No. 694,705. Patented Mar. 4, 1902.

J. WALL.

AUTOMATIC RELEASING MECHANISM FOR PHONOGRAPHS, &c.

(Application filed Nov. 9, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

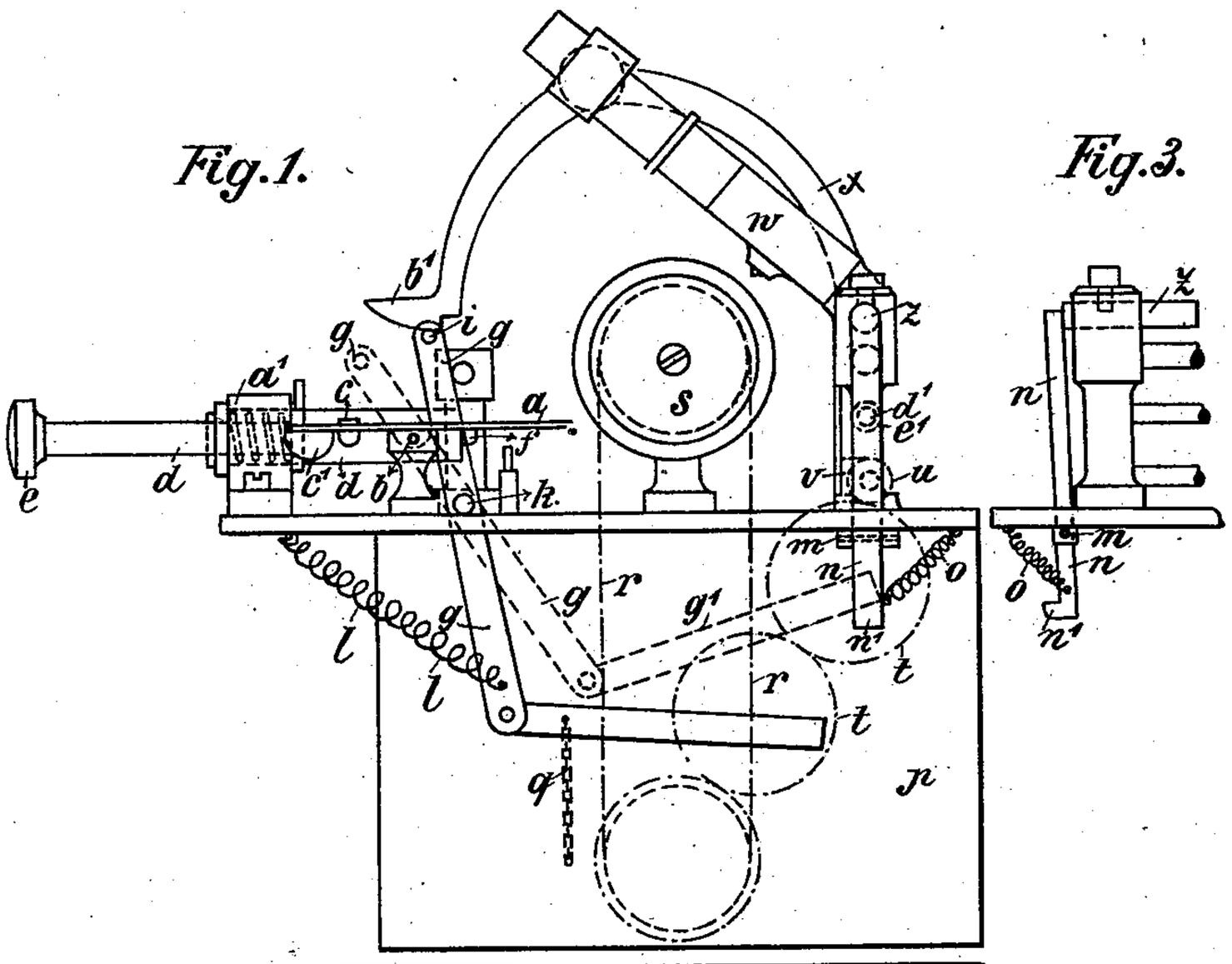

Fig. 3.

