

1,011,895.

The image contains two technical drawings of a folding box with a locking mechanism.

Fig. 1 is a perspective view of the box in its closed position. The box consists of a main body *A* and a lid *A'*. The lid is hinged to the body at the front edge *B*. A locking mechanism is shown on the right side of the lid, consisting of a handle *G* and a latch *g²* that engages with a corresponding part *g³* on the body.

Fig. 2 is a cross-sectional view of the box, showing the internal components and the locking mechanism in detail. The box is divided into two main sections, *A* and *A'*, which are separated by a partition *B*. The lid *A'* is shown in an open position, revealing the internal structure. The locking mechanism is located at the bottom of the lid, where a handle *G* is connected to a latch *g²* that engages with a corresponding part *g³* on the body. Various other components are labeled with letters and numbers, including *c¹*, *c²*, *c³*, *c⁴*, *c⁵*, *c⁶*, *c⁷*, *c⁸*, *c⁹*, *c¹⁰*, *c¹¹*, *c¹²*, *c¹³*, *c¹⁴*, *c¹⁵*, *c¹⁶*, *c¹⁷*, *c¹⁸*, *c¹⁹*, *c²⁰*, *c²¹*, *c²²*, *c²³*, *c²⁴*, *c²⁵*, *c²⁶*, *c²⁷*, *c²⁸*, *c²⁹*, *c³⁰*, *c³¹*, *c³²*, *c³³*, *c³⁴*, *c³⁵*, *c³⁶*, *c³⁷*, *c³⁸*, *c³⁹*, *c⁴⁰*, *c⁴¹*, *c⁴²*, *c⁴³*, *c⁴⁴*, *c⁴⁵*, *c⁴⁶*, *c⁴⁷*, *c⁴⁸*, *c⁴⁹*, *c⁵⁰*, *c⁵¹*, *c⁵²*, *c⁵³*, *c⁵⁴*, *c⁵⁵*, *c⁵⁶*, *c⁵⁷*, *c⁵⁸*, *c⁵⁹*, *c⁶⁰*, *c⁶¹*, *c⁶²*, *c⁶³*, *c⁶⁴*, *c⁶⁵*, *c⁶⁶*, *c⁶⁷*, *c⁶⁸*, *c⁶⁹*, *c⁷⁰*, *c⁷¹*, *c⁷²*, *c⁷³*, *c⁷⁴*, *c⁷⁵*, *c⁷⁶*, *c⁷⁷*, *c⁷⁸*, *c⁷⁹*, *c⁸⁰*, *c⁸¹*, *c⁸²*, *c⁸³*, *c⁸⁴*, *c⁸⁵*, *c⁸⁶*, *c⁸⁷*, *c⁸⁸*, *c⁸⁹*, *c⁹⁰*, *c⁹¹*, *c⁹²*, *c⁹³*, *c⁹⁴*, *c⁹⁵