

(No Model.)

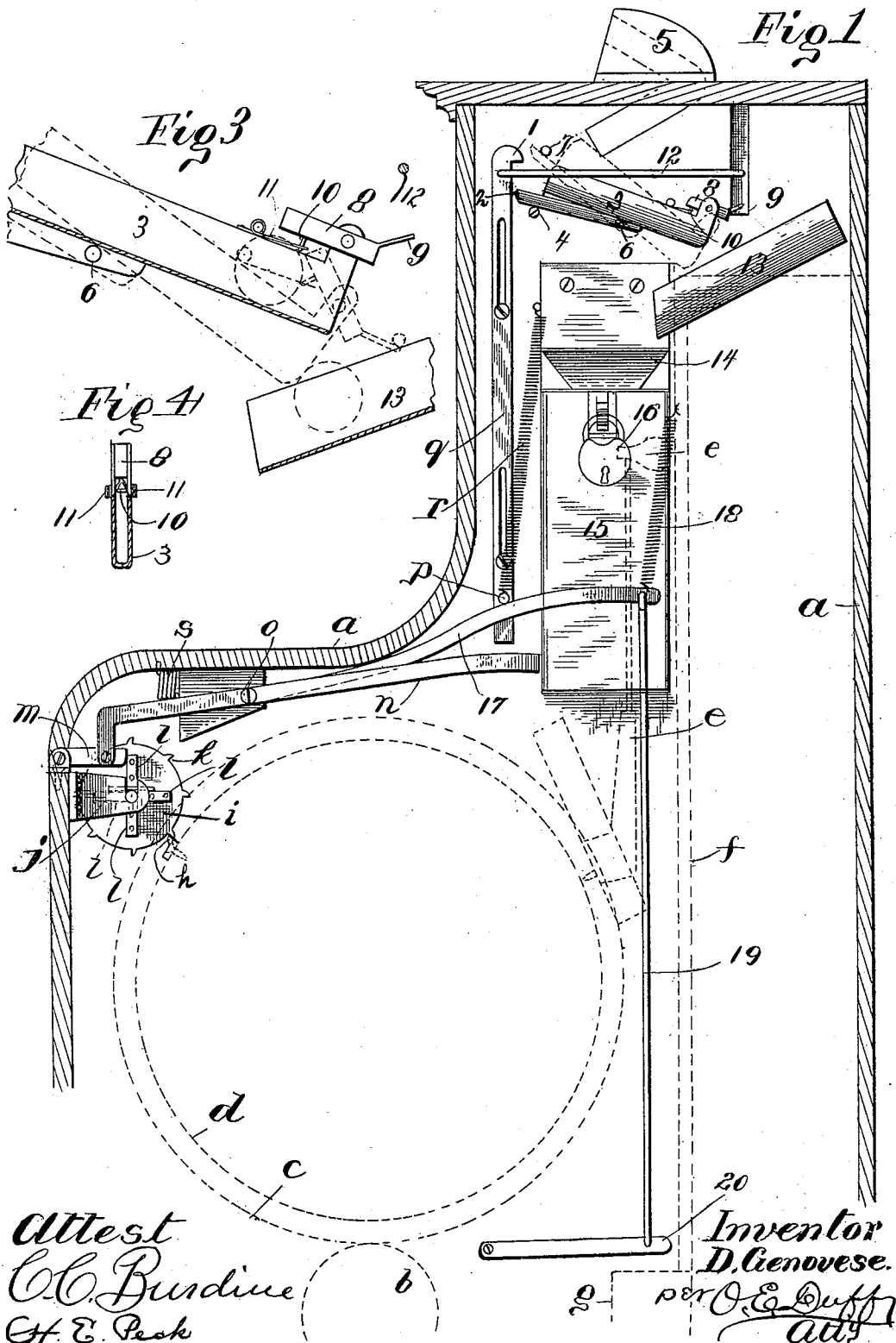
2 Sheets—Sheet 1.

D. GENOVESE.

COIN CONTROLLED DEVICE FOR MUSICAL INSTRUMENTS.

No. 470,041.

Patented Mar. 1, 1892.



(No Model.)

