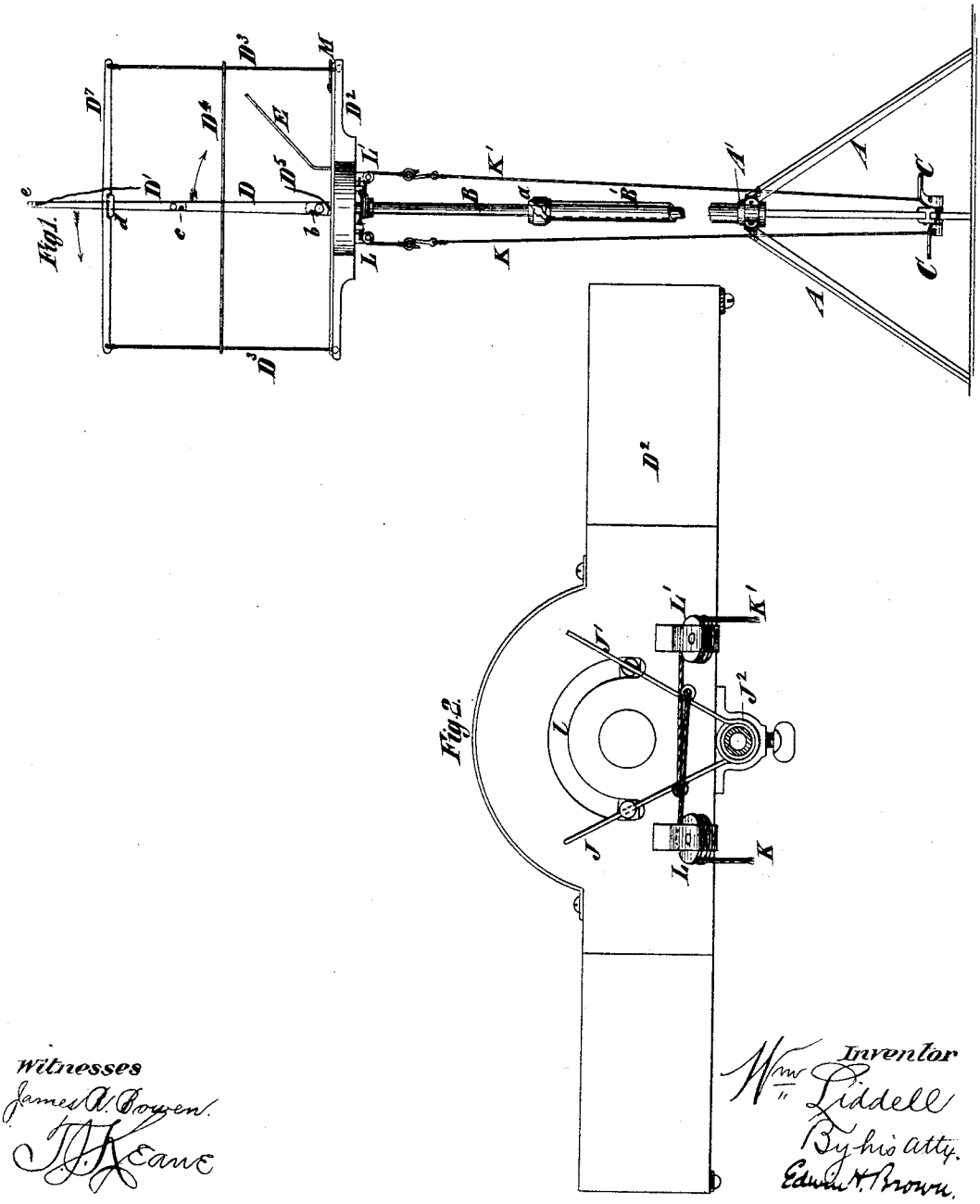
(No Model.)

2 Sheets—Sheet 1.

W. LIDDELL.

MUSIC LEAF TURNER.

No. 264,716. Patented Sept. 19, 1882.



Witnesses
James A. Bowen.
T. J. Keane

Inventor
Wm. Liddell
By his atty.
Edwd. A. Brown.

N. PETERS. Photo-Lithographer, Washington, D. C.

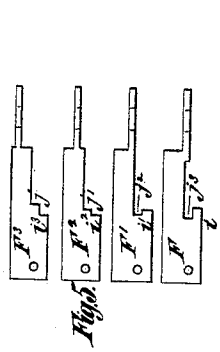
(No Model.)

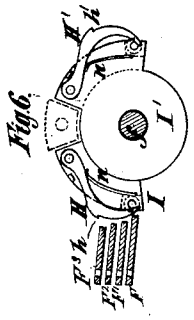
2 Sheets—Sheet 2.

