

(No Model.)

W. N. WEEDEN.

MUSIC BOX.

No. 283,307.

Patented Aug. 14, 1883.

Fig. 1.

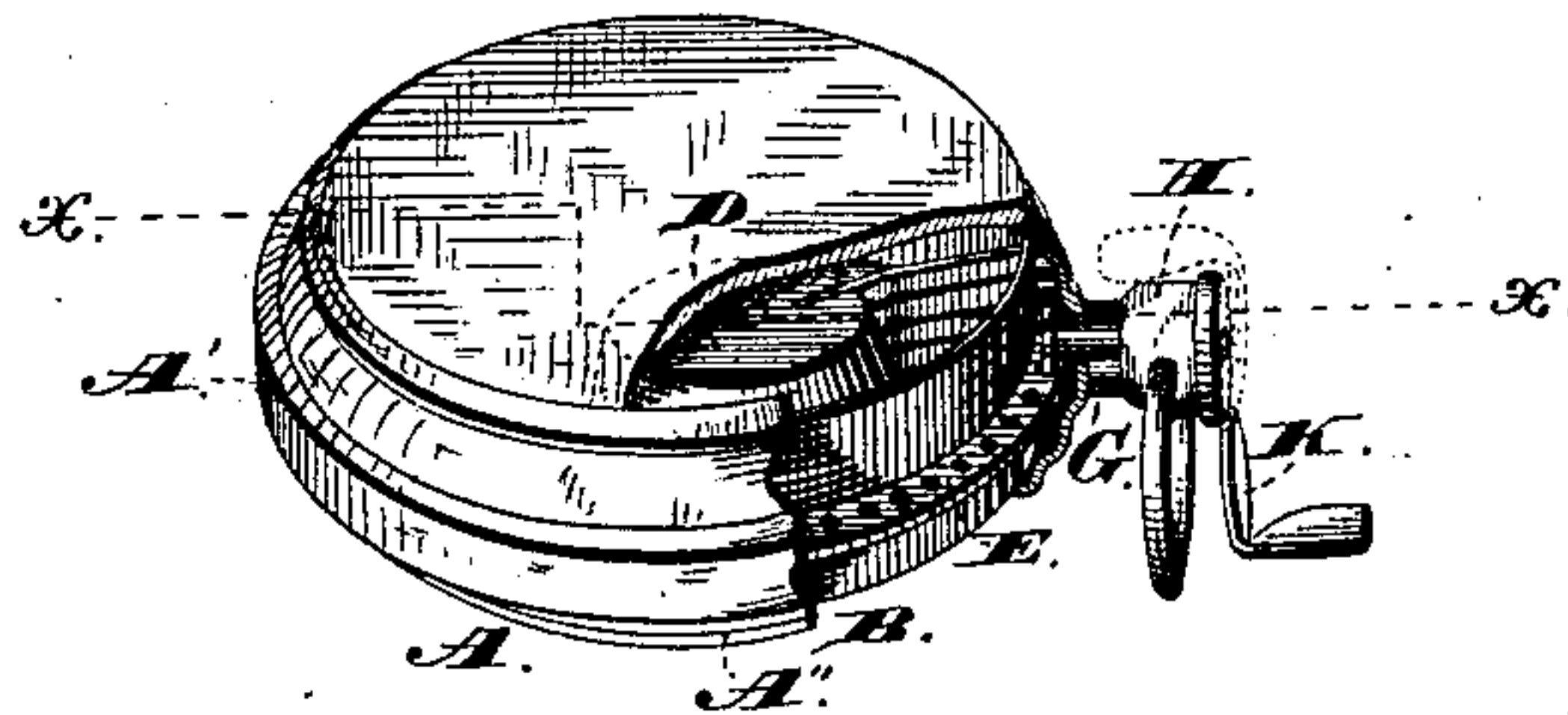


Fig. 2.

