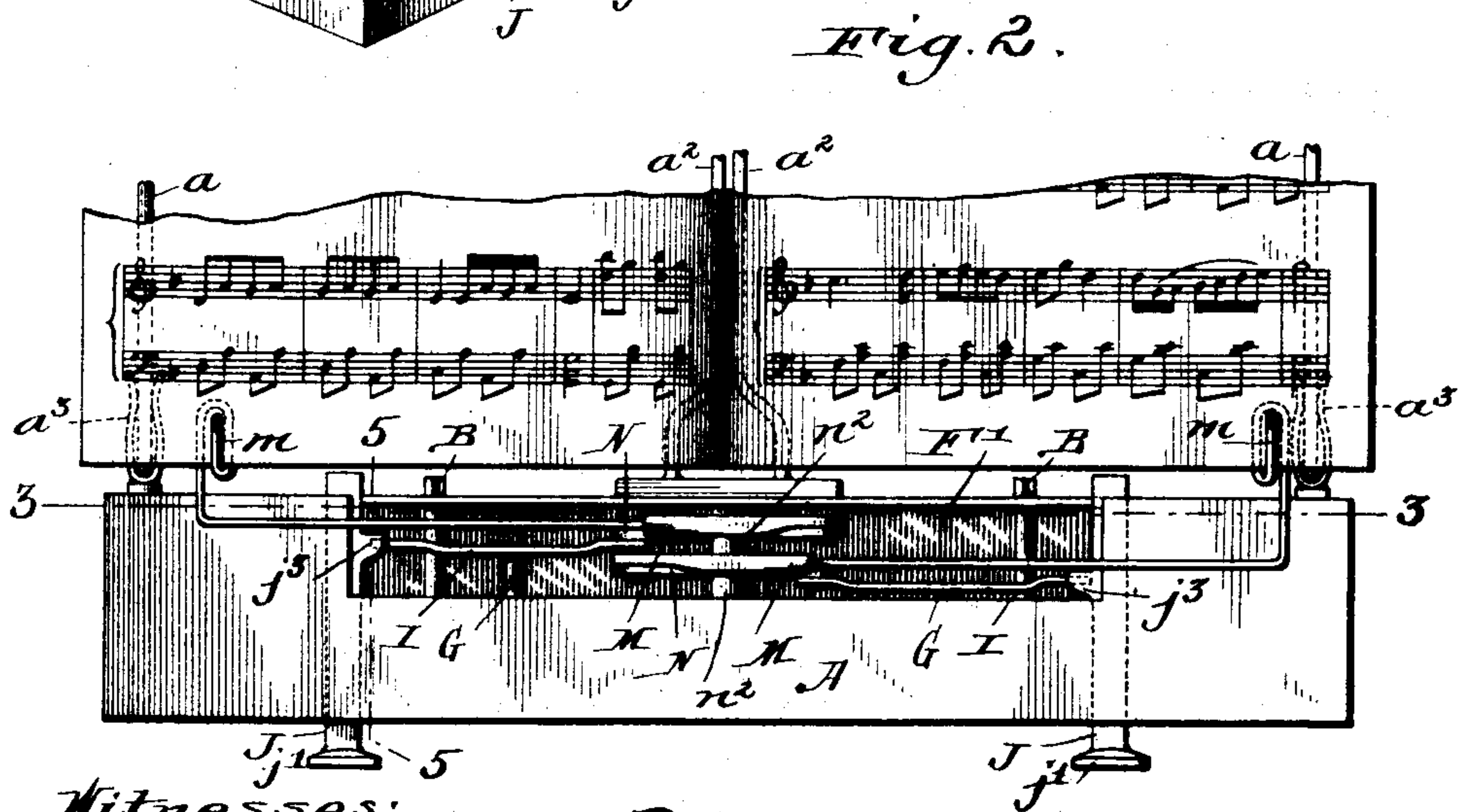