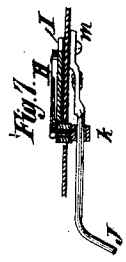
W. LIDDELL.

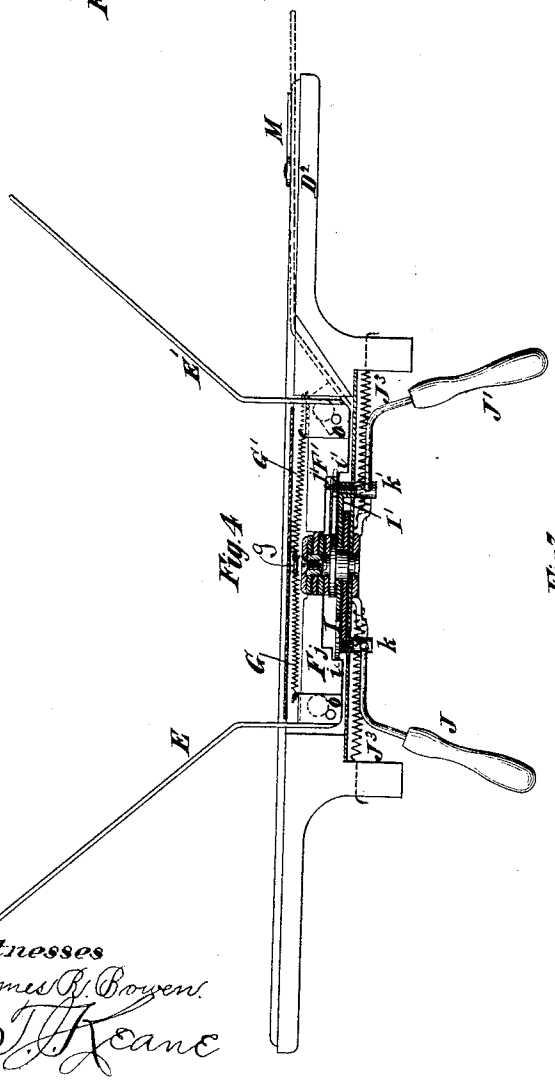
MUSIC LEAF TURNER.

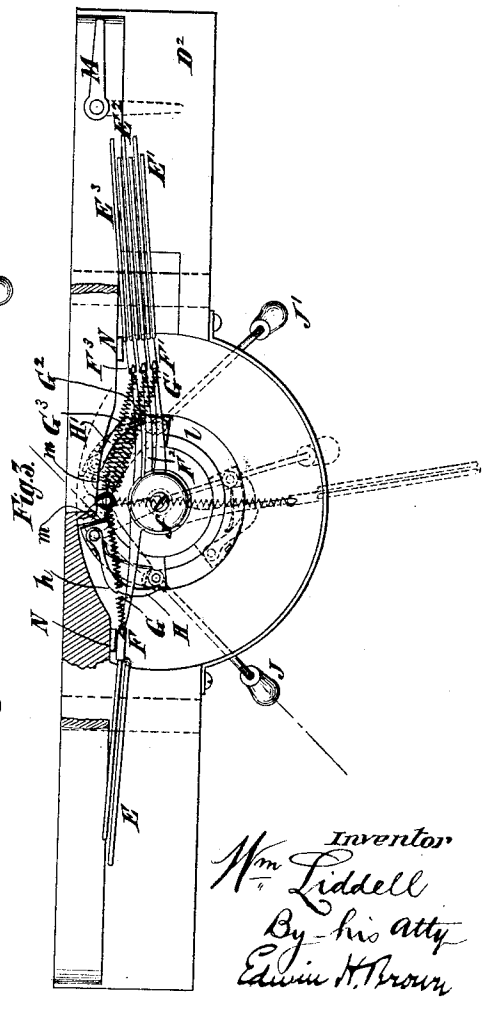
No. 264,716. Patented Sept. 19, 1882.











Witnesses
James R. Bowen.
T. H. Keane

Inventor
Wm. Liddell
By his atty
Edwin H. Brown

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM LIDDELL, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO ROBERT GAIR, OF SAME PLACE.

MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 264,716, dated September 19, 1882.

Application filed March 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LIDDELL, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Music-Stands and Music-Leaf Turners, of which the following is a specification.

The improvement consists in a rack of novel construction for supporting music, and adapted to be folded up compactly when not in use.

It also consists in pairs of fingers for grasping music-sheets, arms carrying said fingers and fulcrumed upon a common vertical pivot, so as to swing horizontally, means unconnected with them for operating them part of the distance they travel, and springs applied, one to each arm, for impelling them the remainder of the distance.