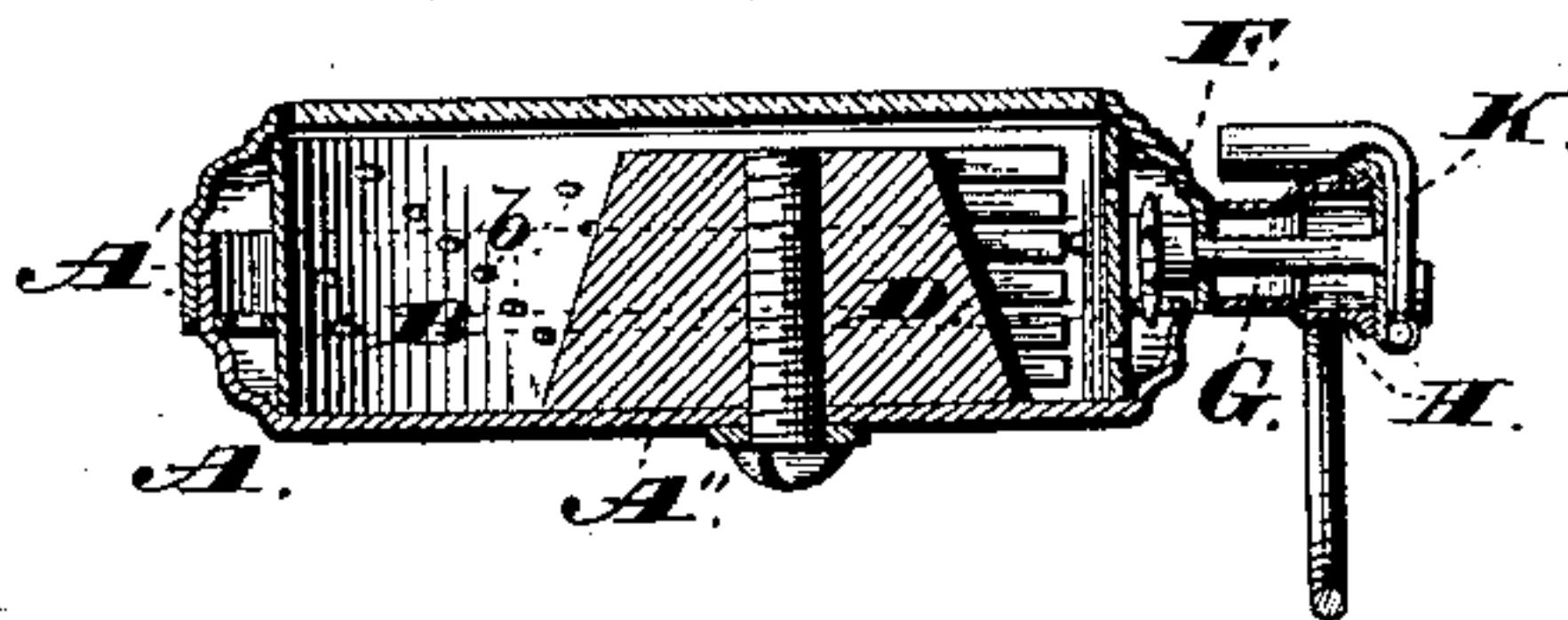