*, *c⁹⁶*, *c⁹⁷*, *c⁹⁸*, *c⁹⁹*, *c¹⁰⁰*, *c¹⁰¹*, *c¹⁰²*, *c¹⁰³*, *c¹⁰⁴*, *c¹⁰⁵*, *c¹⁰⁶*, *c¹⁰⁷*, *c¹⁰⁸*, *c¹⁰⁹*, *c¹¹⁰*, *c¹¹¹*, *c¹¹²*, *c¹¹³*, *c¹¹⁴*, *c¹¹⁵*, *c¹¹⁶*, *c¹¹⁷*, *c¹¹⁸*, *c¹¹⁹*, *c¹²⁰*, *c¹²¹*, *c¹²²*, *c¹²³*, *c¹²⁴*, *c¹²⁵*, *c¹²⁶*, *c¹²⁷*, *c¹²⁸*, *c¹²⁹*, *c¹³⁰*, *c¹³¹*, *c¹³²*, *c¹³³*, *c¹³⁴*, *c¹³⁵*, *c¹³⁶*, *c¹³⁷*, *c¹³⁸*, *c¹³⁹*, *c¹⁴⁰*, *c¹⁴¹*, *c¹⁴²*, *c¹⁴³*, *c¹⁴⁴*, *c¹⁴⁵*, *c¹⁴⁶*, *c¹⁴⁷*, *c¹⁴⁸*, *c¹⁴⁹*, *c¹⁵⁰*, *c¹⁵¹*, *c¹⁵²*, *c¹⁵³*, *c¹⁵⁴*, *c¹⁵⁵*, *c¹⁵⁶*, *c¹⁵⁷*, *c¹⁵⁸*, *c¹⁵⁹*, *c¹⁶⁰*, *c¹⁶¹*, *c¹⁶²*, *c¹⁶³*, *c¹⁶⁴*, *c¹⁶⁵*, *c¹⁶⁶*, *c¹⁶⁷*, *c¹⁶⁸*, *c¹⁶⁹*, *c¹⁷⁰*, *c¹⁷¹*, *c¹⁷²*, *c¹⁷³*, *c¹⁷⁴*, *c¹⁷⁵*, *c¹⁷⁶*, *c¹⁷⁷*, *c¹⁷⁸*, *c¹⁷⁹*, *c¹⁸⁰*, *c¹⁸¹*, *c¹⁸²*, *c¹⁸³*, *c¹⁸⁴*, *c¹⁸⁵*, *c¹⁸⁶*, *c¹⁸⁷*, *c¹⁸⁸*, *c¹⁸⁹*, *c¹⁹⁰*, *c¹⁹¹*, *c¹⁹²*, *c¹⁹³*, *c¹⁹⁴*, *c¹⁹⁵*, *c¹⁹⁶*, *c¹⁹⁷*, *c¹⁹⁸*, *c¹⁹⁹*, *c²⁰⁰*, *c²⁰¹*, *c²⁰²*, *c²⁰³*, *c²⁰⁴*, *c²⁰⁵*, *c²⁰⁶*, *c²⁰⁷*, *c²⁰⁸*, *c²⁰⁹*, *c²¹⁰*, *c²¹¹*, *c²¹²*, *c²¹³*, *c²¹⁴*, *c²¹⁵*, *c²¹⁶*, *c²¹⁷*, *c²¹⁸*, *c²¹⁹*, *c²²⁰*, *c²²¹*, *c²²²*, *c²²³*, *c²²⁴*, *c²²⁵*, *c²²⁶*, *c²²⁷*, *c²²⁸*, *c²²⁹*, *c²³⁰*, *c²³¹*, *c²³²*, *c²³³*, *c²³⁴*, *c²³⁵*, *c²³⁶*, *c²³⁷*, *c²³⁸*, *c²³⁹*, *c²⁴⁰*, *c²⁴¹*, *c²⁴²*, *c²⁴³*, *c²⁴⁴*, *c²⁴⁵*, *c²⁴⁶*, *c²⁴⁷*, *c²⁴⁸*, *c²⁴⁹*, *c²⁵⁰*, *c²⁵¹*, *c²⁵²*, *c²⁵³*, *c²⁵⁴*, *c²⁵⁵*, *c²⁵⁶*, *c²⁵⁷*, *c²⁵⁸*, *c²⁵⁹*, *c²⁶⁰*, *c²⁶¹*, *c²⁶²*, *c²⁶³*, *c²⁶⁴*, *c²⁶⁵*, *c²⁶⁶*, *c²⁶⁷*, *c²⁶⁸*, *c²⁶⁹*, *c²⁷⁰*, *c²⁷¹*, *c²⁷²*, *c²⁷³*, *c²⁷⁴*, *c²⁷⁵*, *c²⁷⁶*, *c²⁷⁷*

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MUSIO LEAF TURNER.
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2 SHEETS-SHEET 2.

Fig. 3.

