No. 828,598. PATENTED AUG. 14, 1906.

E. L. CRABB.

REPEATING ATTACHMENT FOR PHONOGRAPHS.

APPLICATION FILED JUNE 28, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

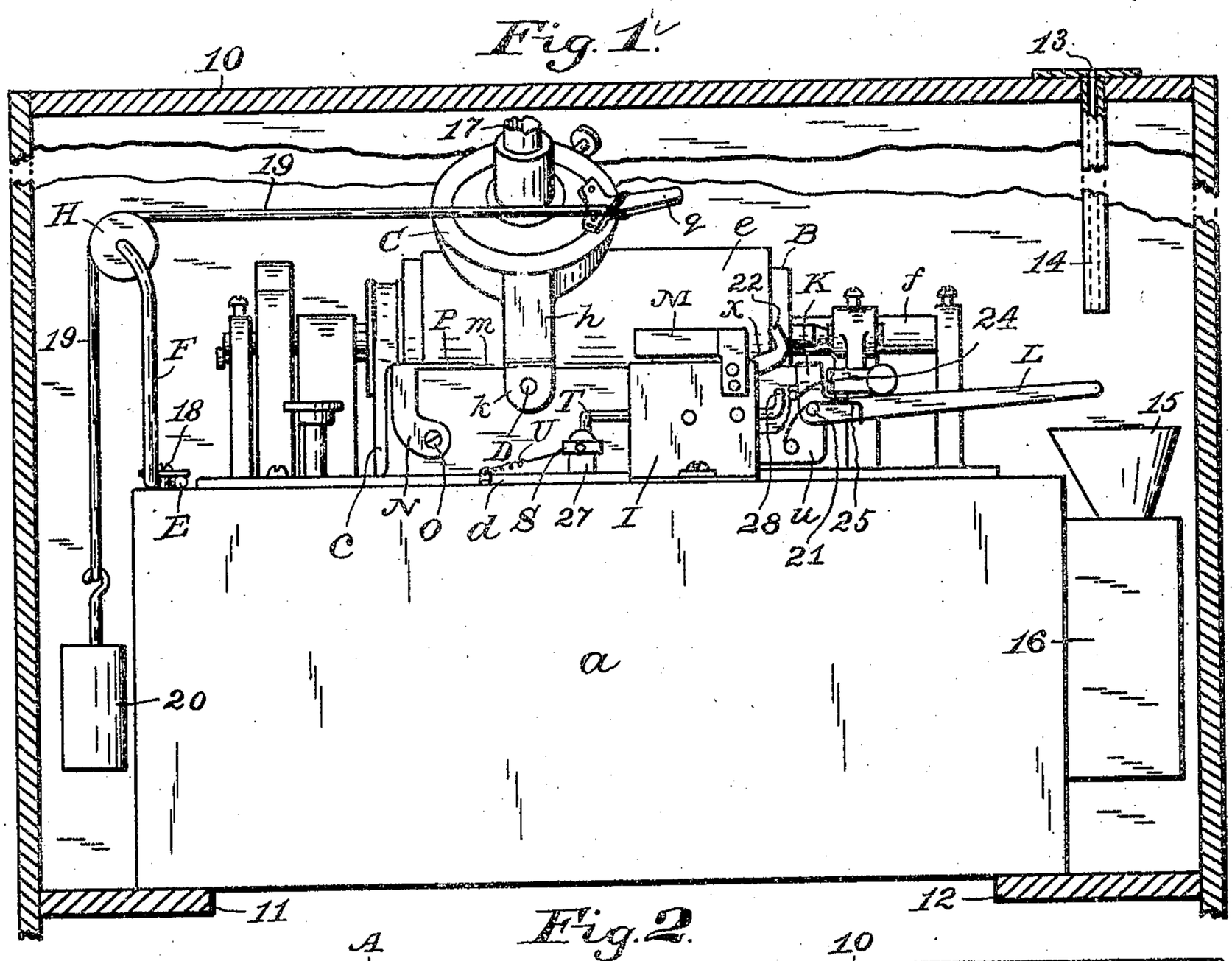
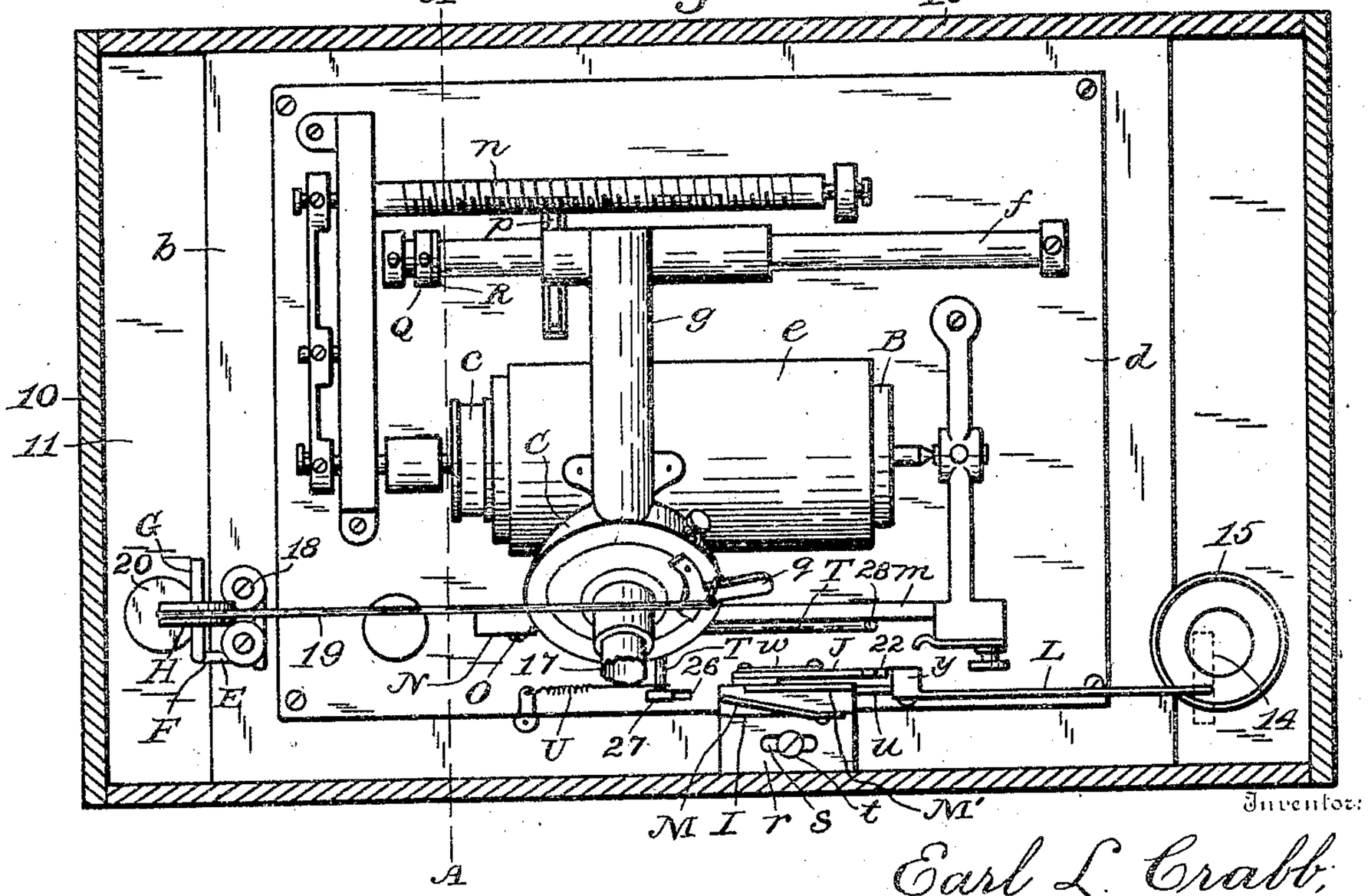


