E. N. WALTER.

MUSIC LEAF TURNER.

APPLICATION FILED FEB. 24, 1908.

969,317.

Patented Sept. 6, 1910.

3 SHEETS—SHEET 1.

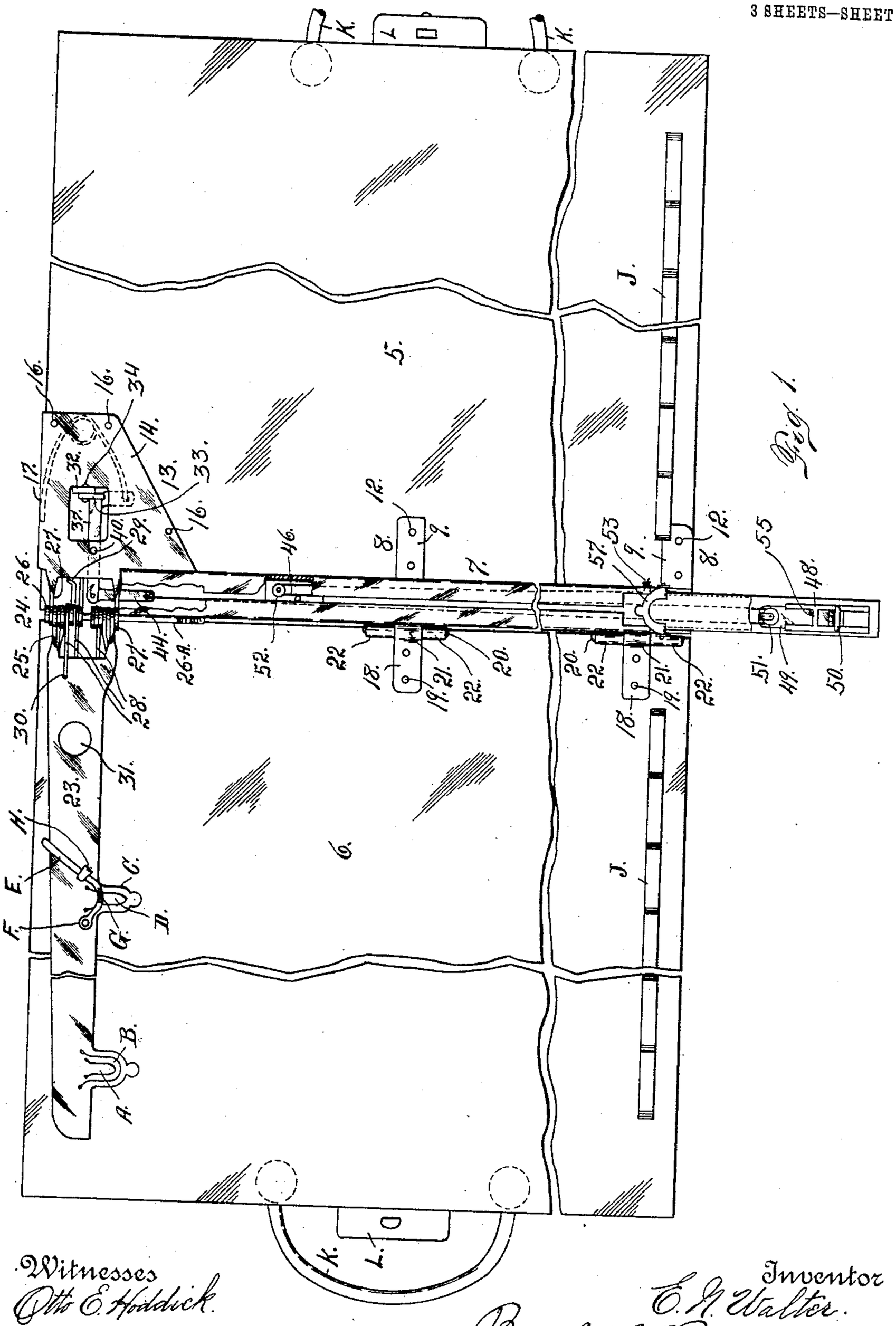

Fig. 1.

Witnesses
Otto E. Holdrick.
Dena Nelson.

Inventor
E. N. Walter.
By Baker & Baker
Attorney

E. N. WALTER.

MUSIC LEAF TURNER.

APPLICATION FILED FEB. 24, 1908.

969,317.

Patented Sept. 6, 1910.