It also consists in various combinations of parts, including arms carrying fingers which are designed to grasp sheets of music, levers and appurtenances, and springs for operating and controlling the arms, as hereinafter described.

In the accompanying drawings, Figure 1 is a front view of a music-stand and music-leaf turner embodying my improvement. Fig. 2 is an under side view of the music-leaf turner. Fig. 3 is a sectional plan of a music-leaf turner embodying my improvement and of slightly modified form. Fig. 4 is a sectional front view of the latter. Fig. 5 is a side view of a number of arms embodied in the music-leaf turners. Fig. 6 is a sectional plan of certain parts, and Fig. 7 is a sectional front view of certain of the parts.

Similar letters of reference designate corresponding parts in all the figures.

The stand has legs A, hinged to a common support, A′, and a pillar consisting of a rod, B, sliding in a tube, B′, and capable of being secured in different positions by a set-screw, *a*. To one of the legs A treadles C are pivoted. This stand is surmounted by a rack which consists of a sectional staff, D D′, the lower section of which is pivoted at the lower end to a stem, so that it can be folded over to the right against a bottom rail, D^2, a pin, *b*, being employed to prevent it from turning to the left. The upper section is pivoted to the lower, so that it can be turned to the left over the lower, a pin, *c*, being combined with it for preventing it from turning to the right. The top rail, D^7, is notched at the middle, and may be slipped from above over a block, *d*, on the upper section of the staff, and is fastened at the ends by cords D^3, which secure it down on the said block. A rod, D^4, having its ends bent to embrace the cords D^3, forms the middle rail of the rack. It may be slid down against the bottom rail, D^2, when the rack is folded up. An elastic strap, D^5, of india-rubber or other suitable material, holds the music at the middle fold to the rack. It is looped at the upper end, and may be slipped over a button, *e*, to secure it for use.

E E′ E^2 E^3 designate pairs of fingers for grasping sheets of music between them. One of each pair extends above the other, so as to facilitate the insertion of the sheets of music between them. These pairs of arms are fastened to and carried by arms F F′ F^2 F^3, which are connected to a common vertical pivot, *f*, so as to swing horizontally. Springs G G′ G^2 G^3 are fastened to these arms beyond the pivot *f*, and to an eye, *g*, which is located behind the pivot *f*. When these arms are moved past a central position, or, in other words, a position transverse to the bottom rail, D^2, these springs carry them the remainder of the distance they travel. They also hold the arms in position at the ends of their paths and prevent the music-sheets, which are held by the fingers, from being accidentally turned or blown over.

H H′ designate dogs pivoted to plates I I′, which are fitted to the pivot *f*, and are free to turn thereon. These dogs are provided with shoulders *h h′*, the former of which engages with wards *i i′ i^2 i^3*, and the latter of which engages with wards *j j′ j^2 j^3*, which are arranged in a different plane. The plates I I′ are operated by levers J J′, which pass through swiveling studs *k k′*, which are fastened to the plates and extend through a slot, *l*, in a plate forming the bottom of a cavity in the bottom rail, D^2, which contains the arms F F′ F^2 F^3, springs G G′ G^2 G^3, plates I I′, and dogs H H′.

In the example of my improvement shown

in Figs. 1 and 2 the levers J J′ form part of a spring, J^2, which is coiled around the rod B of the stand; but these levers, in the example of my improvement shown in Figs. 3, 4, 5, 6, and 7, are made separately from each other, and are pivoted to studs or pivots *m*, arranged in rear of and independent of the pivot *f*. In the latter case springs J^3 draw them to their rearmost position, while in the former case the spring J^2 subserves the same purpose.

Cords K K′ are fastened to the levers J J′ in the example of my improvement shown in Figs. 1 and 2, and pass thence over pulleys L L′ to the treadles C. In the example of my improvement shown in the other figures the levers are, however, provided with handles. The latter example of my improvement is especially designed for application to a piano-forte or organ, while the former is designed for use with other wind and string instruments. Chains may be used in lieu of the cords K K′, and different links may be engaged with the treadles, according to the position of the rod B relatively to the tube B′.

The wards $i\ i'\ i^2\ i^3$ of the arms F F′ F^2 F^3 are not coincident with each other, but each projects beyond or inward of the one behind it. The forward end of the dog H always bears against the forward ward, and a spring, *n*, forces the dog outward against it. The shoulder *h* is thereby prevented from engaging with any but the forward arm. When the arms are all turned to the opposite position the dog H′ acts similarly, in conjunction with the wards $j\ j'\ j^2\ j^3$. It will be observed that the wards of each set are arranged in reverse order of progression, so that when the arms on which they are formed are turned to the right the wards $i\ i'\ i^2\ i^3$ will be so disposed that each projects inward beyond the one behind it, and so that when said arms are turned to the left the wards $j\ j'\ j^2\ j^3$ will be arranged with each projecting inward of the one behind it.

