

(No Model.)

P. L. CARDEN.
MUSIC LEAF TURNER.

No. 356,983.

Patented Feb. 1, 1887.

Fig. 1.

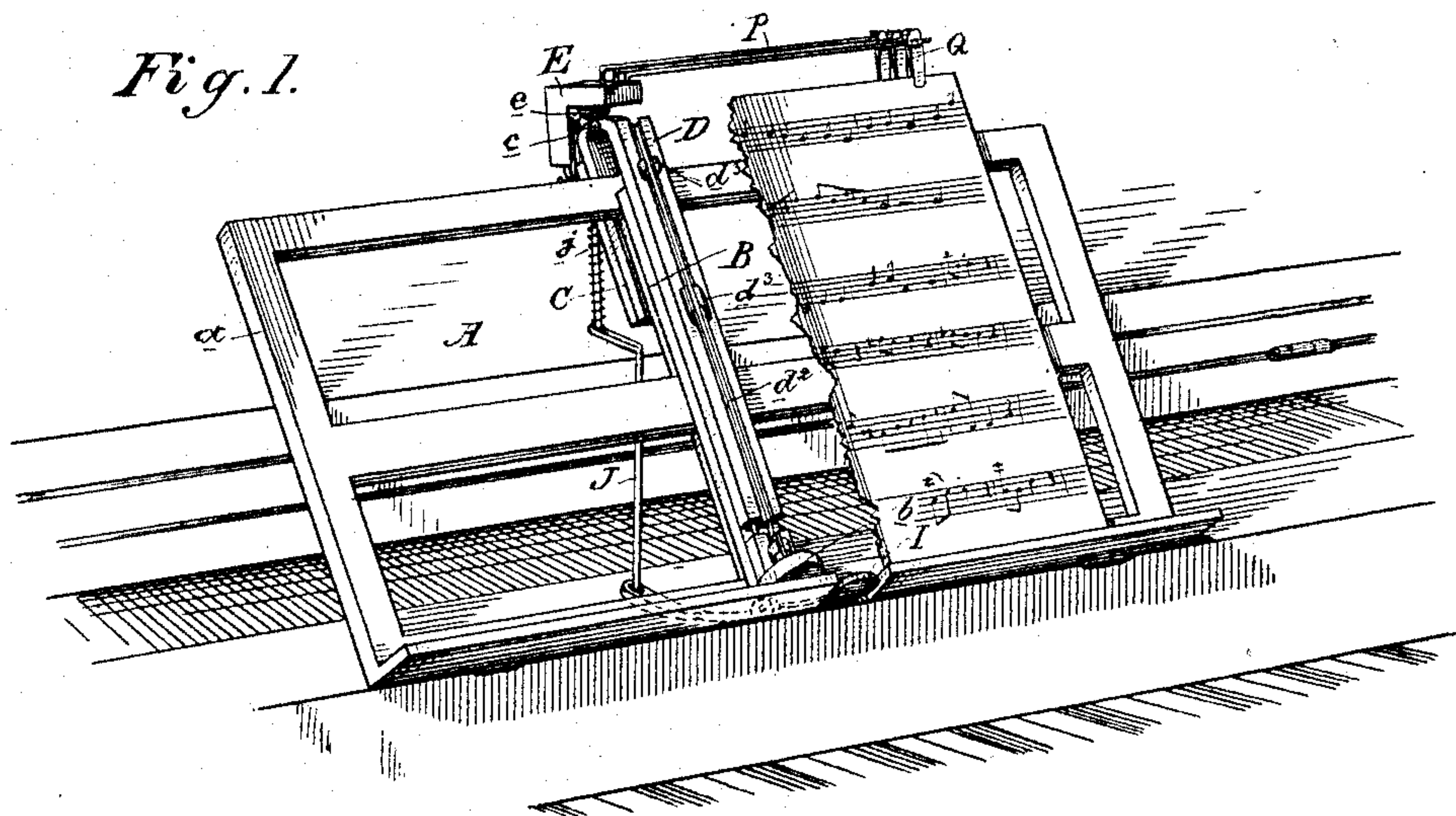
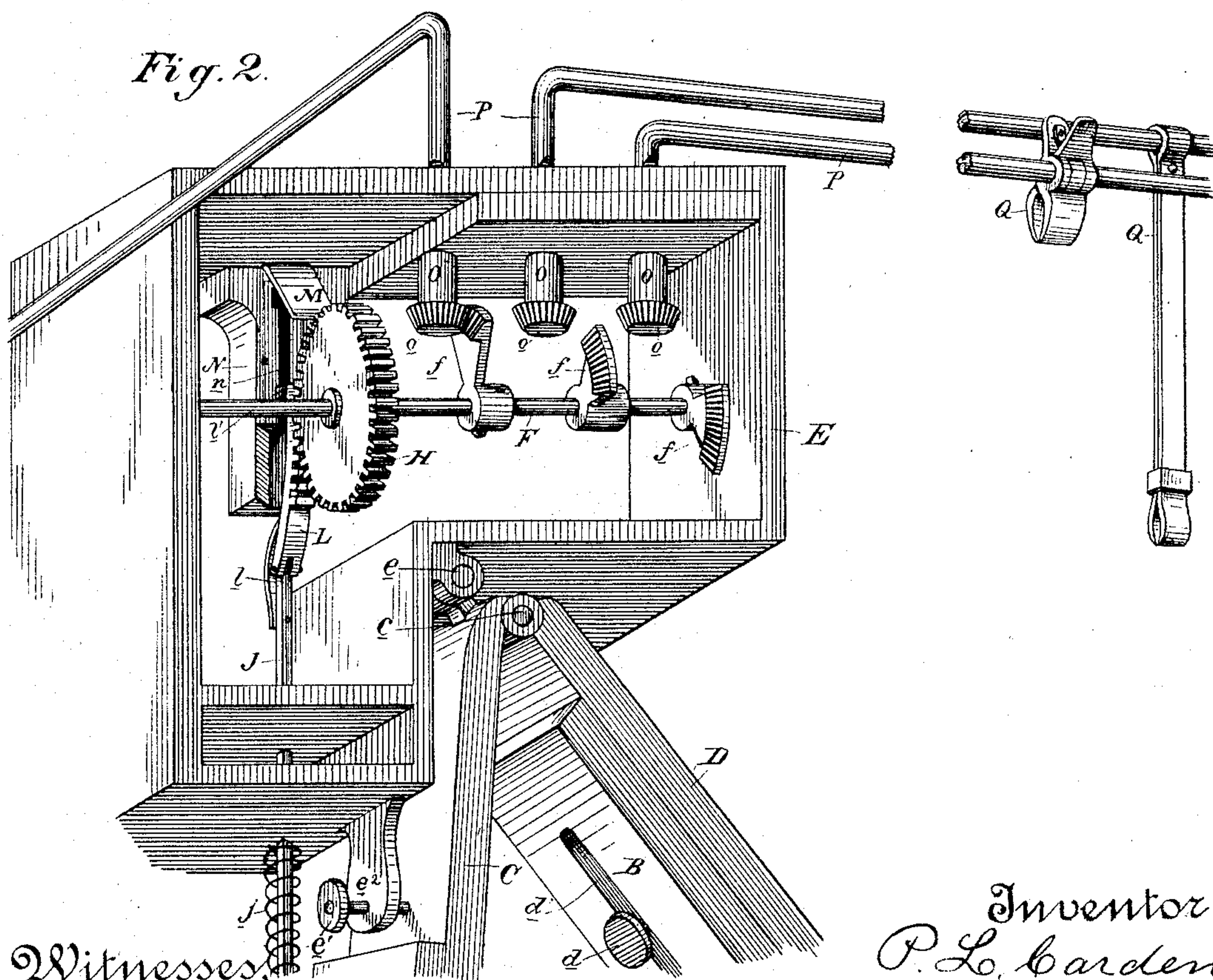


