No. 690,395. Patented Jan. 7, 1902.

# W. J. BRASHEARS.

## LEAF TURNER.

(Application filed Sept. 22, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

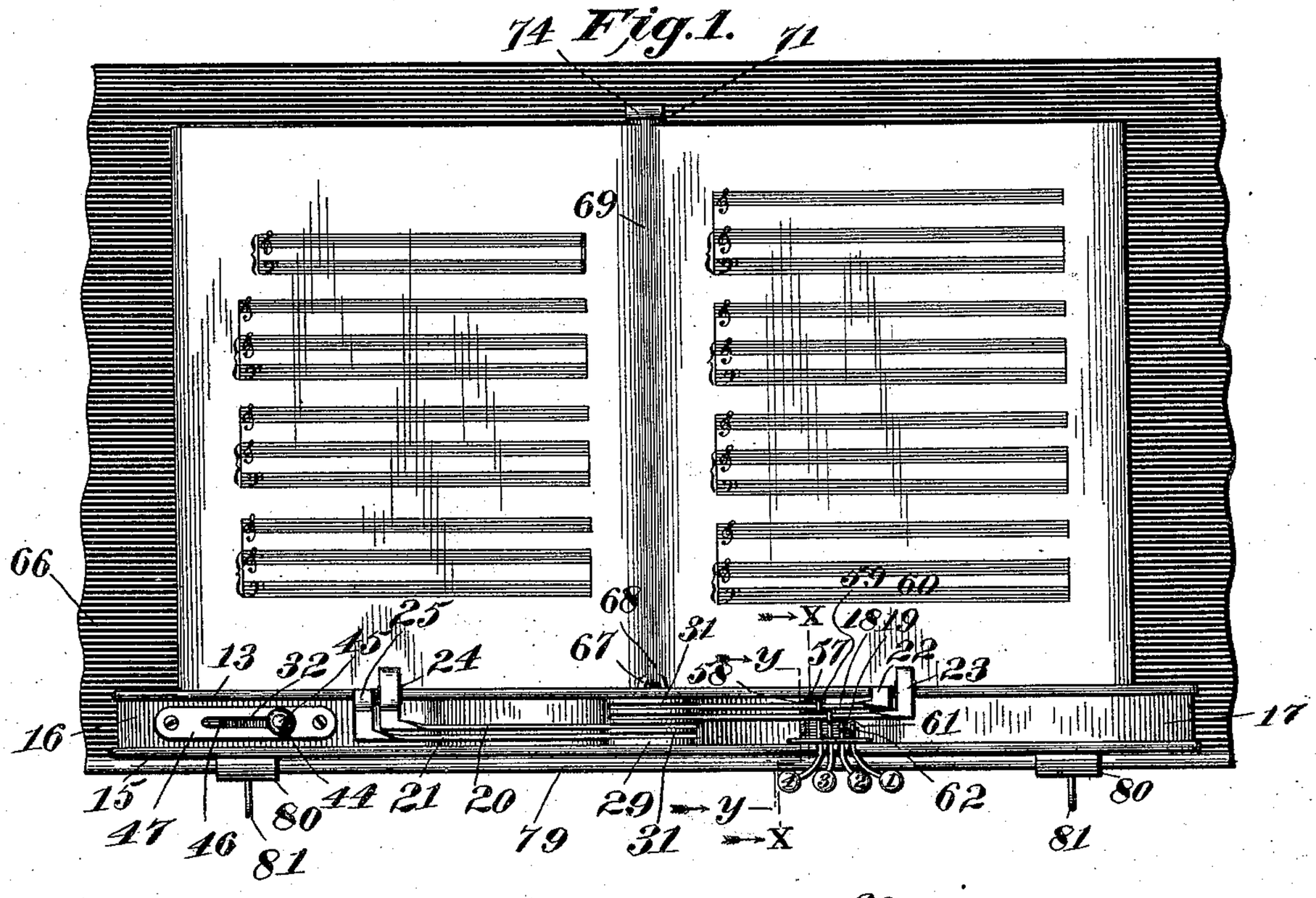


Fig. 2.

