(No Model.) 2 Sheets—Sheet 1.

A. H. HAMMOND.

MECHANICAL MUSICAL INSTRUMENT.

No. 284,844. Patented Sept. 11, 1883.

Fig. 1.

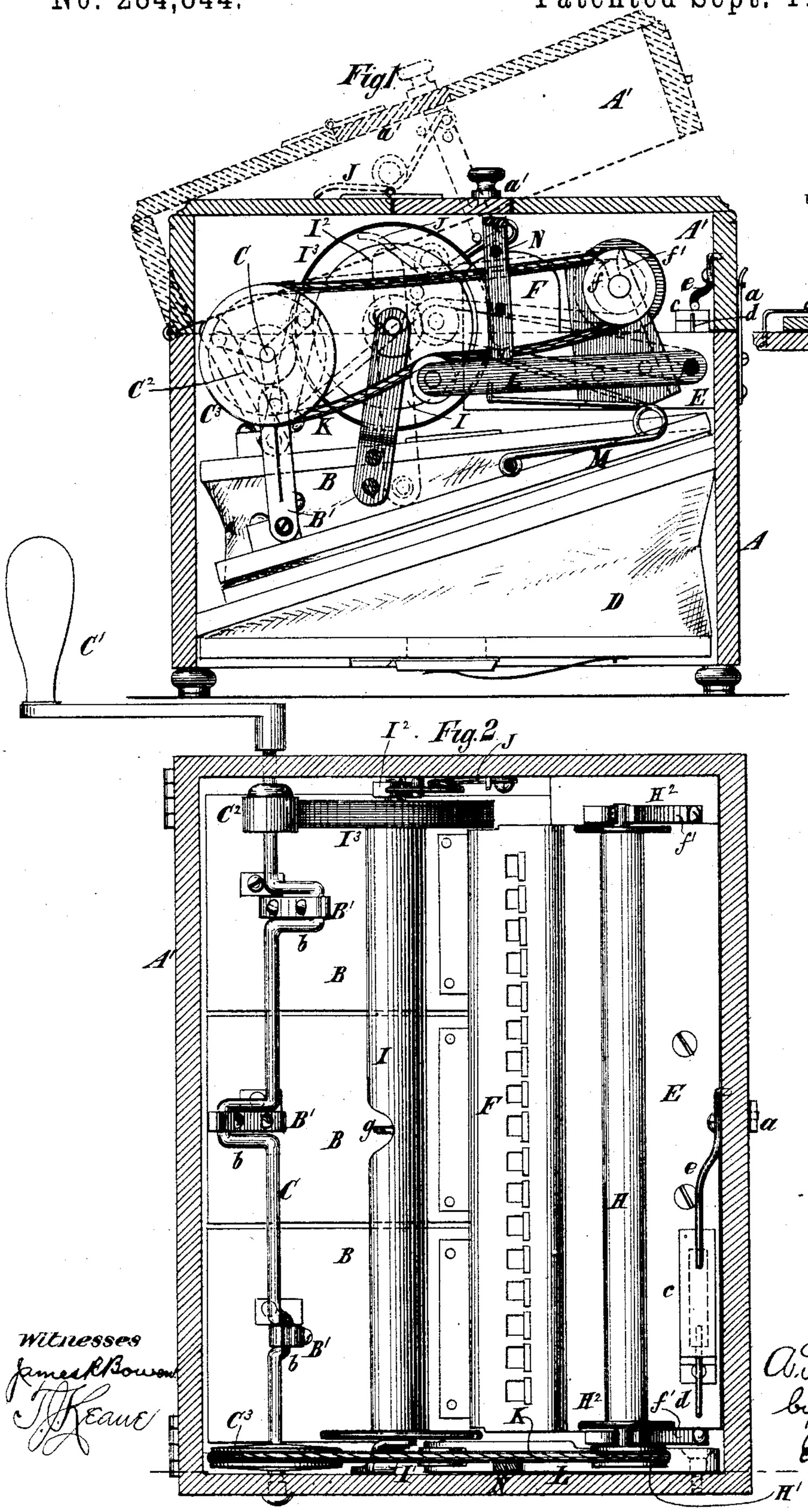
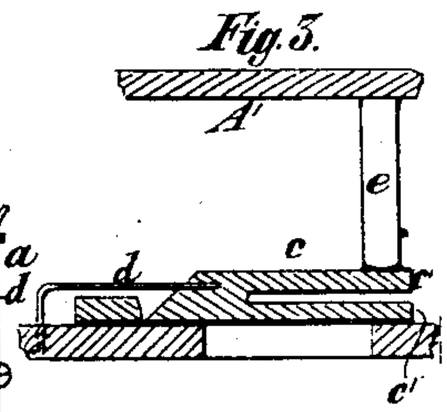


