2 Sheets—Sheet 1.

W. LIDDELL.
Music-Leaf Turner.

No. 198,990. **Patented Jan. 8, 1878.**

Fig. 1

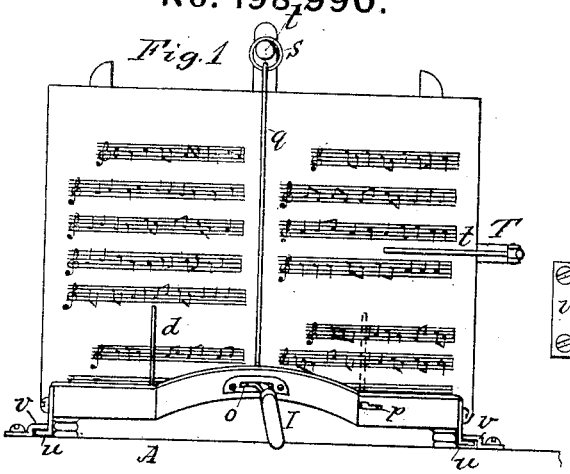


Fig. 2.

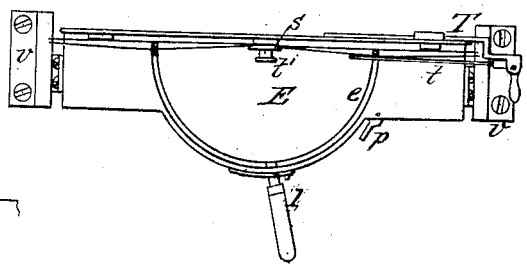


Fig. 3.

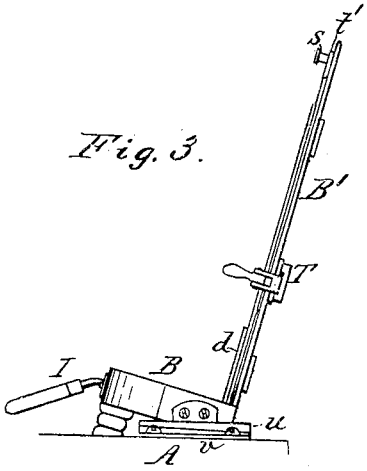


Fig. 5.

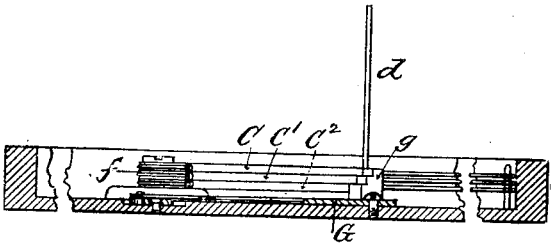
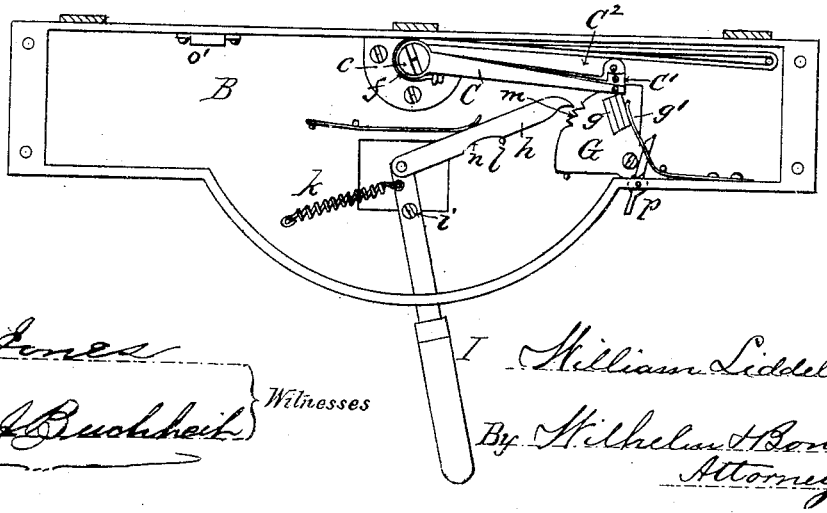


Fig. 4.



H. K. Jones
Chas. J. Buchheit } Witnesses

William Liddell Inventor
By Wilkelman & Bonner
Attorneys.

2 Sheets—Sheet 2.

W. LIDDELL.

Music-Leaf Turner.

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Fig. 6.

