

(No Model.)

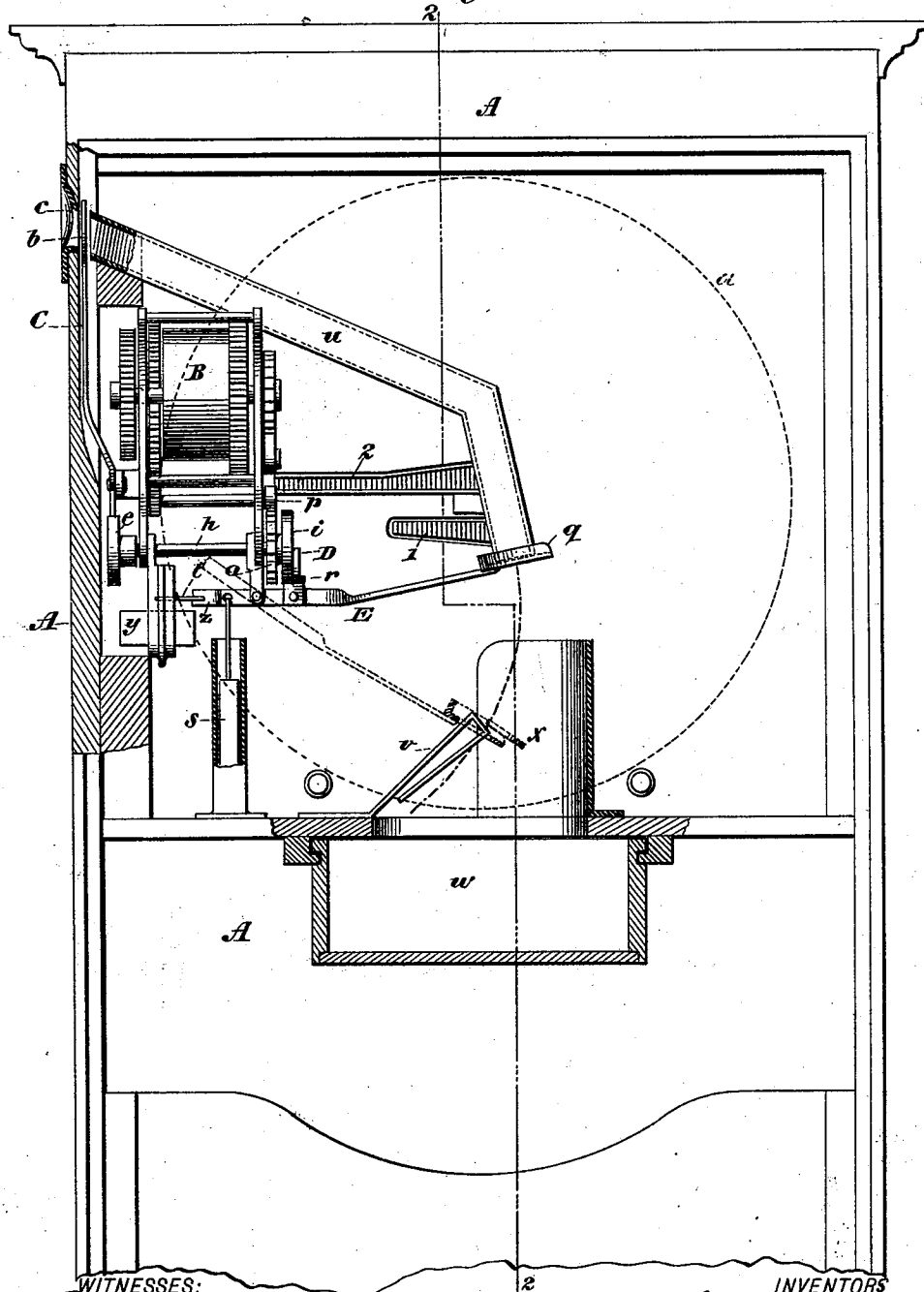
3 Sheets—Sheet 1.

G. A. BRACHHAUSEN & P. RIESSNER.
COIN CONTROLLED MECHANISM FOR MUSIC BOXES.

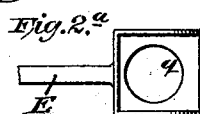
No. 509,358.

Patented Nov. 28, 1893.

Fig. 1.



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(No Model.)