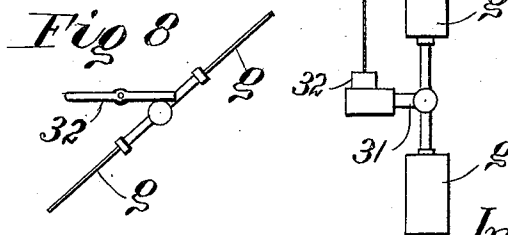
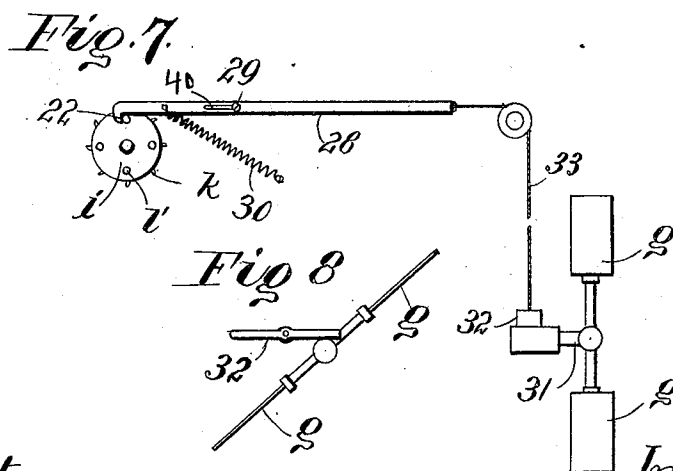
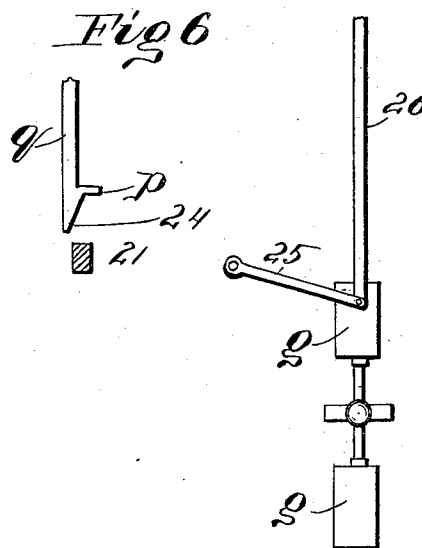
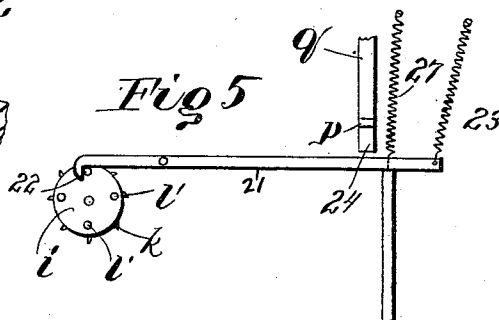
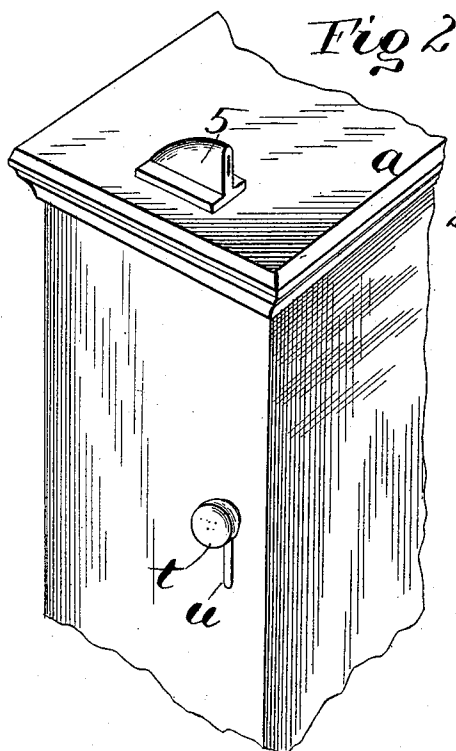
2 Sheets—Sheet 2.

D. GENOVESE.

COIN CONTROLLED DEVICE FOR MUSICAL INSTRUMENTS.

No. 470,041.

Patented Mar. 1, 1892.



Attest
C. C. Burdine
H. C. Peak.

