(No Model.) 2 Sheets—Sheet 1.

E. TULLER.

MUSIC BOX.

No. 467,388. Patented Jan. 19, 1892.

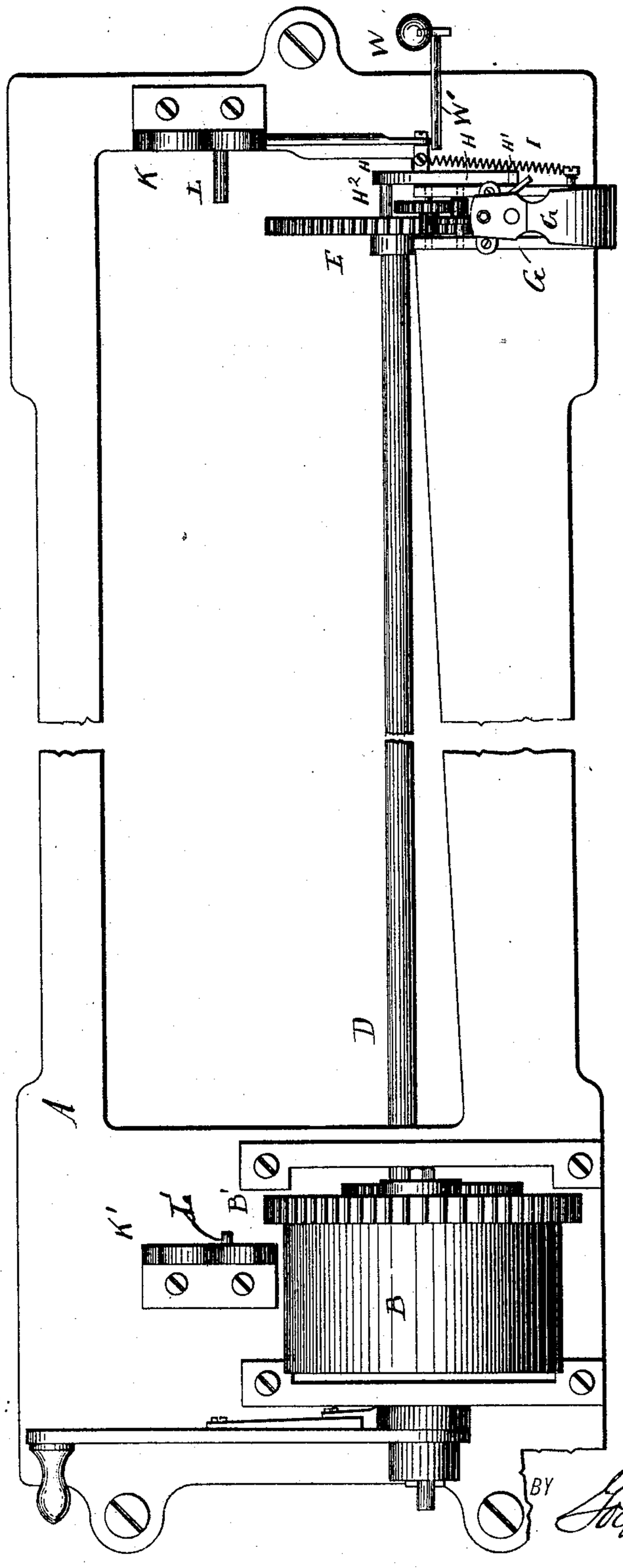

FIG. 1.

WITNESSES:

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C. Bles

INVENTOR

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BY Howson & Sayegeur

ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

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FIG. 2.

