

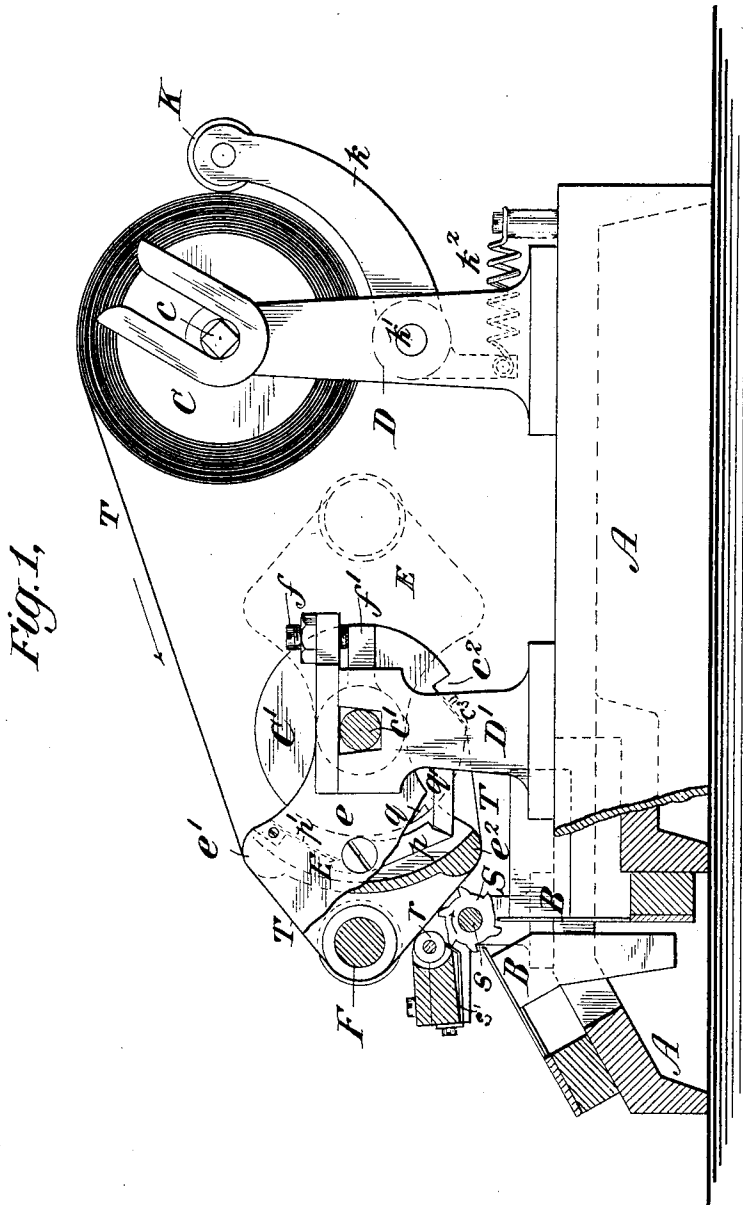
(No Model.)

2 Sheets—Sheet 1.

G. BOURQUIN.
MUSICAL BOX.

No. 587,925.

Patented Aug. 10, 1897.



WITNESSES:

R. H. Maynard
F. W. Wright.

INVENTOR

Gustave Bourguin

BY

BY
Hansen & Hansen
his ATTORNEYS.