Inventor;
D. Genovese.
Per *D. E. Duff*
Att'y

UNITED STATES PATENT OFFICE.

DOMINICK GENOVESE, OF WASHINGTON, DISTRICT OF COLUMBIA.

COIN-CONTROLLED DEVICE FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 470,041, dated March 1, 1892.

Application filed October 6, 1891. Serial No. 407,937. (No model.)

To all whom it may concern:

Be it known that I, DOMINICK GENOVESE, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Automatic Coin-Controlled Devices for Musical Instruments; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 the letters and figures of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in coin-controlled apparatus, more particularly to certain improvements in coin-controlled mechanism for musical instruments or other devices operated by a motor or other power.

The object of the invention is to provide an improved coin-controlled apparatus for musical instruments or other power-operated devices exceedingly simple, cheap, and durable in construction and composed of a minimum number of parts, whereby the devices which release or start the motor in operation cannot be operated until a coin of suitable size and weight has been dropped into the machine.

The invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a vertical section of the automatic self-acting piano, a portion of the operating parts thereof being shown in dotted lines, my invention being shown applied thereto in full lines. Fig. 2 is an exterior perspective view of part of the case of the instrument. Figs. 3 and 4 are detail sectional views. Figs. 5, 6, 7, and 8 are detail views of various forms of stops or locks to hold the motor.

In the drawings, *a* indicates the case of an automatic self-acting piano or other motor-driven instrument.

b indicates the driving-gear, (shown in dotted lines in Fig. 1,) driven by a suitable motor (not here shown) preferably located in the case. This operating-gear *b* meshes with and drives the gear *c*. (Shown in dotted lines on one side of the cylinder *d*, which is also shown in dotted lines.) This cylinder is rotated by

the motor and has its periphery provided with series of radial projecting teeth or pins arranged suitably, as in an ordinary music-box, to cause the hammers *e* (also shown in dotted lines) to strike the chords *f* (shown in dotted lines) to produce the musical tones in proper sequence, as desired.

g indicates the regulator-fan of the motor.

In carrying out my invention suitable stop mechanism is provided, which controls the movements of the motor and cylinder, so that when the stop is released the cylinder will rotate a certain distance to produce one or more tunes, and will then be automatically stopped and held, suitable mechanism being provided, so that the stop mechanism cannot be operated until released by suitable means controlled by coins of a certain size and weight. The preferred mechanisms for these purposes are constructed substantially as here set forth. The cylinder is provided with one or more radial projections or lugs *h*, according as to whether it is desired that the cylinder shall rotate entire revolutions or only partial revolutions each time it is released.

i indicates a stop-wheel mounted in suitable bearings, such as *j*, rigidly secured to hold the stop-wheel parallel and adjacent to a portion of the cylinder provided with the stop projection or lug *h*. This stop-wheel is provided with the peripheral radial lugs or projections *k*, arranged to project successively into the path of the projection *h*, carried by the cylinder. It will thus be seen that the stop-wheel will be rotated one tooth or projection every time the cylinder revolves unless the stop-wheel is held rigidly, in which case it will rigidly hold the cylinder through the medium of projection *h* and a tooth or projection *k*. The stop-wheel is held by means of lateral lugs or projections *l* on its face, these lugs being suitably arranged in relation to the teeth or projections *k*, so that the cylinder can revolve twice, and thus move the stop-wheel the distance between two teeth before the stop-wheel will be rigidly held by the pivoted lever *m* engaging one of the stops *l*. This lever is pivoted to a suitable support at one end to permit vertical swing, so that its opposite end can swing above or in front of one of the lugs *l*, so that the lug will strike the end of the lever and press the same in

