R. W. PAIN.

ADJUSTABLE MUSIC BOX.

APPLICATION FILED JAN. 24, 1911.

1,021,471. Patented Mar. 26, 1912.

3 SHEETS—SHEET 1.

Fig. 1.

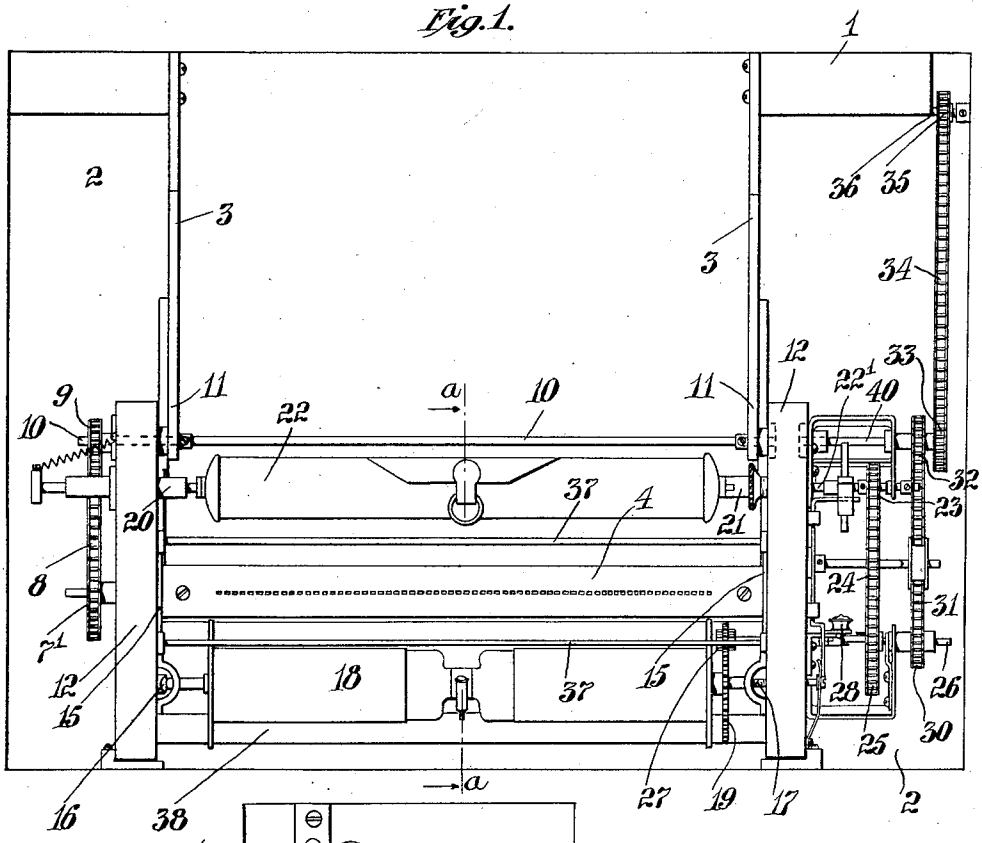
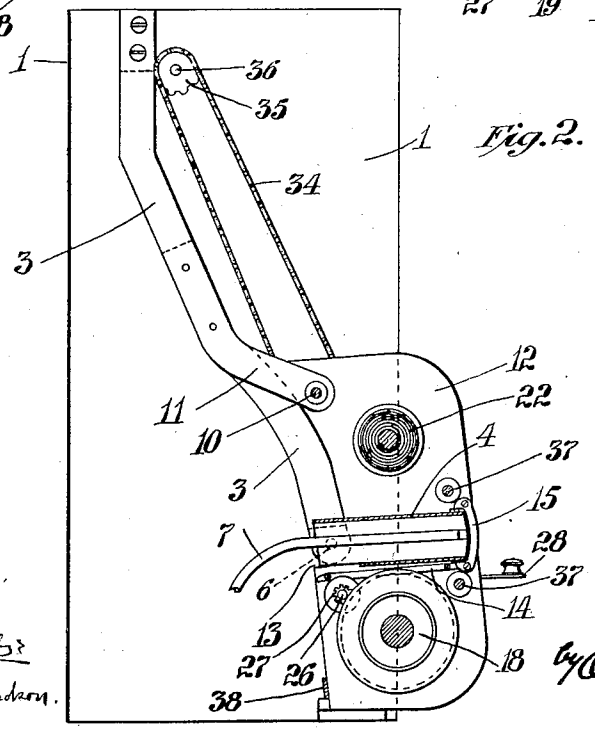