Fig. 2.

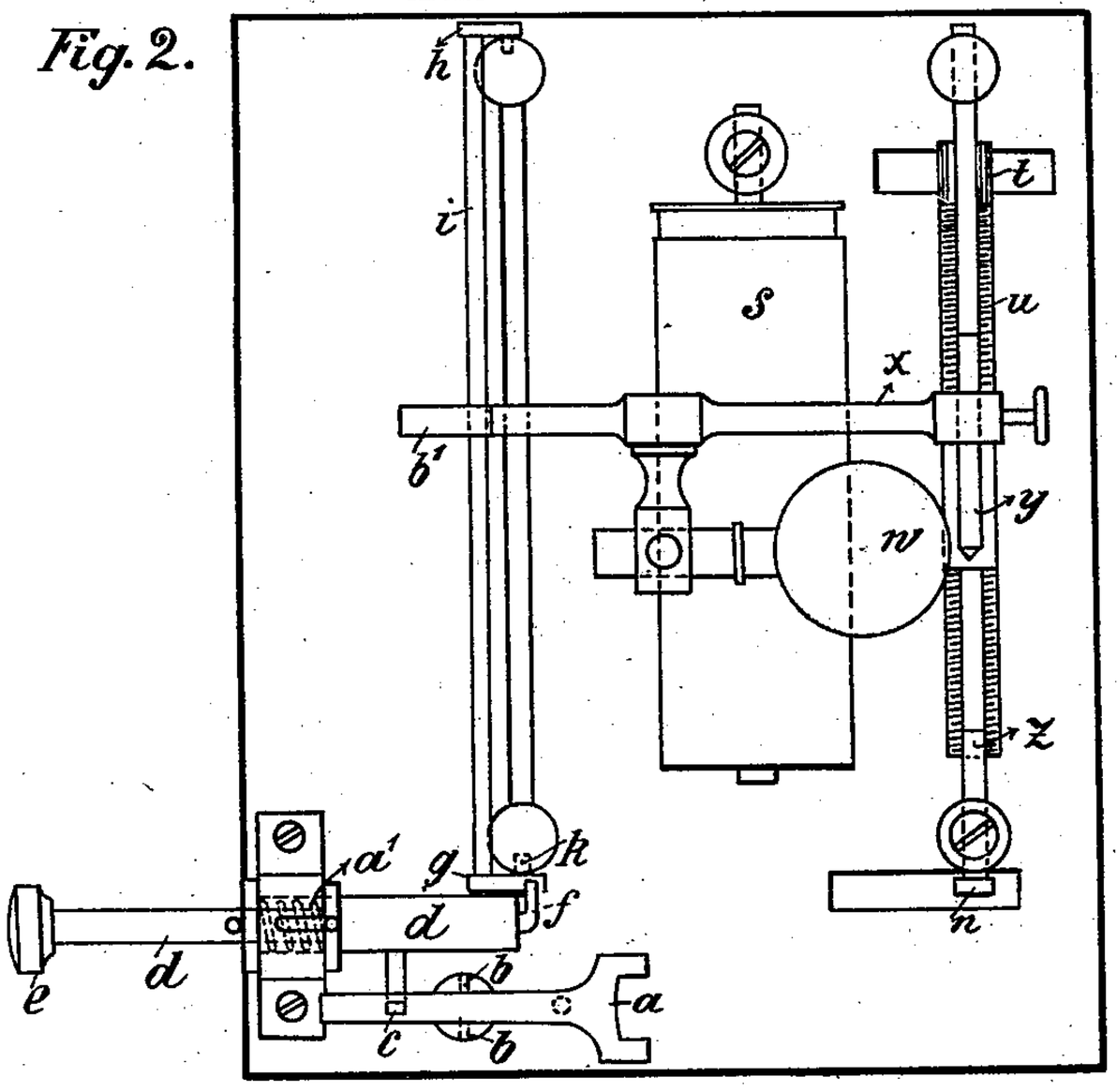

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Fig. 4.