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

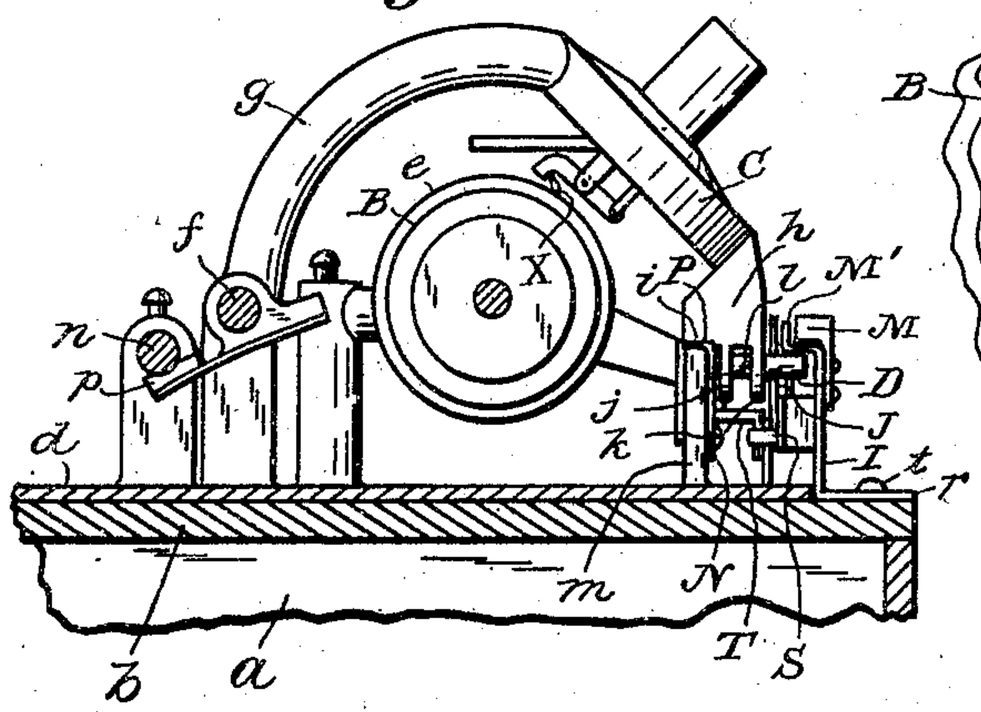


Fig. 4.

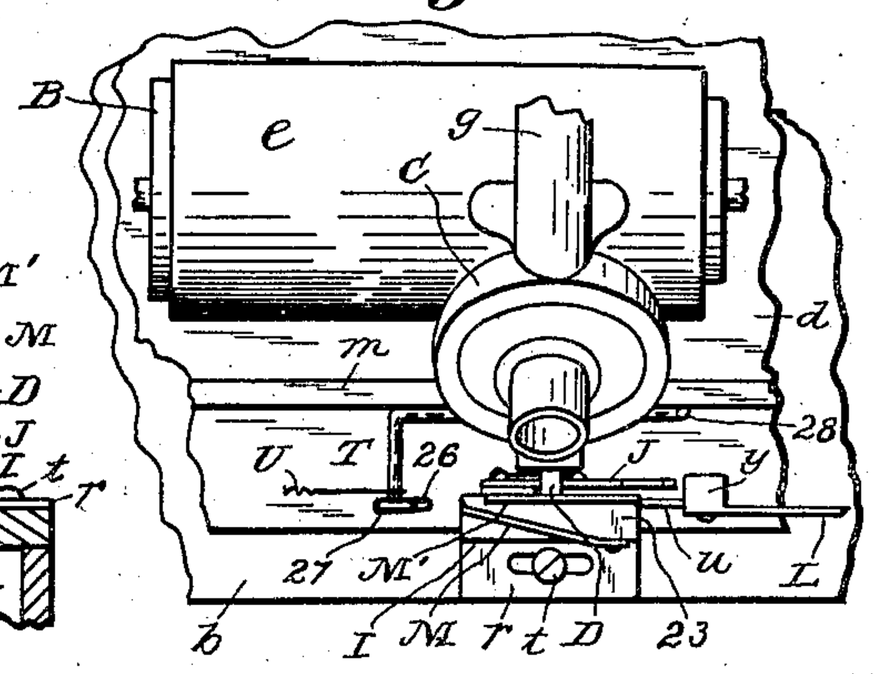
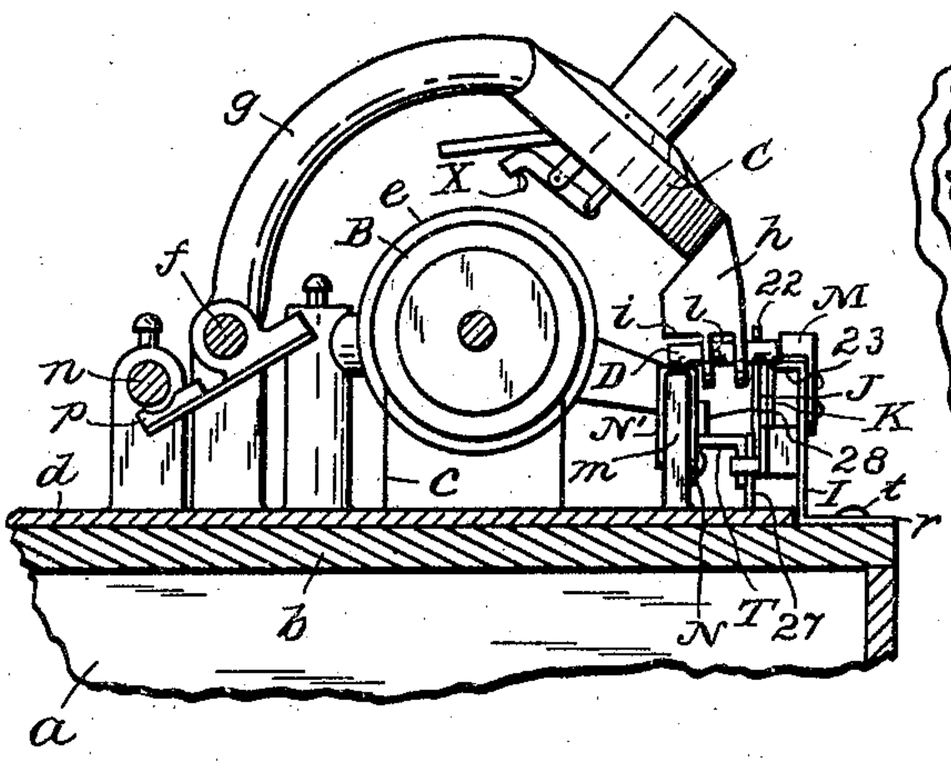