the line of its length. This locking-lever *m* is controlled by a horizontally-arranged swinging lever *n*, fulcrumed at *o* between its ends and at one end pivotally secured to the free end of locking-lever *m*. The opposite end of lever *n* is located beneath the lateral projection *p* of the vertically-movable slide *q*, provided with suitable means for holding it in position, so that it can be vertically reciprocated, and having a spring *r* for yieldingly holding it at its limit of upward movement and so that the lateral lug *p* will be a distance above the free end of lever *n*. A spring *s* is provided to yieldingly hold the locking-lever *n* in its normal position, which is the locking position, as shown in Fig. 1. This spring preferably bears on the end of lever *n*, as shown. The push-rod or slide *q* is provided with a pin extending through the slot *u* in the side of the case, which is provided with the exterior knob or handle *t*, so that the push-rod can be forced down. This push-rod has a lateral projection 1 at its upper end of such length that when the projection 2 of the swinging coinway 3 is in its normal position resting on stop 4 the push-rod *q* cannot be forced down a sufficient distance to swing lever *n*, as the end or projection 2 rests in the path of projection 1. The coin of the proper size is received in the opening of the guideway 5 at the exterior, preferably the top of the case, which drops the coin into the upper end of the swinging coinway 3. This coinway is mounted on the pivot 6 to swing vertically between the stops 4 and 7 and is so weighted or balanced that when the coin of a proper weight is dropped in its upper end it will roll to the lower end, where the coin is stopped and the weighted closed end of the guideway carrying projection 2 is swung up to stop 7, so that the projection 2 is moved up out of the path of projection 1 of the push-rod, thereby allowing the push-rod to move its full stroke and force down the free end of lever *n* and release the locking-lever *m* from the stop-wheel, thereby allowing the stop-wheel to revolve and release the cylinder. As soon as the push-rod is forced down its full distance it should be released, and the parts will be returned to their normal positions by springs *r* and *s*, so that the locking-lever *n* will be in position to again lock the stop-wheel and cylinder when they have moved a certain predetermined distance.

Suitable means can be provided at the end of the swinging way to hold the coin therein and the projection 2 raised until the push-rod can be forced down. This stop device shown consists of the swinging lever 8, mounted above the open top of the lower end of the way. One end of this lever is provided with the projecting arm 9, by which the lever is raised to lift the projection 10 at the other end of the lever a suitable distance above the top of the way out of the path in which the coin moves, a spring, such as 11, being provided to hold the lever 8 in its normal position

with said projection extending into the way to engage the edge of the coin. By this arrangement if a coin of smaller size than required is dropped into the device it will roll under the projection 10 and will not be stopped thereby, but will drop immediately from the swinging way and not hold the same down long enough to allow the full stroke of the push-rod. A light coin of the proper size will not swing the pivoted way, and the sides of the opening of the guide 5 will not permit the entrance of a coin of light weight and large size. The stop or gate at the end of the swinging way is automatically opened where the push-rod is depressed by means of the rod 12, rigid with the push-rod and extending laterally therefrom and provided with a bent end adapted to engage projection 9 and depress the same when the push-rod is forced down its full length, thereby opening the end of the swinging way when swung down its full distance. The coin from way 3 drops into the rigid inclined way 13, from which it rolls into the open funnel 14, rigid with the money-box 15. This money-box is rigidly secured in the case, and it has a swinging cover provided with a funnel-shaped opening 14 and a padlock or other suitable lock 16, provided to lock the cover. This money-box is preferably removably secured to the case, so that the box containing the money can be removed and an empty one substituted whenever desired, so that although a person may have access to the case he has not access to the box unless provided with a key.

With the apparatus thus far described it might be possible to drop in a nickel, if that be the coin required, and force down the push-rod to release the stop mechanism and then hold down said rod and allow the machine to play as long as desired. To prevent this being done, a brake or stop device is provided, which holds and prevents operation of the mechanism when the push-rod is depressed. Various specific constructions can be used for this purpose, the device in Fig. 1 consisting of the lever 17, pivoted at one end so as to extend beneath the lateral projection *p* of the push-rod, having its free end upheld by spring 18 and connected by means of rigid rod 19 with the free end of the swinging arm 20, located in proximity to the regulator *g*. Thus when the push-rod *q* is forced down the lever 17 is depressed and the arm 20 is thrown into the path of the regulator *g*, thereby preventing operation of the machine. When the push-rod is released and returns to its normal position, this brake or stop mechanism 17, 19, and 20 is returned to its normal position by the spring 13 and the regulator is allowed its free movement. If desired, the arm 20 might carry a brake-shoe to engage the regulator-shaft when depressed. Of course it is evident that various means of stopping and braking mechanisms can be provided.