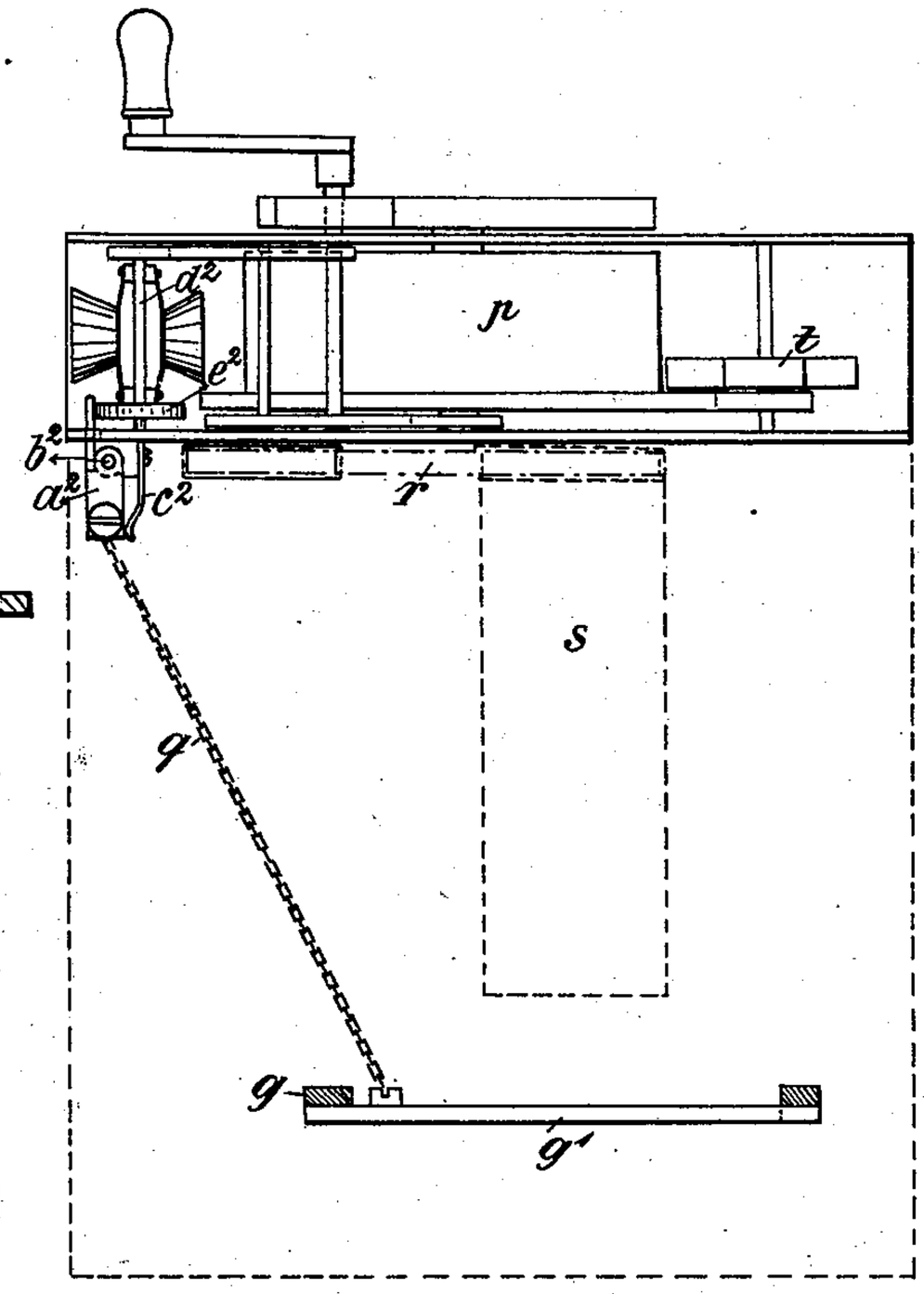
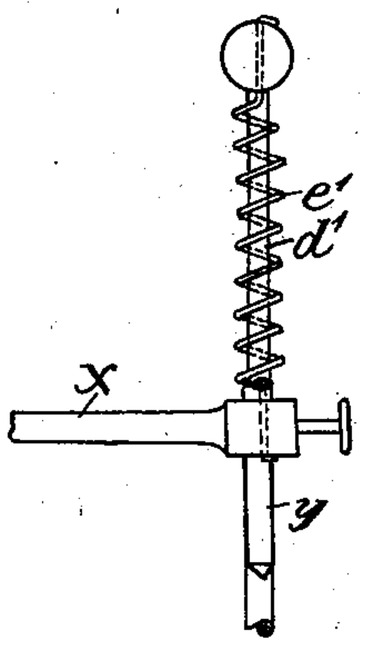


