

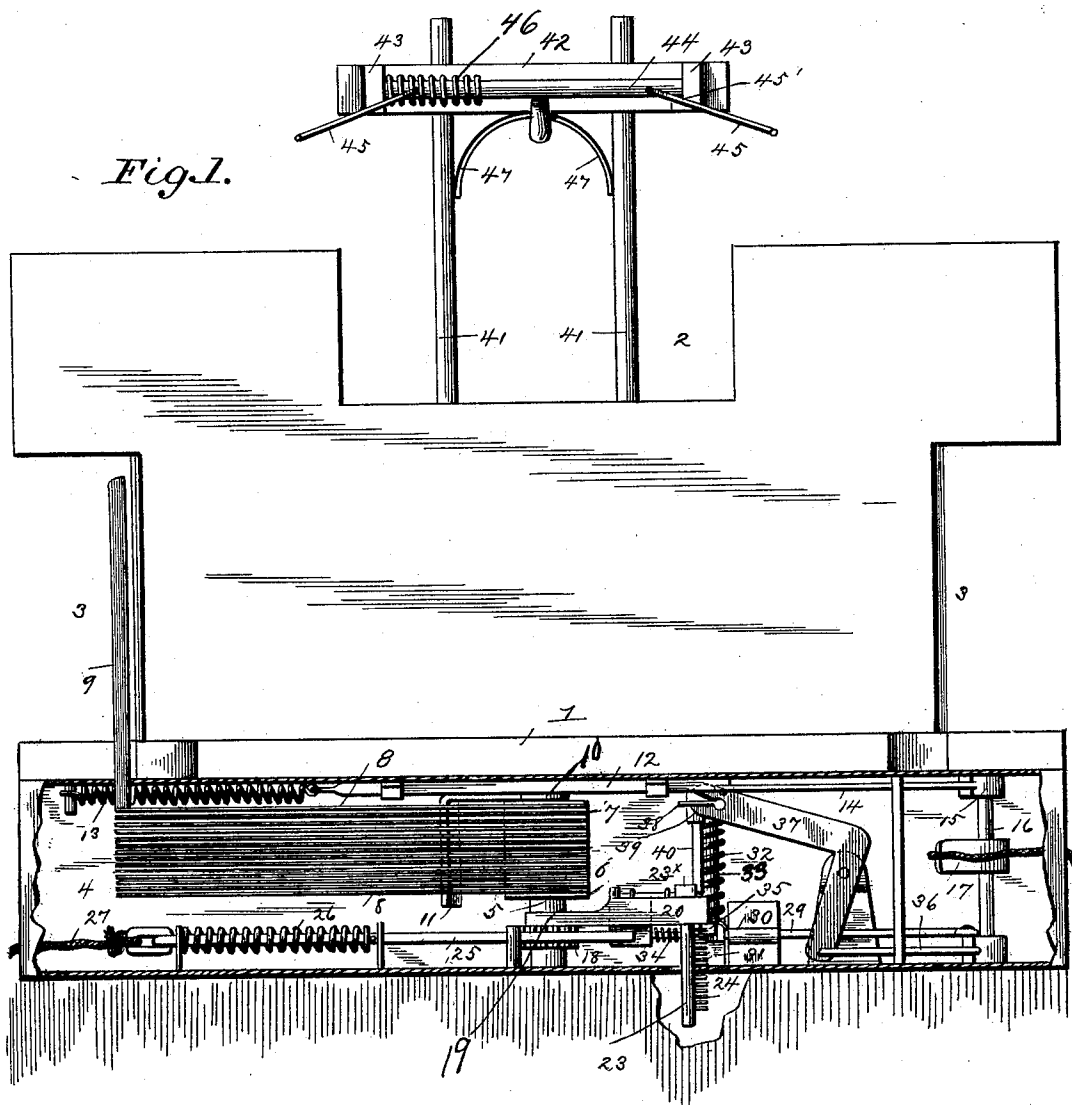
(Model.)

2 Sheets—Sheet 1.

F. M. HURLEY.
MUSIC LEAF TURNER.

No. 507,816.

Patented Oct. 31, 1893.



