A. JOHNSEN.

MUSIC LEAF TURNER.

APPLICATION FILED AUG. 26, 1910.

1,005,710.

Patented Oct. 10, 1911.

3 SHEETS—SHEET 1.

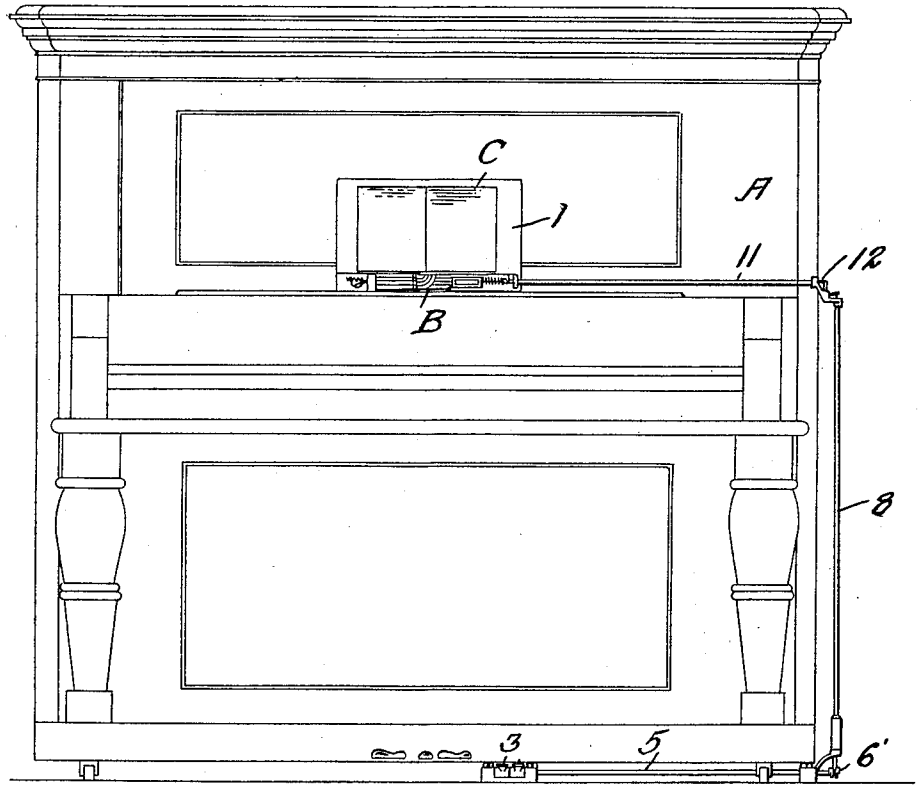

Fig. 1.

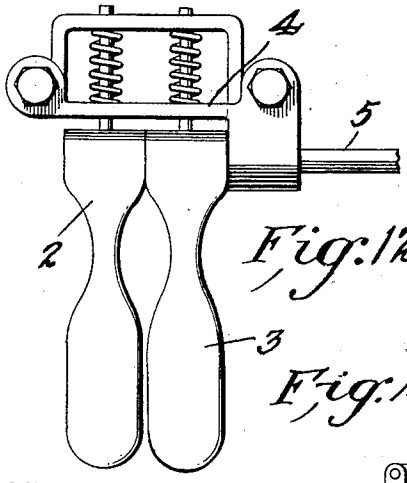

Fig. 12.

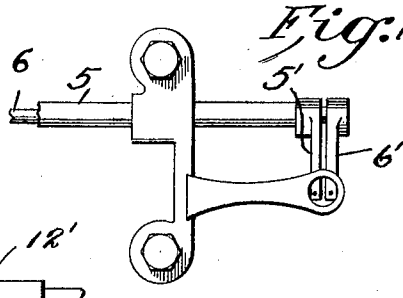

Fig. 13.

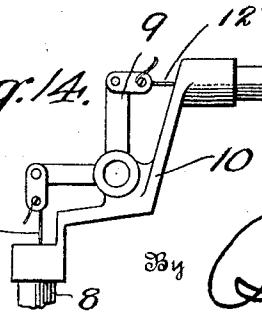

Fig. 14.