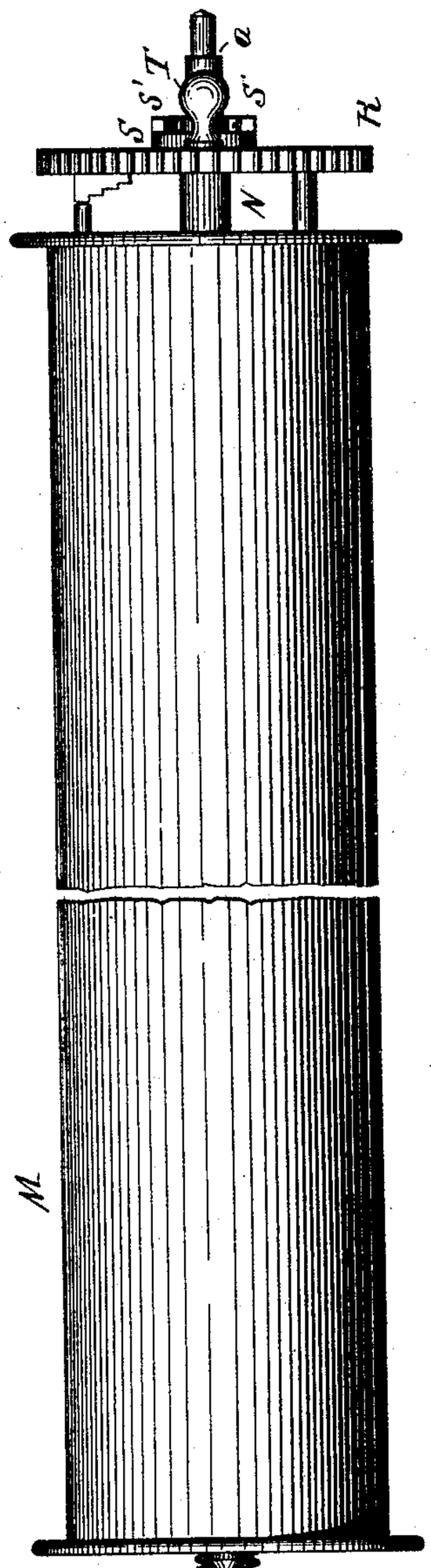


FIG. 3.

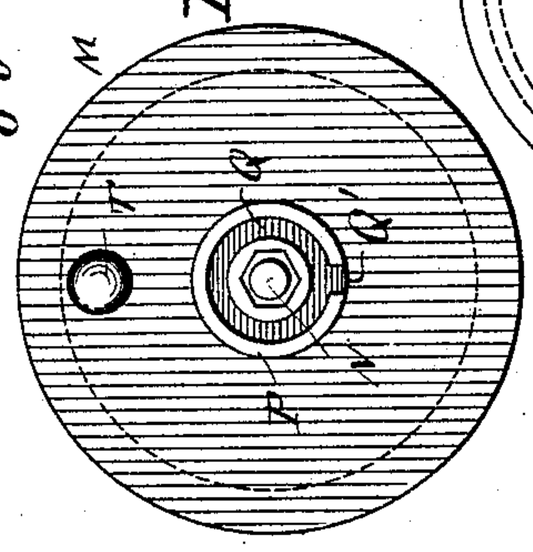


FIG. 4.