Frank M. Hurley,
Inventor—

Witnesses:

Wm. E. Moore
May E. Moore

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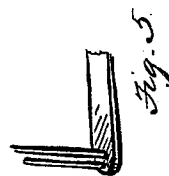
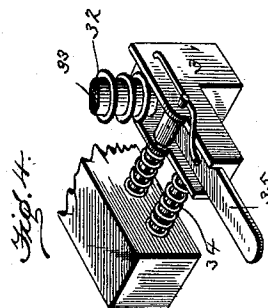
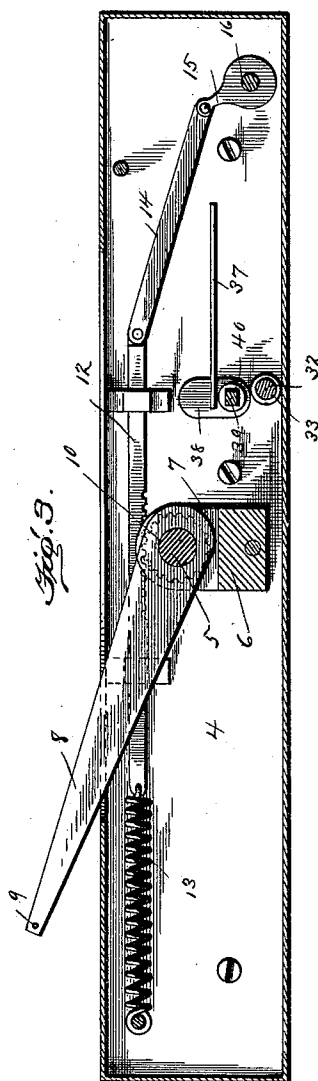
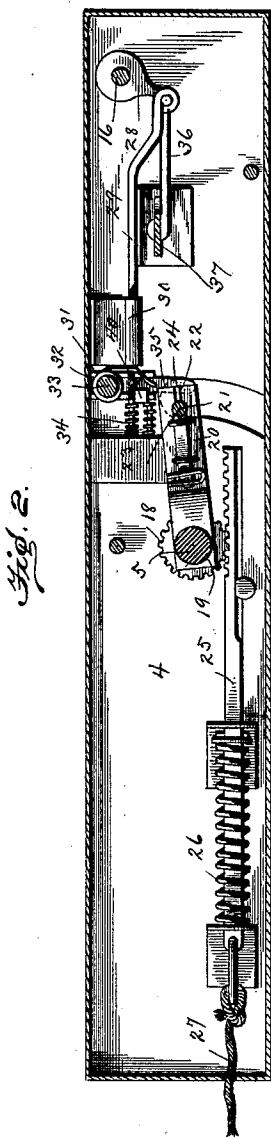
(Model.)

2 Sheets—Sheet 2.

F. M. HURLEY.
MUSIC LEAF TURNER.

No. 507,816.

Patented Oct. 31, 1893.



Witnesses—
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By J. M. Moore,
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UNITED STATES PATENT OFFICE.

FRANK M. HURLEY, OF BENNINGTON, OHIO.

MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 507,816, dated October 31, 1893.

Application filed November 4, 1892. Serial No. 450,997. (Model.)

To all whom it may concern:

Be it known that I, FRANK M. HURLEY, a citizen of the United States, residing at Bennington, in the county of Morrow and State of Ohio, have invented certain new and useful Improvements in Music-Leaf Turners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in music leaf turners, and the object of my invention is to improve the construction of devices of this character and render them more easy and effective in operation and simplify and cheapen the construction and thus render the device practical and useful.

To attain the desired objects and such others as pertain to an invention of this character my invention consists of a music leaf turner embodying novel features of construction and combination of parts whereby the device is adapted to perform its functions in a thorough manner as will be disclosed herein.

In order that the details of construction and the operation and advantages of my invention may be apparent I have shown in the accompanying drawings a music leaf turner constructed according to my invention.

In said drawings, Figure 1 represents a front elevation of my device applied to a piano in order to show the application of the device. Figs. 2 and 3 represent sectional views of the device taken through the casing. Figs. 4 and 5 represent detail views.

Referring by numerals to the drawings in which similar numerals denote corresponding parts in all the views—the numeral 1 designates the rack or support for the music which is provided with the recess 2, to receive the book holding device and the recesses 3 on each side to allow the passage of the leaf turning arms of the device as will appear. To the lower edge of the rack is secured the casing or housing 4 in which is housed the mechanism of the leaf turner and this housing is of proper size and made ornamental so as not to mar the appearance of the instrument.