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

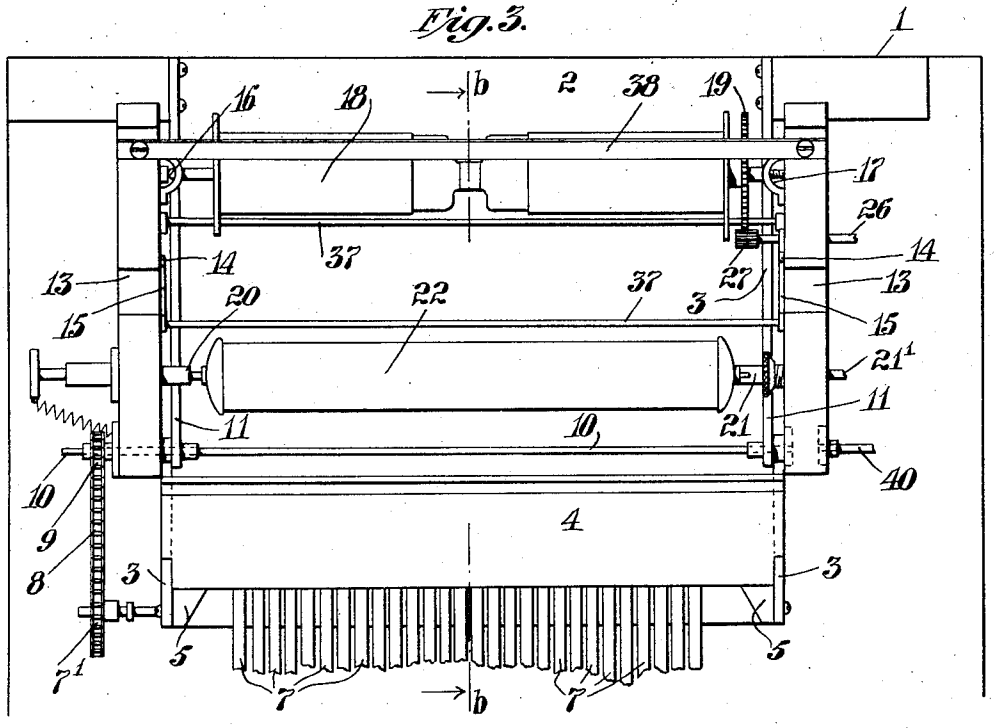
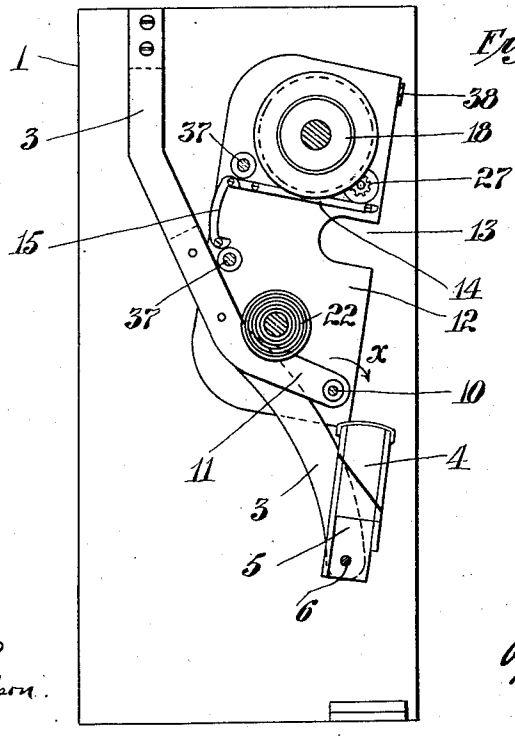


Fig. 4.



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R. W. PAIN.

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3 SHEETS—SHEET 3.

