

No. 686,084.

Patented Nov. 5, 1901.

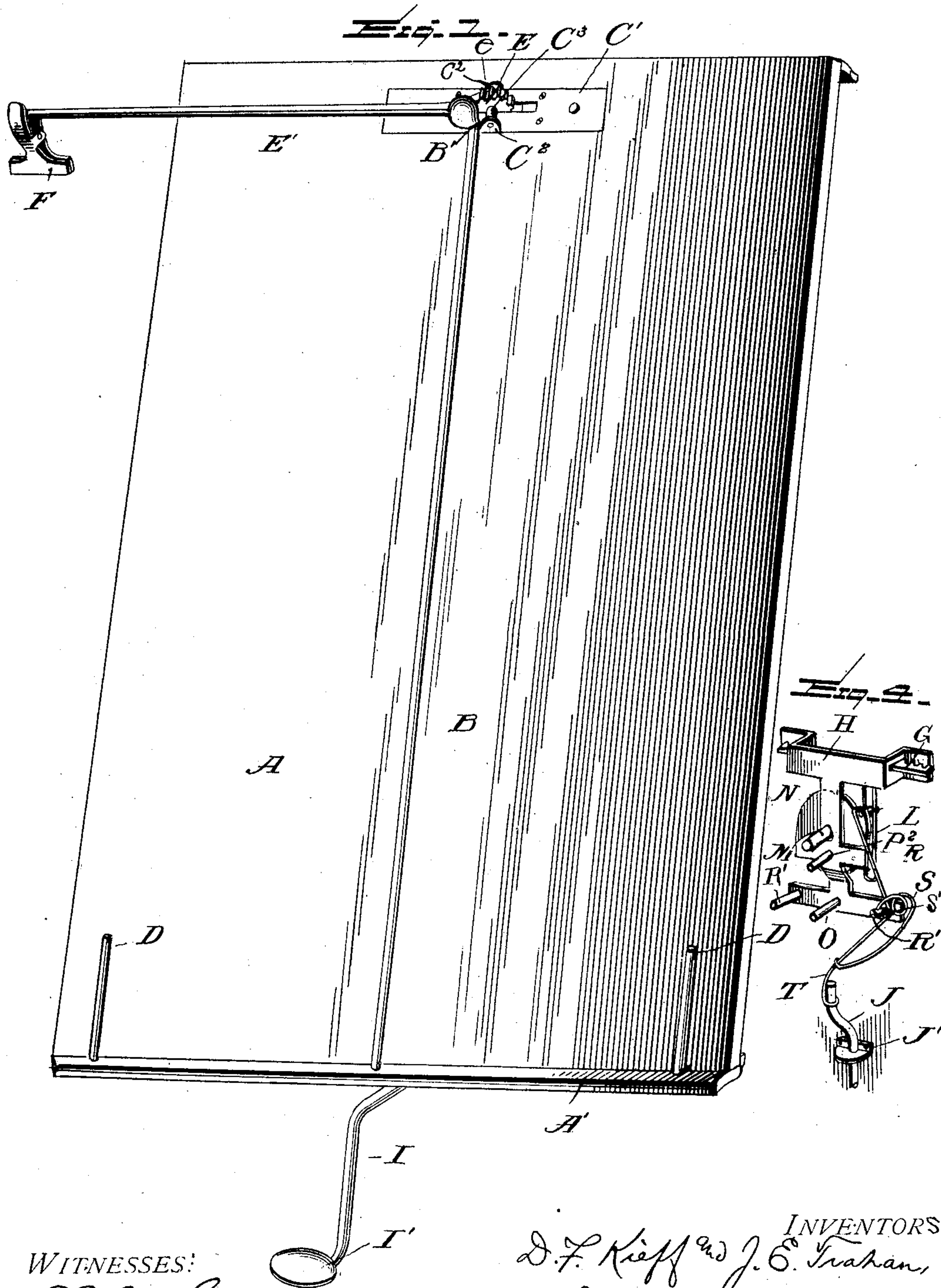
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MUSIC LEAF TURNER.

(Application filed Dec. 3, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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UNITED STATES PATENT OFFICE.

DANIEL F. KIEFF AND JOSEPH E. TRAHAN, OF WATERTOWN, NEW YORK.

MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 686,084, dated November 5, 1901.

Application filed December 3, 1900. Serial No. 38,478. (No model.)

To all whom it may concern:

Be it known that we, DANIEL F. KIEFF and JOSEPH E. TRAHAN, citizens of the United States, residing at Watertown, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Music-Leaf Turners; and we 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 letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in music-leaf turners, in which a spring-actuated reciprocating rack-bar is employed to throw a leaf-turning rod.

The invention will be hereinafter described in detail and then specifically defined in the appended claims, and is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form part of this application, and in which drawings similar letters of reference indicate like parts throughout the several views, in which—

Figure 1 is a perspective view of our improved music-leaf turner. Fig. 2 is a rear view of the board on which the music is held, showing the leaf-actuating mechanism secured thereto. Fig. 3 is a horizontal section on line 3-3 of Fig. 2. Fig. 4 is a detail in perspective showing the inner portion of the frame which supports a double cam-wheel, also showing the means for holding said cam-wheel from rotation. Fig. 5 is a detail view of the lever or the key which releases the catch from the cam and allows the rack-bar to move longitudinally.

Reference now being had to the details of the drawings by letter, A designates the rack on which the music is held by means of a central rod B, which has its lower end seated in the flanged or projecting portion A' at the bottom of the board and its upper end having a lug B', which is adapted to be inserted into an aperture C in the plate C', which is secured to the face of the music-holding board. Said rod is adapted to hold the music at its longitudinal center to the board, while short pins D are provided, which hold the outer covers or leaves of music open.