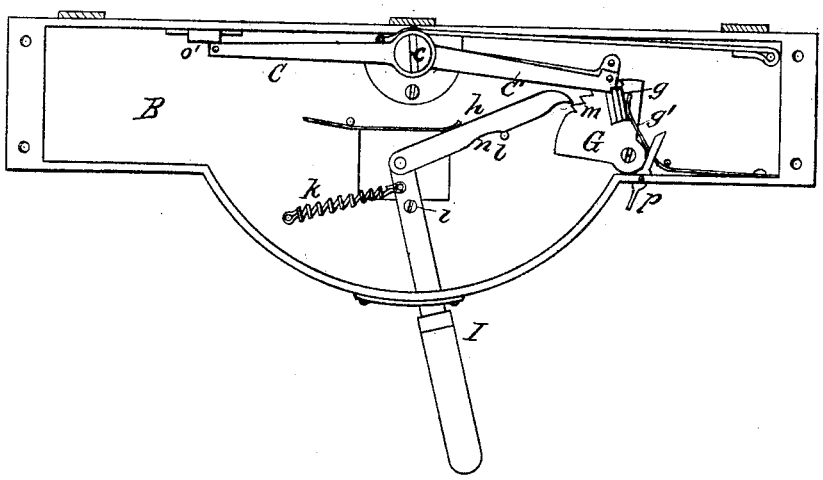
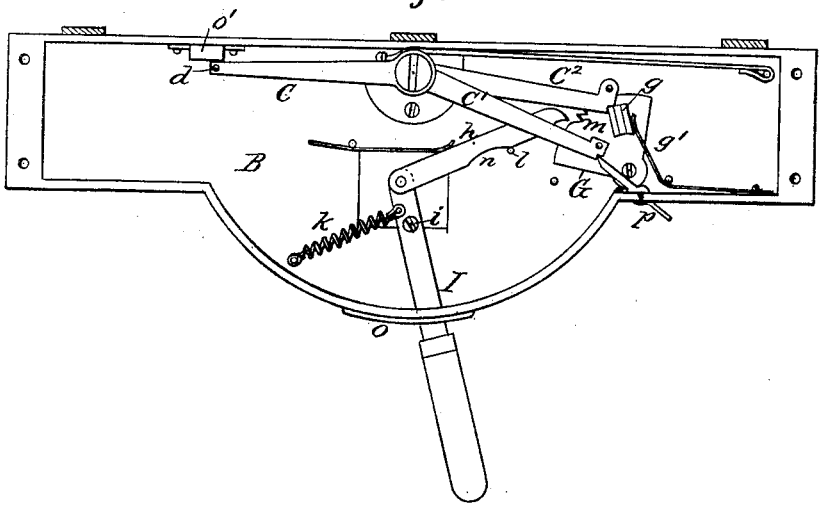


Fig. 7.



Witnesses

H. K. Jones

Chas. J. Buchheit

William Liddell Inventor

by Wilkelms & Bonner

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM LIDDELL, OF SANDY HILL, NEW YORK.

IMPROVEMENT IN MUSIC-LEAF TURNERS.

Specification forming part of Letters Patent No. **198,990**, dated January 8, 1878; application filed November 19, 1877.

To all whom it may concern:

Be it known that I, WILLIAM LIDDELL, of Sandy Hill, in the county of Washington and State of New York, have invented new and useful Improvements in Music-Leaf Turners, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to that class of music-leaf turners which are provided with one or more pivoted arms actuated by suitable springs, and having a locking and releasing mechanism so constructed that the pivoted arms are locked and the leaves held against displacement until one of the arms is released, when that arm is caused to make a half-revolution by the reaction of the springs, thereby turning the leaf.

My invention consists of the particular construction of the mechanism for locking and releasing the pivoted arms and for holding the leaves in place.

The nature of my invention will be fully understood from the following description.

In the accompanying drawings, Figure 1 is a front elevation of my improved music-leaf turner. Fig. 2 is a top-plan view. Fig. 3 is a side elevation thereof. Fig. 4 is a plan view of the apparatus with the covering removed, so as to expose the mechanism, and showing all the arms locked on one side. Fig. 5 is an elevation of the arms and locking mechanism. Fig. 6 is a detached plan view, showing one arm opened. Fig. 7 is a similar view, showing the arms in the position for engaging the leaves therewith.

Like letters of reference designate like parts in each of the figures.

A represents the top board of the case of a piano or organ, or any other support; and B, the base of the leaf-turner, arranged, preferably, at an angle, so as to give the rack B′ the proper inclination. C C^1 C^2 represent a number of arms, arranged one above the other, and pivoted to the base B at *c*. The arms C C^1 C^2 are provided at their ends with upwardly-projecting wires *d*, engaging back of the leaves, and traveling in a semicircular slot, *e*, formed in the cover E of the base. *f* are spiral or other suitable springs connected with the arms C C^1 C^2, in such manner as to retain the arms on the left-hand side of their pivot *c*.