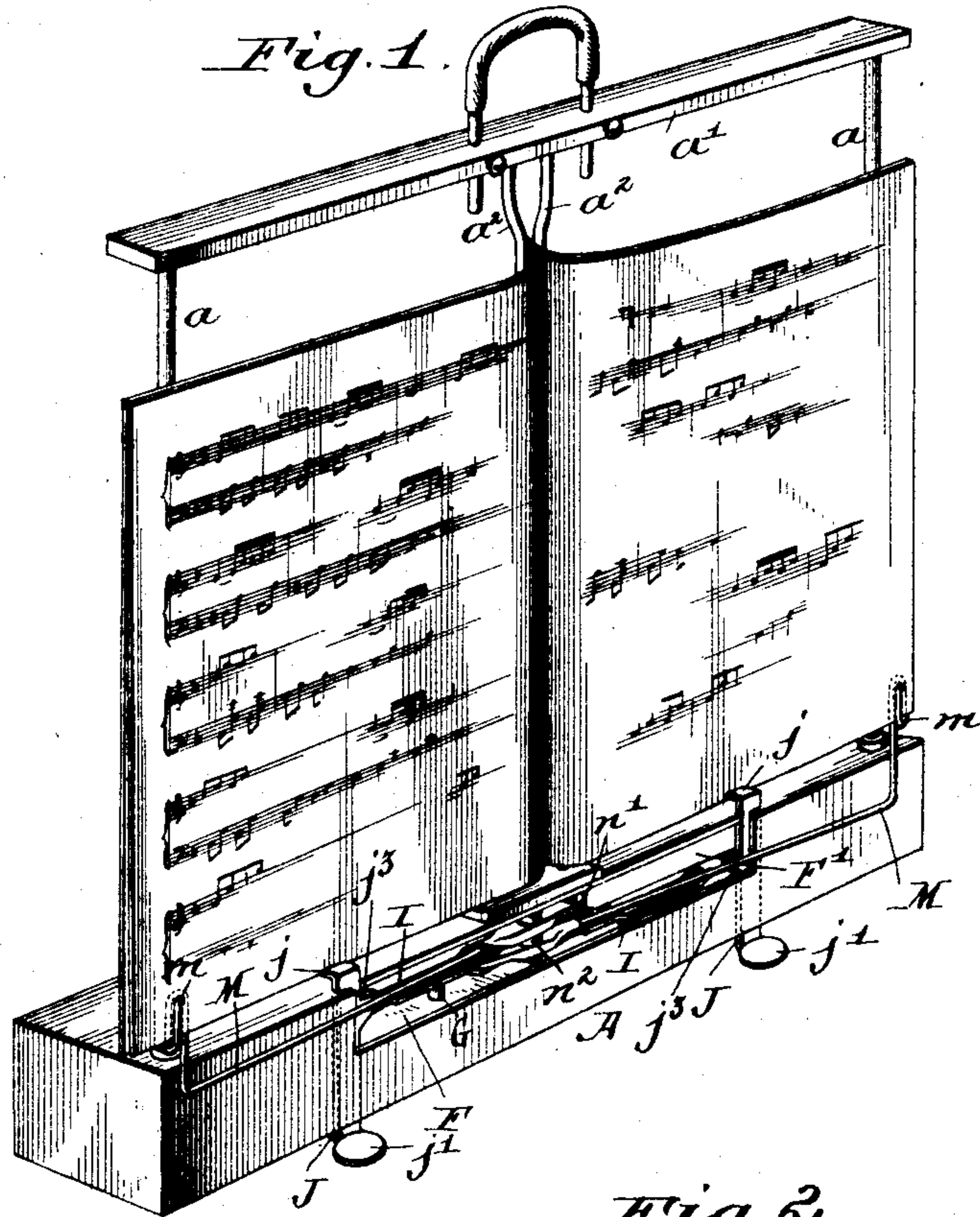