Fig. 2.



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UNITED STATES PATENT OFFICE.

PATRICK LYNETT CARDEN, OF DIXON, CALIFORNIA.

MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 356,983, dated February 1, 1887.

Application filed September 22, 1886. Serial No. 214,273. (No model.)

To all whom it may concern:

Be it known that I, PATRICK LYNETT CARDEN, of Dixon, Solano county, State of California, have invented an Improvement in Music-Leaf Turners; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of music-turners; and my invention consists in the novel arrangement and construction of the leaf-holding arms, the operating-key, the power-transmitting mechanism between the key and the leaf-holding arms, by which they are successively actuated, the adjustable frame for attaching the device to the rack of the piano and for holding music of various length, and various details, all of which I shall hereinafter fully describe.

The object of my invention is to provide a simple and effective music-leaf turner adapted to be readily attached to the rack of any piano and to be easily operated.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view showing the application of my music-leaf turner to the rack of a piano. Fig. 2 is a perspective view showing the details of the power-transmitting mechanism.

A is the piano, having the ordinary rack, *a*. B is a standard, the lower portion of which is provided with a foot, *b*, which rests upon the base of the rack *a*. Fitted to the face of the standard is a sliding bar, D, which by its movement adapts the length of the standard to any length of music. This bar may be fitted to the standard in any suitable manner, though I have here shown a set-screw, *d*, projecting within a slot, *d'*, made in the standard. By adjusting this set-screw the sliding bar may be fixed in the position to which it is adjusted.

The face of the bar D is grooved, as shown at *d''*, for the reception of the back of the music or music-book, and on each side of the groove are arranged spring-clasps *d'''*, for clamping the back of said music or book.

To the top of the sliding bar D is hinged, at *e*, the arm C, which passes down behind the rack, and is secured thereto in any suitable

manner. The hinging of the bar and the arm together provides for the ready application of the device to any rack. Hinged at *e* to the top of the arm C is the box or casing E, the angle of which is regulated by means of the set-screw *e'*, passing through a short bracket, *e''*, on the base of the box and bearing against the arm C. Within this box is mounted the shaft F, upon which is secured the gear-wheel H.

I is a key let through the base of the rack *a*, its outer end projecting within convenient reach of the player. It is suitably pivoted or fulcrumed, and has loosely connected with its rear end the rod J. This rod extends upwardly, and has pivoted to its upper end within the box a rack-bar, L, which is held forward to its engagement with the gear-wheel H by means of a spring, *l*. A spring, *j*, around the rod J throws it back again when the key is relieved. In thus returning, it is obvious that the rack-bar L must be thrown from its engagement with the gear H, so as not to reverse it. To effect this I have at the top of the box an inclined plane or cam, M. Secured to the back of the box is a strip, N, having made in it a T-shaped groove, *n*. On the back of the rack-bar L is a stud, *l'*, with a head. Now, when the rack-bar has been moved to the upper limit of its stroke, its upper end coming in contact with the inclined plane or cam M, it is forced back on its pivotal center until the head of its stud *l'* enters the open top of the groove *n*. The rack-bar is thus held away from the gear, and may move down with the rod J under the influence of the spring *j*.

Pivoted in the top of the box are spindles O, the lower ends of which are provided with pinions *o*. With these engage segmental gears *f*, mounted on the shaft F in different positions, so that their action may be successive. Connected with the spindles O in any suitable manner, as by simply fitting in sockets therein, are the arms P, the ends of which are provided with the leaf-clasps Q. These may be of any suitable character adapted to clasp the music-leaves. There may be any desirable number of said arms.

The operation of my music-leaf turner is as

follows: As I have heretofore mentioned, the standard B, with its sliding bar D and hinged arm C, may be adjusted readily to the rack, as shown in Fig. 1, and the box E may be then
 5 adjusted to the proper angle by means of the set-screw *e'*. The sheet-music or the book is then fitted to the grooved face of the adjustable bar D, and is secured by the spring-clamps *d'*. It is then opened out, and one of
 10 the clamps Q is secured to each leaf. When the time comes for turning the first leaf, the key I is depressed, whereby the rod J is forced up, thereby, through the rack-bar L on its top, effecting the partial rotation of the gear H and
 15 the shaft F. The first of the segmental gears *f* is thus caused to engage the pinion *o* of the spindle O, carrying the first arm P, and to partially rotate said spindle, whereby it throws said arm over to the other side, thus turning
 20 the leaf. The movement of the rack-bar L is great enough to carry its upper end against the cam M, whereby it is thrown back and held by the engagement of its stud *l'* with the
 25 grooved strip N, and being thus free from the gear-wheel H, it moves down to its initial position under the influence of the spring *j*, leaving the gear in the position to which it had been turned, so that at the next operation of
 30 the key the second segmental gear is ready for its engagement. As each leaf has to be turned the key is operated as described, and at each operation the engagement of the rack-bar with the gear is broken, so as to leave the shaft
 35 ready for a continuance of the operation. The whole device can be made in such small compass as not be in the way in any manner. The position of the operating-key, right in
 40 front of the operator, renders its use very convenient, as the motion needed to reach it and the power to operate it are scarcely greater than in operating the ordinary keys of the
 45 piano. If, however, it be found desirable, the rod J, instead of terminating at the base of the rack and being operated by a key at that point, may pass on down to a suitable treadle below, whereby the turner may be operated by the foot.