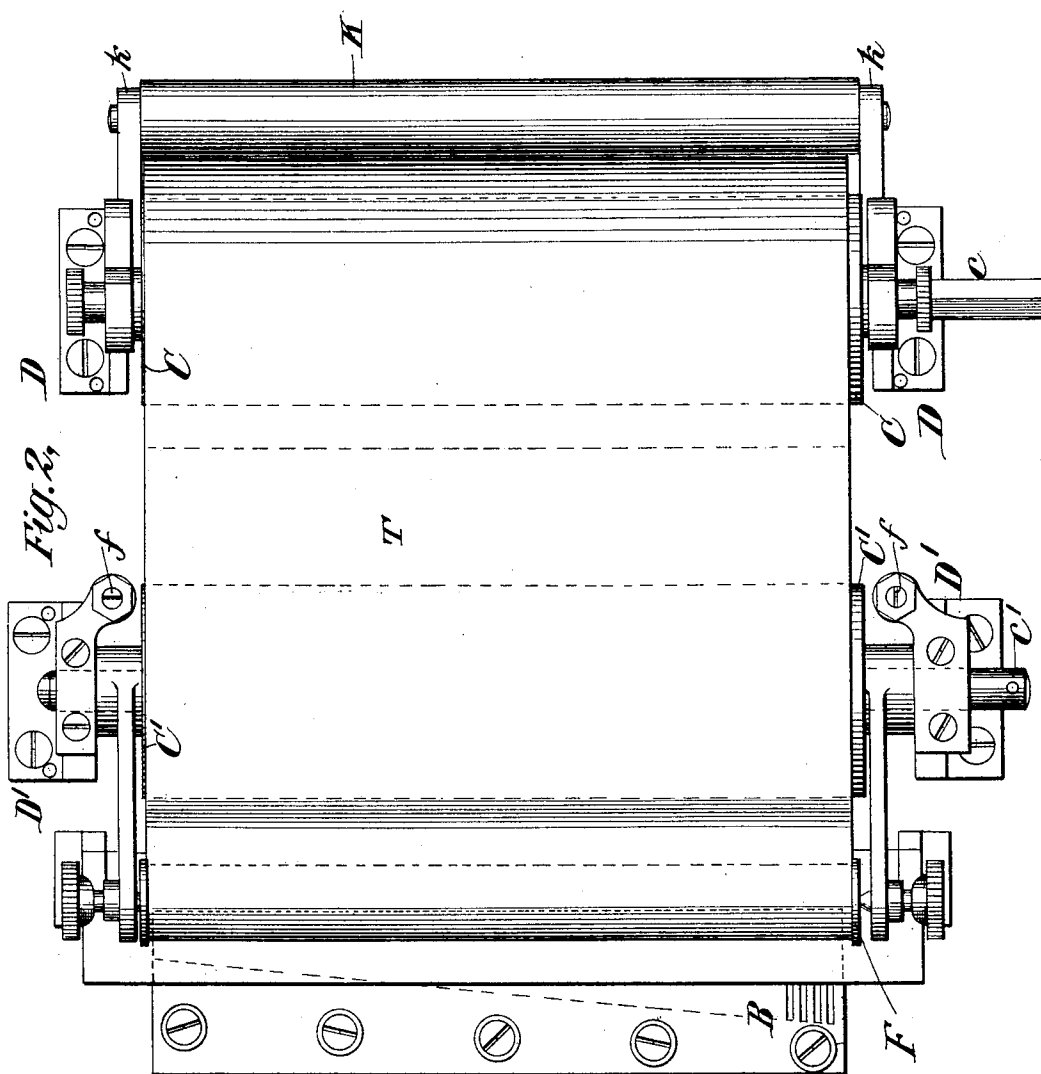
(No Model.)

2 Sheets—Sheet 2.

G. BOURQUIN.
MUSICAL BOX.

No. 587,925.

Patented Aug. 10, 1897.



WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

GUSTAVE BOURQUIN, OF MERCHANTVILLE, NEW JERSEY, ASSIGNOR OF
ONE-HALF TO JOSEPH BORNAND, OF NEW YORK, N. Y.

MUSICAL BOX.

SPECIFICATION forming part of Letters Patent No. 587,925, dated August 10, 1897.

Application filed September 11, 1896. Serial No. 605,508. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVE BOURQUIN, a citizen of the Swiss Republic, and a resident of Merchantville, Camden county, New Jersey, have invented Improvements in Musical Boxes, of which the following is a specification.

The object of my invention is to construct a simple and convenient musical box in which the teeth of the comb are operated by star-wheels, so that an elongated traveling tune-sheet may be employed in place of the rotary flat tune-sheet most commonly used.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of my improved construction of musical box. Fig. 2 is a plan view of the same, the perforations of the tune-sheet not being shown and the teeth of the upper comb being indicated only in part in order to avoid confusion.

The apparatus may be inclosed in any suitable box or case; but that has not been indicated in the drawings, as it forms no part of the invention.

A is a base-piece, preferably of the hollow form indicated in the drawings and adapted to carry the comb or combs B B, two such being shown in the drawings, to be operated by the same set of star-wheels S. These star-wheels are mounted on an axis *s* and are severally combined with springs *s'*, which, when pressing against the teeth, as illustrated in Fig. 1, tend to turn the wheels in the direction of the arrow in that figure.

The elongated tune-sheet is constructed to be wound up on and unrolled from a drum or roll C and wound up onto another roll C'. The extended ends of the shaft *c* of the roll C are adapted to be received into bearings at the upper ends of the uprights D, these bearings being open at the top to permit of the ready insertion and removal of the rolls with their different tune-sheets. One end of this shaft *c* may be squared, as shown in Figs. 1 and 2, for the reception of a crank-handle to rewind the tune-sheet.

The shaft *c'* of the winding-up roll C' is mounted in bearings at the upper ends of posts D' D'. This winding-up roll is provided with a longitudinal groove *c²* and pins *c³*. Clips or other suitable means are to be

provided for attaching thereto the outer end of each tune-sheet. To one end of the shaft *c'* of this winding-up drum will be applied the spring or other driving power to cause the desired travel of the tune-sheet.

