and provided with means for preventing its escape outwardly through the opening—as, for instance, the shoulders h^{13}, projecting under the shell at the ends of the opening. The spring i^{10} is arranged to press between the block h^{12} and shaft to force the block outwardly as well as to create friction upon the shaft. The block projects somewhat above the periphery of the shell when at its extreme outward travel and is adapted to yield inwardly as a record is slid upon the drum to adjust and accommodate itself to the base of the same. This makes an expanding mandrel of the drum and insures its holding the records securely, though they vary somewhat in the size of the bore.

I claim and desire to secure by Letters Patent—

In a phonograph the combination of the driving-shaft, the record-cylinder fitted freely thereon, and the frictional clamping-spring i interposed between the shaft and the cylinder-shell, and adapted to be inserted within the cylinder through the shaft bearing or aperture in the head thereof, substantially in the manner and for the purpose specified.

Signed by me at New Haven, Connecticut, this 3d day of January, 1903.

EDWARD GILMAN.

Witnesses:
JENNIE HOLMES,
GEORGE L. BARNES.