Witnesses

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3 SHEETS—SHEET 2.

Fig. 2.

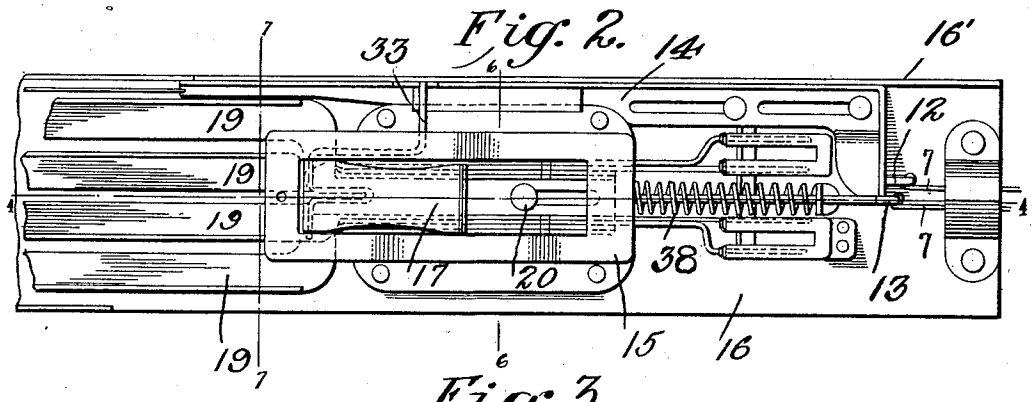


Fig. 3.

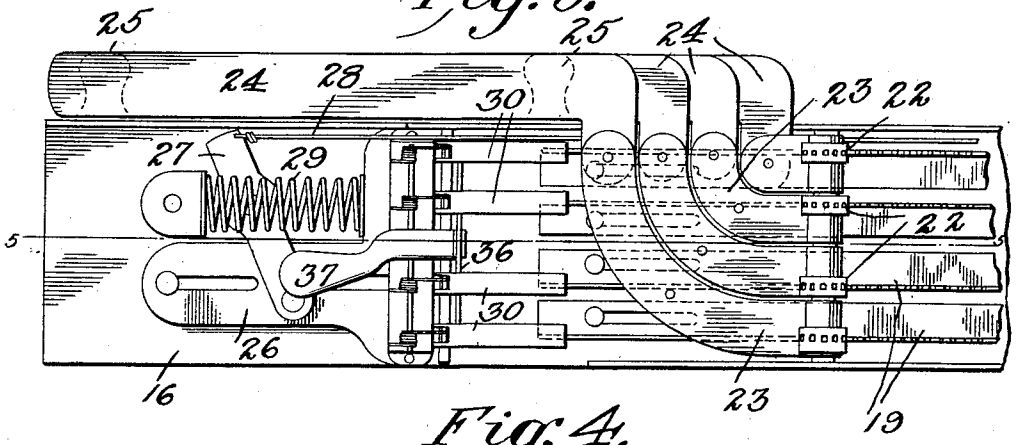


Fig. 4.

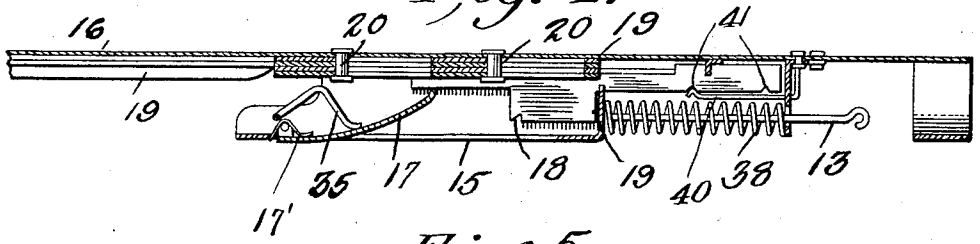
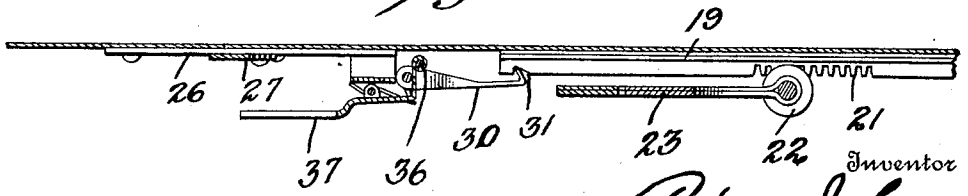


Fig. 5.



