

No. 759,365.

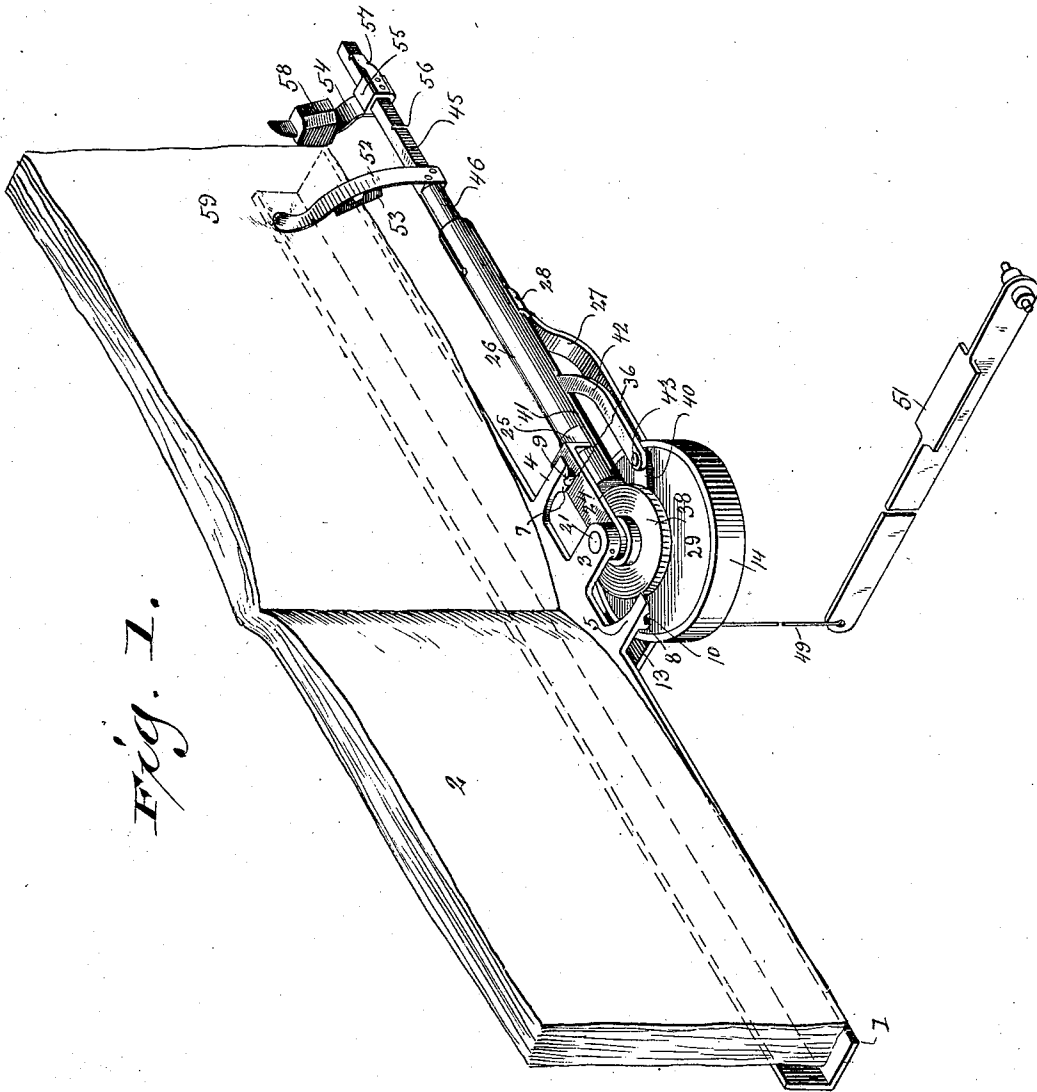
PATENTED MAY 10, 1904.

W. GEYER.
LEAF TURNER.

APPLICATION FILED MAR. 20, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:
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3 SHEETS—SHEET 2.

Fig. 2.