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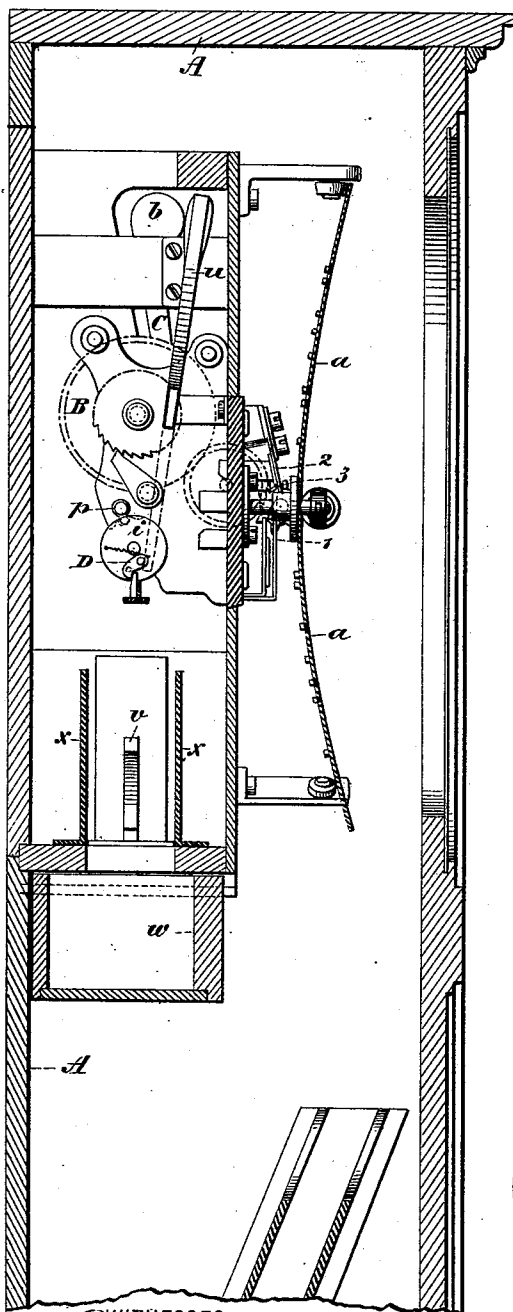
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Fig. 2.



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Fig. 3.

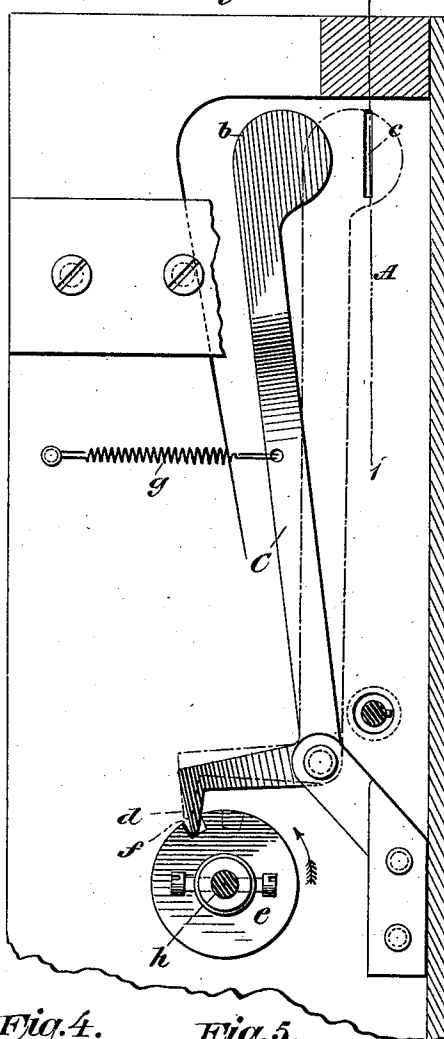


Fig. 4.

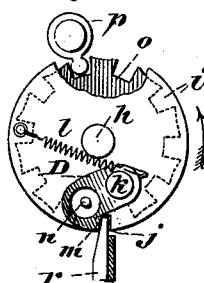
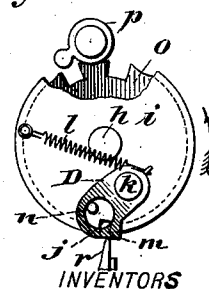


Fig. 5.



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(No Model.)

3 Sheets—Sheet 3.

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Fig. 6.