Witnesses

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3 SHEETS—SHEET 3.

Fig. 6.

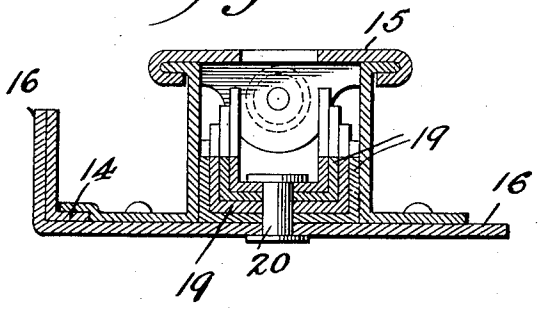


Fig. 8.

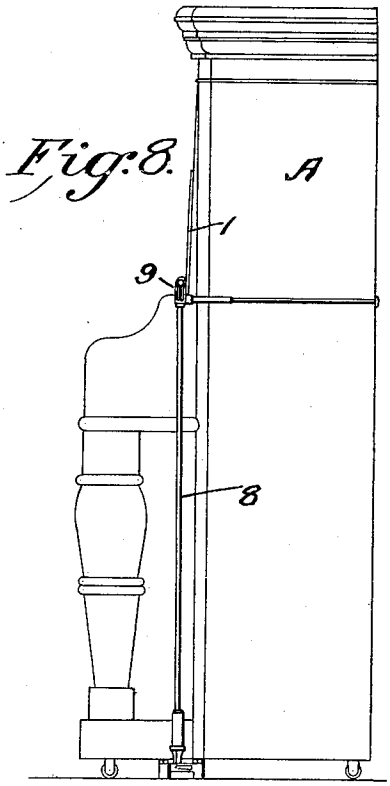


Fig. 7.

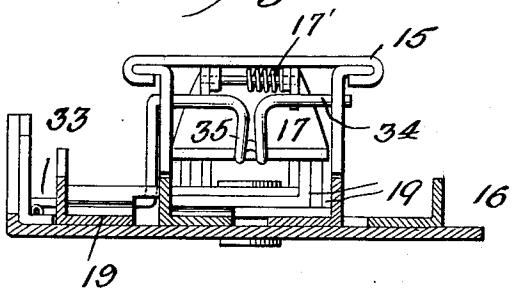


Fig. 15.

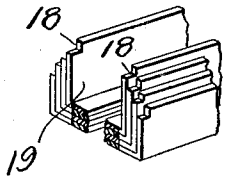


Fig. 9.

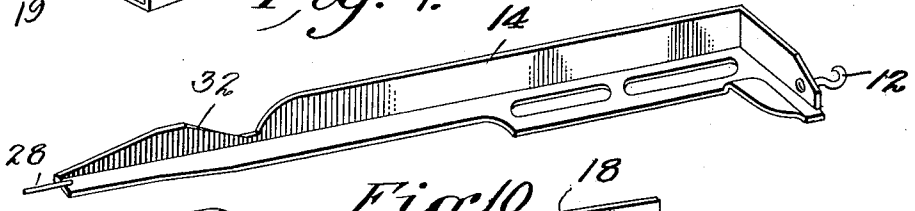


Fig. 10.