The levers J J′, in the example of my improvement shown in Figs. 1 and 2, are operated by the treadles C; but in the other example of my improvement they are operated by a sharp tap on their handles. In both cases they need be impelled far enough only to carry the arms F F′ F^2 F^3 past a central position, whereupon the springs G G′ G^2 G^3 carry them over to the end of their paths.

Preferably the pairs of fingers E E′ E^2 E^3 are not rigidly connected to the arms F F′ F^2 F^3, but are pivoted thereto by pins *o*, so that they can be folded down against the bottom rail, D^2, of the rack. The springs G G′ G^2 G^3 maintain the fingers in an upright position normally. A pivoted button, M, may be turned over the fingers, when they are folded down, to retain them there.

While I have shown the rack illustrated in Figs. 3, 4, 5, 6, and 7 as a separate structure, it may be made to form a permanent part of a piano-forte or organ, and the levers J J′ may be extended down into the position ordinarily occupied by knee-swell levers, or may be connected with other levers occupying such positions.

The rack, in the example of my improvement shown in Figs. 1 and 2, is intended to be inclined relatively to the stand, but I have neglected to so represent it, so as to conduce to clearness.

Cushions N, of india-rubber or any other suitable material, may be employed to preclude the arms F F′ F^2 F^3 from making a noise at the ends of the stroke. Similar cushions may be employed in conjunction with the levers J J′.

It is obvious that my music-leaf turner may be operated conveniently for turning music backward for repeating.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The rack consisting of the bottom rail, D^2, notched top rail, D^7, staff D D′, block *d*, and cords D^3, substantially as specified.

2. The rack consisting of the bottom rail, D^2, notched top rail, D^7, staff D D′, block *d*, cords D^3, and rod D^4, substantially as specified.

3. In a music-leaf turner, the combination of pairs of fingers extending from arms pivoted at one end for grasping sheets of music, and means connected with a support independent of the support of the arms, whereby the several pairs of fingers and arms may be turned, one pair at a time, in either direction to carry a sheet from either position to a reverse position, substantially as specified.

4. In a music-leaf turner, the combination of the arms F F′, &c., fulcrumed upon a common vertical pivot and adapted to swing horizontally, the means for moving them past a central position, and the springs G G′, &c., applied one to each arm, for impelling them the remainder of the distance they travel, substantially as specified.

5. In a music-leaf turner, the combination of the arms F F′, &c., means for moving them past a central position, and the springs G G′, &c., for impelling them the remainder of the distance they travel, and so combined with them as to hold them in their rearmost positions, substantially as specified.

6. In a music-leaf turner, the combination of the arms F F′, &c., the levers J J′, for moving them past a central position, and springs G G′, &c., substantially as specified.

7. In a music-leaf turner, the combination of the arms F F′, &c., the levers J J′, the dogs H H′, and means through which said levers operate said dogs, substantially as specified.

8. In a music-leaf turner, the combination of the arms F F′, &c., the plates I I′, the dogs H H′, the swiveling studs *k k′*, and the levers J J′, substantially as specified.

9. In a music-leaf turner, the combination of the arms F F′, &c., provided with wards *i i′*, &c., the plates I I′, and the dogs H H′, substantially as specified.

10. In a music-leaf turner, the combination of the arms F F′, &c., provided with the wards *i i′*, &c., and with the wards *j j′*, &c., the plates I I′, the dogs H H′, and the levers J J′, substantially as specified.

11. In a music-leaf turner, the combination of the arms F F′, &c., the bottom rail, D^2, the pairs of fingers E E′, &c., pivoted to said arms, and adapted to be swung down upon the rail D^2 to render the rack compact for carrying, and the springs G G′, &c., substantially as specified.

12. In a music-leaf turner, the combination of the arms F F′, &c., the pairs of fingers E E′, &c., pivoted thereto, the springs G G′, &c., and the button M, substantially as specified.

13. In a music-stand, the combination of the arms F F′, &c., arranged upon a common center and adapted to swing horizontally, the levers J J′, and devices carried thereby for engaging successively with said arms for swinging them in either direction, the treadles C, and cords K K′, forming connections between said treadles and levers, substantially as specified.

WM. LIDDELL.

Witnesses:
T. J. KEANE,
JAMES R. BOWEN.