

No. 685,533.

Patented Oct. 29, 1901.

F. A. SHUNK & U. G. DAVIS.  
MUSIC LEAF TURNER.

(Application filed Sept. 10, 1900.)

(No Model.)

Fig. 1.

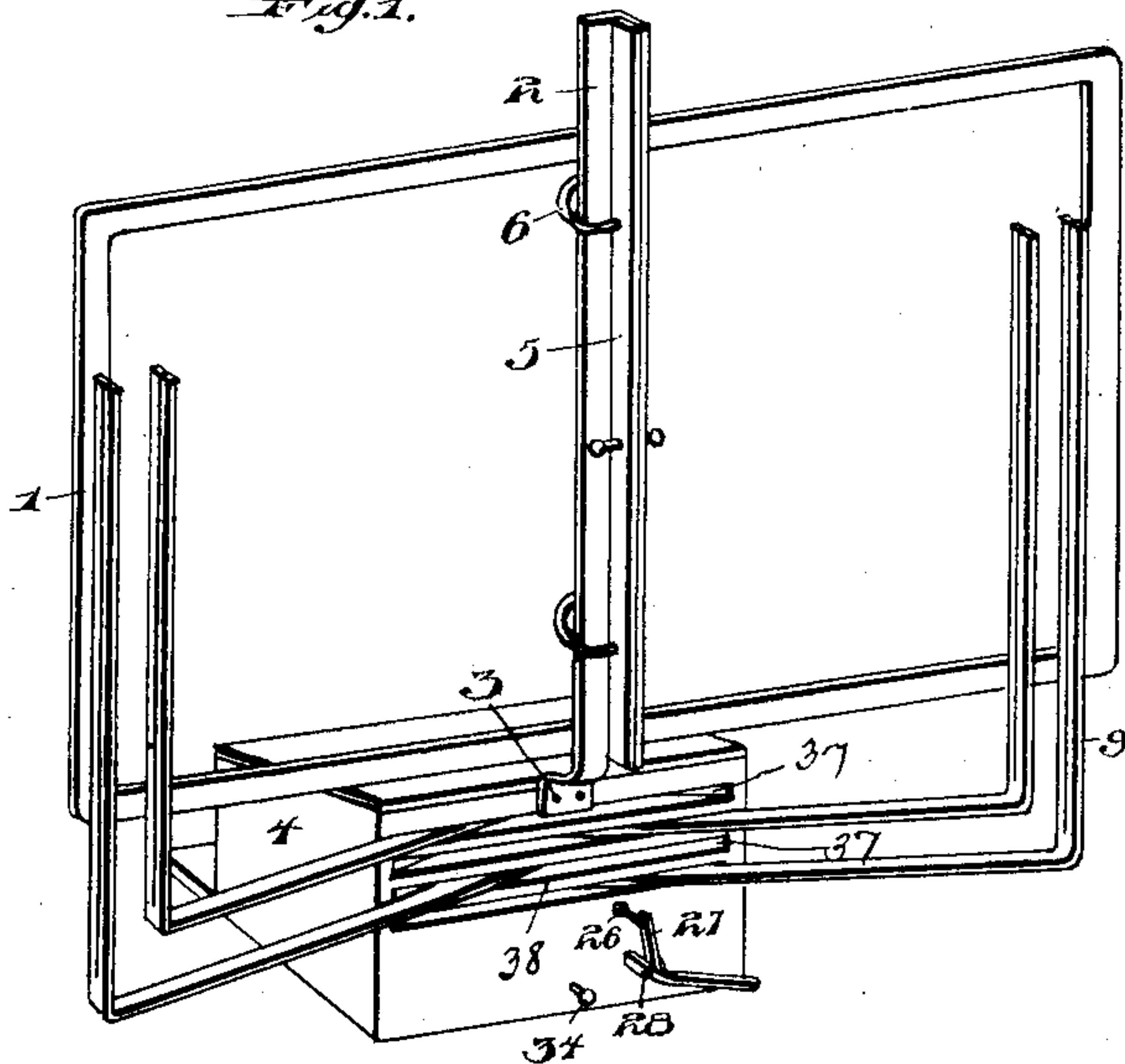


Fig. 2.