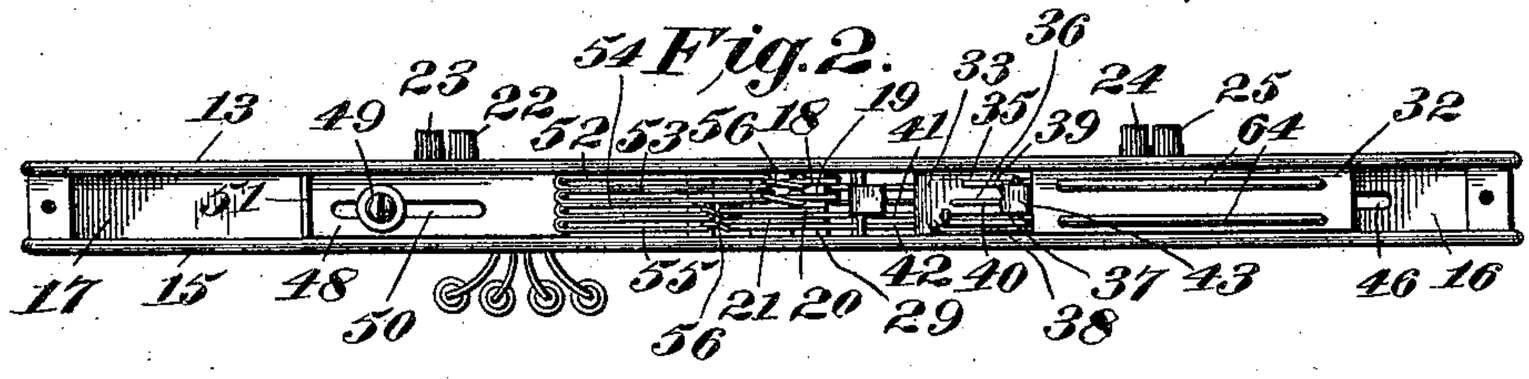


Fig. 3.