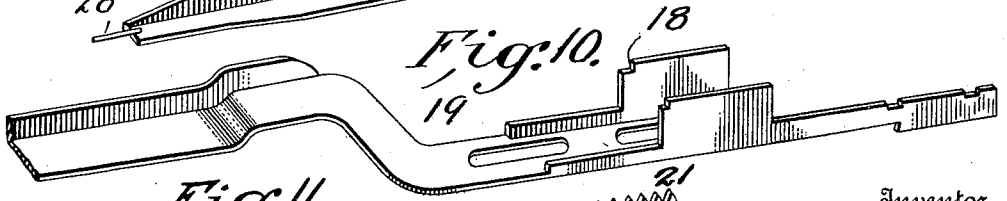
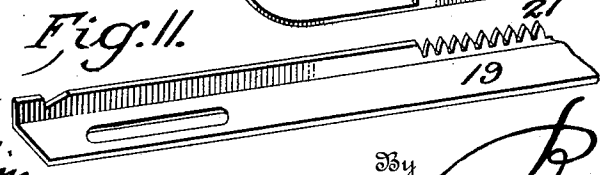


Fig. 11.



Witnesses

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UNITED STATES PATENT OFFICE.

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MUSIC-LEAF TURNER.

1,005,710. Specification of Letters Patent. Patented Oct. 10, 1911.

Application filed August 26, 1910. Serial No. 579,099.

To all whom it may concern:

Be it known that I, ANDREW JOHNSEN, a subject of the King of Denmark, residing at Warren, in the county of Warren and State of Pennsylvania, have invented certain new and useful Improvements in Music-Leaf Turners, of which the following is a specification.

This invention embodies certain improvements in that class of devices commonly known as music leaf turners, the invention residing in specific features of the construction of the mechanism whereby leaves of music may be readily turned in consecutive order without the necessity of using the hands of the operator for such purpose.

For a full understanding of the invention, reference is to be had to the following detail description and to the accompanying drawings, in which—

Figure 1 is a front elevation of a piano showing the invention applied thereto; Fig. 2 is a plan view partly broken away showing a part of the operating mechanism by which the leaf turning members are actuated; Fig. 3 is a view similar to Fig. 2 showing another part of the operating mechanism, the view being really a continuation of Fig. 2 toward the left; Fig. 4 is a longitudinal sectional view taken about on the line 4—4 of Fig. 2, the slides being shown in positions assumed when they have been actuated to move the leaves to the left; Fig. 5 is a longitudinal sectional view taken about on the line 5—5 of Fig. 3; Fig. 6 is a tranverse section taken about on the line 6—6 of Fig. 2; Fig. 7 is a transverse section taken about on the line 7—7 of Fig. 2; Fig. 8 is an end view of a piano showing the invention applied thereto; Fig. 9 is a detail perspective view of the reversing plate; Fig. 10 is a detail perspective view of one of the actuating plates; Fig. 11 is a broken detail perspective view of the left hand end of the actuating plate shown in Fig. 10; Fig. 12 is a detail plan view of the pedals; Fig. 13 is a detail view of the supporting base of the vertical standard; Fig. 14 is a detail view of the angle member at the upper end of the vertical standard; Fig. 15 is a fragmentary perspective view of the notched portions of the actuating slides.

Throughout the following detail description and on the several figures of the drawings, similar parts are referred to by like reference characters.

Specifically describing the invention with reference to the main parts, as shown in Figs. 1 and 8, the music leaf turner is applied to a piano, though the invention may be used in connection with music stands, suitable attaching mechanism always being employed to operatively connect the music leaf turning devices with the operating pedals or other means.

The leaf turning mechanism proper consists of a back 1, adapted to rest upon the music supporting ledge of the piano A, said back having secured thereto the mechanism B for turning the leaves of the sheet music, shown at C. The mechanism B is operated preferably by means of turning and reversing pedals 2 and 3 supported on a suitable base 4 arranged near the pedals of the piano, the pedal 3 being connected with an outer tubular rotatable member 5, in which is adapted for rotation a rod 6. The members 5 and 6 are provided at their outer ends with crank arms 5′ and 6′ respectively, the crank arms each being connected, by a flexible connection 7 passing upwardly through a tubular standard 8, with a bell crank lever 9 pivotally mounted on an angle member 10 by which the standard 8 is connected with a tubular arm 11. Flexible members or connections 12′, similar to the connections 7, pass through the tubular arm 11, and connect the bell crank 9 with hooks 12 and 13, the hook 12 being carried by a reversing plate 14 shown in Fig. 9 and the hook 13 being extended from the end of a sliding actuator 15 movable longitudinally of a base plate 16 attached to the back 1 of the device.