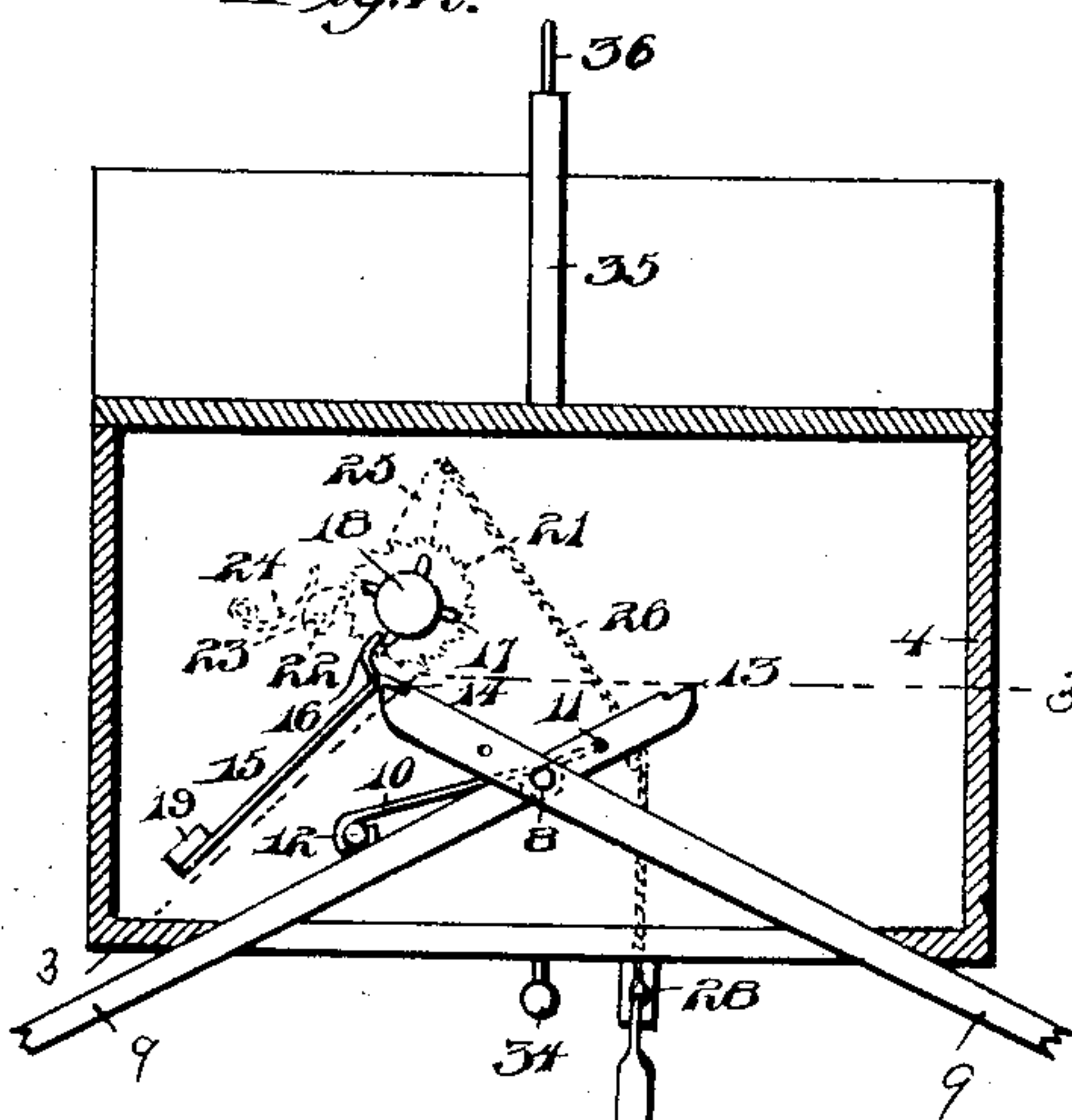


Fig. 3.