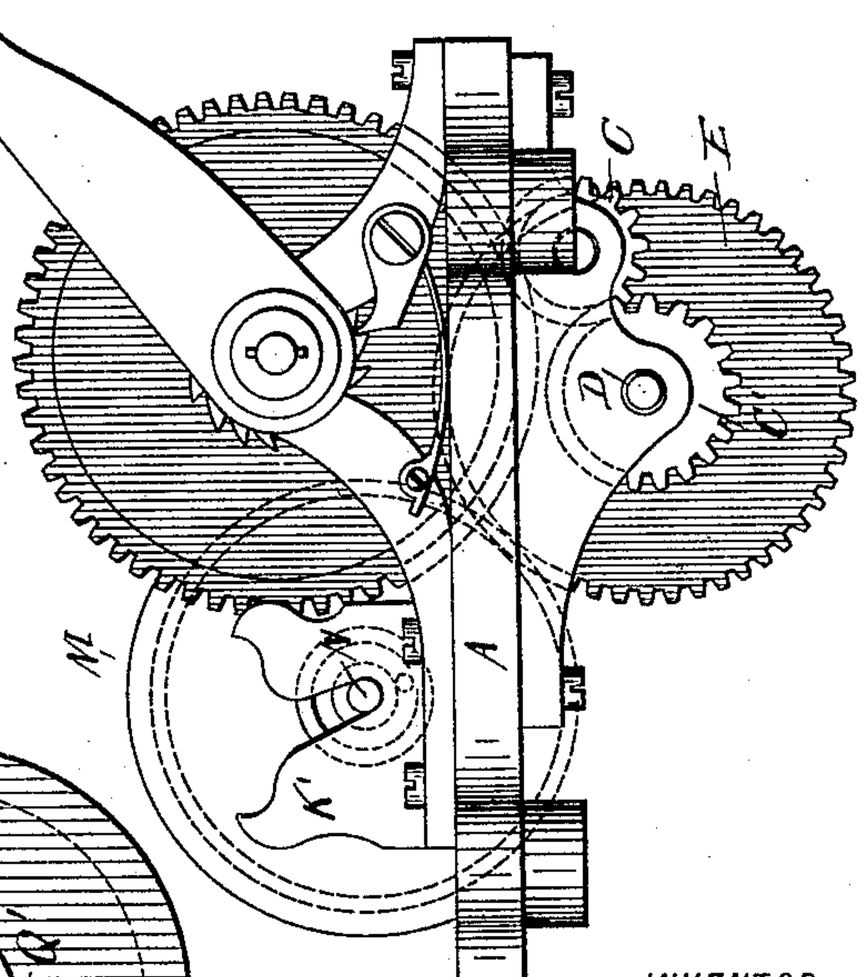


FIG. 5.

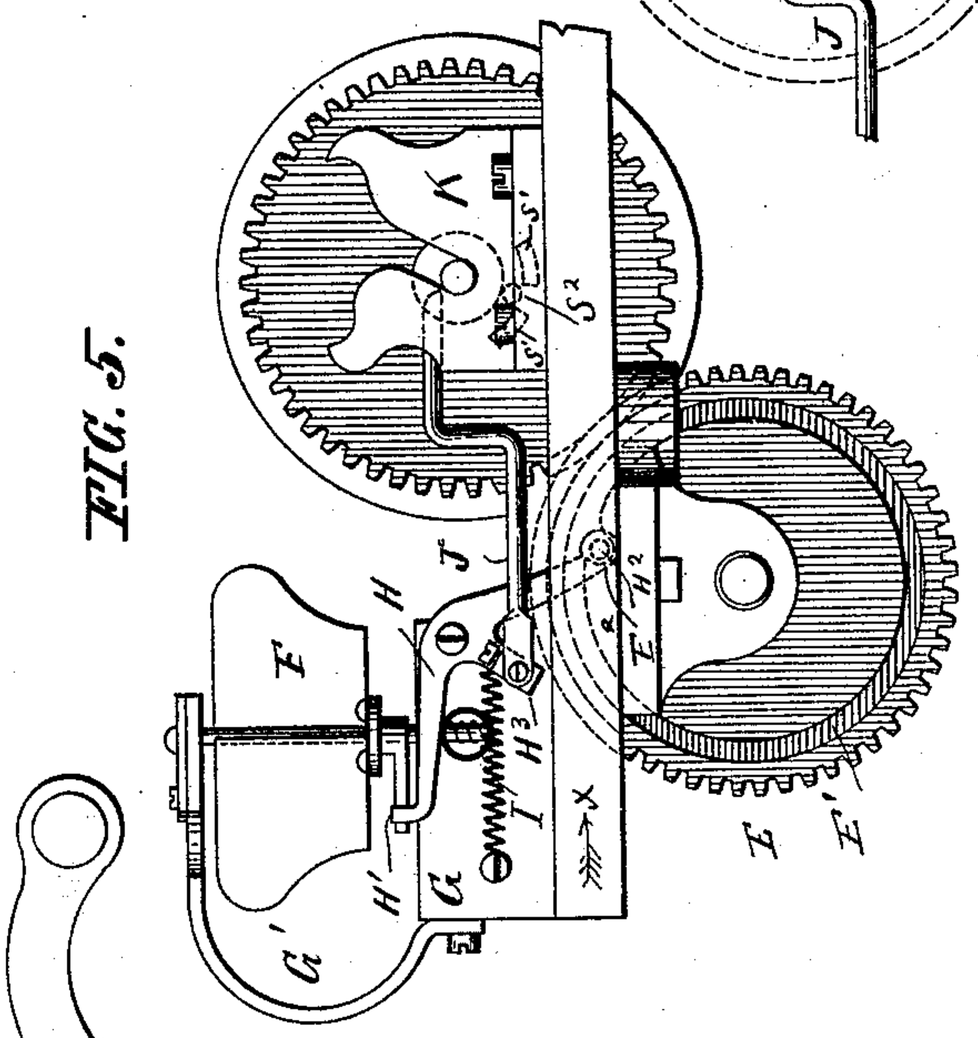
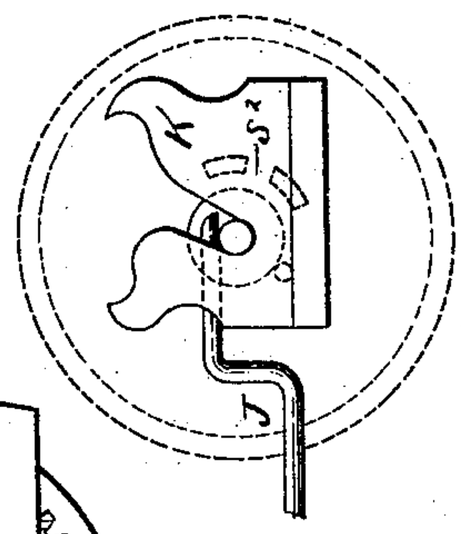