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

JULIUS WALL, OF BERLIN, GERMANY.

AUTOMATIC RELEASING MECHANISM FOR PHONOGRAPHS, &c.

SPECIFICATION forming part of Letters Patent No. 694,705, dated March 4, 1902.

Application filed November 9, 1900. Serial No. 35,946. (No model.)

To all whom it may concern:

Be it known that I, JULIUS WALL, a citizen of the United States of America, residing in Berlin, in the Empire of Germany, (whose post-office address is 46–47 Landsbergerstrasse, Berlin,) have invented certain new and useful Improvements in Automatic Releasing Mechanisms for Phonographs and the Like, of which the following is a specification.

This invention has relation to an automatic releasing mechanism for phonographs; and in such connection it relates to the construction and arrangement of such a mechanism.

The principal object of my invention is to provide in a phonograph a draw-bar, a lever adapted to be operated when said draw-bar is pulled in one direction, an arm controlled by said lever, a sound box or carrier adapted to descend upon the operation of the lever, a clockwork mechanism adapted to be set in operation upon one movement of the arm, a driving-worm and drum controlled by the clockwork, means for coupling the sound box or carrier to the driving-worm when the carrier descends, a record secured to the drum and adapted to be engaged by the reproducing mechanism of the sound-box, a hook adapted to retain the lever and its arm in operative position, a stop traveling with the sound-box carrier and adapted to release the hook at the completion of the movement longitudinally of said carrier, and a spring adapted to return the lever and arm to normal inoperative position when said hook is released and to elevate the sound-box carrier away from the drum and record.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a side elevational view of a phonographic apparatus embodying main features of my invention. Fig. 2 is a top or plan view of Fig. 1. Fig 3 is a detail view of the locking mechanism for securing the starting-lever mechanism in elevated position. Fig. 4 is a top or plan view illustrating the lever mechanism in conjunction with the clockwork. Fig. 5 is a sectional view illustrating the driving shaft or drum, and Fig. 6 is a detail view of the connection between the spring and the sound-box slide or carrier.

Referring to the drawings, the apparatus consists of a lever a, pivotally secured, as at b, to the framework of the machine. The lever a has at one end an opening adapted to receive a bolt or pin c and carries at that end a counterweight c'. A draw-bar d is provided with a button e and hook f and is normally under tension of a spring a'. The lever g is pivotally secured, as at k, to the framework of the phonograph and carries an arm g'. The lever g and a lever h both carry a rod i. The lever g is under the influence or tension of a spring l. A lever n, under tension of the spring o, is pivoted to the framework, as at m, and carries the hook n'. The clockwork p is located in a housing below the phonograph proper and is started by the cord r and wheels t. The cord r actuates the drum s and the wheels t actuate the worm u. The worm u is engaged by a nut v, secured to the sound-box carrier x. The stop y, normally pressing against a stop z, is also carried by the membrane or sound-box carrier $\dot{x}$, which carrier x is under the influence of a spring e'. The lever g, by means of a chain q, is connected with a brake-lever a^2, which controls the clockwork p, and when elevated starts said clockwork. The clockwork p stops upon the descent of the lever g.