In order to get the necessary tension of the tune-sheet in its travel from one drum to the other and to maintain the operative part of the sheet always in a fixed relation to the star-wheels notwithstanding the variations in diameter of the delivery-roll and the winding-up roll as the tune-sheet has to pass from one to the other, I combine with the drums a tension device consisting of a swinging frame E. I have mounted this swinging frame upon the shaft *c'* of the winding-up drum by means of its flanges *e*. This tension-frame has two or more bearing edges; but I prefer three, as shown—that is, upper and lower bearing edges *e'* and *e²* and centrally between them a bearing edge consisting of a roller F. When the end of the tune-sheet is to be connected to the pins or clips in the grooves *c²* of the winding-up drum C', this tension-frame is thrown into the position indicated by dotted lines in Fig. 1. Then the bar E is turned to the position shown by full lines in Fig. 1, so that the tune-sheet is stretched over the top and bottom bearing edges *e'* *e²* and the roller F. That part of the tune-sheet between the roller F and the lower bearing edge *e²* is then in proper relation to the star-wheels S to have the perforations of the tune-sheet act upon the star-wheels. Rollers *r* are provided also as guides. The winding-up of the tune-sheet onto the drum C' tends to keep the tension-frame E in the position shown in full lines in Fig. 1.

I prefer to provide one of the flanges *e* of the tension-frame E with a pawl *p*, acted on by a spring *p'*, Fig. 1, to engage with a notch *q* in the end of the roll C' whenever the tension-frame E is away from the position indicated by full lines, so that as the tension-frame is moved from the position indicated by dotted lines to that shown by full lines the pawl *p*, coming into engagement with the notch *q*, will turn the cylinder with it and so draw on and tension the tune-sheet. The pawl *p* is thrown out of engagement again by coming into contact with a fixed stop *q'*

as the tension-frame reaches the position shown by full lines, by which time the power to turn the winding-up drum will have been applied.

- 5 Adjustable set-screws *f* on ears on the standards *D'* bear against tailpieces *f'* on the flanges *e* of the tension-bar and so determine with nice adjustment the proper relation of the star-wheels to that part of the tune-sheet between the roller *F* and the bearing edge *e*².

10 I prefer to provide in connection with the delivery-roll a friction-roller *K* to prevent the too quick delivery of the tune-sheet. This friction-roller is carried by a forked arm *k*,
15 mounted at *k'* on some suitable part of the frame and acted on by a spring *k*² to keep the roller pressed up to the drum notwithstanding variations in diameter of the roll.

I claim as my invention—

- 20 1. The combination of the star-wheels of a music-box with a traveling tune-sheet, delivery and winding rolls therefor and a tension-frame between the said two rolls to tension the traveling tune-sheet said frame having
25 two bearing edges to maintain said sheet in proper relation to the star-wheels, notwithstanding the variations in diameter of the winding and delivery rolls, substantially as described.

- 30 2. The combination of the star-wheels of a music-box with a traveling tune-sheet, delivery and winding rolls therefor and a swinging tension-frame having two bearing edges to maintain the traveling tune-sheet in proper
35 relation to the star-wheels, substantially as described.

- 40 3. The combination of the star-wheels of a music-box with a traveling tune-sheet, delivery and winding rolls therefor and a swinging tension-frame, having two bearing edges and adapted to turn about the axis of the winding-roll, as and for the purpose described.

4. The combination of the star-wheels of a music-box with a traveling tune-sheet, delivery and winding rolls therefor and a swinging tension-frame having three bearing edges for the tune-sheet, substantially as described. 45

5. The combination of the traveling tune-sheet of a musical instrument with delivery and winding rolls therefor, a swinging tension-frame and a connection between said swinging frame and the winding-roll to turn the latter as the frame is being swung into operative position as and for the purpose described. 50

6. The combination of the traveling tune-sheet of a musical instrument with delivery and winding rolls therefor, a swinging tension-frame, a pawl-and-ratchet connection between the delivery-roll and said frame and a stop to disengage the pawl as the frame is turned into position, substantially as described. 55

7. The combination of the star-wheels of a music-box with a traveling tune-sheet, delivery and winding rolls therefor, a swinging tension-frame for the tune-sheet, and means for accurately adjusting its operative position, substantially as described. 60

8. The combination of a tune-sheet of a music-box with star-wheels and springs bearing on the star-wheels in a direction to tend to rotate them, whereby the teeth thereof may be projected into the perforations of the tune-sheet, as the latter travels along, substantially as described. 75

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GUSTAVE BOURQUIN.

Witnesses:

JOSHUA E. BORTON,
DAVID S. ENGLISH.