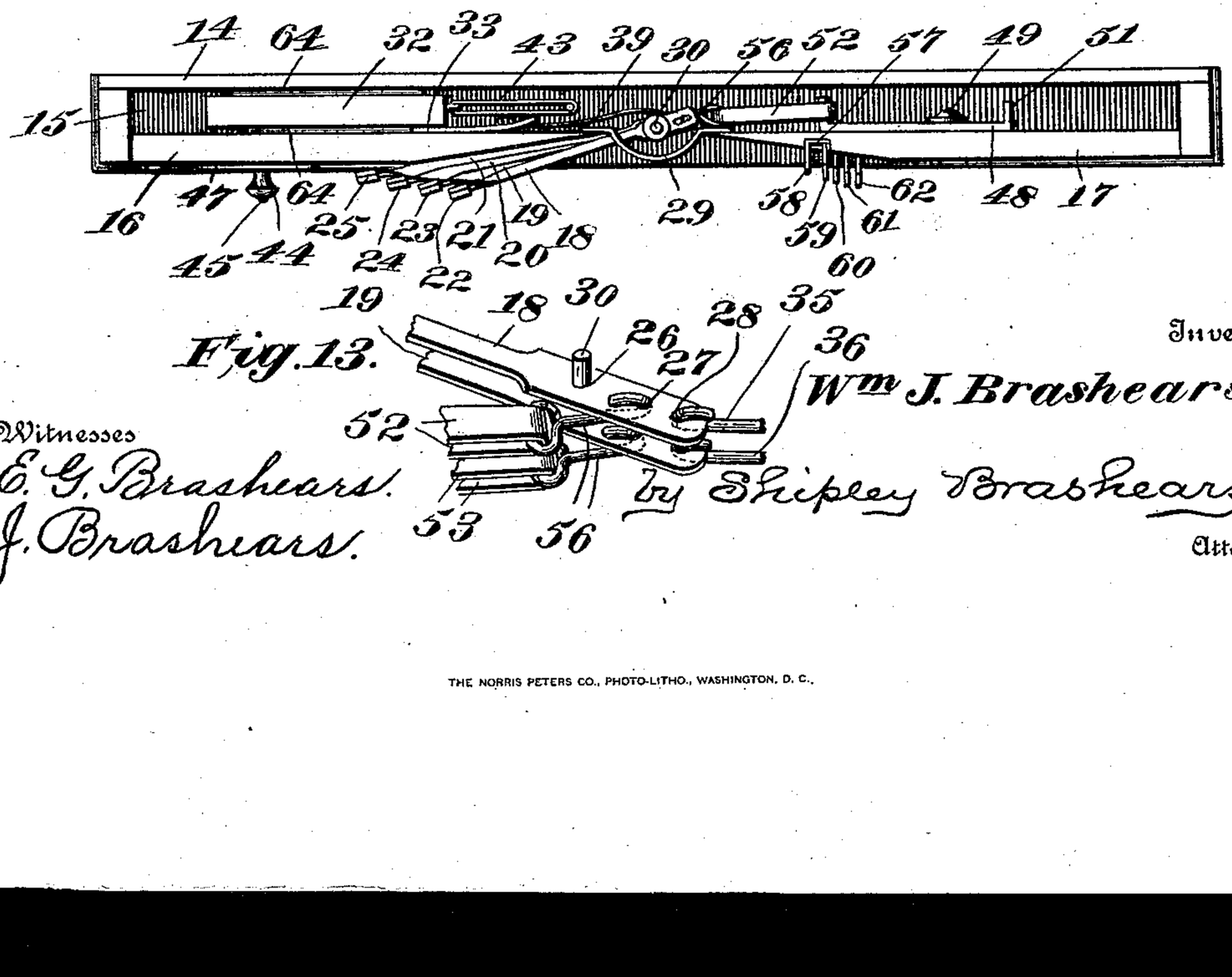


Fig. 13.




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## LEAF TURNER.

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(No Model.) 2 Sheets—Sheet 2.

Fig. 4.

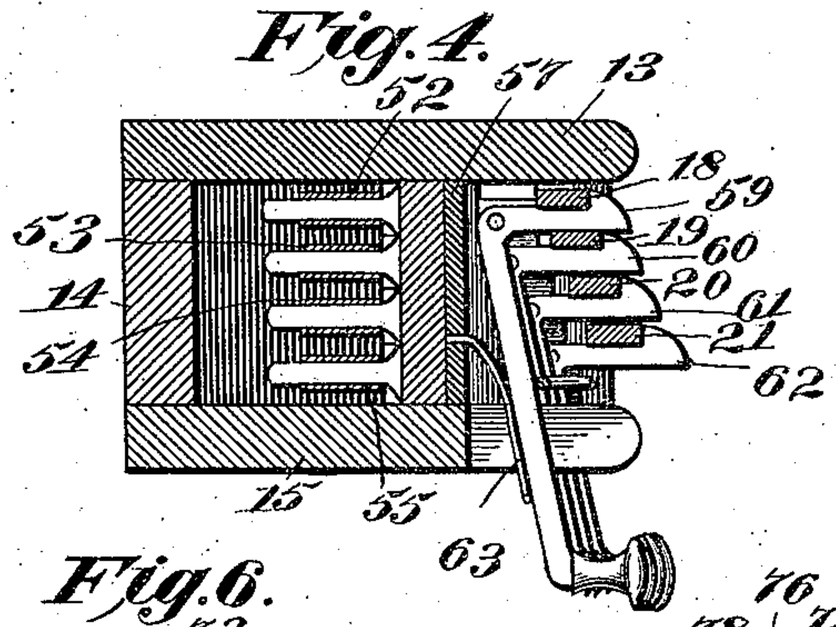



Fig. 5.