Fig. 3.



I². Fig. 2. J

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(No Model.) 2 Sheets—Sheet 2.

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Fig 4.

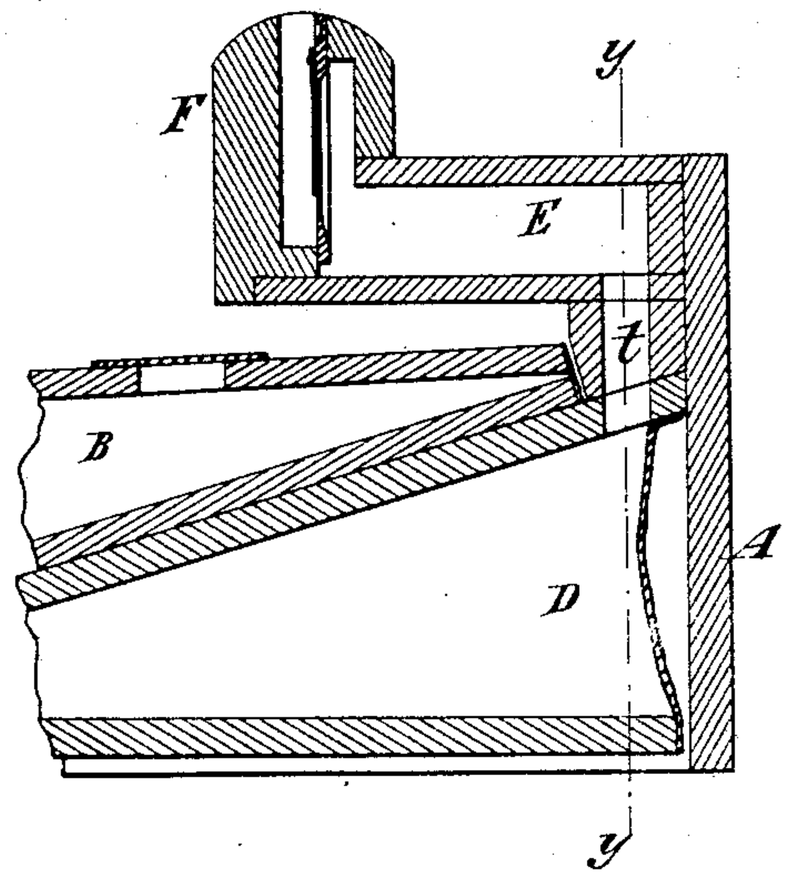
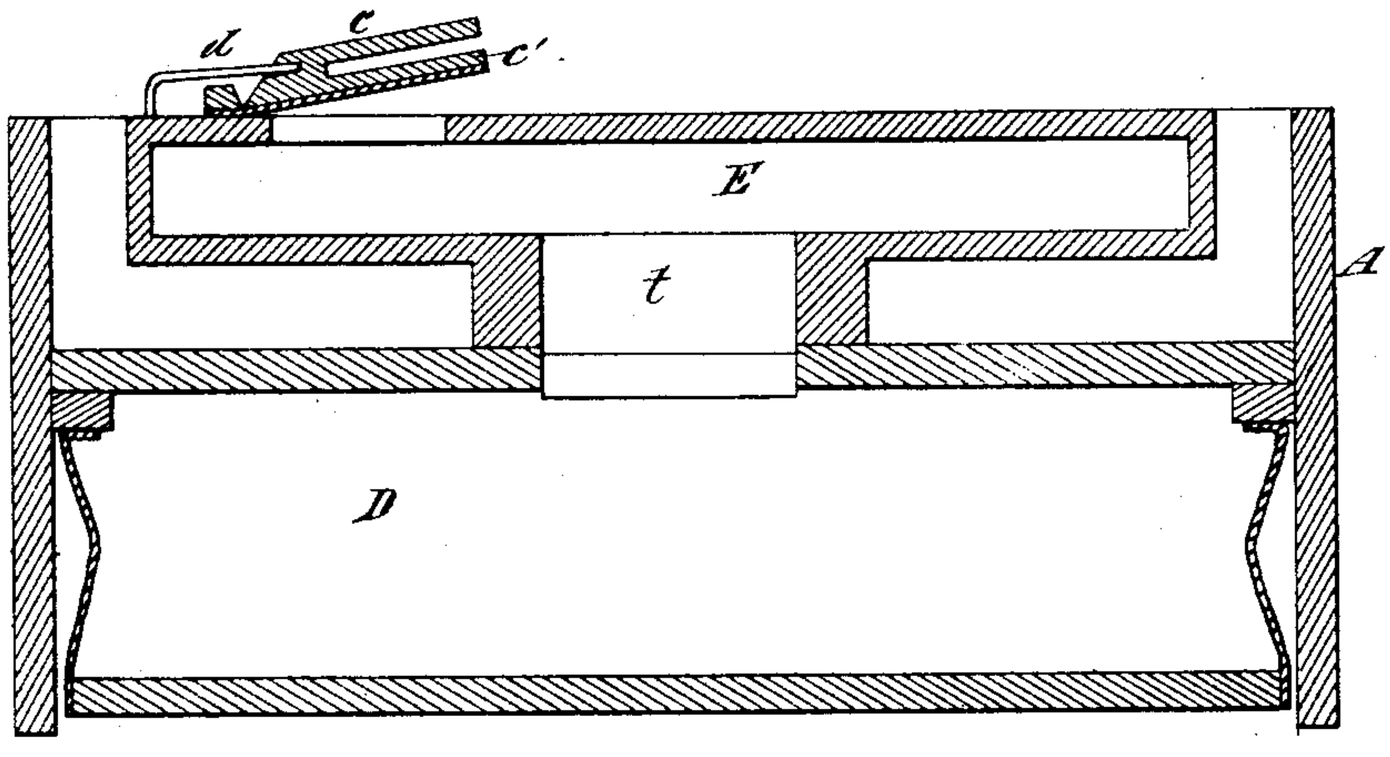


