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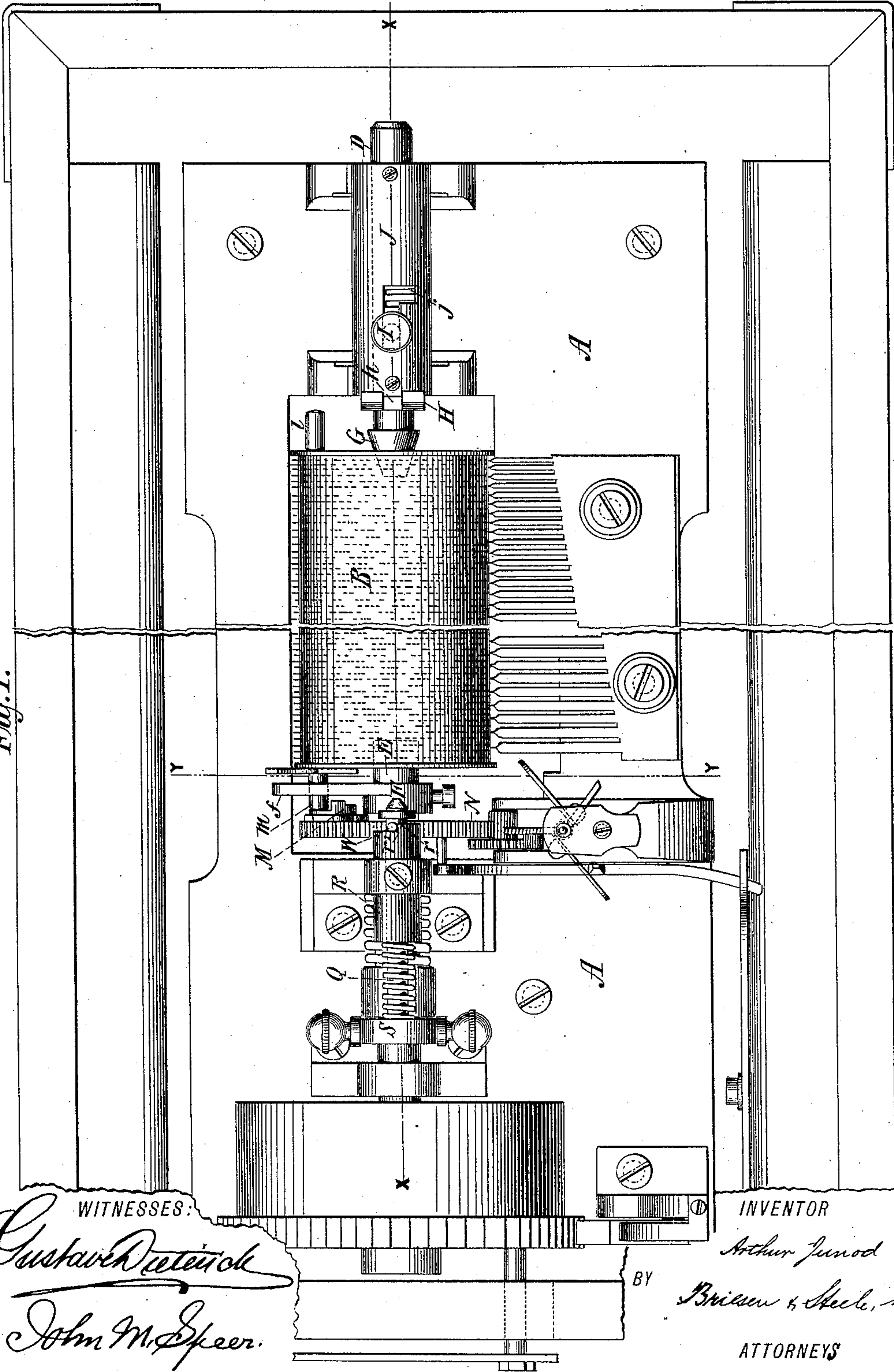
2 Sheets—Sheet 1.

A. JUNOD.  
MUSIC BOX.

No. 367,409.

Patented Aug. 2, 1887.

Fig. 1.