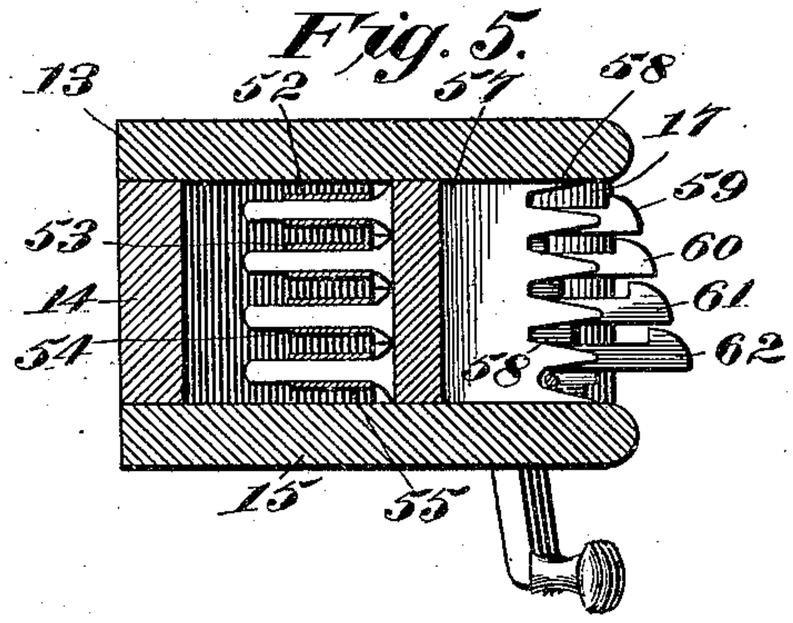



Fig. 6.

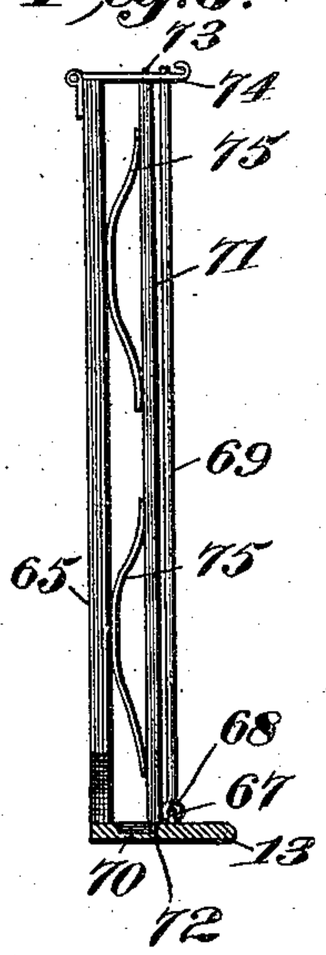



Fig. 7.

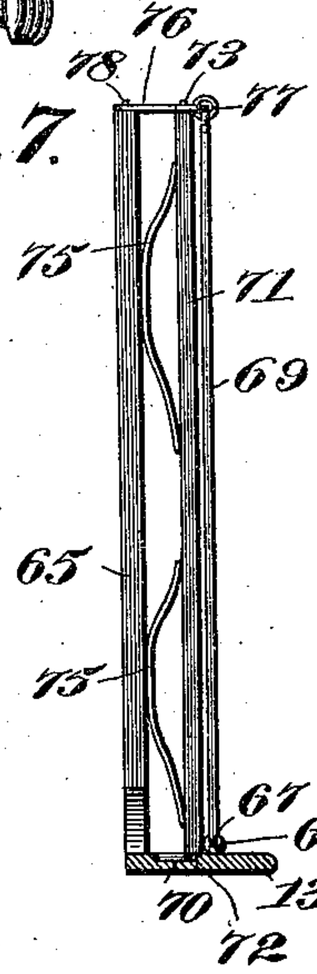



Fig. 8.

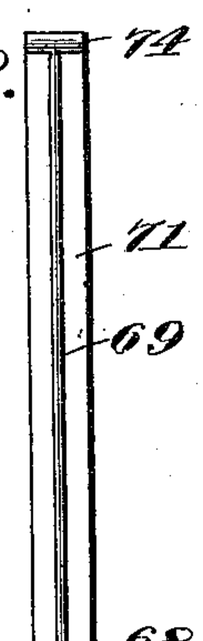



Fig. 9.

