

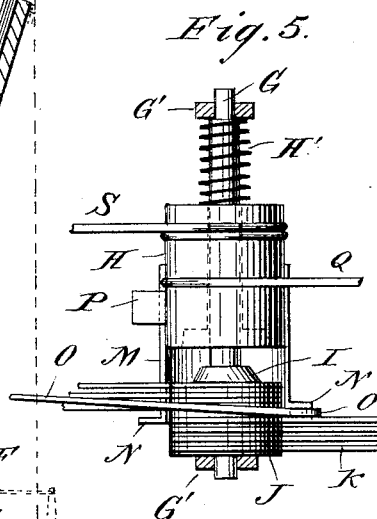
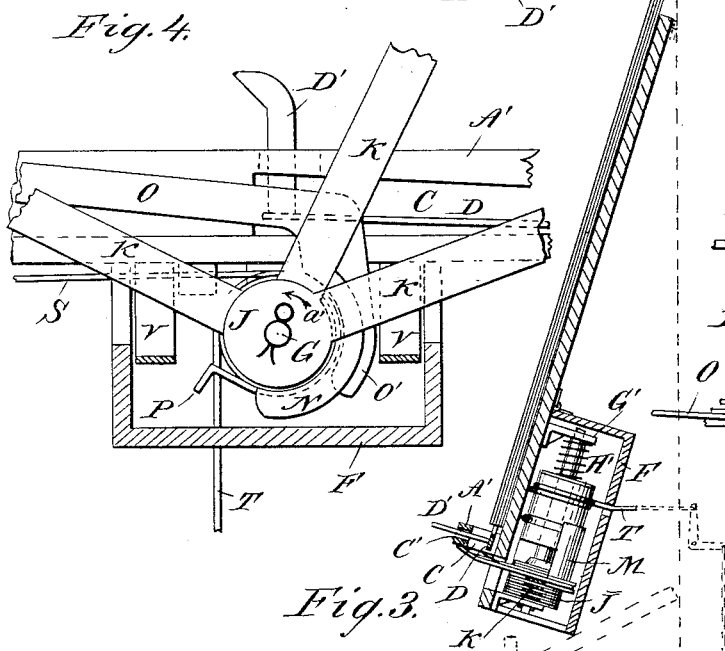
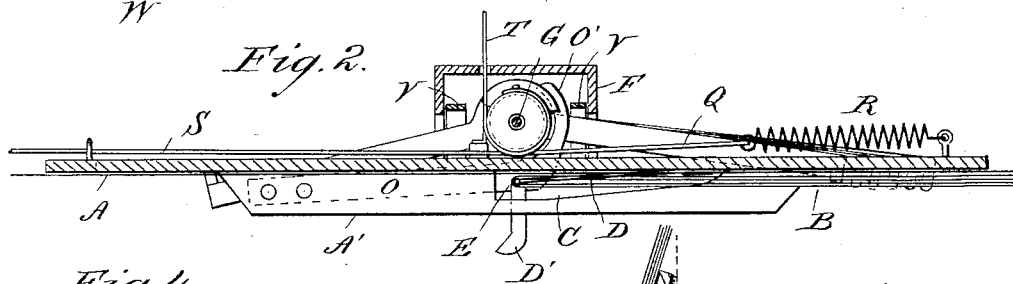
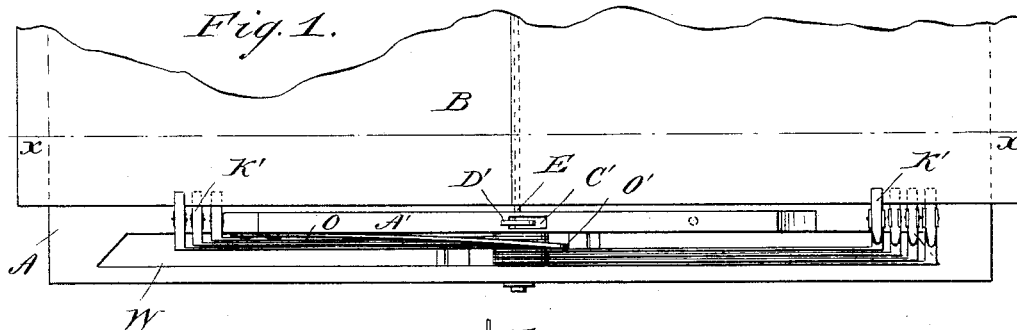
(Model.)

T. H. GARLAND.

MUSIC LEAF TURNER.

No. 348,323.

Patented Aug. 31, 1886.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

THOMAS H. GARLAND, OF CHICAGO, ILLINOIS.

## MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 348,323, dated August 31, 1886.

Application filed May 27, 1885. Serial No. 167,107. (Model.)

*To all whom it may concern:*

Be it known that I, THOMAS H. GARLAND, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Music-Leaf Turner, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved music-leaf turner, which is so constructed that it can be released at the proper time to turn a page.

The invention consists in the construction and combinations of parts, as will be fully set forth and described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a face view of the lower part of my improved music-leaf turner. Fig. 2 is a sectional plan view of the same on the line *x x*, Fig. 1. Fig. 3 is a cross-sectional view of the same. Fig. 4 is a detail plan view of the mechanism for throwing the arms holding the leaves. Fig. 5 is a front view of the same.

The rack A is provided at its bottom with the ledge A', on which the bottom edges of the sheet-music B rest, which ledge is provided with a recess, C, in the bottom of which a spring-strip, D, is secured, the free end of which is at the middle of the bottom edge of the rack, and has a lug, D', projecting through a slot, C', in the ledge, and from the top of the ledge a rod, E, projects from the free end of the spring over the rack to the top of said rack. A box, F, is hinged on the under side of the lower part of the rack. Within the said box a spindle or rod, G, is held on clips G', projecting from the under side of the rack, and on the said spindle a spool, H, is mounted to revolve and slide, and is pushed toward the lower end of the spindle by a spiral spring, H', surrounding the spindle between the upper end of the spool and the upper clip G'.