WITNESSES:

*Gustave Dietrich*  
*John M. Speer*

INVENTOR

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BY

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ATTORNEYS



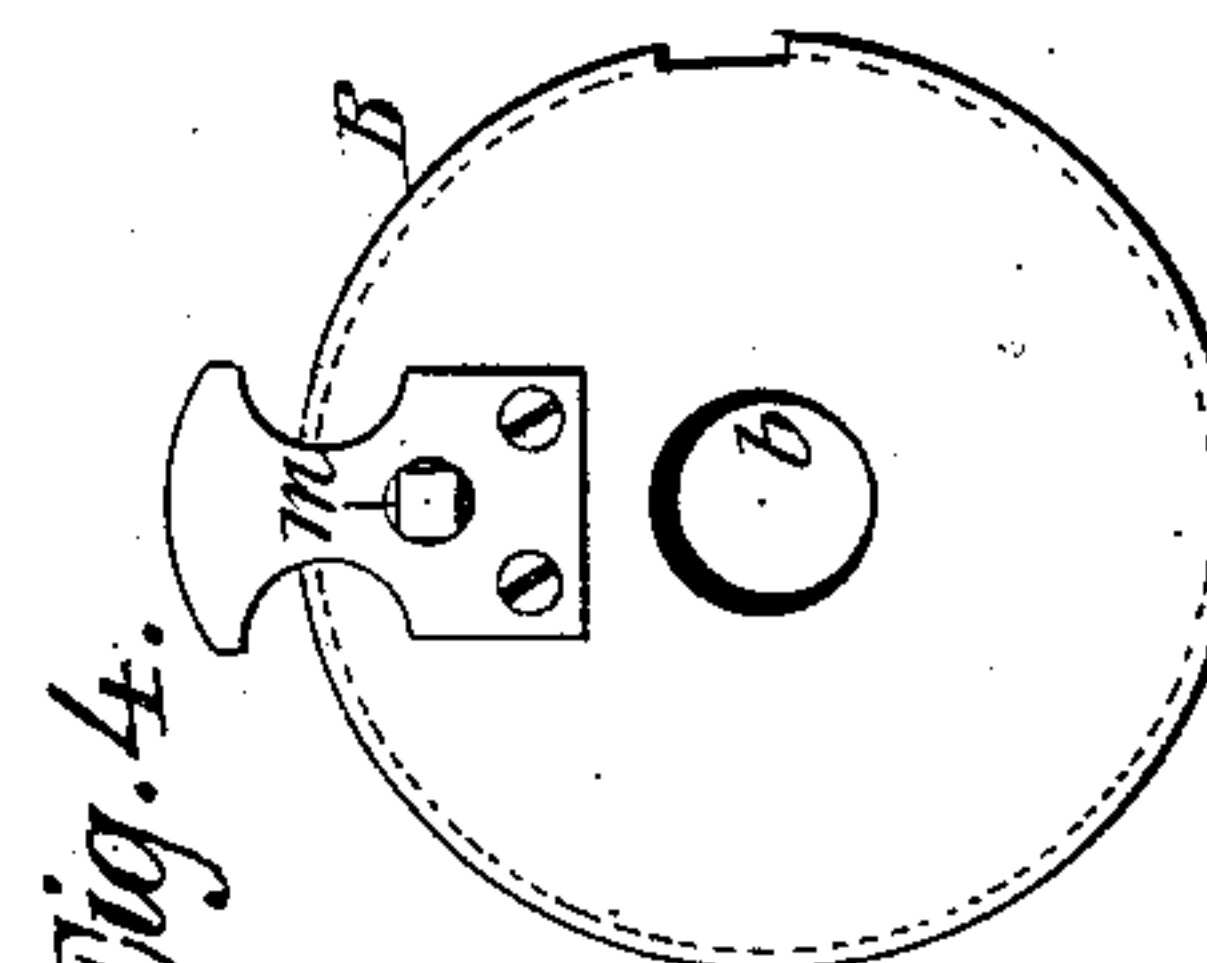