Figs. 5 and 6 show different stopping mechanisms. In this arrangement the stop-wheel

5 i has the teeth k and is provided with the lateral rounded projections l' , and the locking-lever 21 is provided with a fulcrum between its ends and a hooked end 22 to engage and hold the gear l' of said wheel, and at its opposite free end is provided with the spring 23, yieldingly drawing the hooked end down to engage the projections l' . The brake mechanism to hold the machine when the push-rod 10 is depressed is substantially the same as disclosed in Fig. 1, and the upper end of rod 19 of this brake mechanism is arranged to normally rest against the under side of lever 21. The push-rod q is provided with a lateral projection p to depress the free end of lever 21 and release its notched or free end from the stop-wheel. The side of the push-rod beneath the lateral projection p is inclined to form an oblique inclined cam-edge 24. Fig. 5 shows 20 the position of the parts when the machine is locked, the swinging arm 25 serving as a brake to hold the hammer by engaging the regulator-frame and lever 21, also locking the stop-wheel. When the push-rod q is depressed, its cam-edge 24 will strike the lever 21 and throw it laterally off of the upper end of the rigid rod 26, and thereby allow the spring 27 to draw the rod 25 from the path of the regulator, thereby releasing the motor, and as the push-rod q descends its lateral projection p will 30 press down the free end of the lever 21 and release the hooked end 22 from the lateral lug of the stop-wheel, and thereby allow the cylinder to rotate and the machine to play. As soon as the lever 21 is released its hooked end 22 drops to the next lower lateral lug l' , thereby raising the free end above the upper end of rod 26. Hence as the stop-wheel is rotated by the cylinder the lateral lug on which 40 the hooked end of the lever 21 rests gradually moves up, thereby raising the hooked end of the lever and depressing the free end thereof and forcing down rod 26, and with it the arm 25, so that the arm 25 engages the regulator and locks the motor just a moment previous to the locking of the stop-wheel by hooked end 22 and a lateral lug. The object of this construction just described is to prevent the sudden jar of the machine by quickly stopping rotation of the cylinder with a lateral 50 lug of the stop-wheel and a rigid lever when the machine is going at full speed; but by this arrangement the motor is gradually braked at the regulator and then the lock is applied to the cylinder.

Various constructions can be provided for stopping or braking the motor before applying the lock to the cylinder.

60 Figs. 7 and 8 show a different construction. In these figures 28 indicates a longitudinally-movable locking-lever having the hooked end 22 to engage the lateral lugs of the stop-wheel, mounted on pivot 29, extending through longitudinal slot 40 of the lever 28 to permit the longitudinal movement hereinafter referred to. Said lever is provided with the spring 30 to draw the lever back away from the stop-

wheel and to draw the hooked end of the same down on the lateral lugs thereof. 31 indicates the shaft of the regulator, and 32 indicates the swinging lever, at one end provided with a brake-shoe to bear down on the regulator-shaft and stop the motor and at its opposite end, on the other side of its fulcrum, connected by cord 33 to the end of the locking-lever 28. The direction of the cord can be changed by pulley, as shown. Fig. 7 shows the parts in locked position. When lever 28 is swung by the push-rod q to release the stop-wheel, it raises the brake-shoe from the regulator-shaft by the cord 33, the spring 30 drawing the hook of the lever 28 down and throwing the lever back, so that the cord 33 is loosed and the hooked end of the lever 28 drops down on the next pin l' . As the stop-wheel revolves it lifts the hooked end of lever 28 and draws the lever forward, and as the lever 28 is drawn forward it tightens the brake-shoe on the regulator-shaft and protects the motor before the lever 28 brings the stop-wheel to a sudden stop. The shape of the guide 5 is such that a wire or other implement cannot be inserted to depress the end of the swinging coinway.

It is obvious that various changes and modifications might be made in the form, constructions, and arrangements of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the exact construction herein shown and set forth; but,

Having fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a musical instrument, the operating mechanism comprising the cylinder driven by the motor, in combination with an automatic stop mechanism arranged so that when released it will permit the cylinder to rotate a certain distance and will then automatically stop it, releasing mechanism arranged when operated by hand to operate said stop mechanism to release said cylinder, and a movable coin-controlled apparatus normally extending into the path of and locking said releasing mechanism against operative movement and arranged to move out of said path and release the same when the proper coin is received, substantially as described.