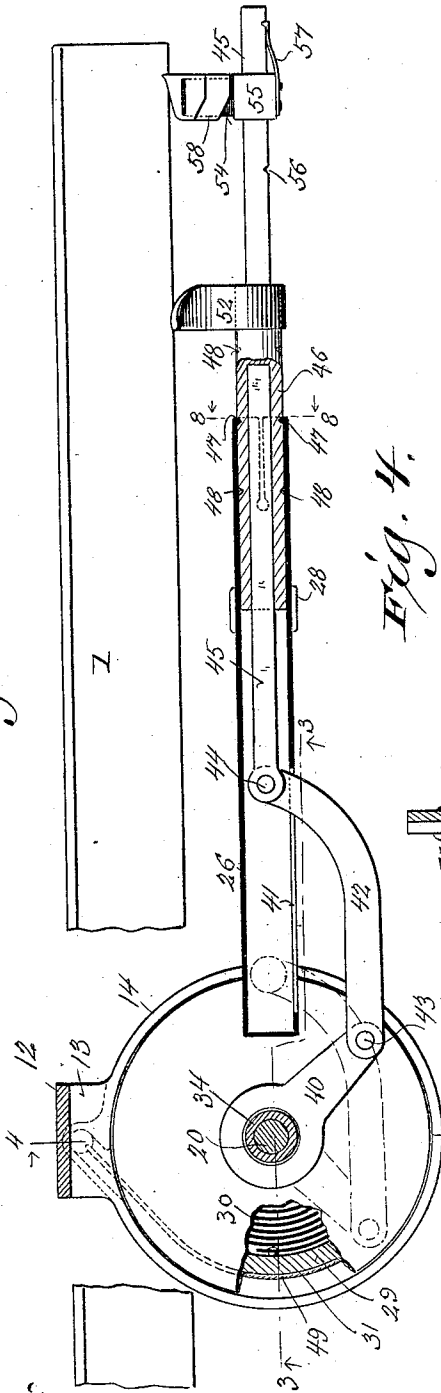


Fig. 4.

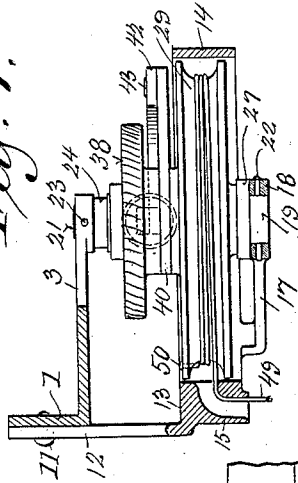
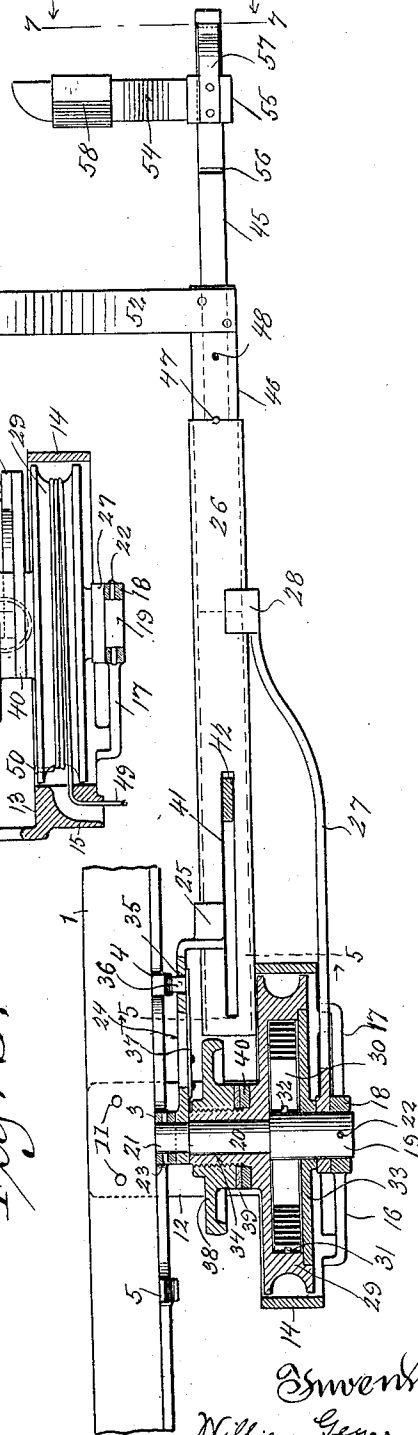


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 7.