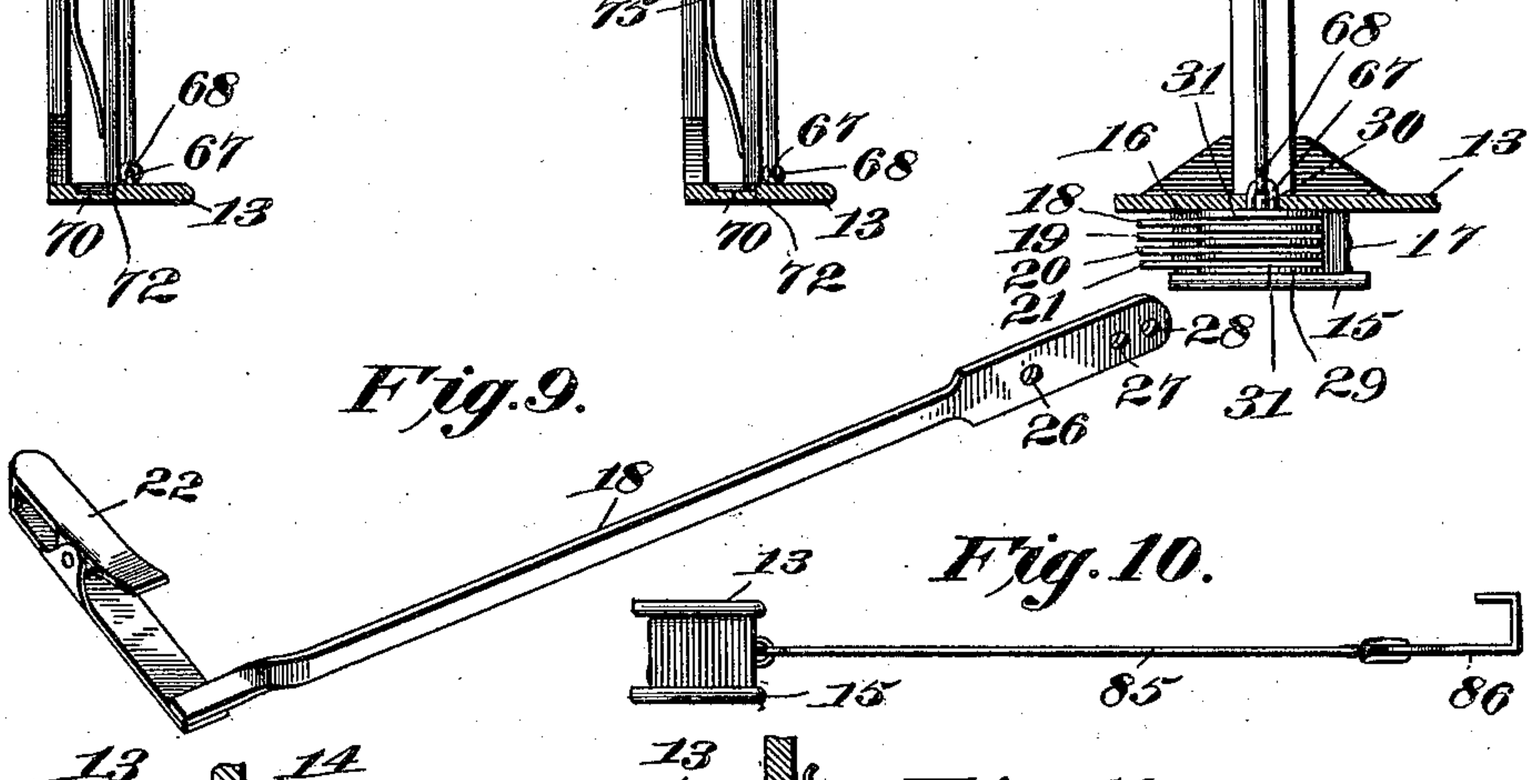



Fig. 10.




Fig. 12.