Between the lower clip G' and collar I on the spindle a series of flat rings, J, are mounted on the spindle, and each ring is provided with an arm, K, on the outer end of which a spring-clip, K', or other device for holding the music-leaves at their lower outer corners is secured. The arms K gradually increase in length, the lowest arm being the longest.

A half-sleeve, M, is secured to and projects beyond the lower part of the spool H, and is provided at its outer or lower end with parallel semicircular flanges N, between which a prong, O', passes, formed on the end of a spring-strip, O, secured to the lower surface of the ledge A' at the left-hand end of the same. A stop-lug, P, is also secured on the half-sleeve M. A cord, Q, is secured to and wound around the spool H, passed through an opening in the side of the box F, and secured to a spring, R, on the under side of the rack.

Cords S and T are secured to the spool H and wound around the same in the inverse direction of the cord Q, and the end S is passed to the left side of the rack and suitably guided. The cord T is passed through the back of the box F, and connected with an elbow-lever shown in dotted lines in Fig. 3, and connected by suitable rods and levers with a pedal.

The rack is provided below the ledge A' with a slot, W, into which the arms K can swing, and that part of the rack below the slot is connected with the part above it by strips V.

Washers are placed between the rings J, and the rings J are of such diameter that the half-sleeve M can pass over them. It will be understood that in practice these washers will only be allowed a sliding movement on the spindle G and rotary movement, so that when a swinging arm is turned it cannot by friction on one of said washers cause the adjacent arm to turn. This may be accomplished in any ordinary manner, as, for instance, by a spline-and-groove connection between the spindle and washers.

The operation is as follows: The sheet-music is placed on the rack and held in place by the rod or wire E, pressed upon it at the middle by the spring D, the said spring being raised by means of the lug D' to permit passing the sheet-music under the rod. All the leaves are folded upon the right-hand side of the rack, and the arms K are swung to the right, and the leaves held by the clips K', the uppermost leaf being held by the shortest and uppermost arm, K. On swinging the arms K to the right in the manner set forth the spring O is pushed against the bottom of the ledge and presses the spool H and its half-sleeve M upward, so that the end of the front flange

rests against the uppermost arm, K. By pulling on the cords S or T the spool H and its half-sleeve M are revolved in the direction of the arrow  $a'$ , Fig. 4, and as the end of the lower flange, N, rests against the bottom edge of the uppermost arm, K, the said arm is swung in the direction of the arrow  $a'$  and to the left, and carries the uppermost leaf with it from right to left. The springs H' and O then force the spool H and its half-sleeve M downward until the end of the lower flange, N, rests against the bottom edge of the second arm, which is thrown from right to left in the manner set forth above when the spool is turned, and so on. Every time an arm has been thrown the spool H and half-sleeve M are moved downward to bring the edge of the lower flange against the bottom edge of the next arm K, and so on. The spring R turns the spool H in the inverse direction of the arrow  $a'$  after the tension on the cords S or T has been removed. The stop P prevents the spring R from turning the spool H too far in the inverse direction of the arrow  $a'$ .

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the spindle and a series of swinging arms carried thereby, of a revoluble spool on said spindle, a half-sleeve on said spool for throwing the swinging arms, a plate-spring pressing the spool toward the swinging arms, the said spring also bearing on the swinging arm adjacent to it, and means for throwing and reversing the movement of the spool on the spindle, whereby, when one or more of the swinging arms are reversed to turn back one or more pages of music, the said arms will press on the spring and cause it to slide the spool on the arm to automatically set said swinging arms, substantially as described.

2. The combination, with the rack, the spindle G, the series of swinging arms K on the lower end of the spindle, the spool H, loosely mounted on the spindle above the swinging arms, and having the half-sleeve M, adapted to engage with its lower edge the swinging arm adjacent thereto, the spring O, secured to the rack, extending across and bearing on the

upper swinging arm, and connected to the lower part of the half-sleeve to press the spool downward, the cord Q, secured at one end to the spool, and the spring R, connected to the rack and to the other end of cord Q, for reversing the spool, and the throwing-cords S T, substantially as set forth.

3. The combination, with the rack B, provided with the ledge A, slotted at W, of the casing F, hinged to the back of the rack at its lower end, the spindle G within the casing, the swinging arms on said spindle extending through slot W, the spool on the spindle above the swinging arms, the half-sleeve M, adapted to engage said arms and having two flanges, N, on its lower edge, the spring O, secured to the under side of the ledge and having an extension resting in the space between said flanges, and bearing between its ends on the upper surface of the swinging arm adjacent to it, and thereby preventing more than one arm being swung at once, the reversing-spring R, and cord Q, and the throwing-cords connected with the spool, substantially as set forth.

4. The combination, with the rack B and the ledge A, having slots C C', of the horizontal spring D, having an arm, D', extending through the slot C', and the vertical rod E, extending through slot C upward to or near the top of the rack, substantially as set forth.

5. The combination, with a rack, of the ledge A', the spring D, the lug D', the rod or wire E, a series of swinging arms on a spindle, a sliding and revolving spool on said spindle, and a flange connected with said spool and acting on the arms, substantially as herein shown and described.

6. The combination, with a rack, of the spindle G, the arms K, the spool H, the half-sleeve M, the stop P on the same, cords for turning the spool, and a spring for turning the spool in the inverse direction of that in which it is turned by the cords, substantially as herein shown and described.

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Witnesses:

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