Fig 5.



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UNITED STATES PATENT OFFICE.

ANDREW H. HAMMOND, OF WORCESTER, MASSACHUSETTS.

MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 284,844, dated September 11, 1883.

Application filed December 1, 1882. (No model.)

To all whom it may concern:

Be it known that I, ANDREW H. HAMMOND, of Worcester, in the county of Worcester and State of Massachusetts, have invented a certain new and useful Improvement in Mechanical Musical Instruments, of which the following is a specification.

This improvement relates to mechanical musical instruments wherein perforated sheets control the playing, and are wound and rewound upon rollers termed "take-up" and "music" rollers.

The object of the improvement is to render the instrument operative for playing when a top section or cover with which it is provided is put on or adjusted into place, and to render the music-roller capable of rewinding the music-sheet when the top section is removed.

The improvement consists in the combination, in a mechanical musical instrument wherein a traveling music-sheet is employed, of a take-up roller on which the music-sheet is wound during playing, a music-roller on which the music-sheet is rewound after playing, a driving-shaft, a belt for transmitting motion from the driving-shaft to the music-roller, a top section or cover, a device adapted to move and put the belt under tension upon the removal of the top section or cover, and to be moved so as to slacken the belt when the top section or cover is put on or adjusted into place, and means for transmitting motion to the take-up roller when the top section or cover is adjusted into place.

The improvement also consists in the combination, in a mechanical musical instrument wherein a traveling music-sheet is employed, of a take-up roller on which the music-sheet is wound during playing, a music-roller on which the music-sheet is rewound after playing, a driving-shaft, a belt for transmitting motion from the driving-shaft to the music-roller, a top section or cover, a device capable of movement independently of the music-roller and adapted to act against the belt so as to tighten it or put it under tension when the top section or cover is removed, and be moved away from the belt when the top section or cover is put on or adjusted into place, and means for transmitting motion to the take-up roller when the top section or cover is adjusted into place.

The improvement also consists in the combination, in a mechanical musical instrument wherein a traveling music-sheet is employed, of a take-up roller on which the music-sheet is wound during playing, a music-roller on which the sheet is rewound after playing, a driving-shaft, a belt for transmitting motion from the driving-shaft to the music-roller, a top section or cover, a device capable of movement independently of the music-roller, and consisting of a lever adapted to rise against the belt, so as to tighten it or put it under tension when the top section or cover is removed, and a push-piece on the top section or cover, serving to depress said lever when the top section or cover is put on or adjusted into place.

The improvement also consists in novel details of construction and combinations of parts, hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a sectional elevation of a mechanical musical instrument embodying my improvement. Fig. 2 is a horizontal section of the same. Fig. 3 represents a valve which is applied to the wind-chest, and a push-piece acted on by the cover of the case to hold the valve closed. Fig. 4 represents a vertical section in a plane transverse to the rollers, showing the passage through which the wind-chest communicates with an air receiver or equalizer; and Fig. 5 represents a vertical section on the dotted line *y y*, Fig. 4.

Similar letters of reference designate corresponding parts in all the figures.

The case A of the instrument may be of any suitable material and construction. It is provided with a top section or cover, A′, which, as here shown, is hinged in place, and may be thrown back or removed at pleasure. When in place, it is fastened by a spring-catch, *a*. The top section or cover may be provided with a hinged swell-cover, *a′*.

B designates bellows, (shown as three in number,) having their movable boards connected by links B′ with cranks *b* on a driving-shaft, C, which is provided, outside the case A, with a hand-crank, C′. This driving-shaft may be supported in bearings in the sides of the case.

These bellows are in this example of my invention of the type known as "suction-bellows," but may be force-bellows. A receiver or equalizer, D, is combined with the bellows, as usual, and is shown as arranged below the bellows, the latter being mounted on its stationary board. The receiver or equalizer communicates, by means of a passage, *t*, (shown in Figs. 4 and 5,) with a wind-chest, E, on which is mounted a reed-board, F. The top or apex of the reed-board forms a rest for a traveling music-sheet. The wind-chest is provided with a valve, *c*, which is hinged in place at one end, and is impelled upwardly by a spring, *d*, so as to uncover an opening and prevent the sounding of the reeds. A push-piece, *e*, arranged on the cover, closes this valve when the top section or cover, A′, is put on or adjusted into place. This valve is cut so as to form two resilient portions, *c*′.

H designates a music-roller on which the music-sheet is normally kept wound. This roller is provided on one journal with a pulley, H′. Its journals fit in bearings H^2, which severally have a projection, *f*, and an elastic strip, *f*′, secured in place by a screw near the lower end. When inserted in the bearings, a friction is generated on the journals by the strips *f*′, thereby causing a tension on the music-sheet.

I designates a take-up roller. It is supported at one end in a stationary bearing, I′, affixed to one side of the case A, but offset inwardly away therefrom, and at the other end in a swinging bearing, I^2, which is pivoted to the opposite side of the case. The music-sheet is provided with an eye, which may be engaged with a hook, *g*, arranged in a recess in this roller, a simple detachable connection being thus formed.