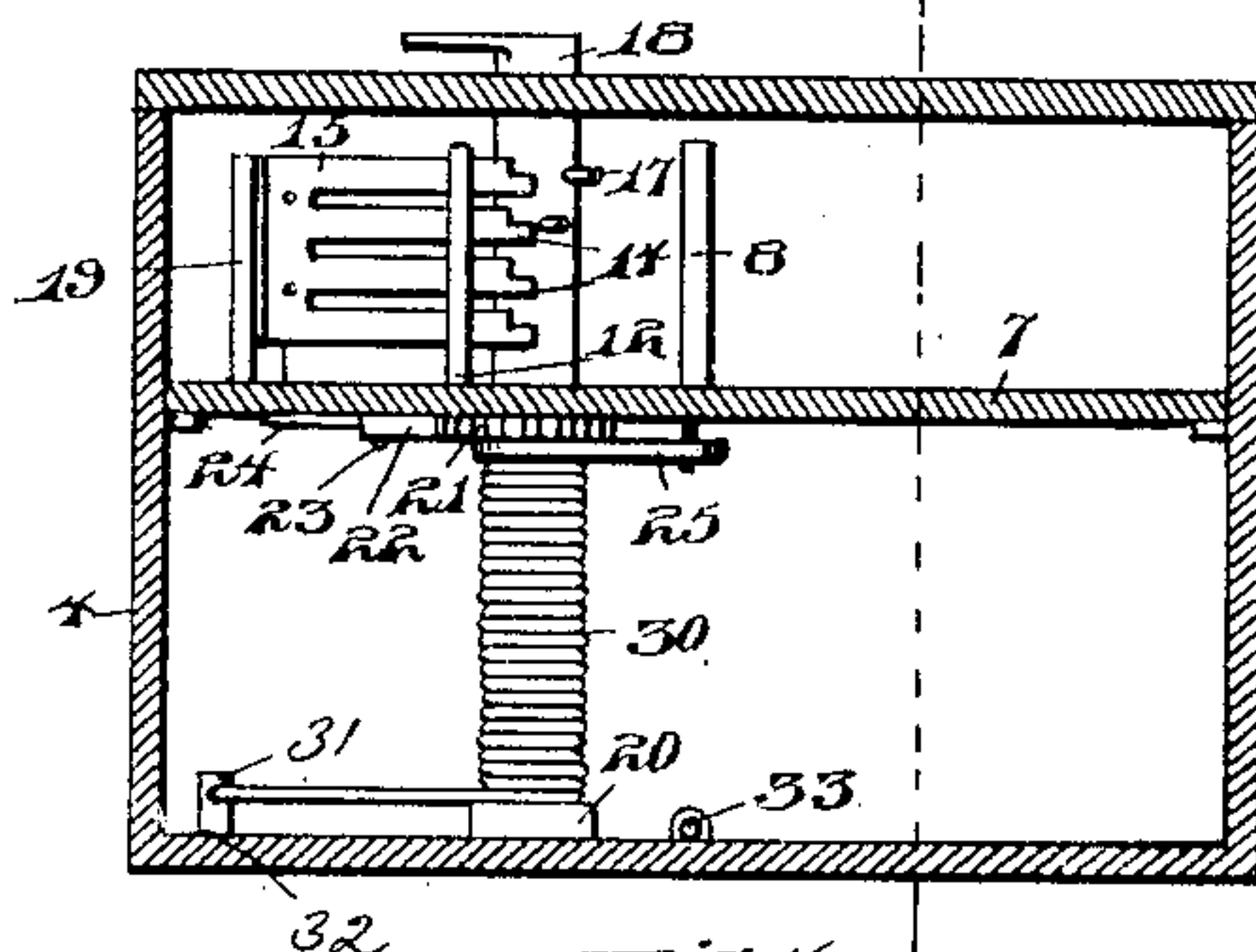


Fig. 4.