Fig. 6.

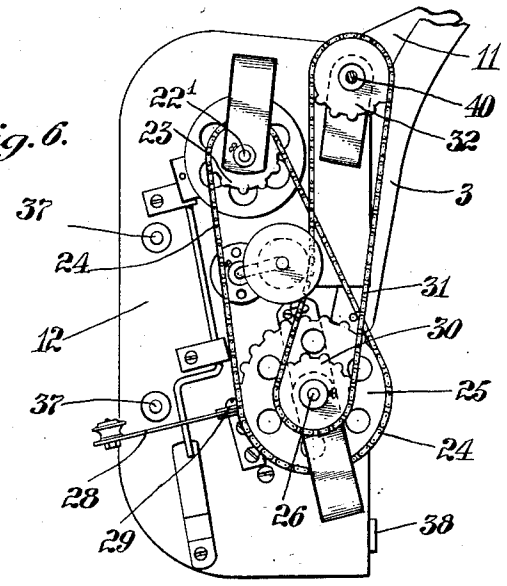


Fig. 5.

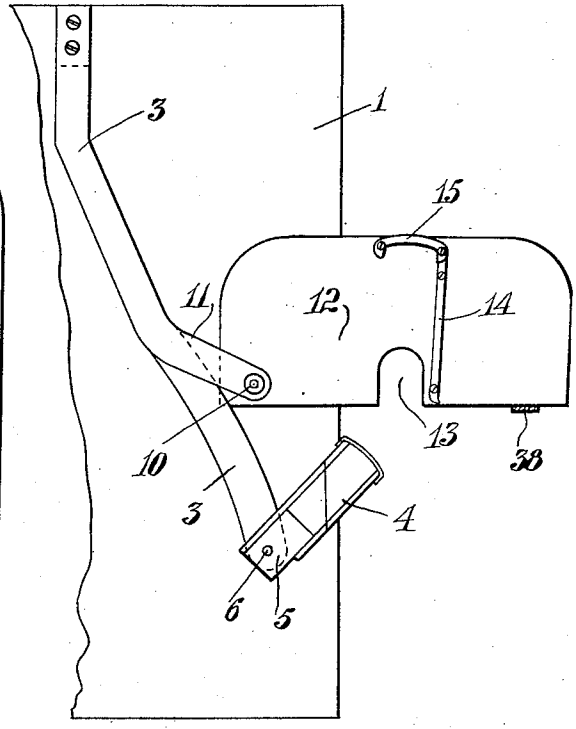
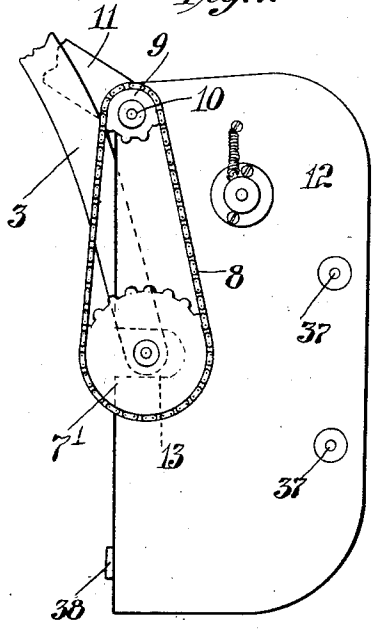


Fig. 7.



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UNITED STATES PATENT OFFICE.

ROBERT W. PAIN, OF NEW YORK, N. Y.

ADJUSTABLE MUSIC-BOX.

1,021,471. Specification of Letters Patent. **Patented Mar. 26, 1912.**

Application filed January 24, 1911. Serial No. 604,341.

To all whom it may concern:

Be it known that I, ROBERT W. PAIN, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Adjustable Music-Boxes, of which the following is a specification.

This invention relates to new and useful improvements in adjustable music boxes for player pianos and the object of my invention is to provide a new and improved adjustable music box for such instruments, which when not in use can be folded very compactly so as to be out of the way and for use can be brought into convenient position for the operator, and which music box does not necessitate or require that the dimension of an ordinary upright piano casing, in the direction from front to rear be increased as required for the music box in use heretofore, as my improved music box when folded for non-use, and when the front of the piano is closed, is so compact that it can find sufficient space in any upright piano cases of ordinary width, but when swung down for use projects from the opening in the front of the piano case.