Fig. 5.

Fig. 6.



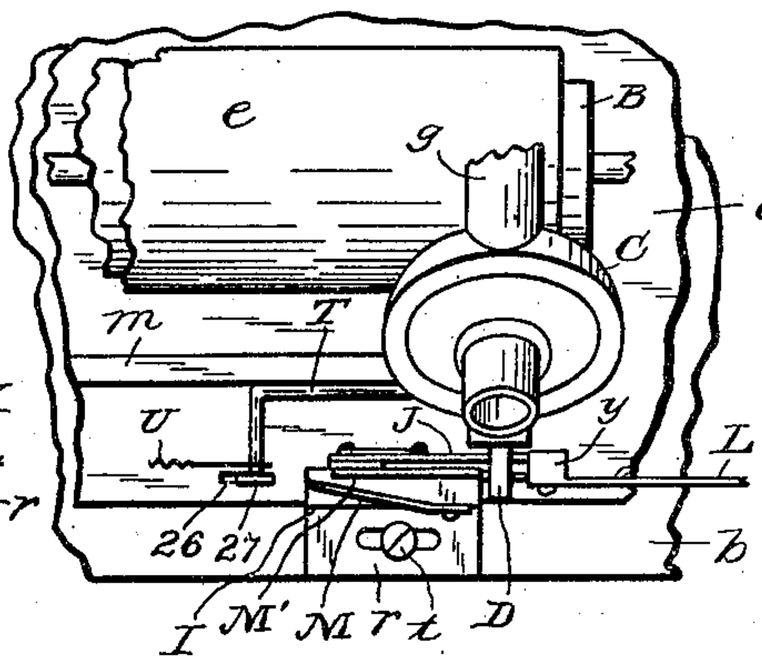


Fig. 7.