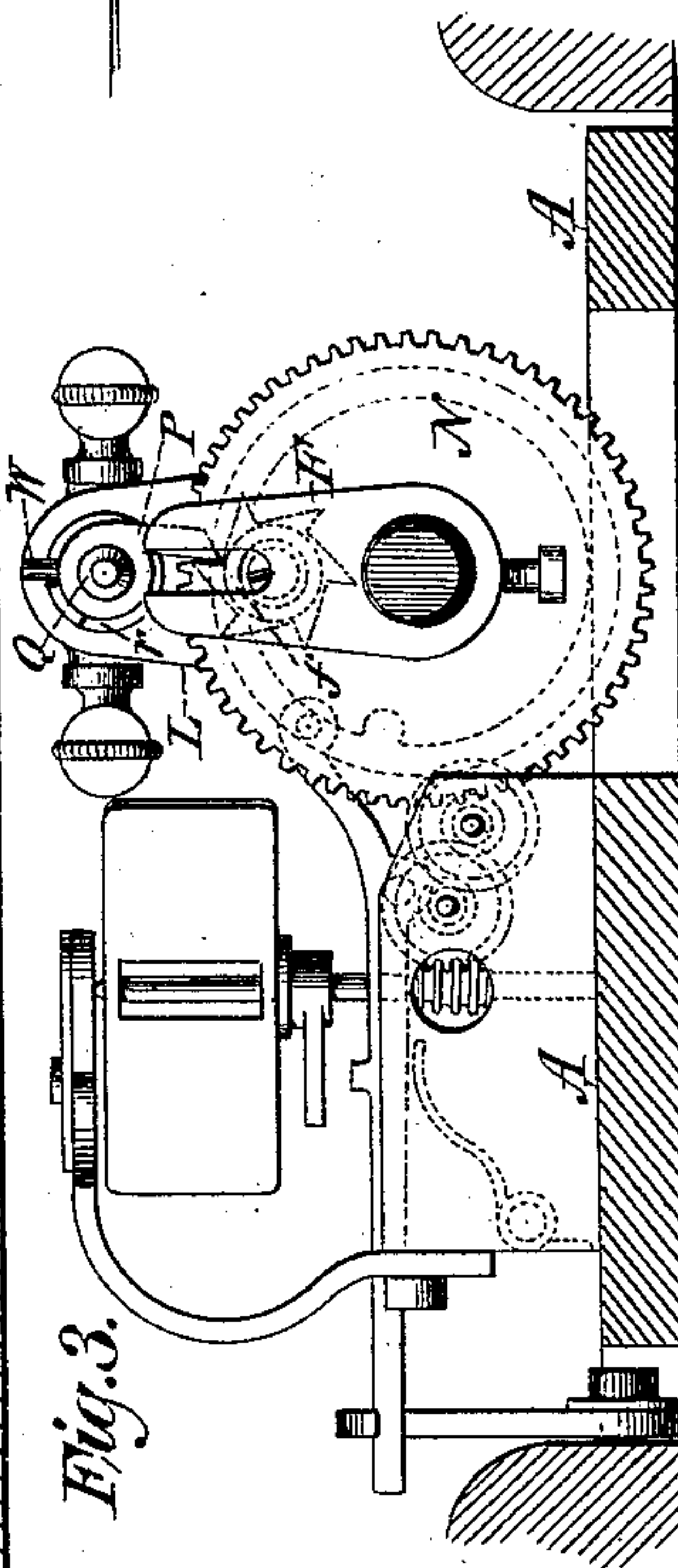
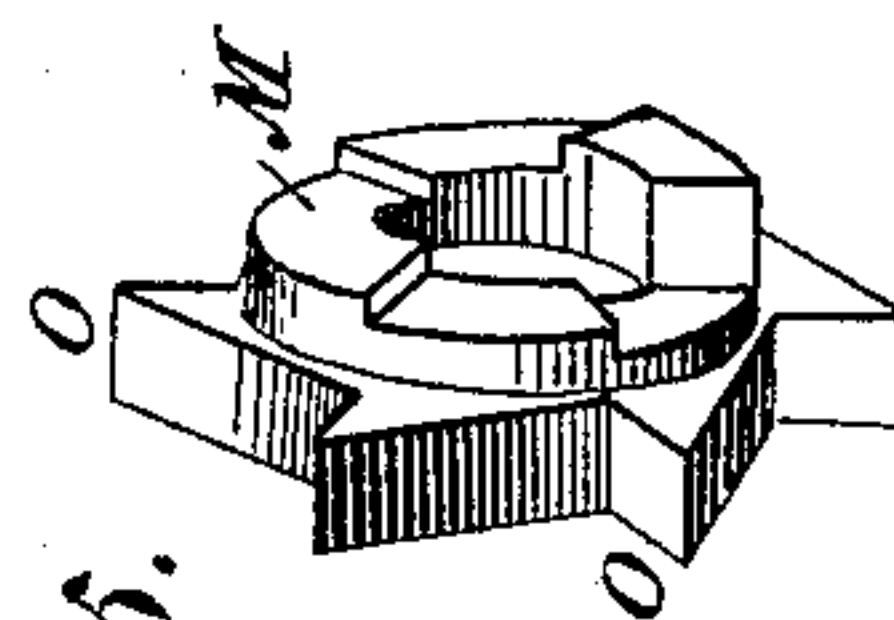
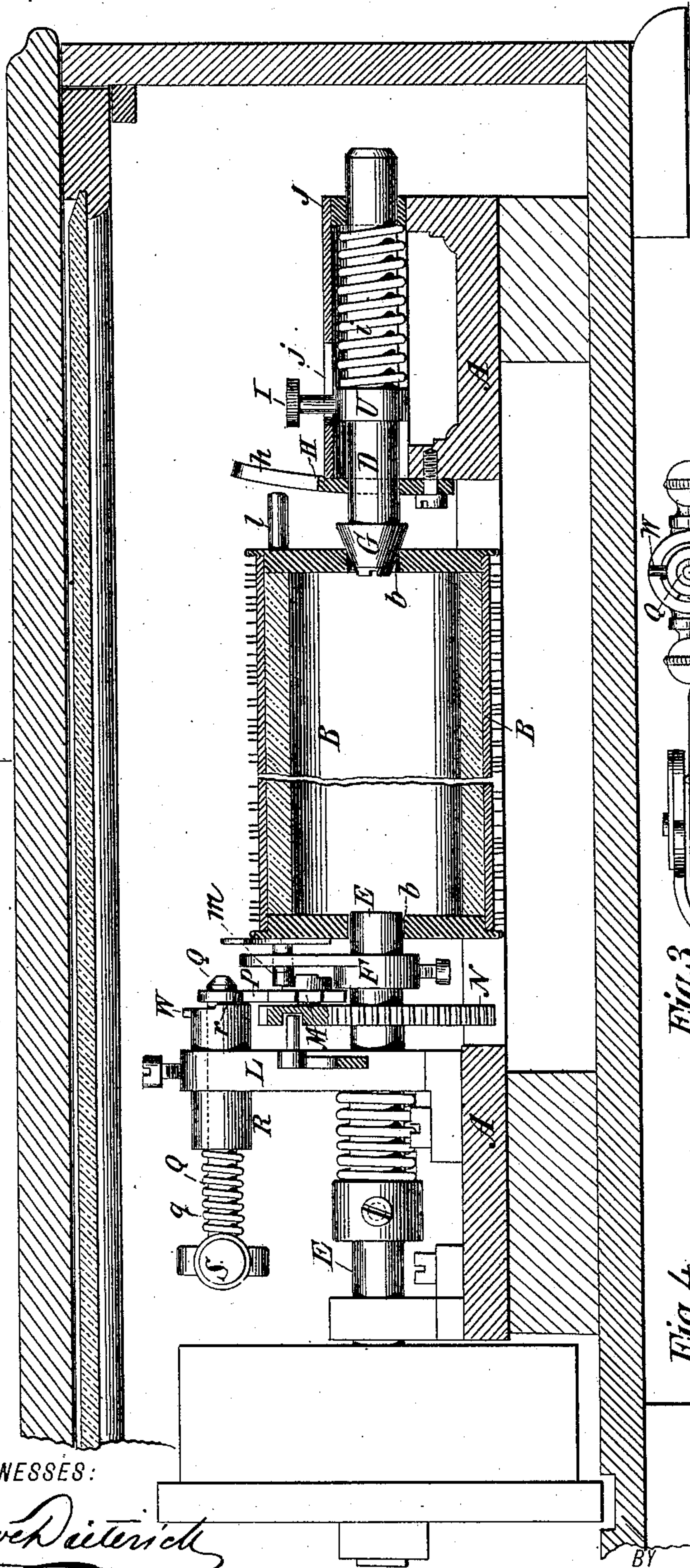