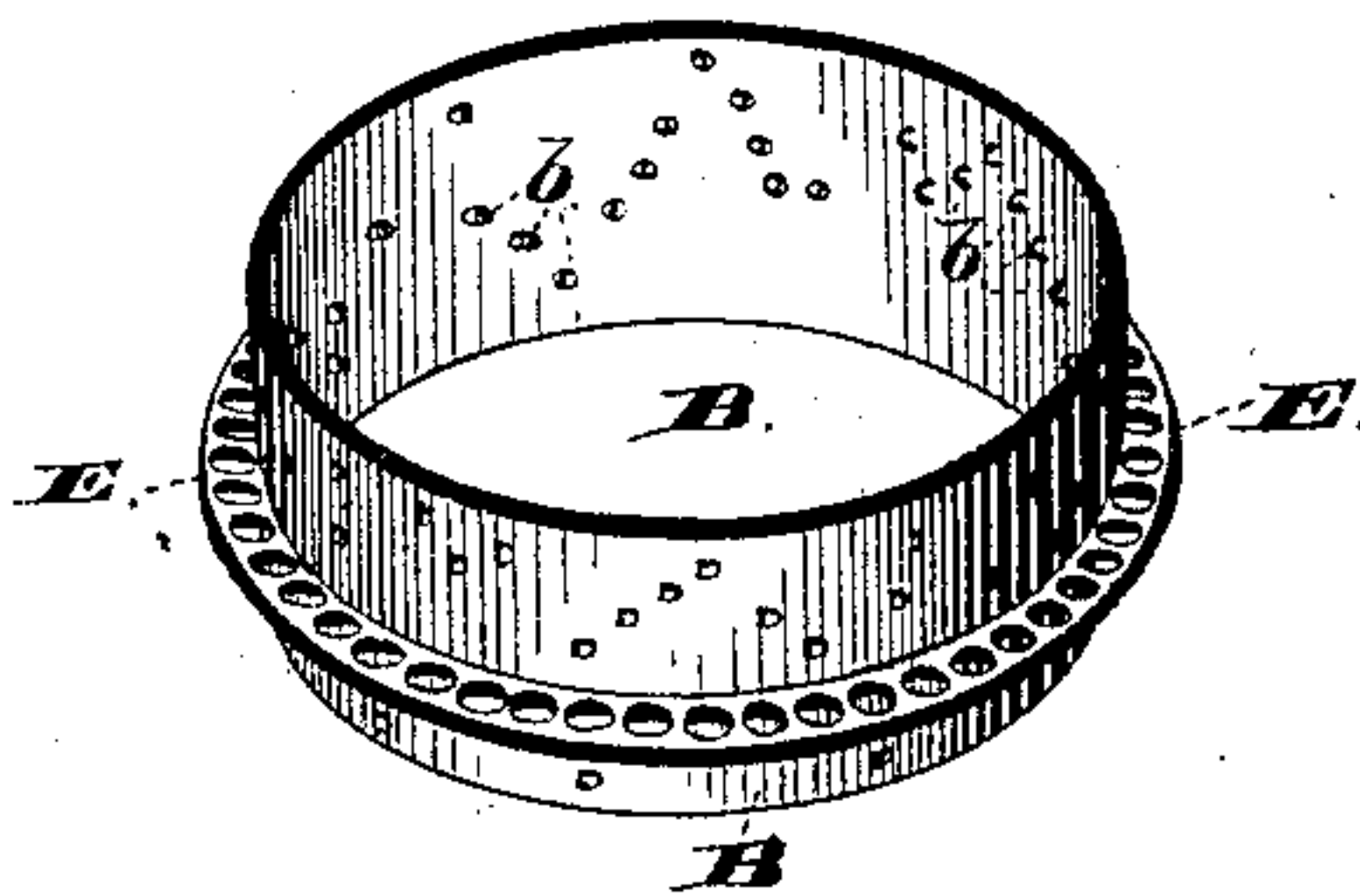