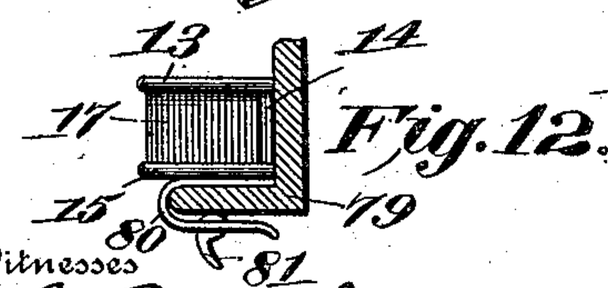
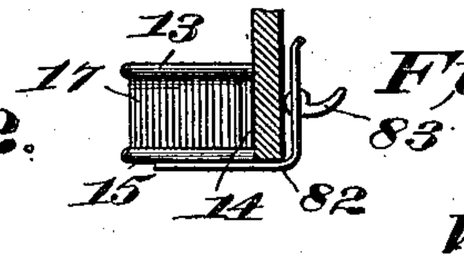



Fig. 11.

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# UNITED STATES PATENT OFFICE.

WILLIAM J. BRASHEARS, OF WILMINGTON, DELAWARE.

## LEAF-TURNER.

SPECIFICATION forming part of Letters Patent No. 690,395, dated January 7, 1902.

Application filed September 22, 1900. Serial No. 30,822. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. BRASHEARS, a citizen of the United States of America, and a resident of the city of Wilmington, in the county of Newcastle and State of Delaware, have invented certain new and useful Improvements in Leaf-Turners, of which the following is a specification.

This invention relates to means for turning leaves, and especially the leaves of sheet or book music on a piano, organ, music stand, or easel, and has for its object to provide a device for this purpose possessing certain advantages hereinafter enumerated.

With this object in view the invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically claimed.

In the accompanying drawings, which illustrate a device embodying my invention, Figure 1 is a view in front elevation, the device being shown in position with a piece of music on the music-rack of a piano or organ. Fig. 2 is a rear elevation removed from the rack, with the rear of the frame removed to expose the internal mechanism. Fig. 3 is a top plan view with the top of the body removed. Fig. 4 is an enlarged sectional view on the broken line $x\ x$ of Fig. 1. Fig. 5 is a similar view on the line $y\ y$ of Fig. 1. Fig. 6 is a view in side elevation of the music-supporting uprights, the top of the body being shown in section. Fig. 7 is a similar view showing a slightly-modified securing link or hasp. Fig. 8 is a view in front elevation of the devices shown in Fig. 7, part of the interior mechanism being also shown. Fig. 9 is a perspective view of one of the leaf-turning arms detached and on an enlarged scale. Figs. 10, 11, and 12 are detail views of means for securing the device to the piano or organ. Fig. 13 is a detail perspective view showing parts of the leaf-turning arms and their connections.

Like numerals mark the same parts wherever they occur in the various figures of the drawings.

Referring to the drawings by numerals, 13 indicates the top; 14, the rear; 15, the bottom, and 16 17 the two pieces forming the front of the main frame or body, such parts being made of any suitable material and secured together in any suitable manner, the parts of the front being separated at their inner ends to leave a space for mounting the leaf-turning arms 18, 19, 20, and 21, depressed below the front edges of the top and bottom to leave space on each side to accommodate said arms without the necessity of the arms projecting beyond the edges of the top and bottom. The turning-arms are of the same form, but of progressively different lengths, the arm 18 being shortest and the arm 21 longest, and each arm is provided at its outer end with any suitable leaf-clamp, as at 22, 23, 24, and 25, projecting vertically at right angles to the arms. The inner ends of the arms are alike, being broadened and each provided with three holes 26 27 28, as in Fig. 9. The two pieces 16 and 17 of the top of the body are connected by a metal plate 29, curved outward on an arc having a vertical pin 30 as the center, the arms being pivotally mounted on said pin (by means of holes 26) and separated by washers, said arms being projected through parallel guide-slots 31 in the curved plate 29.