Mounted in the ears C² of the plate C' is a pin C³, to which is secured a toothed segment E, having teeth e thereon, and an integral arm E', carrying at its outer free end a clamp F. Said toothed segment is adapted to turn in an elongated slot in the plate C', and the teeth of said segment are normally in mesh with the teeth of the rack-bar G, which is mounted to reciprocate in apertures in the angled ends of the plate H, forming the inner portion of the wheel-supporting frame, which is shown in Figs. 2 and 3. This plate is secured to the rear face of the plate C' by means of bolts H'. (Shown in Figs. 1, 2, and 3.) Secured at right angles and projecting beneath said rack-bar is a loop L, and mounted on a shaft M, which is journaled in the plates M' and M², is a double cam N, terminating in right-angled shoulders N' at points diametrically opposite each other, and adjacent to one of said shoulders is a pin n, carried by the cam, and said pin is adapted to work longitudinally in the loop carried by the rack-bar, and as the shaft carrying said cam makes a complete revolution the rack-bar is caused to be thrown to its outer limit in opposite directions, thus causing the arm which is clamped to the music-leaf to swing from one end of the board to the other, thus presenting at each revolution of the cam the opposite faces of the leaf of music. Mounted in apertures M³ in said plates M' and M² is a shaft O, carrying a coiled spring, one end of which is fastened to said shaft and the other end to a stationary part of the frame, and O' is a gear-wheel, which is mounted to rotate with said shaft O. A suitable ratchet-wheel O² is also carried on said shaft and rotates therewith and is engaged by a spring-actuated dog O³, while a suitable winding-key O⁴ is provided for winding up the spring. The teeth of said gear-wheel O' are adapted to mesh with the teeth of a gear-wheel P, which is mounted on a shaft P' in said frame and in turn meshes with the teeth of a pinion-wheel Q, which is mounted on and rotates with the shaft M, which carries said double cam. By this mechanism it will be observed that as the spring is wound up motion is imparted from the shaft carrying said spring to the double cam, causing the latter to rotate, and through its connections with the

rack-bar will cause the latter to reciprocate. In order to allow said double cam to make a one-half revolution for the purpose of turning a leaf in one direction, we provide a spring-actuated catch R, which has an angled end disposed in the path of said shoulders of the cam and is adapted to engage the same. Said arm is mounted upon one of the pins R', which pass through the lower portion of the plates M' and M², and a spring S, having one end secured to a pin S', has its free end bent to form a hook and caught over an arm T, which is secured at its inner end to the pin on which said angled arm engaging the cam is mounted. By means of the hook in said spring-arm engaging over the arm T it will be observed that the free angled end of the arm adjacent to the cam will be held against the circumference of said double cam and will catch against each shoulder as the cam rotates unless said arm is raised out of the path of said shoulders. The lower end of the arm T is bent to form an eye and is engaged by the upper angled end of the rod J, which is journaled in apertures in the brackets J' on the rear face of said board. The lower end of said rod is bent at right angles to its upper angled end and in an opposite direction from the angle at its upper end, and mounted in the flanged portion of the board, at the bottom thereof, is a double-angled operating member I, having a key I' at its lower end. The upper angled end of this member is held against the lower end of the rod J, and said member under the influence of the spring bearing against the arm T is caused to be normally held at its farthest outward throw, and when a slight pressure is applied to said key the upper angled end of said member will force the lower angled end of the rod J toward the rear face of the board and the upper angled end of the rod J will swing laterally, carrying with it the lower end of the arm T, which will cause the free angled end of the cam-engaging arm to be raised out of the path of the shoulders of said cam, allowing the cam to rotate. If pressure is relieved from the key after being once depressed, the angled arm will allow said cam to make a one-half revolution, which will turn the leaf of music. When it is desired to return the lever to its original position, a second application of pressure to the key will cause the lever-carrying arm to swing in the opposite direction.

While in the drawings we have shown but a single lever-engaging arm, it is our purpose to

have, if desired, a plurality of arms, which may be similarly constructed when it is desired to turn several pages of music. It is thought, however, that one arm will sufficiently illustrate the principle of our invention. Hence but one is shown in the drawings.

Having thus described our invention, what we claim to be new, and desire to secure by Letters Patent, is—

1. In a music-leaf turner, the board, a toothed segment journaled on the board, bracket, a reciprocating rack mounted in said bracket, and having a slotted member, a double cam-wheel, the shaft on which the same is mounted, the pin carried by the cam to engage said slotted member, a spring-actuated shaft, geared connections between the same and the cam-shaft, a pin journaled in the frame carrying the spring-actuated shaft, an arm carried by said pin and having its angled end held adjacent to shoulders on said cam, a second pin mounted in said frame, and having a spring-arm secured thereto, the end of said arm being hooked, an arm secured to the pin carrying the angled arm, and adapted to be engaged by said spring-arm, and means for raising said angled arm out of the path of shoulders on the cam, as shown and described.

2. In combination with the rack-bar, the segment with integral arm, the double cam and spring-actuated mechanism for rotating said cam, the frame and pin journaled therein, an arm carried by said pin, one of said arms being angled, and disposed in the path of shoulders on said cam, the second arm being spring-actuated, and having an eye at its end, a rod journaled in suitable bearings on said board, and having its upper angled end engaging said eye, and a tilting angled member mounted in the flange at the lower end of said board, and having a key at its lower end, its upper end being bent, and adapted to engage the lower angled end of said rod, whereby as said key is depressed, the angled arm, which is normally held in contact with said cam, is raised out of the path of the shoulders thereon, as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

DANIEL F. KIEFF.
JOSEPH E. TRAHAN.

Witnesses:

DAVID D. KIEFF,
PETER CULLEN.