2. In combination, a stop mechanism for the operative parts of the motor-driven instrument, a hand releasing mechanism normally locking said stop mechanism and arranged to operate the same to release said operative parts of the instrument when moved to its limit in one direction, and a freely-movable counterweighted coin-controlled mechanism normally extending into the path of said releasing mechanism, so as to prevent the operation thereof, and arranged to swing out of the path thereof by the weight of a proper coin, substantially as set forth.

3. In combination, a stop mechanism for the operative parts of the motor-driven in-

strument, a swinging lever controlling the stop mechanism, a push-rod arranged to swing said lever to release said stop mechanism, a handle at the exterior of the instrument to
 5 reciprocate the push-rod, and a coin-controlled apparatus controlling the movements of the push-rod, comprising a swinging coinway normally projecting into the path of said rod to prevent operative movement thereof and
 10 arranged to swing out of said path when it receives the proper coin, substantially as set forth.

4. In combination, the operating mechanism of a motor-driven musical instrument, the
 15 stop mechanism therefor, a brake operating on the motor, a releasing-slide arranged and constructed to release said stop mechanism when forced in one direction, and connections connected with said brake and arranged and
 20 constructed to apply said brake when said slide is forced in the direction to release said stop mechanism, substantially as described.

5. In combination, the cylinder, the stop-wheel therefor, having the teeth to engage a
 25 lug on the cylinder, and having lateral projections, a locking-lever to engage said lateral projections, a releasing push-rod to operate said lever to release the wheel, said push-rod having an operating handle or knob at the exterior of the instrument and having a lug or
 30 projection, and a swinging coinway having an end normally resting in the path of said push-rod projection to prevent the push-rod releasing the stop and arranged so that when a coin
 35 is received into the way it will swing from the path of the push-rod, all arranged substantially as set forth.

6. The combination of a motor-driven cylinder of a musical instrument, provided with
 40 a lateral lug, a stop-wheel provided with projections extending into the path of said lug, a swinging locking-lever provided with a spring to automatically force it into engagement with lugs of said wheel to lock the same
 45 and the cylinder, a push-rod constructed and arranged when forced in one direction to release said locking-lever from said wheel, and a coin-controlled apparatus comprising a swinging coinway normally projecting into
 50 the path of one of said movable parts to prevent release of the locking-lever and arranged to swing out of said path when a proper coin is received, substantially as described.

7. The combination of the operating mechanism of a motor-driven musical instrument,

a stop-wheel provided with radial lugs to engage a stop projection on a rotary part of said mechanism, a locking-lever for said wheel provided with a spring constantly tending to
 60 force it into locking engagement with lugs of said wheel, whereby when the locking-lever is released said wheel can rotate until another lug is caught by the wheel, a releasing mechanism for said lever, and a swinging balanced coinway normally projecting into the path of
 65 the releasing mechanism to prevent releasing movement of said mechanism and to swing out of said path when a proper coin is received thereinto, substantially as described.

8. The combination of a rotary cylinder of
 70 a power-driven musical instrument, an automatic stop mechanism therefor, a releasing mechanism for said stop mechanism, comprising a push-rod having an exterior handle, a swinging balanced coinway normally projecting
 75 into the path of said push-rod to prevent operative movement thereof and arranged to move out of said path when the proper coin is received, the coin-detaining device at the discharge end of said way, comprising a movable stop, and means carried by said push-rod, constructed and arranged to operate said
 80 stop to open the way when the push-rod is moved a distance, to operate substantially as described.

9. The combination of the rotary cylinder having a stop projection, the stop-wheel having the radial lugs extending into the path of said projection and having side lugs, a locking-lever yieldingly held in the path of said side
 90 lugs to lock the stop-wheel, releasing mechanism to release said locking-lever, comprising a push-rod having lateral projections and a spring to return it to its normal position, and an exterior handle, a swinging coinway having
 95 a projection normally resting in the path of a projection of said rod and arranged to swing from the same when it receives the coin and provided with a coin-detaining device, and an arm carried by said rod to operate
 100 said coin-detainer, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

DOMINICK GENOVESE.

Witnesses:

O. E. DUFFY,
 C. M. WERLE.