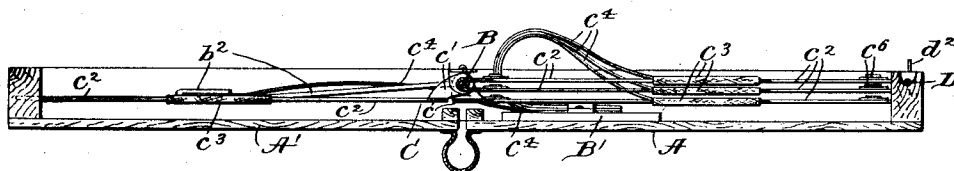


Fig. 4.

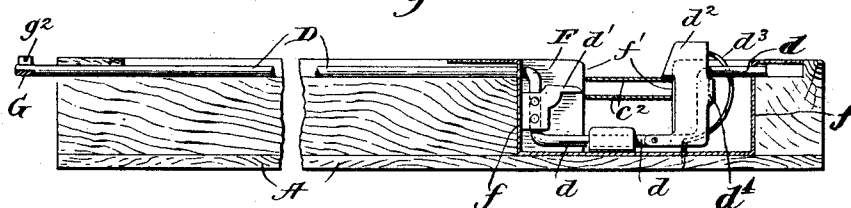


Fig. 5.

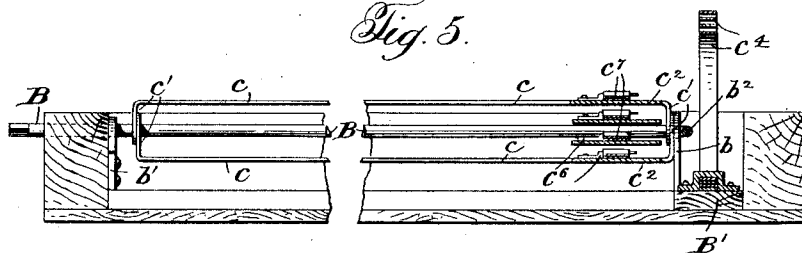
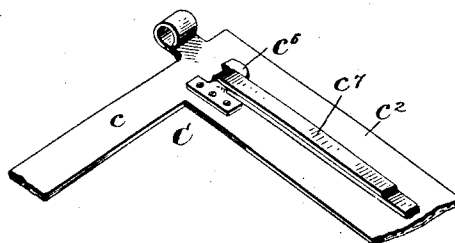


Fig. 6.



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MUSIC-LEAF TURNER.

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Specification of Letters Patent.

Patented Dec. 19, 1911.

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To all whom it may concern:

Be it known that I, EDDIE G. ABBEY, a citizen of the United States, residing at Monett, in the county of Barry and State of Missouri, have invented certain new and useful Improvements in Music-Leaf Turners, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to an improvement in music leaf turners and one of the objects of the present invention is the provision of a simple and efficient device of this character which is housed within a casing adapted to be supported upon a music rack after the manner of the usual music book and which, when not in use may be used as a receptacle for the music and may be readily transported from place to place.

A further object of the present invention is the provision in a device of this character, of improved means for turning the several leaves as they are played so that the turning of the leaves is effected by the natural movement of the hand of the person while playing and there is thus no interference with the proper execution of the music being played.

A further object of the present invention is the provision in a device of this character, of means whereby all of the leaves which have been turned may be simultaneously restored to their initial position.

Other objects of the invention will be apparent from the detailed description hereinafter when read in connection with the accompanying drawings wherein a convenient embodiment of the invention is illustrated and wherein like numerals of reference refer to similar parts.

In the drawings: Figure 1 is a perspective view of the device in its closed position, Fig. 2 is a plan view of the device in its open position, Fig. 3 is a cross section on line 3—3 of Fig. 2, and Figs. 4, 5 and 6 are detail views.

Referring now more particularly to the drawings the body portion or case of the device comprises two flanged sections A, A' which are hinged together at their inner edges and are adapted when folded to constitute a receptacle for holding sheet music and for carrying the same from place to place. The sections of the case are preferably so formed as to simulate the appearance of a book when folded and any suitable

means is provided for locking the sections together when in their folded position.