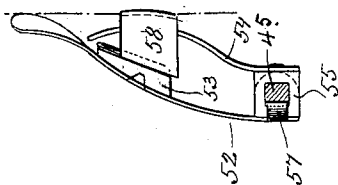


Fig. 9.

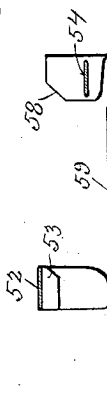


Fig. 10.

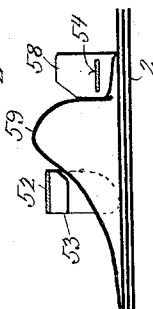


Fig. 11.

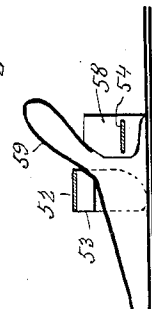


Fig. 12.

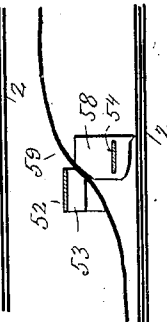


Fig. 5.

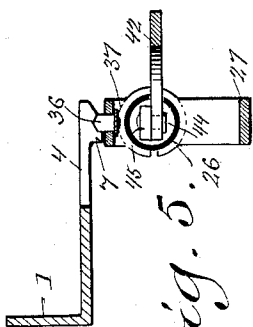


Fig. 6.

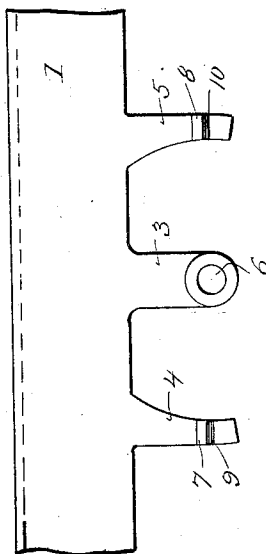
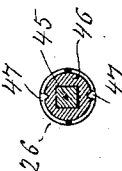


Fig. 8.



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UNITED STATES PATENT OFFICE.

WILLIAM GEYER, OF MILWAUKEE, WISCONSIN.

LEAF-TURNER.

SPECIFICATION forming part of Letters Patent No. 759,365, dated May 10, 1904.

Application filed March 20, 1903. Serial No. 148,714. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GEYER, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Leaf-Turners; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to devices for turning the leaves of either sheet-music or of books; and it consists in certain peculiarities of construction and combination of parts, as will be fully set forth hereinafter in connection with the accompanying drawings and subsequently claimed.

In the said drawings, Figure 1 is a perspective view of my said device in operative position. Fig. 2 is a partly-sectional plan view of a portion of the same, drawn to an enlarged scale. Fig. 3 is a view of said parts, partly in elevation and partly in section on the plane indicated by the line 3 3 in Fig. 2. Fig. 4 is a view of the pulley and adjacent parts, partly in elevation and partly in section on the plane indicated by the line 4 4 in Fig. 2. Fig. 5 is a detail sectional view taken on the line 5 5 of Fig. 3. Fig. 6 is a detail under side view of the central part of the angle-piece of the music-stand. Fig. 7 is a detail end view, partly in section, on the line 7 7 of Fig. 3. Fig. 8 is a detail sectional view on the line 8 8 of Fig. 2. Figs. 9 to 12, inclusive, are views illustrating the operation of the leaf-turning fingers.