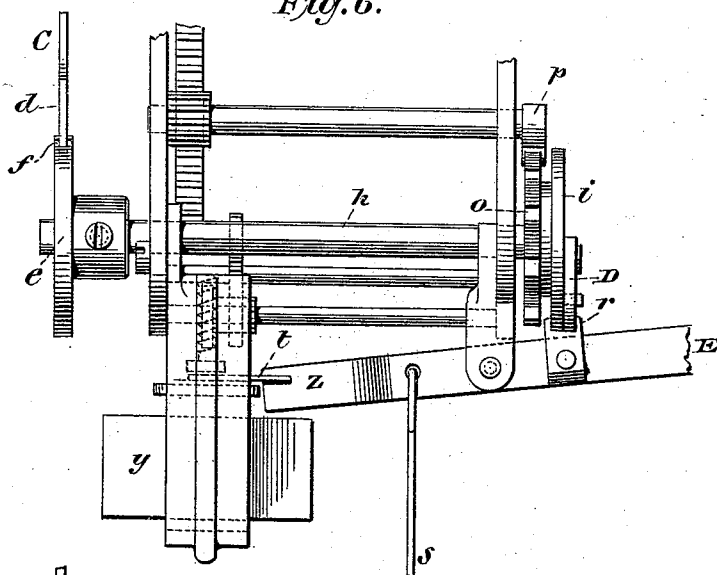
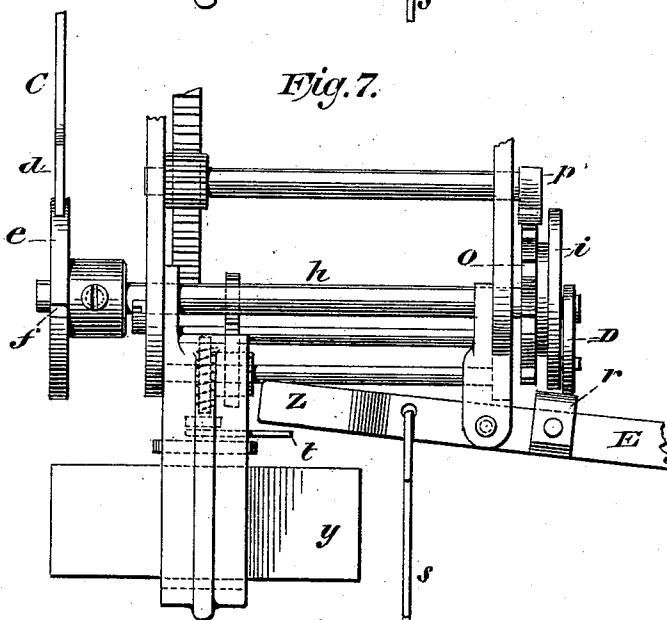


Fig. 7.



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UNITED STATES PATENT OFFICE.

GUSTAV. A. BRACHHAUSEN, OF HOBOKEN, NEW JERSEY, AND PAUL RIESSNER,
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COIN-CONTROLLED MECHANISM FOR MUSIC-BOXES.

SPECIFICATION forming part of Letters Patent No. 509,358, dated November 28, 1893.

Application filed January 18, 1893, Serial No. 458,794. (No model.)

To all whom it may concern:

Be it known that we, GUSTAV. ADOLF BRACHHAUSEN, a resident of Hoboken, Hudson county, State of New Jersey, and PAUL RIESSNER, a resident of Eutritzsch, near Leipsic, Germany, have invented a new and useful Improvement in Coin-Controlled Mechanism for Music-Boxes and the Like, of which the following is a full, clear, and exact description.

In the accompanying drawings, Figure 1 is a back view, partly in section on line 1—1, Fig. 3, of a music-box embodying our improved stop and start mechanism. Fig. 2 is a vertical section on the line 2—2 of Fig. 1. Fig. 2^a is an enlarged top view of the coin-catching pan or tray. Fig. 3 is an enlarged inner face view of the slot-closing mechanism. Figs. 4, 5, 6, and 7 are enlarged detail views of portions of our improved mechanism showing parts in different positions therein.

Our invention relates to a start and stop mechanism more particularly adapted for use in music-boxes, in which the playing is coin-controlled, but is also adapted for use in any character of machines wherein stop and start mechanisms are required.

Our invention also relates to an automatic slot-closing mechanism to prevent the insertion of a coin in the slot while the music-box is playing, and to other details.