FIG. 6.



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UNITED STATES PATENT OFFICE.

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MUSIC-BOX.

SPECIFICATION forming part of Letters Patent No. 467,388, dated January 19, 1892.

Application filed November 10, 1891. Serial No. 411,467. (No model.)

To all whom it may concern:

Be it known that I, EUGÈNE TULLER, a citizen of Switzerland, and a resident of Ste. Croix, Switzerland, have invented certain new and useful Improvements in Music-Boxes, (for which I have obtained a patent in Switzerland, No. 3,742,) of which the following is a specification.

This invention relates to improvements in music-boxes, and especially to music-boxes of that class known as "interchangeable cylinder" boxes, in which the cylinder can readily be removed and replaced by any cylinder provided with pins for playing different tunes.

The object of my invention is to provide a box of this kind in which the cylinder can readily be removed and replaced, and in which no special locking devices for the cylinder are required.

The invention consists in the combination of the usual driving mechanism and pin-cylinder of bearings for the shaft of said cylinder, a bolt operated from the starting and stopping lever and serving to lock the shaft of said cylinder in place, and a bayonet-joint lock for that end of the shaft opposite the one locked by the bolt mentioned.

The invention also consists in the constructions and combination of parts and details, as will be fully described and set forth hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the base-plate of my improved music-box and the driving mechanism on said base-plate, parts being broken out. Fig. 2 is a top view of the cylinder, parts of the same being broken out and the pins omitted. Fig. 3 is an end view of the cylinder. Fig. 4 is an end view of the base-plate, showing the driving mechanism. Fig. 5 is an end view of the cylinder and power-transmitting mechanism and a side view of the flier and stop-lever. Fig. 6 is a side view of one of the bearings, showing the manner in which the latch locks the cylinder.

Similar letters of reference indicate corresponding parts.

On the base-plate A the spring-barrel B is mounted, which is provided with the usual winding lever and pawls. The gear-wheel B′ of said winding-barrel engages the pinion C, mounted in lugs on the under side of the base-plate, and said pinion C engages the pinion C′, mounted on one end of the shaft D, journaled in lugs on the under side of the base-plate. On the opposite end of said shaft D a cog-wheel E is fixed, which is provided in its outer face with a circular groove E′, having a notch E^2, as shown in dotted lines in Fig. 5. From said cog-wheel E the retarding-fan F is driven in the usual manner, said fan being mounted to turn in the block G and arm G′ of said block. To the side of the said block G the locking-lever H is pivoted, the end H′ of said lever being adapted to engage an arm on the flier-shaft, and the other end of said lever is provided with a pin H^2, that is adapted to travel in the groove E′ of the cog-wheel E and to drop into notch E^2 of said groove. The lever H is also provided with an arm H^3, to which is pivoted a sliding bolt or latch J, that is guided in an aperture in the right-hand bearing K for the cylinder-shaft, and adapted to project over the end part of the shaft when the same is within the notch of the bearing, as shown in Fig. 6. A spring I, attached to the arm H^3 of the lever H and to the block G, serves to press the pin H^2 against the inner edge of the groove E′ and into the notch E^2. The bearing K is provided on its inner side with a laterally-projecting pin L, and the opposite bearing K′ is provided on its inner side with the laterally-projecting pin L′. The cylinder M is mounted in the usual manner to slide on the shaft N, and is acted upon by the helical spring N′, surrounding the shaft and bearing against one end of the cylinder and against the sleeve O, mounted loosely on the shaft and provided with a longitudinal slot O′, into which the pin O^2 projects from the shaft. Said sleeve O is provided with an angular flange P, in the side of which a groove Q, having a notch Q′, is formed. The shaft N is provided with a fixed cog-wheel R, that is adapted to engage the cog-wheel E when the cylinder-shaft is placed in its bearing. Said cog-wheel R is provided in its outer face with a hub S, from which the two segmental lugs S S′ project and form the notch S^2 between them. The wheel R and the left-hand end of the cylinder are provided with the handle-knobs T T′.