Referring by numerals to the drawings, 1 indicates an angle-piece forming part of a music-stand on which the music-book 2 rests, and at its center this angle-piece is formed with three outwardly-extending tongues 3 4 5, the central tongue 3 having an opening 6 through its outer end, (which is increased in thickness on the under side at this point,) while the side tongues 4 and 5 are each formed with stop-lugs, as shown at 7 and 8, on the under side near their outer ends and in front of these lugs with transverse V-shaped notches 9 and 10, all as best shown in the inverted-plan detail view, Fig. 6. A vertical plate 12 is secured by screws 11 11 to the rear of the angle-piece 1, the plate 12 having a forward hori-

zontal extension 13, which is formed integrally with a ring 14, and said extension 13 is formed with a tubular cord-guide 15 and said ring 14 with two arms 16 17, which extend forward toward the center of said ring and are there united by an annular boss 18, which receives the lower end 19 of a vertical spindle of varying diameters, said end 19 being held to said boss 18 by a pin 22. The central part 20 of the spindle is of less diameter than the said lower end and the upper end 21 of said spindle of still less diameter, and said end 21 fits within the opening 6 in the described central tongue 3, to which tongue the said upper spindle end 21 is secured by a pin 23.

24 represents an arm the inner end of which is loosely mounted on the said upper end 21 of the vertical spindle just below the said tongue 3, and the outer end 25 of said arm 24 is bent downwardly and brazed to the upper surface of a tube 26, hereinafter more particularly described, near the rear end of said tube, while another arm, 27, at its outer end 28 is similarly brazed to the lower surface of said tube 26 nearer its front or outer end, while the inner end of said arm 27 is loosely mounted on the part 19 of the described vertical spindle just above the described boss 18.

29 represents the shell of a pulley containing a volute spring 30, one end of which is secured, as shown at 31, to said pulley-shell, and the other, at 32, to the part 19 of the described vertical spindle, the under side of said pulley-shell being closed by a disk 33, said pulley surrounding the said vertical spindle and the said pulley-disk 33 having a lower central hub resting on the upper surface of the inner end of the arm 27. The pulley-shell 29 has an integral upper extension 34 with smooth vertical bore surrounding the part 20 of the vertical spindle and extending up to a point just below the inner end of the arm 24, and said extension 34 is formed with extension screw-threads, as shown in Fig. 3. The arm 24 is formed with an opening 35 there-through near its outer end for the passage of a V-shaped lug 36, fast on the outer end of a flat spring 37, whose inner end is secured to the under side of said arm 24, the said lug 36

being for engagement with the described V-shaped notches 9 and 10 of the side tongues 4 and 5 of the angle-piece 1 at proper times, as hereinafter described.

5 38 represents a nut whose screw-threaded bore meshes with the screw-threaded exterior of the pulley-shell extension 34, just named, below which nut is a packing 39, of yielding material—such as felt, leather, or rubber—and
10 below this packing 39 the said extension 38 is surrounded by the inner end of an arm 40, and when the nut 38 is screwed tightly down on the washer the arm 40 is held from independent movement. The tube 26 is slotted,
15 as shown at 41, adjacent to its rear end, said slot being for the movement of a curved link 42, one end of which is connected, as by pivot 43, with the outer end of the said arm 40, while the other or forward end of the link 42
20 is pivotally connected, as by pin 44, with the rear or inner end of a squared rod 45. This rod 45 passes through a second tube 46, which latter is adjustably movable in the tube 26, the outer end of said tube 26 being split and
25 provided with inturned detents 47 47 for engagement with notches 48 48, formed at intervals in said inner tube 46, so that after the two tubes have been adjusted to their described relative positions the detents of one
30 may snap into the notches of the other and preserve this adjustment. The tube 46 fits snugly in the tube 26 and has a squared bore, so that the squared rod 45 will always maintain its proper position, as best shown in Fig. 8.
35 49 represents the cord on the pulley, one end of which cord is knotted, as shown at 50 in Fig. 4, and the said cord passes through a hole in the pulley-shell 29 (the said knot preventing the end being pulled through said
40 hole) and around the groove of the pulley and thence down through the cord-guide 15 to the treadle 51, the latter being located within convenient reach of the musician's foot.