Our invention consists in the novel arrangement and combination of parts hereinafter described and specifically pointed out in the claims.

In the drawings, wherein like characters indicate corresponding parts in all the figures, A represents the framing of a suitable music-box or machine to which our invention is shown applied.

B represents a cylinder which may contain a coiled spring or be operated by any other source of power, which cylinder communicates by a suitable train of gearing (see dotted lines Fig. 2) with a sprocket wheel 3 or other well-known means for turning a music disk or cylinder *a*, which by its projecting teeth operates suitable series of musical tongues 1, 2.

C represents a lever whose upper portion *b* is adapted to cover a slot *c*, through which the coin is to be inserted. The lower part of this lever C carries a toe *d* which is held in

contact by a coiled spring *g* with the periphery of a disk *e*. The disk *e* is mounted upon a shaft *h* and is provided with a notch *f* into which the toe *d* of the lever C is adapted to enter when the coin-slot *c* is open, for purposes which will be hereinafter described. The shaft *h* also carries a disk *i* in which is a notch *j* (Fig. 4).

D is a latch which is pivoted to the disk *i* as shown at *k* and can be held over the notch *j* by a coiled spring *l*, or other means as in Fig. 5. A pin *n*, projecting from disk *i* through a hole in latch D, serves to limit the movement of the latch D, which when out of its normal position, shown in Fig. 5, has a shoulder *m* extending beyond the periphery of the disk *i*, all as shown in Fig. 5. Upon the shaft *h* is also mounted a gear-wheel *o* which meshes with a mutilated gear *p* driven by the main train of gear from cylinder B. From this rotating gear *p* intermittent motion is given to the shaft *h* and all of the parts mounted thereon.

E is an engaging and disengaging lever preferably provided at one end with a tray *q* which has a perforation therein slightly smaller than the diameter of the coin to be used for operating the machine. A finger or part *r* is located on the lever E intermediate of its pivot and the tray *q* so that it will contact with the disk *i*. This finger *r* is normally held against the disk *i* by the weight *s* (Fig. 1) or its equivalent. The end of the lever E, opposite the one having the tray *q*, forms a trip *z*, which when the device is in its normal position (or at rest) engages the arm *t* rigidly attached to the escapement or wind-fan *y* which is geared in the usual or suitable manner with the cylinder B. Hence the lever E, when in contact with the arm *t*, as shown in Figs. 1 and 6, prevents the rotation of the cylinder B and of all parts dependent thereupon.

u designates a chute which conveys the coin when dropped in the slot *c* to the tray *q*, it being understood that the tray *q* is by the weight *s* normally held close to the discharge end of the chute, as in Fig. 1.

v represents a stationary abutment or projection smaller in diameter than the aperture in the tray *q* and placed in the path of said

tray and adapted to protrude through it and to discharge the coin into a suitable drawer or receptacle *w*, whenever the tray is carried down by the weight of said coin. A fixed shield *x* serves to insure the proper delivery of the coin into the drawer.

Having described the details of our improved device, we will now proceed to describe the operation thereof, supposing the parts are in their normal stationary position, as shown in Fig. 1. At this time the end *b* of the lever *C* is away from the slot *c*, as indicated in Fig. 3. The coin is dropped into the slot *c* and conveyed by means of the chute *u* to the tray *q*, on striking which, overcoming the weight *s* of the lever *E*, it forces the tray *q* down until the abutment *v* protrudes through the aperture therein and causes the coin to be discharged into the drawer *w*. If, however, the coin be smaller than that for which the device is intended, it will drop through the opening in the tray *q* without imparting motion to the lever *E*. A coin of a larger diameter than that intended to be used could not be inserted in the slot *c*, since it is made just large enough to receive a coin of the size intended to operate the device, so that in this way a coin of a diameter other than that intended for the device cannot be used. When the tray end of the lever *E* is forced down by a proper coin, the finger *r* is drawn out of the notch *j* of disk *i* and the trip *z* disengages from arm *t* of the escapement *y*, allowing all of the parts to be operated by the spring in cylinder *B*. When the finger *r* of the lever *E* is drawn out of the notch *j* in which it normally rests, the latch *D* is by the spring *l* or by its weight swung over the notch *j* as shown in Fig. 5, thus preventing the finger *r* from again entering the notch *j* when the lever arises after delivering the coin, and also preventing the trip end *z* of the lever *E* from reaching and engaging the arm *t* of the escapement, as shown in Fig. 7. The parts being now in operation, will cause the mutilated gear *p* to revolve, thus communicating motion to the gear *o* and the parts mounted on the shaft *h*, that is causing the disks *e* and *i* to be rotated with the gear *o* in the direction of the arrows on Figs. 3, 4 and 5. The effect of this revolution by the disk *e* is that it at once lifts or moves the toe *d* of the lever *C* out of the notch *f*, thereby causing the portion *b* of said lever to cover the coin receiving slot *c*, as shown in dotted lines in Fig. 3. The finger *r* of the lever *E*, after having been drawn out of the notch *j*, is prevented from returning therein by the latch *D* as heretofore described. It consequently bears at first, after the lever *E* has reascended, against said latch (see Fig. 5) until the rotation of the disk *i* carries said latch out of contact therewith when the finger *r* is held against the periphery of the disk until the rotation thereof brings the edge or shoulder *m* of the latch *D* in contact with the finger *r*, and causes the latch to be pushed