Both the music-roller and the take-up roller are provided with flanges, between which the music-sheet is wound. As the peripheries of these flanges extend close to the reed-board, they guide the music-sheet over the apex or rest. The flange I^3 of the take-up roller, which is the nearer to the swinging bearing I^2, is made to constitute a wheel or pulley, and is adapted to engage with a pulley, C^2, on the driving-shaft. When the top section or cover, A′, is in place, a resilient or yielding push-piece, J, with which it is provided, exerts such a pressure on the swinging bearing I^2 toward the driving-shaft that the pulley I^3 is forced against the pulley C^2. Rotary motion may then be imparted to the take-up roller from the driving-shaft. Either or both of the pulleys I^3 C^2 may be faced with india-rubber or like material. The driving-shaft C is provided with a pulley, C^3. A belt, K, passes over this pulley and over the pulley H′ on the music-roller H.

L designates a lever, (here shown as fulcrumed near one end to one side of the case A, and carrying at the other an anti-friction roller, adapted to impinge upon the belt K.) A spring, M, impels the free end of the lever upward, and causes it to tighten or produce a tension on the belt. This result can only occur when the top section or cover is removed or swung back. Then the driving-shaft can be made to transmit motion to the music-roller, and fails to act on the take-up roller, because the swinging bearing I^2 can then move away from the driving-shaft. The top section or cover is provided with a push-piece, N, which, when the said top section or cover is closed, depresses the lever L and causes the belt K to be relaxed. The driving-shaft will then fail to operate on the music-roller through the belt, but will drive the take-up roller.

I do not claim herein the subject-matter shown and described in my application for Letters Patent filed November 14, 1882, the Serial number of which is 76,735.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a mechanical musical instrument wherein a traveling music-sheet is employed, the combination of a take-up roller on which the music-sheet is wound during playing, a music-roller on which the music-sheet is rewound after playing, a driving-shaft, a belt for transmitting motion from the driving-shaft to the music-roller, a top section or cover, a device adapted to move and put the belt under tension upon the removal of the top section or cover, and to be moved so as to slacken the belt when the top section or cover is put on or adjusted into place, and means for transmitting motion to the take-up roller when the top section or cover is adjusted into place, substantially as specified.

2. In a mechanical musical instrument wherein a traveling music-sheet is employed, the combination of a take-up roller on which the music-sheet is wound during playing, a music-roller on which the sheet is rewound after playing, a driving-shaft, a belt for transmitting motion from the driving-shaft to the music-roller, a top section or cover, a device capable of movement independently of the music-roller, and adapted to act against the belt so as to tighten it or put it under tension when the top section or cover is removed, and to be moved away from said belt when the top section or cover is put on or adjusted into place, and means for transmitting motion to said take-up roller when the top section or cover is adjusted into place, substantially as specified.

3. In a mechanical musical instrument wherein a traveling music-sheet is employed, the combination of a take-up roller on which the music-sheet is wound during playing, a music-roller on which the music-sheet is rewound after playing, a driving-shaft, a belt for transmitting motion from the driving-shaft to the music-roller, a top section or cover, a device capable of movement independently of the music-roller, and consisting of a lever adapted to rise against the belt, so as to tighten it or put it under tension when the top section or cover is removed, and a push-piece on the top section or cover, serving to depress the

said device when the top section or cover is put on or adjusted in place, substantially as specified.

4. The combination, with the wind-chest E, of a valve for closing an opening therein, and comprising a resilient portion and a hinged cover, adapted, when closed or shut, to hold said valve to its seat, substantially as specified.

5. The combination, with the wind-chest E, of the valve *c* for closing an opening therein, and comprising a resilient portion, the push-piece *e*, bearing upon said valve, and a hinged cover, A′, adapted, when shut, to act upon said push-piece, and thereby hold the valve closed, substantially as specified.

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