B designates a shaft which extends for substantially the full length of the case and is positioned in substantial alinement with the axis of the hinges connecting the sections of the case. The upper end of the shaft B is journaled in a bracket *b* which is secured to a block B' secured in the upper portion of the section A of the case, while the lower end of said shaft is journaled in a bearing *b'* which is secured to the inner side of the lower end flange of the section A of the case. The lower end of the shaft B projects without the lower end of the case and terminates in a squared portion upon which is removably secured in any suitable manner, an actuating key B², by means of which the shaft may be shifted in its bearings for a purpose to be hereinafter more particularly set forth. For convenience in shifting the shaft B the actuating key B² is preferably secured thereto at an angle of 45° to the plane of the sections of the case when the same are in their open position.

Loosely mounted upon the shaft B are a plurality of music carrying arms C, which may be conveniently formed of sheet metal. Any number of music carrying arms C may be employed, four of such arms being shown in the embodiment of the invention illustrated in the accompanying drawings. Each of the music carrying arms C comprises a longitudinally disposed portion *c* which extends for substantially the full length of the case and from which depend ears *c'* which loosely embrace the shaft B, and a portion *c²* which projects laterally from the upper end of said longitudinally extending portion, said laterally projecting portion being slightly greater in length than the width of one of the sections of the case.

The several music carrying arms C are adapted when occupying either the section A or the section A' of the case, to lie one upon the other and the laterally projecting portions *c²* thereof are covered, either partially or wholly, with some sound deadening material *c³* such as felt or like material. The sound deadening material on the laterally projecting portions of the music carrying arms not only serves to prevent any noise which might be caused by the impact of the music-carrying arms when shifted during the operation of the device, but the covering of the arms with such material also

serves to space the outer end of the arms a slight distance apart when they are resting one upon the other.

The music carrying arms are normally held in the section A' of the case by springs c^4 , there being one such spring provided for each of the music carrying arms. The springs c^4 are conveniently in the form of flat leaf springs and the inner ends thereof are superposed and are secured to the block B' in the section A of the case, heretofore referred to, by means of a metal plate which overlies the superposed ends of the spring and is secured to said block by screws or other suitable means. The free end of each of the springs c^4 is secured to one of the music carrying arms C and the form of the springs is such that when they are so secured they will have a tendency to hold the music carrying arms in the section A' of the case, one upon the other. When the arms are in this position in the section A of the case it will be seen that any music which is placed in the section A' beneath said arms will be held by the tension of said springs against displacement. The free ends of the springs c^4 may be secured to the music carrying arms in any suitable manner and in the form of the invention illustrated each of the laterally projecting portions c^2 of the music carrying arms is provided with a portion c^5 extending upwardly therefrom which is folded about the ends of one of the springs. Obviously, however, the free ends of the springs might be attached to the laterally projecting portions of the music carrying arms in any other desired manner.

Each of the laterally projecting portions c^2 of the music carrying arms C is provided with means for detachably securing thereto a sheet of music and in the form of the invention illustrated in the drawings each of said laterally projecting portions has secured to its upper face adjacent the ends thereof sheet metal hooks c^6 which hooks are engaged by an elastic band c^7 , under which the sheet of music is slipped when it is desired to secure the same to the music carrying arm. In lieu of the band thus described sheet metal clips may be secured to the laterally projecting portions of the music carrying arms for the purpose of clamping the sheets of music thereto.