The operation of the mechanism is as follows: A coin sliding through a passage impinges upon a lever a and causes the latter to tilt upon an axis or fulcrum b and to thereby free or clear a pin c. This pin c is mounted upon a draw-bar d, which can be drawn outward by means of the button e when its pin c is clear of the lever a. The draw-bar d is provided at its inner end with a hook f, engaging a lever-arm g, pivoted on the pin k. The pin k, in conjunction with a lever h, carries a cross-bar i. A spring l tends normally to retract the lower end of the lever g and to depress the arm g', connected thereto. The arm g' in moving upward against the tension of the spring l presses back a lever n, fulcrumed or pivoted, as at m, against the tension of a spring o. A hook n' on the end of the lever n serves to lock the arm g' in its elevated position. The arm g'

is connected by a chain q with a clockwork or similar motor p. A spring c^2 (see Fig. 4) presses the brake-lever a^2 against a brake-disk e^2, located on the controlling or governor shaft d^2 for the motor p when the arm g' is in its lowermost or inoperative position, and hence in the normal position of the lever a and arm g' the motor p is inoperative. This chain q is connected with the brake-lever a^2, which is under tension of the spring c^2 and is pivotally secured, as at b^2, (see Fig. 4,) to the framework of the machine. When, however, the lever g is shifted by the draw-bar d to elevate the arm g' into locked connection with the lever n and its hook n', as illustrated in dotted lines in Fig. 1, the brake a^2 is released by the chain q from the disk e^2 and the motor p is permitted to operate. The clockwork-motor p operates the phonograph cylinder or drum s by means of a belt or band r, and the motor p also operates a screw-shaft u by means of gears t. The screw or driving shaft u is connected by a nut v with the slide or carrier x, which carries the membrane or sound-box w. (See Figs. 2 and 5.) This carrier x has been lowered by the movement of the lever g outward, since the upper end of said lever g slides from under the beveled projection b' on the free end of said carrier x. When the carrier x is lowered, the sound box or receiver w is brought into operative position, with the record placed upon the drum or cylinder s. When the sound-box w has traversed the record, a pin y on the carrier x impinges upon a catch z, which causes the lever n to retract its hook n' against the tension of the spring o away from the arm g'. This arm g' when released is depressed by the spring l, and its lever g is forced inward to elevate the projection b' and carrier x away from the drum s. The draw-bar d is normally forced inward when the lever g returns to its normal position by means of a spring a'. At the same time the lever a, by means of a counterweight c', falls to its normal position to bring the pin c in locking engagement with the draw-bar d and prevent its withdrawal until another coin is placed in the apparatus. When the carrier x for the sound-box w descends, the nut v engages firmly the driving screw-shaft u, and the carrier is moved forward by said shaft. When, however, the carrier x is elevated by the lever-arm g, the nut v is released from the shaft u, and a spiral spring e', mounted upon the rod d', returns the carrier x to its normal position. The spring e' is fastened at one end to the framework of the apparatus and at the other end to the carrier and is extended by the movement of the carrier along the shaft u. When the arm g' and lever g assume a normal position, the chain q is slackened to permit the brake a^2 to impinge upon the disk e^2 and to stop the motor p.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a phonograph, a draw-bar, a lever adapted to be operated when said draw-bar is pulled in one direction, an arm adapted to be elevated by said lever, a sound box or carrier adapted to descend when said lever is operated, a clockwork mechanism adapted to be set in operation when the arm is elevated, a driving-worm and a drum adapted to be set in motion by the clockwork, a coupling means adapted to connect the sound-box carrier to said driving-worm when the carrier descends, a record secured to the drum and adapted to be engaged by the sound-reproducing mechanism of the sound-box, a hook adapted to retain the lever and its arm in operative position, a stop traveling with the sound-box carrier and adapted to shift said hook at the completion of the longitudinal movement of the carrier, and a spring adapted to return the lever and its arm to normal inoperative position and to thereby elevate the sound-box carrier away from the drum and record.

In witness whereof I have hereunto signed my name, this 6th day of October, 1900, in the presence of two subscribing witnesses.

JULIUS WALL.

Witnesses:
SALLY SCHOENBERG,
HENRY HASPER.