R. O. HAMMOND.  
MUSIC LEAF TURNER.

(Application filed June 20, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:  
R. P. Chamberlain.  
Chas. Palmer.

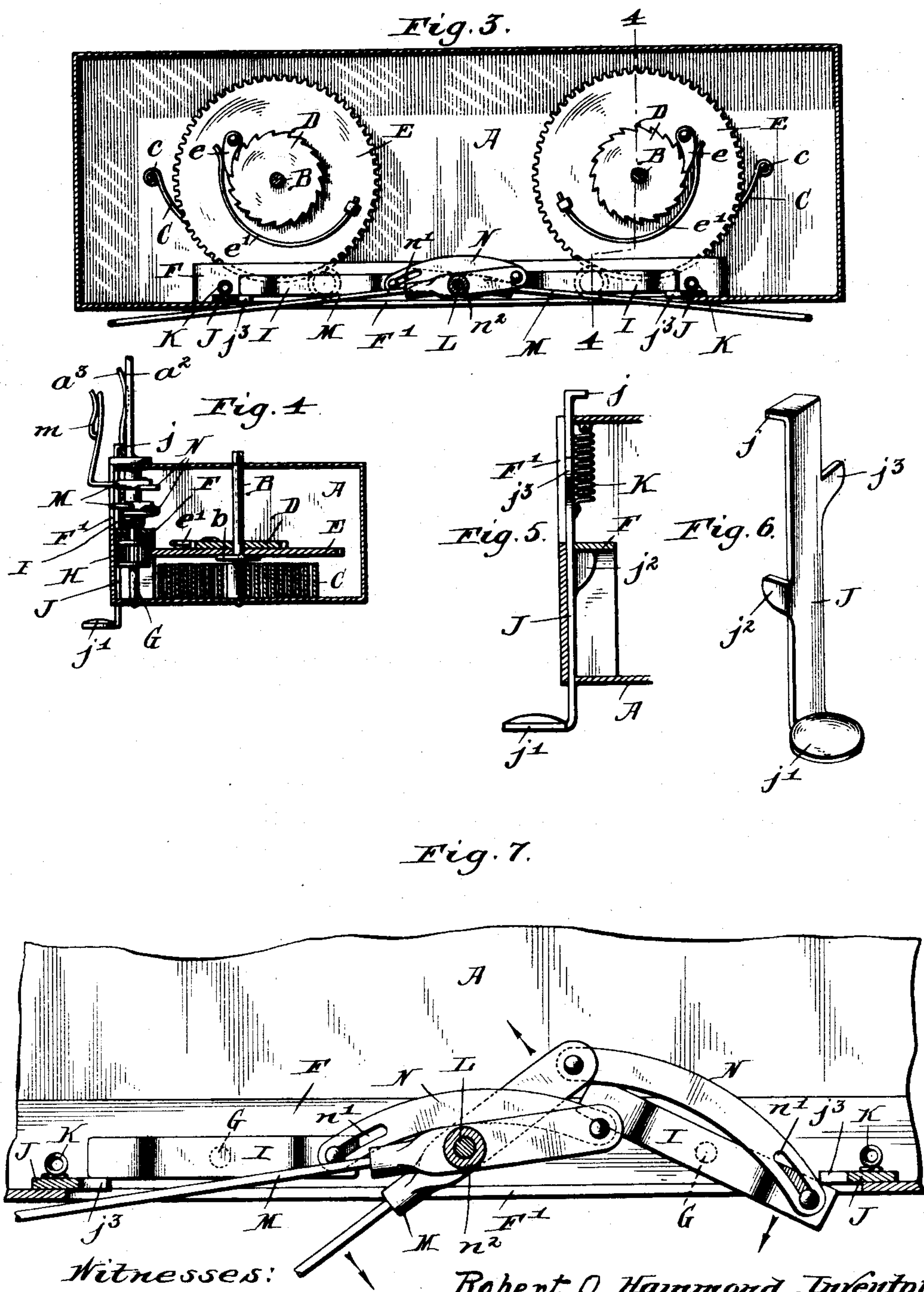
Robert O. Hammond, Inventor  
By Neukart & Burkhardt  
Attorneys.

R. O. HAMMOND.  
MUSIC LEAF TURNER.

(Application filed June 20, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:  
R. P. Chamberlain  
Chas. Palmer.

Robert O. Hammond, Inventor.  
By Neuhart & Burkhardt,  
Attorneys.



# UNITED STATES PATENT OFFICE.

ROBERT O. HAMMOND, OF DEPEW, NEW YORK, ASSIGNOR TO CHRISTIAN HAGEN, OF BUFFALO, NEW YORK.

## MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 682,252, dated September 10, 1901.

Application filed June 20, 1901. Serial No. 65,224. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT O. HAMMOND, a citizen of the United States, residing at Depew, in the county of Erie and State of New York, have invented certain new and useful Improvements in Music-Leaf Turners; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in music-leaf turners whereby on pressing a finger piece or key the music-leaf secured to the leaf-turning arm can be turned in one direction and on pressing the same key again the leaf will be turned in the reverse direction to return the same to its normal position to allow the player to repeat should he so desire, my improved turning mechanism being released by pressing the finger piece or key, which allows the leaf-turning arm to be operated by the said turning mechanism.