The springs c^4 as heretofore stated, serve to normally hold all of the music carrying arms C in the section A' of the case and the shaft B is operatively connected to the lowermost one of said arms when they are so positioned, so that by shifting said shaft through the instrumentality of the key B² heretofore described, all of the arms may be turned and moved to a position in the section A of the case. In the form of the invention illustrated the means utilized for this purpose comprises an arm b^2 which pro-

jects laterally from the upper end of the shaft B and the outer end of which is secured in any suitable manner to the music carrying arm C which is lowermost when such arms occupy their normal position in the section A' of the case. When the shaft B is turned to shift the music carrying arms C to the section A of the case, means are provided to lock the arms in said section and to release the same one by one, thereby permitting the springs to shift the arms back into the section A' of the case and thus effect the turning of the sheets of music carried thereby. This is accomplished, in the embodiment of the invention illustrated in the drawings, by means of a rod D, which is positioned in a groove or channel formed in the upper surface of the side flange of the section A of the case and which is provided adjacent its upper end with a downwardly bent U-shaped portion d . The upper portion of the side flange of the section A of the case is provided with a pocket in the inner surface thereof over which is removably secured a plate F which is provided with integral flanges f projecting from one side thereof in which are slidably mounted the portions of the rod D at each end of the U-shaped portion d thereof. The space between the flanges f of the plate F is such that when the rod D is moved downwardly until the U-shaped portion d thereof contacts with one of said flanges, the upper portion of said rod will have been disengaged from the other of said flanges, thus permitting the rod to be removed without disengaging the bearing plate. The bearing plate F is provided with a cut-away portion f' therein into which the outer end of the music carrying arms C are moved when such arms are shifted from the section A' of the case to the section A of the case. Rigidly secured to the side arm of the U-shaped portion d of the rod D, nearest to the lower portion of the case is a hook member d' having an upwardly projecting nose. Pivottally secured to the side arm of the U-shaped portion d of the rod D, which is nearest to the top of the case is a hook member d^2 having a nose turned toward the nose of the hook member d' but positioned in a higher plane. A spring d^3 which is secured to the bearing plate F engages the rear portion of the hook member d^2 and such hook member is provided on its rear edge with a portion d^4 which is adapted to engage the arm of the U-shaped portion d of the rod D and thus limit the movement of the hook portion on its pivot. The spring d^3 serves to normally hold the hook portion d^2 in a position at right angles to the rod D. With the hook portion d^2 thus held against movement on its pivot, the spring also serves to normally shift the rod D in its bearing, means being provided, however,

as will be hereinafter more particularly set forth, for preventing the spring from shifting the rod a sufficient extent to disengage the upper end thereof from its bearing with the flange projecting from the plate F. The nose of the hook member d^2 is beveled and when the music carrying arms are moved to their position in the section A of the case they will engage the beveled face of the nose of the hook member d^2 and as such member is pivoted it will be forced upward on its pivot, allowing the arms to pass into position below the nose, the spring d^3 returning the hook member d^2 to its normal position with the nose thereof overlying the topmost one of the music carrying arms and thereby locking all of such arms in the section A of the case. The hook members d' and d^2 are so spaced apart that when the nose of the hook member d^2 is in engagement with the uppermost one of the music carrying arms C, the nose of the member d' is out of engagement with the arm C and the members are normally held in this position by the spring d^3 .

G designates an actuating member for releasing the music carrying arms from the sections A of the case and permitting the same to be shifted to the section A' thereof by their respective springs. In the embodiment of the invention illustrated such actuating member comprises a wire or rod, which is pivotally connected at its inner end to the lower flange of the section A of the case, adjacent its connection with the section A', and which extends downwardly and outwardly to the outer edge of the section A of the case and terminates in an upwardly bent portion g , the upper end of which is bent inwardly as at g' and is pivotally connected by means of a removable pin g^2 with the lower end of the rod D which projects beyond the lower flange of the section A of the case. The laterally projecting portion g' of the actuating member G passes through a slotted guide plate g^3 which is secured to the exterior of the lower edge of the section A of the case and which serves to limit the downward movement of the rod D due to the tension of the spring d^3 thereon. The slot in the plate g^3 is of such a length that the rod D cannot be moved downwardly a sufficient distance by the spring d^3 to disengage the upper end thereof from its bearing in the flange projecting from the plate F. If for any reason, however, it is desired to remove the rod D and its attached parts, the lower end of the rod D can be disconnected from the actuating member G so that the rod can be shifted downwardly a sufficient extent to withdraw the upper end thereof from engagement with the flange projecting from the plate F after which the rod can be readily disengaged.