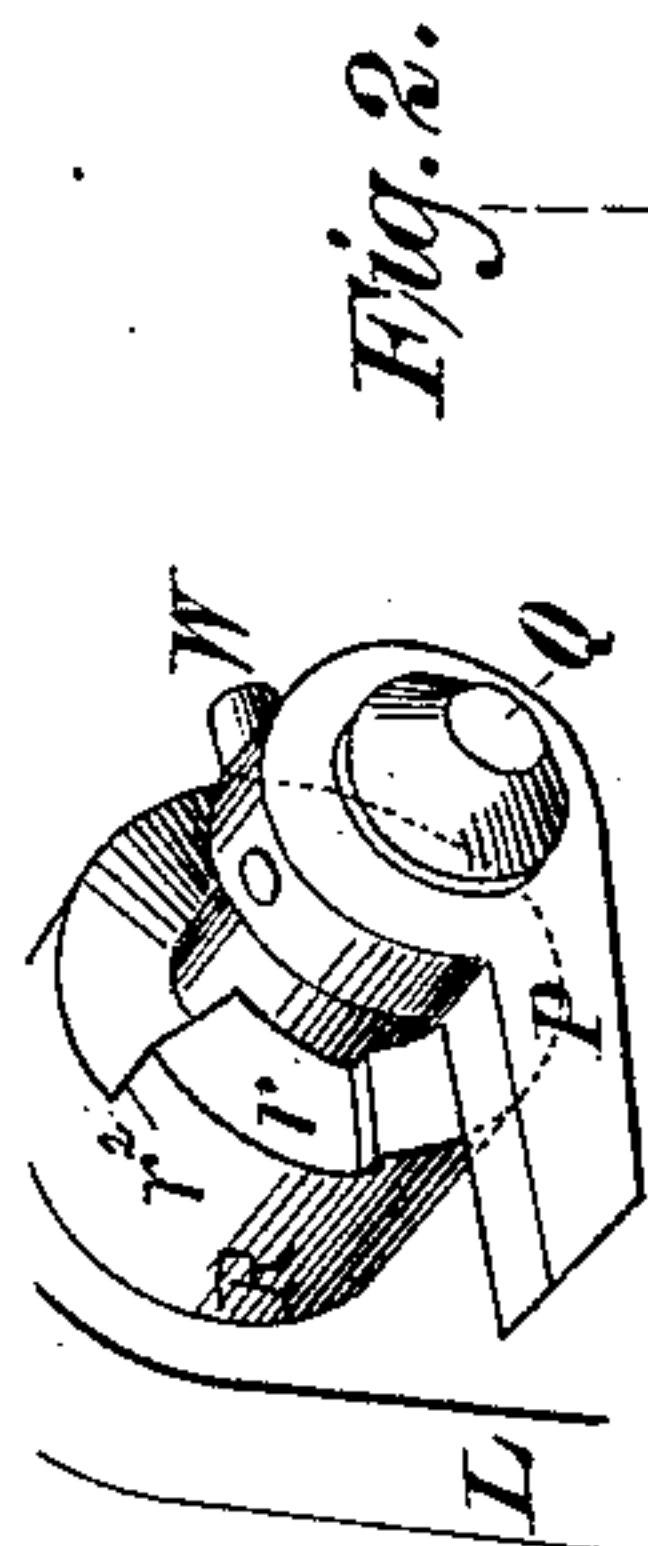
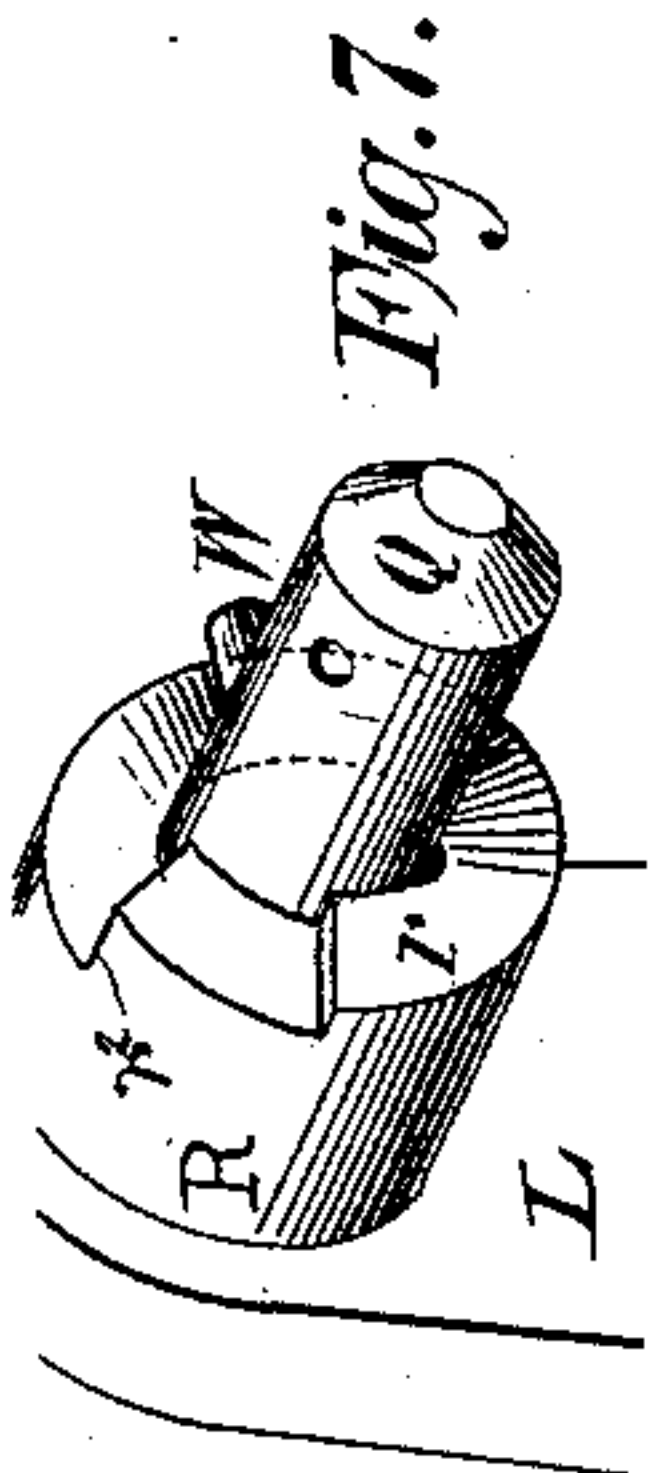
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