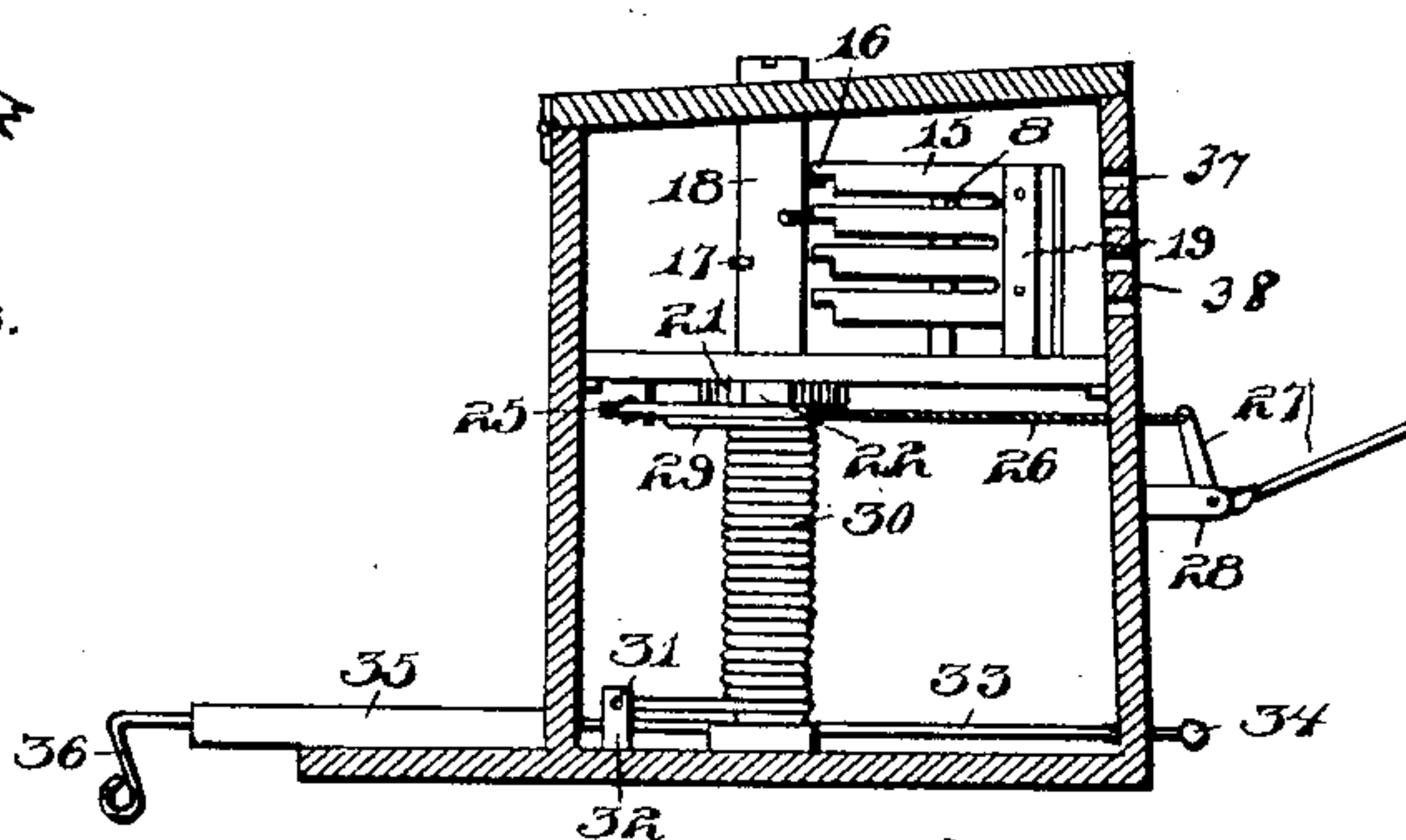


Fig. 5.

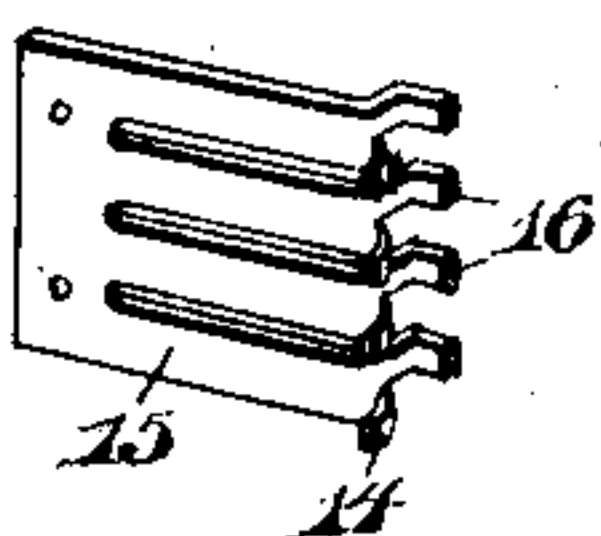


Fig. 6.