In the accompanying drawings in which like letters of reference indicate like parts in all the figures: Figure 1 is a front elevation of my new and improved adjustable music box swung down and adjusted for use. Fig. 2 is a vertical transverse sectional view of the same on the line *a*—*a* Fig. 1. Fig. 3 is a front elevation of the same when folded into the casing, certain parts being omitted. Fig. 4 is a vertical transverse sectional view through the same on the line *b*—*b* of Fig. 3 when in the position shown in Fig. 3. Fig. 5 is a vertical sectional view, parts being omitted, showing the midway position of the parts while they are being brought from the raised to the lowered or from the lowered to the raised position. Fig. 6 is an outside view of one end plate of the swinging support. Fig. 7 is an outside elevation of the opposite end plate of the swinging roll support.

The piano case 1 is provided in its front with the conventional rectangular opening 2, giving access to the music box, that is, to the parts containing the tracker and the rolls, which opening can be closed in the usual manner by sliding doors, which are not shown.

From the top of the opening 2, two slightly angular bars 3 extend downward, their lower ends being about one quarter of the height of the opening from the bottom thereof and slightly to the rear of the front of the casing as is clearly shown in Fig. 5.

The tracker bar 4, of conventional construction, is provided at its bottom edge with end lugs 5, which are pivoted between the lower ends of said bars 3 so that said tracker bar can swing from the position shown in Fig. 4, to the position shown in Fig. 5 and to the position shown in Fig. 2. The tracker bar has its ducts connected with flexible tubes 7 which lead to the usual valve mechanism not shown and which forms no part of the present invention.

When the apparatus is collapsed, as it is, when not in use, the tracker bar is substantially in upright position and when the mechanism is in use the tracker bar is swung into substantially horizontal position as shown in Fig. 2, and when passing from one position to the other passes through the position shown in Fig. 5. One end pivot 6 of the tracker bar extends through the lower end of the corresponding bar 3, in which it turns loosely, and is rigidly connected with the tracker bar, so that this pivot turns as the tracker bar swings and on this pivot pin 6 a sprocket wheel 7′ is secured over which passes an endless chain 8, which also passes over a similar but smaller sprocket wheel 9 fixed on a shaft 10 which is mounted to turn in the ends of two downwardly and outwardly inclined arms 11 of the bars 3, which shaft also passes through the corner parts of two end plates 12 located adjacent to and outside of the bars 3 and their arms 11, which end plates are provided in their rear edge with a notch 13. To the inner face of each end plate 12 a substantially L-shaped guide strip 14 is secured the outer curved arm 15 of which forms a stop for the tracker when the same is in its lower or operative position when the end parts of the outer face of the tracker fit snugly against the inner edges of said curved parts 15 and the underside of the tracker rests on the guides 14. In bearings 16 and 17 of the end plates 12 the conventional take-up roll 18 is mounted and carries a cog wheel 19. At the opposite side of the tracker the two bearings 20 and 21 for the music roll 22 are mounted, the bearing 20 being a sliding spring bearing of conven-

tional construction and the bearing 21 being connected with a shaft 22′ which by the conventional clutch mechanism can be driven by the sprocket wheel 23 and sprocket chain 24 from the sprocket wheel 25 which, by any well known clutch mechanism can be connected wtih the shaft 26 extending through one end piece 12 and carrying on its inner end the driving pinion 27 which can be engaged with the cog weel 19 on the take-up roll 18. A manually operable lever 28 is pivoted at 29 on the outer face of said end wall 12 and serves to shift the shaft 26 so as to bring the pinion 27 into or out of engagement with the cog wheel 19, which mechanism is of well known construction. It will be observed that the entire driving mechanism is supported on the outer face of one end plate 12.