In the rear of the part 16 of the front is mounted a sliding block 32, carrying a metal plate 33, provided with slots 35 36 37 38, progressively increasing in length, as shown in Fig. 2, in which slots are engaged the ends of wires 39, 40, 41, and 42, whose opposite ends are secured in the holes 28 of arms 18, 19, 20, and 21, respectively, said wires being of equal lengths and the wire from each arm being connected in the slot corresponding therewith in length. The sliding block 32 is normally held at the inner end of its stroke by means of a spring 43, preferably a rubber band or cord, in which position the turning-arms are free to be turned, the wires sliding in the slots of plate 33 without any interference with their movement; but the block 33 may be drawn outward by means of a knob 44 on the outer end of a pin 45, projecting outward from the block through a slot 46 in part 16 of the front and in a plate 47, secured thereon. When the block 32 is thus moved outward, the first part of its movement will have no effect on the wires or arms, the slotted plate simply passing along the wires until the wire 39 is engaged by the inner end wall of slot 35. The further movement of the block will successively engage the wires 40 41 42 with end walls of slots

36 37 38 and turn the arms to the left, with each arm slightly in advance of the succeeding arm, with the arm 18 in the lead, as in Fig. 3, which shows the positions of the arms at the time the sliding block has been moved just far enough to have started all of the arms.

48 indicates a block or metal plate adjustably secured to the rear of part 17 of the front by means of a screw 49, passed through a slot 50 in said plate into said part 17. The outer end of the plate is turned up at 51 to form a handle for moving the block, and its inner end is formed to receive one end of each of a series of rubber bands or springs 52 53 54 55, connected, respectively, at their opposite ends, by means of wires or hooks 56, in holes 27 of the turning-bars, the normal tendency of said springs being to draw the inner ends of the turning-arms to the right, and consequently the arms themselves to the left, so that when any arm is free to move on its pivot it will be thrown to the left by its respective spring. The tension of the springs may be regulated by adjusting the position of the plate 48 by means of screw 49, slot 50, and handle 51, as before described.

57 indicates a metal plate secured in a depression in part 17 of the front, said plate 57 having its inner edge bent out at right angles and provided with notches 58, with outwardly-inclined walls to receive and guide the turning-arms when they are turned to the right. On vertical projections from plate 57 are pivoted at their angles elbow, key, and latch levers 59, 60, 61, and 62, the short arms of which are horizontal and of latch form, while the longer vertical arms are normally pressed outward by springs 63 and provided with knobs or keys marked, respectively, 1 2 3 4. (See Fig. 1.) These key-levers are so mounted on plate 57 that each latch-arm is in a different vertical and horizontal plane from the next either above or below and are so arranged with relation to the slots of plate 57 that when any turning-arm is moved on its pivot to the right it first enters its slot, and is thereby surely guided into proper position to be engaged by its respective latch.

The sliding block 32 is provided with rib-wires 64 to reduce friction.

Secured at the center and rear edge of the body in any suitable manner is an upright 65, slightly higher than the height of ordinary sheet or book music, which when the turner is in position rests against the face of the music-rack 66. In front of the upright 65 in the top 13 is secured a staple 67, its legs straddling the pin 30, on which the turning-arms move, and in which staple is engaged an eye 68 on the lower end of a thin stiff wire 69. In the upper surface of top 13 is cut a transverse groove 70, extending from staple 67 to upright 65. Between wire 69 and upright 65 is loosely mounted a strip 71, guided at its lower end by a pin 72, entering groove 70, and its upper end by a similar pin 73, entering a slot in a hasp 74, Fig. 6, hinged to upright 65 and provided with a hole to catch over the upper end of wire 69. The strip 71 is normally pressed forward against the wire 69 by spring 75, Figs. 6 and 7.

In the modified construction shown in Figs. 7 and 8 the hasp is omitted and replaced by a plain link 76, attached in an eye 77 at the top of wire 69, such link catching over a pin 78 at the upper end of upright 65 and serving also as a guide for pin 73 in top of strip 71.

When sheet-music is used, it is laid on strip 71, and wire 69 is secured in the crease of the sheet; but when book-music is used the wire is loosened and turned down, the center of the book laid on strip 71, and book and strip pressed backward against the springs and the wire turned up into the crease of the book and secured. It will be observed that the wire 69 is directly in line with the pivot-pin of the turning-arms, so that there is no strain on the inner edges of the sheets or leaves when turned by the arms, both leaves and arms turning on pivots in line with each other.