About the central part of the housing is mounted the stud or post 5, which passes through the metal block or piece 6, secured to the casing in rear of the post and having a series of kerfs 7, between which and on the post are mounted the levers 8, carrying at their outer ends the vertical arms or fingers 9, which serve to engage the leaves of the music. Any number of these leaf-turning arms may be provided and they are adapted to move from side to side and normally lie in one of the recesses 3 of the rack and thus be out of the way. On the upper end of the post is mounted a pinion 10, carrying an angle arm 11, the transverse limb of which is adapted to engage with the leaf turning levers to return them to their normal position, by means of the rack bar 12, engaging said pinion. The rack-bar 12 moves in suitable guides and at one end is connected to a spring 13 for returning it to its normal position and at the other end is connected to the end of a link 14, the other end of said link being connected to the arm 15 on the rock-shaft 16, and the rock shaft is provided with an arm 17 to which is connected a cord or handle, and by moving the shaft it will be seen that the rack is moved and the angle arm is also moved bringing the transverse arm against the leaf turning levers and returning them, and this construction is for returning all the levers to their normal position, as is evident. On the other end of the post 5 is another pinion 18, and a collar or hub 19, to which is connected an arm 20, and in the free or outer end of said arm is an opening 21 having an open slot 22, of less diameter than the said opening 21 and in said opening is a pin 23 carrying the fingers 24 which normally lie in the slot 22, and the pin is provided with a head or enlargement 23^x at the upper end. The pin is adapted to be retained in the opening against vertical movement by frictional engagement with the walls thereof, and is automatically raised to cause its upper end to engage the levers successively as hereinafter described. Engaging with the pinion 18 is a rack bar 25, moving in suitable guides and having around it a spring 26 for returning the rack bar to its initial position, and to the end of the rod is connected a cord or handle 27 by means of which the rod

is drawn outward to rock the arm 20 to cause it to move the leaf turning levers one at a time and consequently the leaves.

It will be seen that the rack bar is in engagement with the pinion which operates or rocks the arm 20 and this arm carries the pin for moving the levers and I will now describe the peculiar mechanism for moving the pin to cause the same to move the levers one at a time in order that but one leaf of the music will be turned.

On the rock shaft 16 is an arm 28 to which is connected the outer end of a rod 29 the other end of which passes through a guide 30, and engages or exerts a pressure against the block 31, and forces the same inward against the tension of the spring 32 on the rod 33 and the springs 34, and the block carries a flat finger 35 which is preferably made of thin spring material and is inclined normally in the path of the projections or fingers on the pin and thus when the rock arm 20 is returned through the medium of spring actuated rock bar 25, one of the projections rides upon the face of the inclined finger and thus raises the pin one step, bringing its upper end behind the next succeeding lever and in position to engage and move the same. This lifting of the pin is repeated on every return of the rock arm and thus the levers with their corresponding leaves are successively turned. To the arm 28 is also connected a link or rod 36 the other end whereof is connected to the bell-crank lever 37 and the inner end of said lever is connected to the plate 38, having the sleeve or eye 39 which moves on the stud 40, and the plate 38 is adapted to contact with the head of the pin 23 when it has reached the limit of its upward movement after all the levers have been moved and push it downward to its normal position, and the flat finger 35 is moved away from the fingers on the pin by the springs 32 and 34 and the pin can be moved down without hinderance, as will be understood.

In the recess 2 of the rack are placed the two parallel arranged rods 41 on which is mounted the slide 42 having the lugs 43, and in said lugs is mounted the bar 44, carrying the fingers 45 for engaging the leaves of a book to hold the same open or to engage the leaves of a musical composition. The bar 44 is arranged to have a limited sliding movement between the lugs 43 and is normally forced to the right by a spring 46. For retaining the arms 45 downwardly in proximity to the leaves of the music a projection is provided on one of the lugs which engages with a corresponding rabbeted portion (not shown) so that when the arms 45 are turned down to engage the leaves of the music the rabbeted portion slides over the projection and holds the bar against rotation. To hold the slide at the proper place according to the height of the levers I provide the spring arms 47 which are secured to the slide and engage the

rods 41 and by frictional contact secure the slide at the proper place.