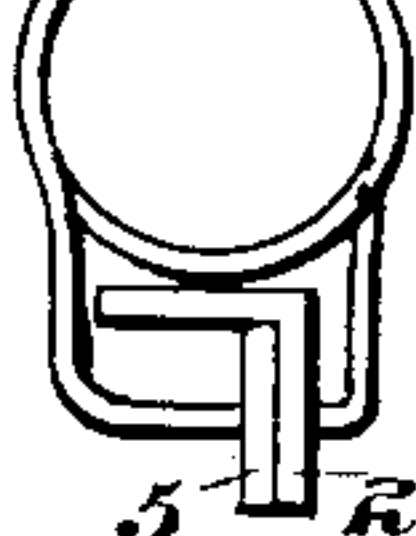
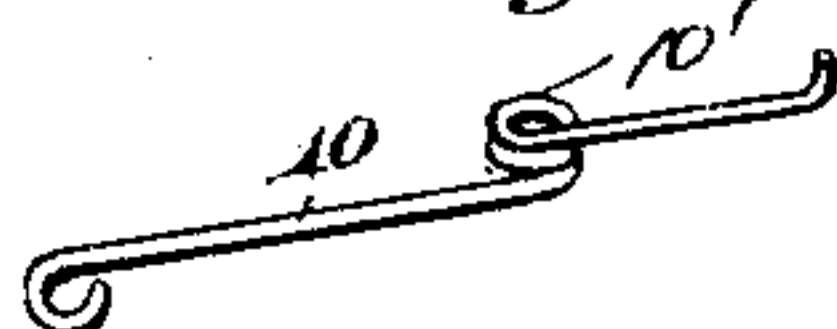


Fig. 7.



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# UNITED STATES PATENT OFFICE.

FRANK A. SHUNK AND ULYSSES G. DAVIS, OF PITTSBURG, PENNSYLVANIA.

## MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 685,533, dated October 29, 1901.

Application filed September 10, 1900. Serial No. 29,569. (No model.)

*To all whom it may concern:*

Be it known that we, FRANK A. SHUNK and ULYSSES G. DAVIS, citizens of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Music-Leaf Turners, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in music-leaf turners, and has for its object the provision of novel means whereby consecutive leaves may be easily and quickly turned as desired.

The invention has for its further object to construct a device of the above-described character that will be extremely simple in construction, strong, durable, and highly efficient in its operation; furthermore, one that may be manufactured at a comparatively small cost.

The invention relates to that class of music-leaf turners in which are a number of spring-actuated arms mounted upon a common shaft, the ends of said arms carrying fingers which are so arranged as to engage one of a series of retractile springs operating in conjunction with novel releasing mechanism, all of which will be hereinafter more particularly described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

Figure 1 is a perspective view of our improved music-leaf turner. Fig. 2 is a top plan view thereof, showing the casing partly in section. Fig. 3 is a vertical sectional view of the casing with a portion of the mechanism in front elevation, taken on the line 3 3 of Fig. 2. Fig. 4 is a transverse vertical sectional view thereof, taken on the line 4 4 of Fig. 3. Fig. 5 is a perspective view of the retaining and releasing spring. Fig. 6 is a detail view of the clamp. Fig. 7 is a perspective view of one of the operating-springs actuating one of the arms.

Referring to the drawings by reference-numerals, 1 indicates a rectangular frame, which

is rigidly connected to a central upright 2, the latter having its lower end 3 connected to the front of a casing 4. A clamping member 5 is arranged to form a clamp with the upright and is secured thereto by means of coiled springs 6. One end of each of these springs is secured to the upright 2, and the other end is secured to the clamping member, these springs normally holding the clamping member against the upright 2 and serving to retain the sheet of music in proper position, the latter being clamped between the upright and the spring-pressed clamping member. The casing 4 has arranged therein a partition 7, which supports a vertical shaft 8, upon which is mounted a series of arms 9. An operating-spring 10 engages each of the said arms, as at 11, and these operating-springs are coiled intermediately of their ends, as at 10', this coiled portion encircling the shaft 8 between the arms 9 and serving to separate the latter on the shaft. The other ends of these springs 10 are secured to a post 12, carried by the partition 7. The arms 9 are provided on their one end with projections 13, which are engaged by prongs 14, formed integral with the free ends of a series of springs 15, each of these springs also having on its free end a lug 16, which lugs engage projections 17, that are arranged spirally upon the operating-shaft 18, that is mounted in the casing. The other ends of the springs 15 are rigidly secured to a post 19, carried by the partition 7. The operating-shaft 18 is suitably journaled, as at 20, in the bottom of the casing. The springs 15, lugs 16, and prongs 14 are formed from a plate (see Fig. 5) which is provided with a series of slits extending from one end to a point near the opposite end to form the springs 15. These springs are then slit centrally of their free ends and the one part of the material bent at right angles to the springs to form the prongs 14. The other half of the spring end is bent in the opposite direction and then forwardly in substantial L shape to produce the lugs to engage with the projections 17 on the shaft 18. Mounted upon this shaft 18, close to the under face of the partition 7, is a ratchet-wheel 21, which is engaged by a spring-pressed pawl 22, the latter being pivoted, as at 23, to the underneath