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

1. In a music-leaf turner, a frame for carrying the operating parts of the device, said frame comprising bars hinged together and straddling the rack of the piano, one of said
 55 bars being fitted to slide upon a standard, whereby it is adjusted to different lengths of music, substantially as herein described.

2. In a music-leaf turner, the standard B and the sliding bar D, fitted to the standard, in combination with the arm C, hinged to the
 60 sliding bar, said arm passing behind the rack of the piano and secured thereto, the whole forming the frame carrying the operating parts of the device, substantially as herein described.
 65

3. In a music-leaf turner, the standard B

and the sliding bar D, fitted to the face of the standard, and having a grooved face for the reception of the back of the music or music-book, and clamps *d'* for holding it, in combination with the arm C, hinged to the top of the sliding bar and passing behind the piano-rack, substantially as herein described.

4. In a music-leaf turner, a frame secured to the rack of the piano, in combination with the box E, carrying the operating parts of the device, said box being hinged to the frame, whereby its angle may be varied and controlled, substantially as herein described.

5. In a music-leaf turner, the frame consisting of the standard B, the bar D, and the arm C, hinged to the bar, as described, in combination with the box E, carrying the turning-arms and the mechanism for operating them, said box being hinged to the arm and having
 85 a set-screw by which its angle may be varied, controlled, or adjusted and fixed, substantially as herein described.

6. In a music-leaf turner, the pivoted arms P, having means for engaging the leaves of the music, in combination with the means for operating them, consisting of the pivoted spindles O, to which they are fitted, and having the pinions *o*, the shaft F, having the segmental gears *f*, engaging the pinions and the
 95 gear-wheel H on the shaft, the pivoted key I below, the rod J, attached to the key, and the rack-bar L, attached to the rod and engaging the gear-wheel of the shaft, substantially as herein described.

7. In a music-leaf turner, the vertically-moving pivoted rack-bar held to its engagement with the gear by a spring, in combination with the means for relieving the engagement, consisting of the cam M, the grooved
 105 strip N, and the stud on the back of the rack-bar, substantially as herein described.

8. In a music-leaf turner, the shaft F and gear-wheel H, through which the turning-arms are operated, in combination with the
 110 vertically-moving rod J, the pivoted key I, for moving it up, the spring *j*, for returning it, the rack-bar L, pivoted to the upper end of the rod and engaging the gear-wheel, the spring *l*, for keeping the rack-bar to its en-
 115 gagement on the upstroke, and the means for throwing it out of engagement on the downstroke, consisting of the cam M, by which the rack-bar is forced back, the grooved piece N, and the stud *l'* on the back of the rack-bar
 120 engaging the grooved piece, substantially as herein described.

9. In a music-leaf turner, the hinged and adjustable frame adapted to straddle the rack of the piano, and the hinged and adjustable
 125 box secured to the frame, in combination with the arms P, having clamps Q, for engaging the sheets of the music, the pivoted spindles O, to which the arms are secured, having the pinions *o*, the shaft F, mounted in the
 130 box and having the segmental gears *f*, meshing with the pinions *o*, and the gear-wheel H,

the key I below, the rod J, secured to the key,
the spring j around the rod, the rack-bar L,
pivoted to the top of the rod, and the spring
l, holding the rack-bar to its engagement with
5 the gear, the cam M, the grooved strip N, and
the stud l' on the back of the rack-bar, all ar-
ranged and adapted to operate substantially as
herein described.

In witness whereof I have hereunto set my
hand.

PATRICK LYNETT CARDEN.

Witnesses:

J. W. COTTEN,
A. R. STORY.