The tube 46 has rigidly secured to its outer
45 end the finger 52, of the shape shown in the drawings, said finger being first curved inwardly and its extreme upper end curved back, while the inner side of this finger carries below its top end a rubber block 53, secured to the
50 finger. The rod 45 carries a movable finger 54, which rises from a slide 55, moving on said rod, the latter having a series of nicks 56 56 in one edge for engagement with the inturned end of a detent-spring 57, secured to said slide
55 55, this finger 54 being also curved, as shown, and carrying a rubber block 58. Thus the securing of the finger 52 in its adjusted position is by the detents 47 in the notches 48 and that of the finger 54 by the detent 57 in the
60 nicks 56.

The operation of my device will be readily understood from the foregoing description of its construction, taken in connection with the accompanying drawings. Let it be under-
65 stood that the fingers 52 54 have been adjust-

ed according to the width of the sheet or music-book leaf, as shown in Fig. 1, with finger 52 bearing against the face of the right-hand leaf (here marked 59) and with the finger 54 closely adjacent to the edge of said leaf. 70
Now in order to turn this leaf the musician presses a foot upon the treadle 51, which draws on the cord 49 and starts the revolution of the pulley, which draws the link 42 and arm 40 from the positions shown in full lines 75 in Fig. 2 to the positions shown in dotted lines in said figure, this movement of link 42 serving to draw the finger 54 (through the travel of the rod 45) back to the finger 52, the action of these fingers (or of the rubber blocks 53 58 80 carried by them) on the said leaf 59 being shown in Figs. 9 to 12, inclusive, in successive stages, the edge of the leaf 59 being first caught up by the block 58 and then the leaf 85 pushed up against the block 53 and then the edge doubled until said edge escapes past the block 58 and the leaf is firmly held between the two blocks. Up to this time the tube 26 has not changed its position; but the link 42 is now 90 near the inner end of said tube and the two fingers together, and hence a further pressure on the treadle, and consequent pull on the cord, will result in freeing the V-shaped lug 36 from engagement with the V-shaped notch 9 in the side tongue 4, and the tube 26 and 95 parts carried thereby will be swung around until the said lug 36 comes against the stop-lug 8 on the other side tongue, 5, and into the notch 10 in said tongue, this carrying the leaf 59 to place on the left-hand side of the book 100 2, this revolution of the pulley having served to wind up the spring 30 therein, and hence when the foot is lifted from the treadle 51 the said spring will cause the pulley to revolve 105 in the opposite direction, so that the link 42 will be again forced outward, and when the same reaches the forward end of the slot 41 the spring, aided by the jar of contact, will release the lug 36 from the notch 10 of side tongue 5, (this movement of the link also forc- 110 ing the rod 45 outward and separating the fingers to their original position,) and then the tube 26 will swing around to the right again ready for the next leaf.

An important feature of my invention lies 115 in the described means which I provide for the adjustment of the finger 54 on the rod 45, whereby the same is longitudinally adjusted with relation to the fixed finger 52 on the tube 46 independent of any movement of said rod 120 45 and at the same time guarding against any change in the line of projection of the curved finger or any rotary movement thereof, the rubber block on said finger always moving in a straight line against the leaf being turned 125 parallel to the rod to which it is attached, and thus turning the leaf without crumpling it, as sometimes occurs with a device having rotary movement.

Having thus described my invention, what 130

I claim as new, and desire to secure by Letters Patent, is—

1. In a leaf-turner, the combination with a sheet or book support, of a vertical spindle supported thereby; a spring-actuated pulley on said spindle; a cord secured at one end to said pulley and wound thereon; a treadle connected to the other end of said cord; arms loosely mounted on said vertical spindle; a slotted tube secured to said arms; a second tube movable within the tube just named; a finger on the outer end of said second tube; a rod movable within said second tube; a finger on the outer end of said rod; an arm extending from the pulley, and means for making it fast thereto; and a lever pivotally connected to said arm and to the inner end of said rod.