The device just described is for holding open the leaves of a book or musical composition and can be used either in connection with the leaf turning devices or alone as found desirable and convenient.

The operation of my device will be readily understood from the description taken in connection with the drawings but in order that it may be more fully understood I would state it as follows: The parts of the leaf turning mechanism are in the position they assume when the device is ready for operation with the leaves of the music held between the arms on the levers and the pin carrying the fingers at its lowest point and the head or end thereof behind the first lever. The rack bar 25 is moved and the arm 20 is tilted or rocked bringing the head of the pin against the first lever and throwing it and consequently turning the leaf, and when the arm returns one of the fingers of the pin is engaged with the flat finger on the block and the pin moved one step and brought under the next lever ready to move the lever when the arm is tilted and this operation is continued until every leaf has been turned and every lever moved. After all the levers have been turned the pin as will be easily understood is moved up as far as it can move, and if it is desired to return the pin to its normal position and also return the levers to their normal position, this is accomplished by drawing on the other cord or handle to tilt the rock shaft which brings the angle arm against all the levers at once and returns them, and at the same time through the medium of the mechanism described the bell crank lever brings the plate carried thereby against the pin and forces it down and also moves the flat finger out of the way in order that said pin can be returned, thus completing the operations of all the parts as will be evident from the description taken in connection with the drawings.

I claim as my invention—

1. In a music leaf turner the combination of a casing, a series of levers pivotally mounted therein carrying leaf engaging arms, a rock arm located below the levers, and a vertically movable pin carried by the rock arm for engaging the levers and positively moving them one at a time, substantially as described.

2. In combination with the casing, a series of levers pivotally mounted therein carrying leaf engaging arms, a rock arm located beneath the levers with means for operating it, a movable pin carried by the rock arm for engaging and positively moving a leaf turning lever, and means for engaging the pin on the return of the rock arm to cause said pin to engage the next succeeding lever, substantially as described.

3. In combination with the casing, a series of levers pivoted therein carrying leaf engaging arms, a rock arm under spring tension

with means for moving it against the pressure of the spring, a vertically movable pin carried by the rock arm for engaging and turning a lever, a series of projections carried
 5 by said pin, and an arm or incline for engaging the projections on the return of the rock arm to raise the pin to engage the next lever, substantially as described.

4. In combination the casing, a series of levers pivoted therein carrying leaf turning
 10 arms, a rock arm under spring tension, a pin carried by the rock arm adapted to engage the levers singly, connections for manually swinging the rock arm to turn the levers, an inclined arm engaging a series of projections on
 15 the pin on the return of the rock arm to raise said pin into engagement with the next succeeding lever, and a manually operated lever with connections for returning all the leaf
 20 turning levers and resetting the pin on the rock arm, substantially as described.

5. In a music leaf turner, the combination of a casing or housing, a post or support therein, a series of levers mounted on said post
 25 and carrying leaf holding and turning arms, a pinion on said shaft or post, an angle arm carried by said pinion, mechanism for engaging said pinion to rock the angle arm to cause the arm to return the levers, for the purpose
 30 described.

6. In combination with the casing, a series of levers pivoted therein carrying leaf engaging arms, a rock arm with operating connec-

tions, a spring for returning the rock arm to normal position, a pin carried by the rock arm
 35 for engaging the levers, a series of projections on said pin, an inclined finger for engaging the projections to raise the pin, and means controlled by the lever returning mechanism
 40 for swinging the inclined finger out of the path of the projections and returning the pin to initial position, substantially as described.

7. In a music leaf turner, the combination of a casing or housing, a post therein, a series of leaf turning levers mounted on the post,
 45 pinion on the post, a rack bar engaging said pinion, an angle arm operated by said pinion to return the levers, a spring for returning the rack bar and means for moving the said bar, a pinion on the other end of the post, a
 50 rack bar engaging said pinion, a spring for returning said rack bar, an arm operated by the pinion, a pin carried by the arm and having a series of fingers, a finger, lug, or extension
 55 for engaging the fingers one at a time to impart a step by step movement thereto, and mechanism for returning the pin to its normal position, and also returning the levers, for the purpose set forth.

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

FRANK M. HURLEY.

Witnesses:

ELIZA G. BENEDICT,
 A. P. BENEDICT.