In using the device, the music carrying

arms C are all moved into the section A of the case and engaged under the nose of the hook member d^2 . After the music on the first sheet has been played and the player desires to turn such sheet, the hand is elevated until the back thereof engages the actuating member G and moves the same upwardly on its pivot. Such movement shifts the rod D upwardly and moves the hook member d^2 from out of engagement with the top-most arm C, thus permitting its spring to shift such arm to the section A' of the case. During the movement of the rod D which effects the disengagement of the hook member d^2 from the top-most arm C, the hook member d' is moved so as to overlie the arm C immediately below the top-most arm and thus prevent the release of but one of such arms at a time. As soon as the pressure on the actuating member G is released, the spring d^3 will restore the parts to their normal position.

Inasmuch as the actuating member is of a width substantially equal to the width of one of the sections of the case, it will be apparent that the player may by merely raising the hand to a slight degree more than it is raised in playing the music, engage such member at any point and effect the turning of the leaf, so that since no special movement of the hand is required to effect the turning of the leaf there is no interference with the proper execution of the music being played. Furthermore, since the lower edge of the actuating member slopes downwardly, it will be seen that the necessary movement can be imparted to the rod D to effect the turning of the leaf by a lateral movement of the hand.

While a convenient embodiment of the invention is illustrated in the accompanying drawing it will be understood that many changes may be made to the aforementioned structure therein shown without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. In a music leaf turner, a supporting member having a vertical receiving groove, a plurality of spring actuated music carrying arms pivotally mounted in the supporting member, means for holding said arms at one side of said supporting member, means for simultaneously moving said arms to such position, means for releasing said holding means to release said arms one by one to permit movement thereof to the opposite side of the supporting member, said releasing means comprising a rod vertically slidable in the groove and provided with means at its upper end to engage alternate arms at their ends and an elongated actuating member pivoted at its inner end to the lower portion of the supporting member and extending downwardly in an inclined direction

transversely of the supporting member and then upwardly for attachment to the lower end of the rod.

2. In a music leaf turner, a supporting member having a vertical receiving groove, a plurality of spring actuated music carrying arms pivotally mounted in the supporting member, means for holding said arms at one side of said supporting member, means for simultaneously moving said arms to such position, means for releasing said holding means to release said arms one by one to permit movement thereof to the opposite side of the supporting member, said releasing means comprising a rod vertically slidable in the groove and provided at its upper end with opposed hooks to engage alternate arms at their ends and an elongated actuating member pivoted at its inner end to the lower portion of the supporting member and extending downwardly in an inclined direction transversely of the supporting member and then upwardly for attachment to the lower end of the rod, said rod and actuating member being limited in their upward movement to prevent accidental release of the arms.

3. A leaf turner comprising a two-part foldable supporting member, a vertical pivot shaft mounted upon the supporting member adjacent its folding point, a plurality of spring actuated music carrying arms having vertical portions pivotally mounted upon the pivot member and having upper laterally projecting portions terminating adjacent the sides of the sections of the supporting member, means for holding said arms at one side of said supporting member, means for releasing said holding means to disengage the arms from such position one at a time to permit movement thereof to the opposite section, the upper end of the pivot member being extended laterally and connected to the lowermost of said arms, and a key for rotating the pivot member to simultaneously swing all of said arms for engagement by the holding means.