2. In a leaf-turner, the combination with a vertical spindle, of a spring-controlled pulley and arms all loosely mounted thereon; a tube rigidly secured to the outer ends of said arms, the said tube being slotted adjacent to the inner end and open at its outer end; an operating-cord connected to said pulley, and a treadle connected to said cord; an arm secured to said pulley; a second tube adjustably movable within the slotted tube, and having a finger fast on its outer end; a rod movable within the said second tube; a finger longitudinally adjustable on the outer end of the said rod; and a link pivotally connecting the inner end of said rod with the outer end of the arm on said pulley.

3. In a leaf-turner, the combination with a longitudinally-movable tube and a rod longitudinally movable in said tube, of a pair of fingers; one fast on the end of one of the said parts and the other longitudinally adjustable on the end of the other part, whereby the adjustment of the movable finger with relation to the fixed finger is independent of any movement of said rod.

4. In a leaf-turner, the combination with a longitudinally-movable tube and a rod longitudinally movable in and projecting beyond the outer end of said tube, of a pair of fingers, one fast on one of said parts and the other longitudinally adjustable on the other of said parts, and each finger being provided with a flexible block for grasping and holding between them the leaf to be turned.

5. In a leaf-turner, the combination with a sheet or book support of a series of three tongues projecting therefrom, the side tongues being formed with stop-lugs and notches forward thereof; a vertical spindle secured to and depending from the central tongue, a ring secured to said support and to said vertical spindle; a pulley-shell having rotatory movement on said spindle within said ring; a volute spring within said pulley-shell; a cord secured to said shell and wound around it; a treadle

secured to the lower end of said cord; arms loosely mounted on said spindle above and below said pulley-shell; an upward extension of said pulley-shell, formed with exterior screw-threads, and surrounding said spindle; an arm loose on said extension; a nut in mesh with said threaded extension, for clamping said last-named arm fast on the pulley; a flat spring secured to the first-named upper arm, and having a lug at its free end for engagement with the stop-lug and notches of the side tongues; a slotted tube carried by the upper and lower arms; a second tube movable within the tube just named; a finger fast on the outer end of said second tube; a rod movable within said second tube; a movable finger on the outer end of said rod; and a lever pivotally secured to the inner end of said rod, and to the outer end of the arm on the pulley-shell extension, and movable in the slot in the first-named tube.

6. In a leaf-turner, the combination with a longitudinally-movable tube and an inwardly-curved and outwardly-bent finger, rigidly secured to the outer end of said tube, and carrying a rubber block on the inner curved surface thereof, and said tube having a polygonal-walled bore therethrough, of a rigid polygonal-faced rod fitting snugly and movably longitudinally therein, said rod being formed with a series of transversely-disposed nicks across one of its faces; a slide movable on said rod, and provided with a detent-spring for engagement with one or the other of said nicks; and a curved finger rising from said slide, and carrying a rubber block secured to its curved surface.

7. In a leaf-turner, the combination with a pair of tubes, one moving longitudinally within the other, the outer tube being split adjacent to its outer end and provided with inturned detents, and the inner tube being formed with a series of notches for engagement with said detents, and with a polygonal-walled bore; of an inwardly-curved and outwardly-bent finger, rigidly secured to the outer end of the inner tube; a rubber block secured to the inner curved surface of said finger; a rigid polygonal-faced rod fitting snugly and longitudinally movable within the said bore of the inner tube, and projecting therefrom; a longitudinally-adjustable slide movable on said rod; and a curved finger, carrying a rubber block, rigidly secured to said slide.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

WM: GEYER.

Witnesses:

H. G. UNDERWOOD,
E. W. HELLER.