In Figs. 10, 11, and 12 I have shown means for securing the device to the music-rack under different conditions. In Fig. 12 the music-rack has a ledge or shelf 79, on which the whole device rests, and is secured by a slip 80, attached to the body and clamping the ledge by means of a cam clamp-lever 81. In Fig. 11 there is no ledge, and by means of a clip 82 and cam clamp-lever 83 the device is secured to the upright board 84 of the rack. In Fig. 10 the body of the device is provided with wires or rods, as 85, one at each end, pivoted to the body and carrying at their outer ends clamp-hooks 86 to engage around the ends of the piano or organ when necessary.

When music (either sheet or book) is in position, as in Fig. 1, the leaves to be turned are engaged by the clamps on the turning-arms, said arms having been previously engaged and held down on the right-hand side by the latches of the key-levers. These arms and latches are so arranged that the turning-arm behind each latch acts as a stop to prevent the latch from being disengaged until said rear arm is removed. This arrangement renders it necessary for the leaves to be turned in proper order only, because the latch of key 1 must be released and the turning-lever engaged thereby and which is clamped to the outer or first leaf on the right-hand side allowed to turn to the right by means of its spring before key 2 can be pressed to release the latch from the next lever. In a like manner the turning-arms must be turned from left to right in the reverse order, the arrangement of the wires 39 to 42 and the successively-lengthening slots 35 to 38 in plate 33 requiring this by moving the arms in advance of each other, as in Fig 3, so that the last arm to be released from the latches must be the first to be engaged therewith, the turning-arms preventing their engagement in any

other order. In Figs. 1, 2, 4, and 5 two arms are shown as engaged with the latches on the right-hand side and two moved over to the right. When playing, it is only necessary for the performer to touch the right key, when the leaf next in order will be carried over to the left by its turning-arm thus released from its latch.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a leaf-turner, the combination with a frame or body and a series of turning-arms pivoted on a single pin, of an upright secured at the center of the rear edge of the body, a wire pivoted to the body in line with the pivotal pin of the arms, a loose strip between the upright and the wire normally pressed against the wire, and means for connecting the tops of the upright and wire serving also as a guide for the loose strip, substantially as described.

2. In a leaf-turner, the combination with a frame or body provided with a transverse groove and an upright secured at the rear edge of the body at one end of said groove, of a wire pivoted to the top of the body at the other end of the groove, a pin in the top of the upright, a link pivoted to the top of the wire and adapted to engage the pin, a loose strip between the wire and the upright provided with top and bottom pins to engage in the link and groove respectively, and means for normally pressing the loose strip against the wire substantially as described.

3. In a leaf-turner, the combination with a frame or body, and a series of leaf-turning arms mounted on a common pivot, of a corresponding series of latches to hold the respective arms in their right-hand positions, each latch being located in the plane of movement of its respective arm and each arm moving across the path of the release movement of the latch in advance of its own latch and when held latched resting against and locking the said advance latch, substantially as described.

4. In a leaf-turner, the combination with a frame or body, of a vertical pin therein, a series of leaf-turning arms pivoted thereon and having rear projections beyond the pivot, springs connecting such rear projections with the body to the right of the pivot, a sliding block mounted in the body to the left of the pivot and connections between said block and the rear projections of the turning-arms, substantially as described.

5. In a leaf-turner, the combination with a frame or body, of a vertical pin therein, a series of leaf-turning arms pivoted thereon and having projections beyond the pivot, springs connecting such rear projections with the body to the right of the pivot, a sliding block mounted in the body to the left of the pivot, a plate secured to said block and longitudinally slotted, and wires connecting in said grooves and with the rear projections of the turning-arms, substantially as described.

6. In a leaf-turner, the combination with a frame or body, of a vertical pin therein, a series of leaf-turning arms pivoted thereon, and having rear projections beyond the pivot, springs connecting such rear projections with the body to the right of the pivot, and a sliding block mounted in the body to the left of the pivot, a plate secured to said block and provided with a series of longitudinal slots of progressively-increasing length, and wires of equal lengths engaging slidably in said grooves and connected to the rear projections of the turning-arms, substantially as described.

Signed by me at Washington, District of Columbia, this 21st day of September, 1900.

WILLIAM J. BRASHEARS.

Witnesses:

M. E. BRASHEARS,

IRMA BRASHEARS.