My invention has for its object the production of a music-leaf turner which is simple and durable in construction, quick and positive in action, and one which consists of few parts.

It consists in certain novel details of construction and combination and arrangement of parts, as will be hereinafter described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of my improved music-leaf turner. Fig. 2 is a front elevation of the casing in which the turning mechanism is confined and a portion of the sheet-music or book-holder. Fig. 3 is a horizontal section taken on line 3 3, Fig. 2. Fig. 4 is a transverse section taken on line 4 4, Fig. 3. Fig. 5 is a vertical section on line 5 5, Fig. 2, on an enlarged scale. Fig. 6 is a detached perspective view of one of the finger or releasing keys. Fig. 7 is a section on a portion of the plane indicated by line 3 3, Fig. 2, on an enlarged scale, showing a different position for one of the leaf-turning arms.

Like letters of reference refer to like parts in the several figures.

The letter A represents the casing in which

the leaf-turning mechanism is confined. This casing is designed to rest on the music-shelf of a piano or organ and is constructed in any size suitable to such an instrument. Provision of course must be made to hold the case on the music-shelf; but as my invention resides in the music-turning mechanism I will state that a spring catch, clamp, or any other suitable means may be employed. To the top of the casing I affix upright bars *a*, which are connected together by a cross-bar *a'*, and midway between these bars I arrange two upright spring-wires *a<sup>2</sup>*, between which the fold of the music-sheet is held. These spring-bars are secured at their upper ends to the cross-bar *a'* and at their lower ends to the casing A. To the lower end of the upright bars *a* spring-clips *a<sup>3</sup>* are affixed, in which the lower outer ends of the sheet-music cover is held. Any other arrangements suitable for holding the sheet-music can be employed in connection with my improvements.

In the drawings I have shown mechanism for two leaf-turning arms; but it is to be understood that one or more than two such arms may be as readily used, separate operating mechanism being necessary for each leaf-turning arm. It has been found in practice that two leaf-turning arms will answer all ordinary purposes, for the reason that only in exceptional cases will a piece of music have more than two leaves to be turned. As each leaf-turning arm has its separate mechanism, I will only describe the mechanism for one arm, which may be considered as applying to both. The operating mechanism is spring-wound and consists of a shaft B, having the inner end of a helical spring C, common to clock-movements, secured thereto, the outer end of said spring being secured to a pin or stud *c*, projecting from the bottom of the casing A. Formed on or secured to the shaft directly above the spring C is a collar or flange *b*.

D designates a ratchet-wheel which is secured to the shaft B in any suitable manner, and between this ratchet-wheel and the collar or flange *b* a gear-wheel E is confined. This gear-wheel is mounted loosely on the shaft B and has a pawl *e* pivotally secured thereon, a spring *e'* being provided to keep



the same in engagement with the ratchet-wheel D. The upper end of the shaft is squared and extends out through the top of the casing to permit a key to be applied for winding up the spring.

F designates a bracket which extends lengthwise of the casing and is secured to the bottom of the same. An opening F' is formed in the front wall of the casing, through which the leaf-turning arm projects, it being of sufficient width to allow said arm to swing from one side of the casing to the other side thereof.

G designates a spindle journaled near its upper end in the bracket F and with its lower end in the bottom of the casing. A lantern-pinion H is secured to said spindle and meshes with the gear-wheel E, receiving motion from the latter when the spring C is allowed to revolve the same. A bar I is secured midway between its ends to the upper end of the spindle G, and this bar is designed to prevent the revolving of the said spindle by engaging a vertically-sliding releasing-key J, which is guided in the casing and provided at its upper end with a stop  $j$  to limit its downward movement and at its lower end with a finger-piece  $j'$ . This sliding key is also provided with a stop  $j^2$ , which bears against the under side of the bracket F to limit its upward movement. Formed on this key between the bracket F and the top of the casing and in line with the revolving bar I is a stop  $j^3$ , against the rear face of which either end of said revolving bar bears, whereby the unwinding of the spring C is prevented. A retractile spring K is secured with one end to the top of the casing and with its other end to the sliding key J, thus keeping the latter in its elevated or normal position, with the stop  $j^2$  bearing against the under side of the bracket F.