Pivoted to the actuator 15 is a pawl 17 adapted to engage in notches 18 in spaced flanges of actuating slides 19. The actuating slides 19 have a pin and slot connection with the base at 20, and portions of said slides are of U-form in cross section, as shown clearly in Fig. 6 of the drawings. The notches 18 in the side flanges of the slides 19 are adapted to be engaged by the pawl 17 when the actuator 15 is reciprocated in an outward direction. The actuating slides 19 are nested in one another, so to speak, and the side flanges of said slides at one end have a stepped arrangement, certain flanges projecting higher than others. This construction is necessary so that when the actuator 15 is moved outwardly the first time the pawl 17 engages the notches of the largest flanges which are carried by one ac-

tuating slide 19, the actuator then returning to its normal position shown in Fig. 4. On the second outward movement of the actuator, the notches of the slide having the next larger flanges are engaged and said slide is forced outwardly simultaneously with the movement of the actuator. The actuating slides are toothed to form racks, as shown at 21, and said racks engage pinions 22 which form the hub portions of the pivoted leaf turning members 23. Four of the latter are illustrated though any suitable number may be employed, there always being an actuating slide for each member 23. Furthermore, each of the leaf turning members 23 is preferably provided with a pivoted end section 24 provided with the clasp means 25 to directly engage the leaf of music. When the music leaf turner is not in use, the members 24 are turned downwardly so as to remain in a plane below the level of the supporting flange 16′ of the base plate 16, this permitting the operator to handle each sheet of music in the usual way without employing the invention.

From the foregoing it will be understood that when the actuator 15 is pulled toward the right, as shown in Fig. 2, by depression of one of the pedals 2 and 3, pivotal movement of one of the leaf turning members 23 will be effected by reason of the coöperation of the racks 21 of the actuating slides with the pinions 22 above referred to. When all of the actuating slides have been operated, which will be accomplished in the present construction by depression of the pedal connected with the actuator 14 four different times, the leaves of the sheet music will all have been turned, assuming that there are four leaves, and in order to reverse the position of said leaves, mechanism now to be described, whereby all four actuating slides 19 will be simultaneously operated, will be employed. For this purpose it is contemplated to provide at the left hand end of the base 16, a carrier 26 operable by a lever 27 pivoted to the base 16, said lever being connected by a wire or rod 28 with the reversing slide 14. The slide 14 is connected, of course, with one of the pedals 2 and 3, the other pedal being connected to the actuator 15 as above set forth. Normally a coiled spring 29 tends to hold the carrier 26 in the position shown in Fig. 3, but when the reversing slide 14 is operated said carrier is forced toward the adjacent outer end of the base 16, carrying with it a plurality of pivoted pawls 30 which have been engaged in notches 31 at the left ends of the actuating slides 19. (See Fig. 5.) When the slides 19 have been operated so as to throw the several leaf turning members 23 into the positions shown in Fig. 3, the various pawls 30 engage the notches 31 of the slides 19 and hence movement outwardly of the reversing slide 14, through its intermediate connections with the carrier 26 will force said carrier toward the adjacent outer end of the plate 16, thereby pulling all of the slides 19 back into their normal positions simultaneously, throwing the leaf turning members 23 into their original positions, ready for the operation of again turning the leaves. When the actuating slides 19, as shown in Figs. 2 and 3, are moved to the left by means of the carrier 26 to restore the members 23 to their original positions, the pawl 17 of the actuator 15 is raised to prevent said pawl from engaging the flanged parts of the slides 19 as said slides are moved in the direction stated. The raising of said pawl 17 is effected by means of a cam flange 32 on the reversing slide 14, said flange engaging the arm 33 of a small shaft 34, and said shaft 34 having a central arm 35 beneath the pawl 17, and movable upward by the coöperation of the members 32 and 33 to engage and force the pawl 17 upwardly from the actuator 15. The shaft 34 is journaled in the sides of the actuator 15. When the slide 14, on being released, has returned to its normal position, the pawl 17 rests in the notch of the upper actuating slide 19.