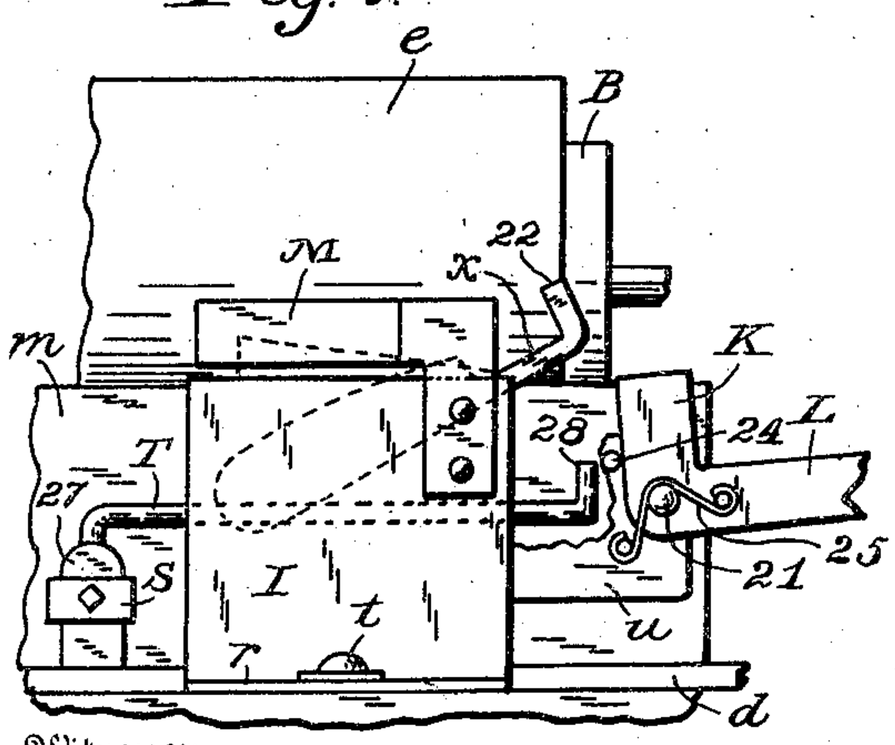


Fig. 8.

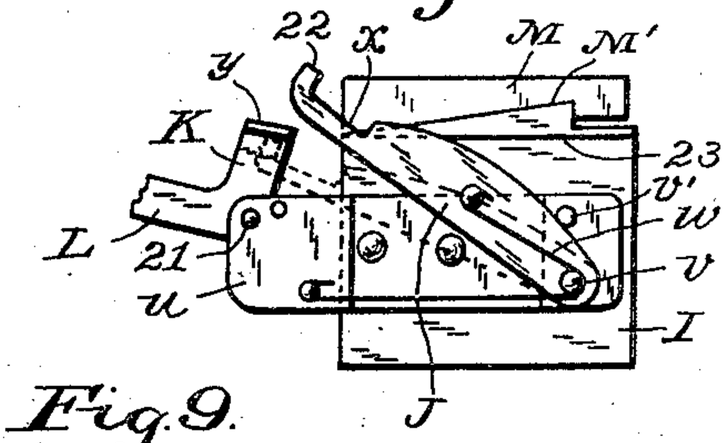
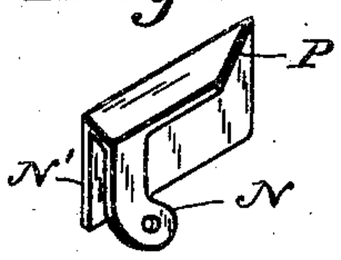


Fig. 9.



Witnesses:

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UNITED STATES PATENT OFFICE.

EARL L. CRABB, OF INDIANAPOLIS, INDIANA.

REPEATING ATTACHMENT FOR PHONOGRAPHS.

No. 828,598. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed June 28, 1905. Serial No. 267,338.

To all whom it may concern:

Be it known that I, EARL L. CRABB, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented new and useful Improvements in Repeating Attachments for Coin-Controlled Phonographs; and I do declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to the class of phonographs that are inclosed in cabinets and coin-controlled; and the invention has particular reference to attachments that are adapted to be connected either permanently or detachably to well-known types of phonographs that are not originally constructed as repeating machines and not coin-controlled, the attachments when applied to such machines enabling them to repeat the records that may be on their mandrels and rendering the machines capable of being coin-controlled.

Objects of the invention are to provide improved and simple attachments for phonographs and similar instruments and adapted to be constructed at relatively small expense for converting simple phonographs into coin-controlled repeating instruments, which attachments may be adapted to be readily removed from the instruments.

The invention consists in a phonograph attachment comprising brake-operating mechanism for stopping the instrument at the end of the record and improved mechanism adapted to be put in motion by coins for restarting the instrument, so as to repeat the record, the attachment being designed to cooperate with phonographs that have reproducer-arms movable on guides and carrying movable devices that may be interposed between the guides and the reproducer-arms for holding the reproducers away from the records.

The invention consists, further, in the novel parts and in the novel combinations and arrangement of parts, as hereinafter particularly described, and pointed out in the appended claims.