ARTHUR JUNOD, OF ST. CROIX, SWITZERLAND, ASSIGNOR TO JACOB & SON,  
OF NEW YORK, N. Y.

## MUSIC-BOX.

SPECIFICATION forming part of Letters Patent No. 367,409, dated August 2, 1887.

Application filed December 8, 1886. Serial No. 220,986. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR JUNOD, a resident of St. Croix, Switzerland, have invented an Improvement in Music-Boxes, of which the following is a full, clear, and exact description, reference being made to the accompanying drawings.

My invention relates to music-boxes, and more particularly to those which have removable barrels or studded cylinders.

In music-boxes which have a barrel or studded cylinder so arranged that it may be taken out and replaced by another barrel having the pins arranged for other tunes it is desirable that as little mechanism as possible shall be attached to the removable barrel, in order to materially reduce their cost.

The object of my invention is to so arrange the operating mechanism of the music-box that the removable barrel will have at most but two little pins attached to its ends.

In the accompanying drawings, Figure 1 is a plan view of a music-box with my invention applied thereto. Fig. 2 is a vertical section on the line *x x*, Fig. 1. Fig. 3 is a vertical section on the line *y y*, Fig. 1. Fig. 4 is a view of the left-hand end of the barrel. Fig. 5 is a detail view of the star-wheel and cam which changes the tune. Figs. 6 and 7 are detail perspective views of the end of the device for operating the star-wheel so as to change the tune.

A is the frame, on which is supported in suitable bearings the driving-shaft E, which is revolved by the usual mechanism, and the sliding arbor D, the latter having the swiveled conical bearing G on its inner end. The shaft E carries the arm F, having the notch *f*. The sliding arbor has a collar, U, against which bears a spring, *i*, which has the tendency to push said arbor inward. From the arbor D projects a pin, I, through an L-shaped slot, *j*, in the stationary shell J, which incloses the said arbor. The object of this construction is to allow the sliding arbor D to be drawn back and locked by turning the pin I into the angular part of the opening *j*, in which position the arbor D will no longer be in contact with the cylinder B.

Secured to the frame A, at or near the shell

J, is a guide-standard, H, having a notch, *h*, therein.