4. A leaf turner of the class described comprising a supporting member having a surrounding flange portion, a central pivot rod carried by the supporting member, a plurality of spring actuated music carrying arms mounted thereon and adapted to lie one upon the other, said arms having laterally extending portions adapted to lie with their ends engaged in recesses in the side flange portions of the supporting member, said arms being adapted for movement upon opposite sides of the supporting member, a rod slidably mounted in one of the recessed flange portions at one side of the supporting member and having opposed hook members mounted in said recess and adapted to engage alternate music carrying arms adjacent the ends of the arms when

the rod is shifted, a spring engaging one of said hooks to force said rod normally downward to hold the uppermost arm and an upwardly movable actuating member extending transversely of the supporting member with an upwardly curved portion connected to the rod at its lower extremity for actuation by the back of the hand when playing.

5. A leaf turner of the class described comprising a supporting member having a surrounding flange portion, a central pivot rod carried by the supporting member, a plurality of spring actuated music carrying arms mounted thereon and adapted to lie one upon the other, said arms having laterally extending portions adapted to lie with their ends engaged in recesses in the side flange portions of the supporting member, said arms being adapted for movement upon opposite sides of the supporting member, a rod slidably mounted in one of the recessed flange portions at one side of the supporting member and having opposed hook members mounted in said recess and adapted to engage alternate music carrying arms at their ends when the rod is shifted, a spring engaging one of said hooks to force said rod normally downward to hold the uppermost arm, an upwardly movable actuating member extending transversely of the supporting member with an upwardly curved portion connected to the rod at its lower extremity for actuation by the back of the hand when playing, and a slotted plate receiving a portion of the actuating member to prevent displacement of the rod under the action of the spring.

6. In a device of the character described, a body comprising a pair of hinged flanged sections, the side flange of one of said sections being provided with a channel in the upper edge thereof and with a cutaway portion adjacent the top thereof, a plurality of aligned spring-actuated music carrying arms pivotally supported in the central portion of the case, a plate secured to the interior of the side flange of one of the sections of the case over the cutaway portion thereof, said plate being provided with an opening therein adapted to receive the ends of the music-carrying arms and with integral flanges projecting from one side thereof into the cutaway portion in the side flange of the case, a rod seated in the groove in the upper edge of the side flange of the case and provided adjacent its upper end with a downwardly extending U-shaped portion, the portions of said rod at each side of said U-shaped portion being slidably mounted in bearings formed in the flanges projecting from the bearing plate, a pair of opposed hook members carried by the arms of the U-shaped portion of the rod, said hook members being adapted upon movement of the rod to engage alternate music-carrying arms

at their ends when they occupy a position within the opening of the bearing plate, a spring carried by the bearing plate and serving to normally force said rod downwardly, and an actuating member for imparting an upward movement to said rod.

7. In a device of the character described, a body comprising a pair of hinged flanged sections, a shaft loosely mounted in said body in substantial alinement with the axes of the hinges thereof, the lower end of said shaft projecting without the body and being provided with an actuating portion, a plurality of music-carrying arms loosely mounted on said shaft and adapted to lie one upon the other, springs normally holding said arms in one of the sections of the case, a rigid connection between the lowermost one of said music carrying arms and said shaft to permit movement of all of said arms to the other section of the case, and means for holding said arms in the other section of the case against the tension of their springs and for releasing the same one by one.

8. In a music leaf turner, a body, a shaft mounted in said body at its upper and lower ends for pivotal movement, a plurality of music carrying arms loosely mounted on said shaft, an anchor block mounted in the

body, springs secured to said block at one end and at their other ends to the arms to normally hold said arms at one side of the body, a rod slidably mounted in the other side of the body and provided with a U-shaped portion depending into a recess therein in the path of movement of said arms, a hook member pivotally secured to the upper portion of the U-shaped portion, an opposed hook member rigidly secured to the lower portion thereof, a spring engaging the movable hook member to hold the uppermost of said arms and normally depress the rod, said rod being limited in its movement and an actuating member disposed in an inclined position and adapted for upward movement at its lower portion, said actuating member being connected to the rod to raise the same by a transverse pressure to release the uppermost arm from the pivoted hook and engage the next arm by the rigid hook.

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

EDDIE GOODELL ABBEY.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."