Referring to the drawings, Figure 1 is a front elevation of a phonograph having the improvement applied thereto and arranged in a cabinet, shown in section, of which parts are broken away; Fig. 2, a top plan of the machine and the improvement, the cabinet being shown in section on a plane above the phonograph; Fig. 3, a transverse sectional view on the line A A in Fig. 2, showing the parts of the instrument in proper position to operate; Fig. 4, a fragmentary top plan view showing the reproducer near the end of its travel; Fig. 5, a transverse sectional view similar to Fig. 3 except that the reproducer is elevated, as when returning to repeat. Fig. 6, a fragmentary top plan view showing the reproducer at the end of its travel, as when locked at rest ready to be released to return; Fig. 7, a fragmentary enlarged detail view showing parts seen in Fig. 1; Fig. 8, an elevation of the devices that coöperate to release and elevate the reproducer, so that it may return for repeating; and Fig. 9, a perspective view of the part that causes the reproducer to be replaced into contact with the record for repeating at the beginning of its travel.

Similar reference characters in the different figures of the drawings designate like elements or features.

The phonograph as heretofore constructed comprises among its essential elements a case *a* for the motor mechanism and having a cover *b* for supporting the upper works of the instrument. In the present invention these need not be elaborate in design, since the case is inclosed in a suitable cabinet 10, being supported on brackets 11 and 12 thereof.

Other features of the phonograph are a driving-belt *c*, driven by the motor and driving a mandrel B, mounted on a base *d*, that rests on the cover *b* and directly supports the upper works, a record *e*, a guide *f*, a reproducer-arm *g*, mounted on the guide and having an integral reproducer-head C, in which a reproducer is mounted, the arm *g* also having a controller comprising an integral head *h*, provided with a shoulder *i* and lips *j* and *k* forward of the shoulder, the lips supporting a guide-pin D, movable longitudinally, that has a stop-pin *l* arranged between the lips, a guide-bar *m* for guiding the reproducer, a feed-screw *n*, a nut *p*, carried by the base of the arm *g*, and a reproducer-lever *q*.

The cabinet 10 may be made in various designs and normally closed, and in the top thereof is a coin-slot 13, beneath which a coin-chute 14 is supported that leads to a suitable point above a hopper 15, emptying into a suitable bin 16, with which the cabinet is provided to receive the coins. The repro-

ducer will be supplied, as usual, with a tube 17, extending through the top of the cabinet with earpieces, as will be understood.

For returning the reproducer to the starting-point apparatus is employed comprising a base E and a pillar F, having an axle G, all formed of a bent wire and having the base secured to the cover *b* by screws 18, there being a guide-sheave H on the axle, and a cord or cable 19 is connected to the lever *q* and runs over the sheave, a weight 20 being attached to the end of the cord.

A particularly novel part of the invention comprises a stand I, having a base *r*, in which is a slot *s* to receive a securing-screw *t*, which holds the base adjustably upon the cover *b*, the stand being near the front of the guide-bar *m* near the terminal end thereof and having a projection *u* and supporting a vertically-swinging arm J, that is mounted at one end thereof on a pivot *v*, which is attached to the stand, the arm being normally held upwardly against a suitable stop *v'* by a spring *w*, that is mounted on the stand. The arm J has a recess *x* in its top near the free end thereof. A latch-arm K is mounted on a pivot 21, that is attached to the projection *u* of the stand I and has a catch-plate *y*, adapted to be engaged by the free end of the arm J to push the latch-arm aside when the arm J descends the catch-plate then engaging the top 22 of the end of the arm J to latch it in its depressed position. The latch-arm K is provided with a lever L, that extends under the terminal or discharge end of the coin-chute 14, and this lever may be of any required length and shape for the purpose designed. The stand I is provided with a lateral guide 23, against which the pin D may be pressed by the arm J, a guide M being attached to the stand and the guide 23 supporting a guide M'. The lever L is normally pressed upwardly and the latch-arm pressed against a stop 24 by a spring 25, the stop and the spring being mounted on the projection *u* of the stand I.

A guide-base comprising connected opposing parts N and N' is clamped by a screw *o* to the guide-bar *m* and supports an oblique-angled guide P upon the guide-bar to be engaged by the inner end of the pin D for forcing the pin from the guide-bar on the return of the reproducer.

A collar Q, having a cushion R, is attached to the guide *f* for stopping the arm *g*.