A sprocket wheel 30 is fixed on the shaft 26 and by means of an endless sprocket chain 31 is driven from the sprocket wheel 32 fixed on one end of the shaft 40 adjacent to which sprocket wheel 32 another sprocket wheel 33 is fixed on the shaft 40 over which sprocket wheel an endless driving chain 34 passes which also passes over a sprocket wheel 35 on a shaft 36 projecting into a music box, and connected with suitable driving mechanism from some source of power, so that when this shaft 35 is rotated the shaft 40 is operated and accordingly as to how the lever 28 is set the rolls are driven to wind the music sheet upon the take-up roll or upon the music roll.

The shaft 40 is in alinement with the shaft 10 but not connected therewith, so that the frame, carrying the music rolls and driving and shifting gear can be swung up or down, on a line coincident with the axis of the shaft 40.

The two end plates 12 are united by two front cross bars 37 and by the rear cross bar 38.

The operation is as follows: Ordinarily when the player piano is not in use the tracker and note roll support are swung up as shown in Figs. 3 and 4 so as to be entirely within the casing of the upright piano. When the player is to be used the support for the note rolls is swung down from the position shown in Fig. 4 into the position shown in Fig. 2 and as it swings down the shaft 10 is turned in the direction of the arrow *x* Fig. 4 and by means of the sprocket wheels 7′ and 9 and chain 8 the tracker is swung from the position shown in Fig. 4 into the positions shown in Fig. 2 and slides along the guides 14 until its outer end face at the end of the tracker rests on the parts 15. It will be observed that now the rolls, the tracker and the end plates 12 project beyond the front of the piano casing as does also the hand lever 28 so that all parts are in convenient position for operation, observation and use. After the playing has been completed the mechanism can be swung from the position shown in Fig. 4 into the position shown in Fig. 2.

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

1. In a player piano, the combination with the piano casing, having an opening in its front, of a music roll and take-up roll support, pivoted behind said opening, a tracker pivoted independently of the music roll and take-up roll support, behind said opening, and L-shaped strips one part thereof forming a guide for the tracker and the other part forming a stop for the tracker, substantially as set forth.

2. In a player piano, the combination with the piano casing, having an opening in its front, of a music roll and take-up roll support, pivoted behind said opening, a tracker pivoted independently of the music roll and take-up roll support, behind said opening, and guides for the tracker on said music roll and take-up roll support, substantially as set forth.

3. In a player piano, the combination with a piano casing having an opening in its front, of a music roll and take-up roll support, pivoted at its upper part behind said opening, to swing partly through said opening, a music roll and take-up roll mounted on said support, a tracker pivoted independently of said support, power transmitting mechanism for driving said rolls, which mechanism is secured to one end wall of said support, and a manual lever projecting beyond the front edge of the said end wall of said support and serving to control said power transmitting mechanism, substantially as set forth.

4. In a player piano, the combination with a piano casing, having an opening in its front, of fixed bars behind said opening, a tracker pivoted to said bars, a music roll and take-up roll support pivoted to said bars, and means for imparting a swinging motion to the tracker from said support, substantially as set forth.

5. In a player piano, the combination with a piano casing, having an opening in its front, of bars projecting into said opening, a tracker pivoted to said bars, a music roll and take-up roll support pivoted to said bars, and means for imparting a swinging motion to the tracker from the pivots of said support, substantially as set forth.

6. In a player piano, the combination with a piano casing, having an opening in its front, of fixed bars within the casing behind said opening, a music roll and take up roll support, pivoted to said bars, and a music roll and take up roll mounted on said support, a tracker pivoted to said bars, motion transmitting means for the music roll

and the take up roll mounted on said support in alinement with the pivots of the said support, and means for driving said motion transmitting means, substantially as set forth.

7. In a player piano, the combination with a piano casing, of a support pivotally mounted in the casing to swing from a position entirely within the casing to a playing position partially beyond the front of the casing, two music rolls pivoted in said support, a tracker pivoted within the casing independent of said support, means for swinging said tracker from a position entirely within the casing into a position partly beyond the front of the casing, and a guide strip and stop on each side wall of the said support for guiding the tracker into the position partly beyond the front of the casing and holding the tracker in this position, substantially as set forth.

Signed at New York city, in the county of New York, and State of New York, this 7th day of Jan'y A. D. 1911.

ROBERT W. PAIN.

Witnesses:

JAMES PURCELL,

GEORGE BELLA.