The operation is as follows: When the mechanism is at a standstill, the pin H^2 is in the notch E^2 of the groove E′, and the bolt or latch J is withdrawn, as shown in Fig. 5. The cylinder is seized by means of the handle-knobs T T′, and the ends of its shaft are placed in the notches of the bearings K K′, and rest on the bottom of said notches. Thereby the wheel R on the cylinder-shaft is engaged with the wheel E. In order to start the musical-box mechanism, the lever H must be so adjusted that the pin H^2 is moved out of the notch E^2 and the arm H′ is moved downward. This is accomplished by means of the usual starting and stopping lever W, Fig. 1, the laterally-projecting pin W′ of which, when the musical box is to be started, acts on the arm H^3 of the lever H and pushes the same in the direction of the arrow X, Fig. 5, whereby the bolt or latch J is shifted in the direction of the arrow X, and passes over that end of the shaft N in the right-hand bearing K, as shown in Fig. 6, and thus automatically locks that end of the shaft in the bearing. When the cylinder-shaft is placed into the bearings, the pin L′ of the left-hand bearing K′ passes through the notch Q′ into the groove Q on the flange of the sleeve O, and the pin L on the right-hand bearing K passes through the notch S^2 between the segmental lugs S′. As soon as the cylinder begins to turn the pin L′ prevents lifting the left-hand end of the cylinder-shaft, which is not locked by a latch or bolt. When the cylinder has made one revolution and completed a tune, the pin H^2 automatically drops into the notch E^2, permitting the spring I to pull the lever H in the inverse direction of the arm X, whereby the latch or bolt J is drawn in the same direction, and thus releases the cylinder. As the cylinder has made one complete revolution, the notches S^2 and Q will be directly below the pins L and L′, thus permitting of lifting out the cylinder. The sleeve O is pressed by the spring N′ against the pin L′ and at the same time presses the cylinder to the right, and the spring also presses the shoulders on the right-hand end to the cylinder-shaft against the bearing K, thus giving a perfectly true adjustment to the cylinder.

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

1. A music-box constructed with a removable cylinder and with a latch or bolt for locking said cylinder in its bearings, which lock or bolt is operated from the starting or stopping lever, substantially as set forth.

2. A music-box constructed with a driven wheel having a circular groove and a notch in said groove, a locking-lever having a pin traveling in said groove, and a bolt operated from said locking-lever, substantially as set forth.

3. In a music-box, the combination, with a base-plate, of bearings, a cylinder having a shaft fitted in said bearings, a locking-lever controlled by one of the wheels of the driving-gear, and a bolt connected with said locking-lever, substantially as set forth.

4. In a music-box, the combination, with a base-plate and a driving-gear, one of the wheels of which is provided with a groove and a notch in said groove, of a bolt or latch pivoted to said locking-lever and guided in one of the bearings of the pin-cylinder shaft, substantially as set forth.

5. In a music-box, the combination, with a base-plate, of the usual driving-gear, a cylinder provided at one end of this shaft with a collar having a circular groove in its outer end and a notch in said groove, a pin on the bearing adapted to enter said notch and groove, and a latch for locking the opposite end of the cylinder-shaft in its bearing, substantially as set forth.

6. In a music-box, the combination, with a base-plate, of two bearings for the pin-cylinder shaft, a collar mounted on the pin-cylinder shaft and provided in its end with a circular groove and a notch, a pin projecting from the bearing and adapted to enter said notch and groove, a locking-lever having a pin on one end, a driving-wheel having a circular groove and notch in which said pin of the locking-lever can travel, and a bolt or latch pivoted to said locking-lever, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

EUGÈNE TULLER.

Witnesses:
P. GIROD,
AD BONJOUR.