L designates a stationary arbor held in the casing and on which the leaf-turning arm M is pivotally held. The outer end of this arm is upturned and provided with a spring-clip  $m$ , in which the leaf to be turned is held. This arm is arranged to extend rearwardly a short distance beyond its pivotal connection on the arbor. Pivotaly connected to the rear end of the said arm is a link N, its opposite end having a sliding pivotal connection with one end of the revolving bar I. This connection is formed by a pin secured to the bar I and passing through a longitudinal slot  $n'$ , formed in the link N. Separators  $n^2$  surround the stationary arbor between the arm M and the casing, and, as shown on the drawings, when two or more leaf-turning arms are employed between the arms also, thus giving each arm an unobstructed path and free movement.

The operation of the device is as follows: The spring C tends through the medium of the gearing to revolve the bar I, unless checked in its movement by the stop  $j^3$ , formed on the key J. Normally the bar is held from revolving by one end thereof bearing against the rear face of the said stop, which on depressing the key J and releasing the same as

soon as depressed allows the bar I to turn one-half revolution, thus causing the other end of the same to engage the stop on the key. During this movement of the bar I the leaf-turning arm M, through the medium of the link N, was swung from one side of the device to the other, whereby the leaf held thereon was turned. Now on depressing the key again and releasing the same as soon as depressed the bar I will be allowed to turn another half-revolution, which causes that end of the bar I first engaging the stop  $j^3$  on the key J to engage the same again. During this movement the leaf-turning bar is swung back to its first position and the leaf held thereon turned back to allow the player to repeat. This return movement is accomplished by reason of the link N being connected to one end of the bar I, which end is brought closer to or swung farther from the pivotal point of the leaf-turning arm when the revolving bar I is turned, thereby swinging said leaf-turning arm backwardly and forwardly intermittently.

Having thus described my invention, what I claim is—

1. The combination with the casing, of a revolving element, a movable stop held in the path of said revolving element to normally hold the same from turning, suitable power for automatically operating said revolving element when the said stop is moved out of the path of the same, a leaf-turning arm pivoted to swing, and a link connecting said revolving element with the leaf-turning arm, substantially as set forth.

2. The combination with the casing, of a revolving element under spring tension and normally held from revolving, a swinging leaf-turning arm, a link connecting said leaf-turning arm with the revolving element at one side of its axis, and means for releasing said revolving element, substantially as set forth.

3. The combination with the casing, of a revolving element under spring tension and normally held from revolving, a leaf-turning arm pivoted near its rear end, a link connecting said revolving element at one side of its axis with the rear end of the said leaf-turning arm, and means for releasing said revolving element to allow the same to swing the said leaf-turning arm through the medium of said link, substantially as set forth.

4. The combination with the casing, of a revolving element having stops at either side of its axis and being under spring tension, a spring-controlled sliding key normally held to prevent movement of said revolving element and being adapted to be depressed to release the same, a leaf-turning arm pivoted near its rear end, a link connecting the rear end of said arm with the revolving element at one side of its axis, said connection allowing of a combined pivotal and sliding movement, substantially as set forth.

5. The combination with the casing, of a revolving bar held under spring tension, a



sliding key having a stop against which said bar bears and whereby it is held from revolving, a spring for keeping said key in its normal position, a leaf-turning arm pivotally held near its rear end, and a link being pivotally connected with one end to the rear end of the leaf-turning arm, and having a longitudinal slot in its other end through which a pin secured to one end of said revolving bar passes, substantially as set forth.

6. The combination with the casing, of a spindle held under spring tension, a bar secured midway between its ends to said spindle, a sliding key having stops to limit its

movement and a stop against which either end of said bar bears, a spring to keep the said key in its elevated or normal position to prevent the turning of the spindle, a leaf-turning arm pivoted near its rear end, and a link pivotally connected at one end to the rear end of the leaf-turning arm and slidingly connected at its other end to one end of the said bar, substantially as set forth.

ROBERT O. HAMMOND.

Witnesses:

CHAS. F. BURKHART,

REGINALD CHAMBERLAIN.