face of the partition and held normally in engagement with the ratchet-wheel by a spring 24. This shaft 18 also carries an operating-arm 25, which is rotatably mounted on the shaft below the ratchet-wheel and has attached to its outer end an operating cord, wire, or cable 26, the latter being connected to a bell-crank lever 27, pivotally mounted in a lug 28, carried on the front of the casing. This arm 25 is also attached, as at 29, to the upper end of a coiled spring 30, which is wound upon the shaft 18 and has its other end secured, as at 31, to a post 32, mounted on the bottom of the casing.

33 is a rod which passes through the casing near the bottom thereof and is provided on its outer end with a suitable head or knob 34 and terminates at its inner end in a loop portion 36, which is adapted to engage with the piano, organ, or other instrument to hold the device in position. A flexible covering 35 is provided for the rod at the back of the casing. The front of the casing is provided with horizontally-extending slots 37, in which the arms 9 operate, the bars 38 between these slots serving as guides for the said arms.

The operation of our improved music-leaf turner is as follows: By pressing down upon the bell-crank lever 27 the cord 26 is actuated, so as to rotate the shaft 18 through the connections of said cord with said shaft, and this rotating of the shaft causes the projections 17 on the shaft to engage the lugs 16 of the springs 15, so as to disengage the prongs 14 of said springs from their engagement with the projections 13 on the rear end of the arms 9 and allowing said arms, through the action of the springs 10, to assume their normal positions.

It will be noted that the projections upon the shaft 18 are arranged spirally upon the same and in this manner disengage consecutively the arms and turn the leaves in their proper order. The spring-pressed pawl serves to lock the ratchet-wheel against reverse motion, thereby preventing the sheets from turning in the opposite direction. A stop attached to the underneath face of the partition serves to limit the movement of the arm.

In view of the above detail description of our improved music-leaf turner it is thought a further description is unnecessary. It will be noted, however, that various changes may be made in the details of construction without departing from the general spirit of our invention.

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

1. In a music-leaf turner, the combination of a casing, a partition arranged therein, a shaft mounted on said partition, a series of arms mounted on said shaft, an operating-shaft, lugs thereon a spring encircling said

shaft one end thereof being secured to the casing, an arm mounted on the said shaft, the other end of the said spring being secured thereto, operating-springs encircling said first-named shaft and engaging the said arms, a series of springs provided with oppositely-disposed lugs one set engaging the projections on the inner ends of the said arms and the other set the lugs on the operating-shaft, a pawl-and-ratchet mechanism mounted on said operating-shaft and the partition, a bifurcated lug made integral with the casing, a bell-crank lever mounted in said bifurcation, a cord connecting said bell-crank and the said arm on the said shaft, a rectangular frame attached to said casing, an upright rigidly secured to said casing, a clamping member removably secured thereto, and springs for clamping said member to the upright, substantially as described.

2. In a device of the character described, the combination of a casing, a rectangular frame carried thereby, a right-angular upright secured to said casing, a clamping member secured to said upright, springs for clamping said upright and member together, a partition in said casing, a shaft mounted thereon, a series of arms mounted on said shaft, integral projections on one end of said arms, springs secured on said partition, said springs encircling said shaft and engaging said arms, a series of springs secured to said partition, integral oppositely-disposed lugs on the free ends of said springs, an operating-shaft, lugs mounted thereon, an arm mounted on said shaft, a ratchet-wheel also mounted thereon, a spring-pressed pawl secured to the partition and engaging the ratchet-wheel, a bifurcated lug secured to said casing, a bell-crank lever pivoted therein, and a cord connecting said bell-crank and the said arm, substantially as described.

3. In a music-leaf turner, the combination of a suitable casing, a partition arranged in said casing, a suitable rectangular frame attached to said casing, a spring-pressed clamp arranged upon said rectangular frame, a shaft, arms mounted thereon, springs encircling said shaft and engaging the said arms, an operating-shaft, lugs mounted thereon, a spring encircling said shaft, a series of springs, the free ends of each of which engage a lug on the operating-shaft and the end of an arm, a pawl-and-ratchet mechanism connected to said operating-shaft and means for actuating the same, substantially as described.

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

FRANK A. SHUNK.  
ULYSSES G. DAVIS.

Witnesses:

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H. C. EVERT.