Phonographs of the character shown each have a slot 26 in the base *d*, and a brake-lever that is connected to brake mechanism of the motor extends through the slot for manual manipulation of the brake. In order to operate the brake automatically, as is required in coin-controlled apparatus, a clamp S is attached to the lever 27 and a reach-rod T is attached to the clamp and extends along the front of the guide-bar *m* toward the terminal thereof and has an upturned end 28, adapted to be engaged by the head *h* after the reproducer has traversed the record. The brake-lever is held in its inoperative position by a suitable spring U.

In practical use, having first prepared the phonograph for operation, the motor thereof may be started, and when the pin D moves upon the arm J the pin will be prevented from rising by engaging the under side of the guide 23, and thereby the arm J will be compelled to move downwardly to permit the pin to pass onward to the end of its traveling distance, and as the arm J descends its end 22 will push back the arm K and pass under and be latched by the plate *y*, the pin D moving a short distance in the recess *x* until the head *h* engages the end 28, resulting in a movement of the lever 27 and a gradual stopping of the whole phonograph machinery, the nut *p* remaining in contact with the feed-screw *n* and preventing release of the brake. A coin may be inserted in the slot 13 and allowed to descend the chute 14, from which it must fall upon the lever L and thence into the hopper 15. The impact of the coin on the lever will cause the catch-plate *y* to be retracted, so as to allow the arm J to rise, engaging the pin D and lifting the head *h*, so as to remove the shoulder *i* thereof from the guide-bar *m*, the nut *p* being simultaneously disengaged from the feed-screw *n*. At the same time the head *h* will release the reach-rod T and the spring U will retract the brake-lever 27, so that the brake will release the motor, permitting the restarting of the motor and the entire machinery. The arm J will elevate the pin D, so that the latter may ride temporarily on the guide M' while the reproducer begins to return, and the guide M will force the pin D onto the guide-bar *m*, the reproducer being returned to its starting-point by means of the weight 20 and its connections or other equivalent device that may be provided. When the reproducer arrives at its starting-point, the pin D will engage the guide P, and thereby be forced forwardly from the guide-bar *m*, and thus permit the head *h* to descend onto the guide-bar and the reproducer to descend until the contact-piece X engages the record, when the record will be repeated and the operations cease at the end thereof, as above described, to be again begun only by the use of a coin, as before.

Having thus described the invention, what is claimed as new is—

1. In coin-controlled apparatus for phonographs, a pivoted spring-pressed depressible lifting-arm provided with a latch mounted in the path of the arm and retractable thereby, the latch having an operating-lever and spring-pressed into engagement with and holding the depressed lifting-arm, a phonograph-record, a traveling reproducer-arm, a motor for the record and the reproducer-arm,

a brake for the motor, a device connected movably to the reproducer-arm and movable thereby into engagement with and depressing the lifting-arm into latching engagement with the latch, and a reach-rod connected with the brake and having an upturned end in the path of the reproducer-arm and engageable thereby after the latching of the lifting-arm occurs.

2. In coin-controlled apparatus for phonographs, the combination with a record, a traveling reproducer-arm, a movable guide-pin mopnted on the reproducer-arm, and a motor for the record and the reproducer-arm, of a motor-brake provided with a reach-rod having an end in the path of the reproducer-arm and engageable thereby, a lifting-arm depressible by the guide-pin, a latch movable into engagement with the depressed lifting-arm, and an operating-lever attached to the latch operating to move the latch out of engagement with the lifting-arm, the lifting-arm when released engaging the guide-pin and thereby lifting the reproducer-arm out of engagement with the reach-rod.

3. In coin-controlled apparatus for phonographs, the combination of a support, a guide on the support, a lifting-arm pivoted on the support and normally spring-pressed beyond the plane of the guide, and a latch pivoted on the support adjacent to the arm for preventing the arm from moving beyond the plane of the guide.

4. In coin-controlled apparatus for phonographs, the combination with a portable stand provided with a supporting-base and having a guide approximately parallel to the bottom of the base, a guide on the stand inclined to and above the plane of the other guide, and a depressible lifting-arm pivoted on the stand and normally spring-pressed beyond the plane of the first-mentioned guide, of a latch pivoted on the stand and spring-pressed into the path of the lifting-arm and retractable thereby, the latch being capable of engaging the lifting-arm and preventing its movement beyond the plane of the guide and having an operating-lever for moving the latch to release the arm.

In testimony whereof I affix my signature in presence of two witnesses.

EARL L. CRABB.

Witnesses:
WM. C. THOMPSON,
E. T. SILVIUS.