The actuator 15 is guided in its movement by any suitable means, and normally a spring 38 encircling the hook 13 tends to hold the actuator 15 in the position shown in Fig. 2.

A lifting rod 36 is arranged transversely beneath the four pawls 30 and is connected with the end of a lever 37 which, when depressed, will thus simultaneously raise the pawls 30 from engagement with the slides 19.

Summing up the whole operation of the invention it will be observed that it is necessary only for the operator to depress one of the pedals 2 and 3 four times whereby to turn four leaves of sheet music, whereupon depression of the other pedal will operate the reversing slide 14 and throw the various turned leaves of music into their original positions, ready to be again separately operated.

Detents 40 are arranged adjacent to the spring 38 to engage notches 41, in the right hand ends of the slides 19. A coil spring 17′ is adapted to force the pawl 17 toward the flanges of the slides 19.

Having thus fully described the invention, what I claim as new is:

1. In a music leaf turner, the combination of a plurality of actuating slides, leaf turning members connected therewith, an actuator, engaging means carried by the actuator to coact with the slides to cause individual movement thereof in one direction, means for reversing the movement of all of the operated slides simultaneously and means

operable independently of the engaging means for rendering the same inoperative when the movement of the slides is reversed.

2. In a music leaf turner, the combination of a plurality of actuating slides, leaf turning members carried thereby, an actuator, a pawl on said actuator coacting with the slides for individual movement thereof in one direction, a reversing device for reversing the movement of all of the operated slides simultaneously, and means carried by said reversing device and operable independently of the pawl for rendering the latter inoperative with respect to the slides on the reverse movement of the slides.

3. In a music leaf turner, the combination with a plurality of actuating devices, leaf turning members connected therewith for operation thereby, means for moving the actuating devices separately in one direction, and means for restoring said actuating devices simultaneously to their original positions, the last mentioned means comprising a carrier, a device for moving said carrier in a predetermined direction, and a plurality of pawls connected with the carrier and engaging the actuating devices for simultaneous movement thereof.

4. In a music leaf turner, the combination of a plurality of actuating slides, leaf turning members associated therewith, means for operating said slides in a predetermined direction, and means for restoring said slides to their original positions said means comprising a reversing slide, a carrier, a lever connecting said slide and carrier, a plurality of pawls mounted on the carrier for engagement with the actuating slides, and means for holding the carrier normally in a predetermined position.

5. In a music leaf turner, the combination with a plurality of actuating slides, of leaf turning members connected therewith, said slides being provided with flanged portions having notches in stepped arrangement, an actuator comprising a pawl adapted to engage the notches in the flanged portions of the slides, and means for reciprocating the actuator to cause separate operation of the slides to actuate the leaf turning members in a predetermined direction, a reversing slide, means for operably connecting said reversing slide with the actuating slides to restore the latter to their normal positions, a device for raising the pawl of the actuator into a position wherein it will not engage the notched flanges of the actuating slides on the return movement of the latter, and means carried by the reversing slide for operating the pawl, raising the device aforesaid.

6. In a music leaf turner, the combination of a plurality of actuating slides, leaf turning members connected therewith, means for moving said slides independently of one another in a predetermined direction, and means for returning the slides to their original positions comprising a reversing device and including a slidably mounted carrier, a pivoted lever connected at one end with said carrier for shifting the same toward and from adjacent ends of the actuating slides, a plurality of pawls connected with said carrier and engaging the actuating slides, and means connected with the lever for actuating the same to move the carrier and exert a pull upon the actuating slides through said pawls, and means for returning the carrier to a predetermined position after actuation by said lever.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW JOHNSEN.

Witnesses:

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FRED L. SWANSON.