B is the cylinder or barrel, which has a central opening, *b*, in each end. From one end of said barrel may project a little guide-pin, *l*. The other end of the barrel carries a projecting pin, *m*, which is adjustable by screwing into the barrel, and serves as a guide-pin to move the barrel lengthwise to change the tune, and also as a driver-pin to turn the barrel.

When the barrel is to be put in place, the sliding arbor D is first drawn back and locked by turning the pin I in the angular part of the slot *j*. The barrel B is then held so that the pin *l* enters in the notch *h* of the standard H, and the pin *m* enters the notch *f* in the arm F, Fig. 3, of the shaft E. At the same time the end of the shaft E enters the opening *b* in one end of the drum. The pin I is then released from the angular part of the slot *j*, and the sliding arbor forced forward by the spring *i* until the swiveled bearing G enters the opening *b* in the other end of the barrel B. The spring *i* also forces the barrel B lengthwise, so that the pin *l* no longer engages the standard H, and the pin *m* presses against the cam portion M of the star-wheel O. This star-wheel is secured to a short stud on the face of the pinion N, carried on the shaft E, and has the usual cam, M, Fig. 5, thereon, the latter having as many cam-surfaces as the barrel plays tunes.

Q is a sliding arbor hung in a standard, L, of the frame A, and carrying on one end a pawl or dog, P, for operating the star-wheel O, and on the other a handle, S, for turning said arbor. This arbor Q is journaled in a sleeve-bearing, R, in the standard L, and surrounded by a spring, *q*, which is interposed between the bearing R and the handle S.

The inner end of the bearing R has a cam-surface, *r*, which forms a shoulder, *r*<sup>2</sup>, Figs. 6 and 7, and against which is held, by the spring *q*, the pin W on the arbor Q.

When the parts are at rest, the star-wheel O is in contact with the pawl P, as shown in Fig. 3. The pawl P can then be turned, by turning the arbor Q, to turn the star-wheel into position and move the cylinder or barrel longitudinally, until the desired tune can be



played; but when the pawl is to be held out of contact with the star-wheel the arbor Q is pushed inward and the handle S turned so as to allow the pin W to rest on the higher part 5 of the cam-surface  $r$ . When the star-wheel is to be turned automatically, the pin W is allowed to rest against the shoulder  $r''$ , thereby holding the pawl P rigid.

The operation is as follows: The barrel B 10 having been secured in place and the mechanism which drives the pinion N started, the arm F engaging, by its notch  $f$ , the pin  $m$  on the barrel, carries the latter around with the revolution of the shaft E. The end of the 15 shaft E and the swiveled bearing G serve as pivots on which the barrel turns. When the shaft has made a complete revolution, the star-wheel O on the pinion N is brought in line with the rigid pawl P, the latter turning the 20 star-wheel one tooth as it passes the pawl, whereby, as the pin  $m$  bears against the cam-portion M of the star-wheel, the barrel is forced lengthwise by the combined action of the spring  $i$  and cam M and the barrel set 25 for a new tune. This construction of the barrel and driving mechanism of a music-box has the advantage that no shafts have to be formed on each barrel, and the tune-regulating pin  $m$  on the barrel has the additional function of 30 serving as a driving-pin. The barrel can also be quickly put in place and guided to the proper position to play a tune from its beginning.

Having now described my invention, what I claim is—

1. The sliding arbor D, combined with the spring  $i$ , means for locking said arbor, tapering swivel-bearing G, and barrel B, substantially as described. 35

2. The combination of the barrel B, having an opening or bearing-surface,  $b$ , in each end, and pins  $l$  and  $m$ , with the shaft E, forked arm F, sliding arbor D, and forked guide standard H, substantially as described. 40

3. The combination of the sliding arbor Q, carrying the pawl P and pin W, with the bearing R, having the cam-surface  $r$ , substantially as described. 45

4. The combination of the barrel B, having an opening,  $b$ , in each end, with the shaft E, sliding arbor D, and swiveled bearing G, substantially as described. 50

5. The sleeve R, having cam-face  $r$  and shoulder  $r''$  thereon, combined with the sliding arbor Q, spring  $q$ , pin W, pawl P, and star-wheel O, substantially as and for the purpose herein shown and described. 55

The above specification of my invention signed by me this 10th day of November, 1886.

ARTHUR JUNOD.

Witnesses:

JULES JANARD FOUDEUR,  
H. ALBERT WEIDMAN.