G represents a locking-segment, provided with a stepped projection, *g*, having as many shoulders or offsets as there are arms, the shoulders or offsets being so arranged that the arms C C^1 C^2 will be released one after another as the respective steps or offsets are pushed past the ends of the arms. The segment G is provided with a spring, *g′*, for holding it, with the projection *g* in contact with the arms C C^1 C^2.

h is a spring pawl or dog for actuating the segment G. It is connected with the end of a hand-lever, I, pivoted to the base B at *i*, and projecting through a slot, *o*, in the front of the base, in convenient reach of the player, the slot *o* serving to limit the sweep of the lever.

k is a spiral or other suitable spring connected with the inner end of the lever I, so as to hold the pawl *h* away from the segment G. *l* is a stud or projection arranged on the base B, on the inner side of the pawl *h*, for holding the end of the latter out of engagement with the notches or ratchets *m* of the segment G, except when the notch or recess *n* of the pawl *h* coincides with the stud *l*. *o′* is an elastic cushion, arranged on the inner side of the base B, for receiving the impact of the arms C C^1 C^2. *p* is a dog or stop-lever pivoted to the front of the base B, so as to engage, when its inner end is thrown to the left, against the end of the second arm C^1, holding the latter in such a position as to permit the leaves to be readily engaged between the wires *d*. If more than three arms are employed, the dog *p* is provided with as many notches or projections as there are arms in excess of two, the notches being arranged at such distances apart as to hold the wires *d* in the proper position for receiving the leaves.

q is an elastic band or cord secured centrally to the base of the rack B′, and provided at its upper end with a ring, *s*, engaging over a stop or catch, *t′*, when the music is placed upon the rack, thereby securely holding the leaves at the middle, while permitting the same to be freely turned.

T is an adjustable arm secured to the right-hand side of the rack, and provided with a flat spring, *t*, bearing against the front of the leaves, for preventing the same from being accidentally turned or displaced. The spring *t*

is preferably pivoted to the outer end of the arm T, so as to be readily applied to and removed from the leaves.

The leaves being arranged on the right-hand side of the rack B′, with the elastic cord *q* holding them at the middle, and the wires *d* of the arms C C¹ C² bearing against the rear side of the leaves, the device is ready for operation.

Upon moving the hand-lever I to the left the pawl *h* engages in the first notch *m* of the segment G, swinging the latter to the right until the upper step of the projection *g* releases the upper arm C, which latter is now swung to the left, thereby turning the leaf resting on its wire *d*. The elasticity of the spring *t* permits this leaf to be withdrawn from under the spring, but at the same time prevents the other leaves from being disturbed by the movement of the first leaf. Upon releasing the hand-lever I it is returned with the pawl *h* to its former position, the stop *l* disengaging the pawl from the ratchets of the segment G. The base B is provided at both ends with laterally-projecting flanges *u*, fitting in ways *v*, secured to the top board or support A. The ways *v* are made tapering backwardly, so that the flanges *u* will bind upon being inserted therein, thereby holding the device firmly in place, while permitting it to be readily withdrawn when not required for use.

If desired, each of the arms C C¹ C² may be formed of wire, in one piece, with a vertical wire arranged centrally on the rack B′, and secured with its upper end to the rack, so that the vertical wire will form at the same time a pivot and torsional spring to the arm, thereby dispensing with the springs *f*.

It is obvious that the hand-lever I may be connected with a treadle or pedal of any suitable construction for operating it by the pressure of the foot, if so preferred.

It is also obvious that instead of providing the projection *g* of the segment G with steps or offsets, as shown, the same may be made of uniform thickness, and the arms C C¹ C² of varying length, whereby the same result will be attained.

The ends of the arms C C¹ C² are notched, as clearly shown in Figs. 6 and 7, so as to engage against the ends of the steps of the projection *g*, thereby preventing the latter from passing by the arms under the pressure of the spring *g′*.

My improved leaf-turner is very simple of construction, not liable to get out of order, and very efficient, only a slight movement of the hand-lever I being required to turn the leaf, while at the same time the leaves are held against displacement by the wind or other causes, which is very desirable in music-racks designed for use in the open air. The wear and tear on the leaves is also greatly reduced.

I claim as my invention—

1. The combination, with one or more pivoted arms, C, of the pivoted segment G, provided with projection *g*, pawl *h*, and actuating-lever I, substantially as and for the purpose set forth.

2. The combination, with a series of pivoted arms, C C¹ C², of the pivoted segment G, provided with stepped projection *g* and notches *m*, pawl *h*, and actuating-lever I, substantially as and for the purpose set forth.

3. The combination, with one or more pivoted arms, C, of the pivoted segment G, provided with projection *g* and notches *m*, pawl *h*, having a recess, *n*, stop *l*, and actuating-lever I, substantially as and for the purpose set forth.

4. The combination, with a series of pivoted arms, C C¹ C², and segment G, provided with projection *g*, of the pivoted dog *p*, substantially as and for the purpose set forth.

5. The combination, with the series of pivoted arms C C¹ C² and rack B′, of the adjustable arm T and spring *t*, substantially as and for the purpose set forth.

6. The combination, with the top board or support A, provided with tapering ways *v*, of the base B, provided with lateral flanges *u*, substantially as and for the purpose set forth.

WILLIAM LIDDELL.

Witnesses:
JNO. J. BONNER,
CHAS. J. BUCHHEIT.