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM N. WEEDEN, OF NEW BEDFORD, MASSACHUSETTS.

MUSIC-BOX.

SPECIFICATION forming part of Letters Patent No. 283,307, dated August 14, 1883.

Application filed April 18, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM N. WEEDEN, of New Bedford, in the county of Bristol, and in the State of Massachusetts, have invented certain new and useful Improvements in Music-Boxes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this application, in which—

Figure 1 shows a perspective view of my invention inclosed in a case of watch form, with a portion broken away to show the operating mechanism. Fig. 2 shows a section on line x of Fig. 1, and Fig. 3 shows a perspective view of the cylinder removed.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to economize space in the arrangement of the parts of music-boxes, and to make them simpler and more economical in construction, and more compact in form; and to this end it consists in the peculiarities of construction, as hereinafter described, and more specifically pointed out in the claims.

In the drawings, A designates the case, which in the present instance is in shape and size substantially like a watch-case. It is made in two parts, A' A". The part A' corresponds in shape to the center-piece of a watch-case, and is adapted to receive a disk of glass, as the watch-case bezel receives and holds the crystal. The part A" is cup-shaped, and fits inside of the part A', as shown. Within and journaled at its ends, as shown, in the case thus formed is the short hollow cylinder B, made of sheet metal. The inside of this cylinder is provided with projections $b b$, so arranged as during the revolution of the cylinder to engage the free ends of the music-producing teeth or tines held in the rigid post D, screwed or otherwise attached to the bottom of the case, as shown in Figs. 1 and 2. This post D, I make in the shape of a frustum of a cone, so that there shall be a suitable graduation in the lengths of the teeth, the free ends of which must be in the same straight line to be properly engaged by the projections on the cylinder. Attached to the outside of the cylinder, and between it and the case, is a circular rack, E, which can be of any desired con-

struction, but in this case consists of a flange provided with suitable perforations to receive the teeth on the pinion F on the inner end of the shaft G, journaled in the pendant H, and provided on its outer end with a folding crank, K. (Shown in Fig. 1 in operative position in full lines, and in dotted lines folded in out of the way.) As will be seen by reference to the drawings, the projections within the cylinder are formed of tongues of the material of the cylinder punched inward. As shown, the gearing so rotates the cylinder that these projections engage the musical teeth or tines in such a direction as to offer the greatest resistance to bending. The tines strike against those sides of these tongues which were on the outside of the cylinder, and can only tend to bend them farther back; but, obviously, there is great resistance to such bending—more than there would be to force applied on the opposite side. These tongues or projections are, as usual in music-boxes, so situated relatively to each other and to the teeth of the music-comb that any desired air will be played thereon when the crank-shaft is turned and the cylinder revolved; but the especial feature of my invention is that this comb is situated within the cylinder, and is acted upon by teeth projecting inward therefrom. By such construction I economize in the space heretofore occupied in music-boxes by the cylinder and comb. I am enabled to use a cylinder of large diameter, and so can increase the length of the tune to be played beyond what was possible before without taking up too much space. That part of the space which was formerly occupied by the internal and inoperative part of the cylinder is in my music-box utilized to afford room for the comb and comb post or holder. The outside casing or box needs then to be only enough larger than the cylinder itself to make room for the operating-gearing, all the music-producing devices being on the inside of the cylinder.

The usual pins can be used instead of the projecting tongues described.

A cylinder constructed according to my invention is applicable to all musical devices having barrel attachments—such as music-boxes, chime bell-ringers, automatic playing mechanism for pianos, &c. As I so economize space, a music-box constructed according to

my invention can be made to play an air of considerable length, while the mechanism itself takes up very little space, and can be placed within a watch-case, as shown, or even in the head of a cane.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In a musical device, the hollow cylinder journaled at its ends in the case, and provided with internal projections arranged to properly engage the music-producing mechanism.

2. The combination of the hollow cylinder journaled at its ends in the case, and provided with internal projections, with the musical tines held by the post attached to the case and extending within the cylinder, substantially as and for the purpose set forth.

3. In combination with the hollow cylinder journaled at its ends in the case, the post D, attached to the case, extending within the cylinder and made conical in shape, so that the musical tines projecting therefrom are properly graduated in length, while their ends are in the path of the internal projections on the cylinder, substantially as shown and described.

4. The hollow cylinder provided on its interior with series of inward projections, and on its exterior with a rack, in combination with the pinion and the series of musical tines.

5. The cylinder for music-boxes and the like, made hollow and provided on its interior with series of projections, and on its exterior with a flange perforated as shown, to form a rack.

6. The barrel or cylinder for music-boxes and the like, journaled at its ends in the case, and provided on its exterior with a rack engaged by a pinion on the crank-shaft, journaled, as shown, in the pendant of the case.

7. In combination with the case made in two parts, as shown, the hollow cylinder having each of its ends directly supported by and journaled in one of these parts, the rack on the cylinder, and the engaging pinion on the shaft journaled in the case, substantially as and for the purpose shown and described.

8. In a music-box, the barrel or cylinder provided with the tine-striking projections, consisting of tongues bent or punched up from the material of the cylinder itself.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of April, 1883.

WILLIAM N. WEEDEN.

Witnesses:

F. C. S. BARTLETT,

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