aside thereby, allowing the finger *r* to again enter the notch *j* and stopping the machine. At the same time the elevation of the lever *E* thus accomplished causes the trip *z* to contact with the arm *t* of the escapement, arresting the same instantaneously. At this time the toe *d* of the lever *C* again reaches the notch *f* of the disk *e* and enters it under the influence of the spring *g*. Consequently the slot *c* is again uncovered and is ready for the reception of another coin.

It will be observed that by the particular form of mutilated gear employed by us, we are enabled to allow the shaft upon which the gear *p* is attached to make many revolutions in excess of those made by the shaft *h* so that an entire tune may be played during a single revolution of the shaft *h* and that while the tooth of the gear *p* is out of engagement with gear *o*, said gear *o*, the shaft *h* and its mountings will be prevented from movement by the main axial portion of said gear *p* bearing on the concave edge of the gear *o*, as shown in Fig. 5.

It is of course understood that when the cylinder *B* is left free to revolve, it will by independent gear connection turn the disk *a* and cause the same to produce the desired tune; and that meanwhile the shaft *h* is slowly advanced step by step, until the tune is completed and a complete revolution of shaft *h* accomplished, whereupon by the engagement of *r*, *j* and *t*, *z*, or either of them, the further motion of the cylinder *B* is arrested, the coin slot being at the same time opened and the tray *q* placed in position for receiving a new coin. If the disk *e* be provided with several notches *f* and the disk *i* with several notches *j* and latches *D*, all this can be accomplished with a partial instead of a complete rotation of the shaft *h*.

It is obvious that many other modifications in details might be made without departing from the spirit of our invention.

If any one should try to insert a coin attached to a string through the slot *c* and cause the machine to operate with that coin and then to withdraw it, our lever *C* will in most cases cut the string and our tray *q* will prevent the re-elevation of the coin into the chute.

Having described our invention, we claim—

1. The combination of the main driving cylinder *B* and means substantially as described for turning it, with the notched disk *e*, gearing substantially as described for turning same from cylinder *B*, spring-pressed lever *C*, having toe *d* adapted to enter the notch of disk, and case *A* having coin slot *c* and coin-receiving contrivances, substantially as described, all arranged so that the lever *C* will close the slot *c* whenever the parts are in operation, and open said slot whenever said parts cease to operate, as specified.

2. The combination of the notched disk *i* and means substantially as described for turning it, with the pivoted latch *D* on the

- side thereof, said latch having shoulder *m* adapted to protrude beyond the edge of the disk only when said latch is in its normal position, and with the lever E having the part 5 *r* adapted to enter the notch of the disk *i*, all arranged so that when the part *r* is withdrawn from said notch, the latch D will cover the said notch, substantially as and for the purpose described.
- 10 3. The combination of the lever E, notched disk *i* adapted to be automatically engaged by said lever E, notched disk *e* connected with disk *i*, coin slot closing lever C having toe *d*, all arranged so that when the disk *e* is 15 revolving the lever C will close the slot and allow it to open when said disk *e* ceases to revolve substantially as described.
4. The combination of the lever E, having perforated coin receiving tray *q*, trip *z* and finger *r*, notched disk *i*, latch D mounted thereon, 20 notched disk *e*, connected with said notched disk *i*, lever C and case A, having slot *c*, all arranged so that when a coin is dropped in the coin-receiving slot *c* the device will be put in motion and the slot closed until the 25 device is again at rest, substantially as described.

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