3 SHEETS—SHEET 2.

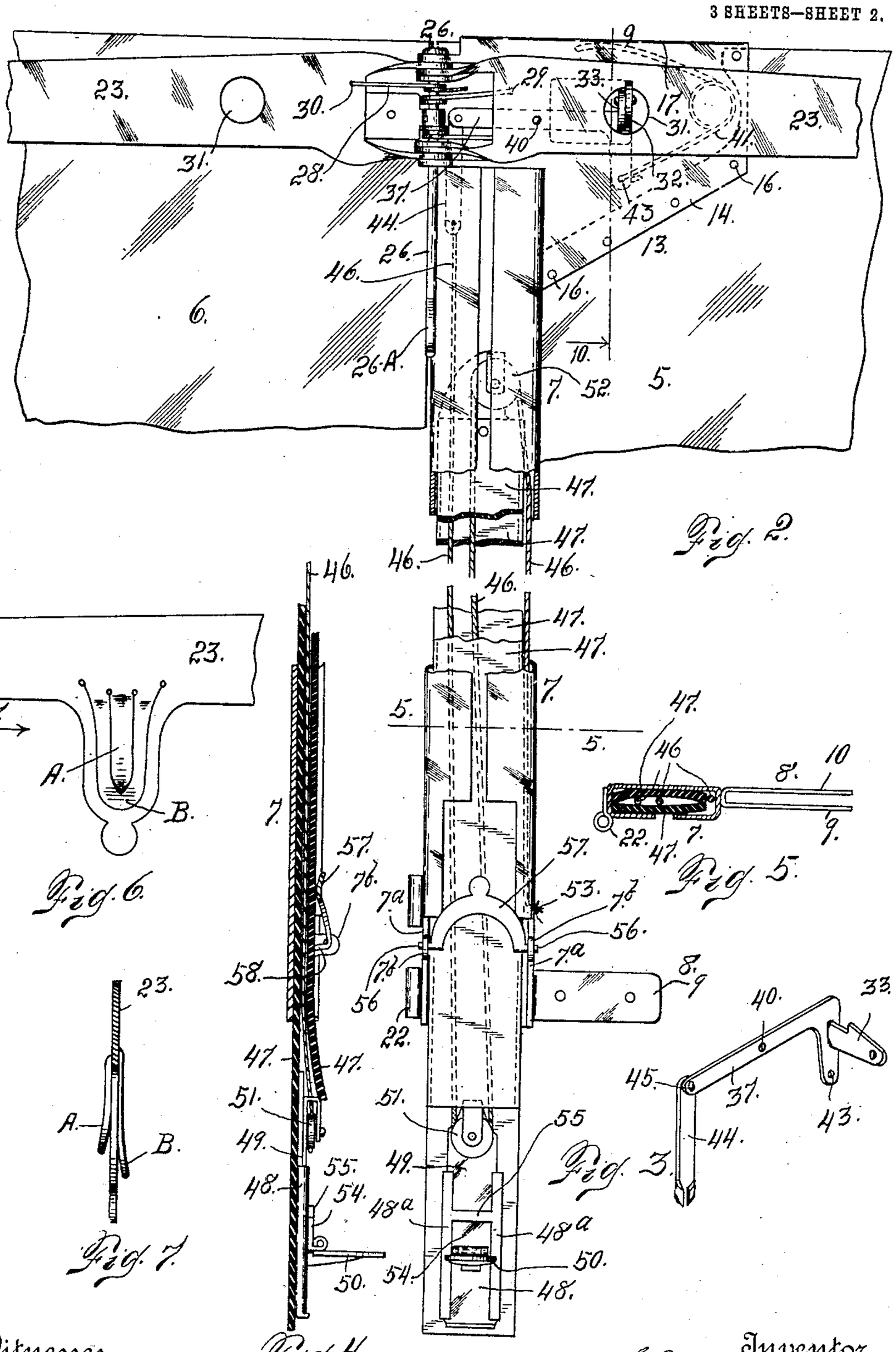

Fig. 2.

Fig. 6.

Fig. 5.

Fig. 7.

Fig. 3.

Fig. 4.

Witnesses

Otto E. Hoddick.

Dena Nelson.

Inventor

E. N. Walter.

By Attorney

E. N. WALTER.

MUSIC LEAF TURNER.

APPLICATION FILED FEB. 24, 1908.

969,317.

Patented Sept. 6, 1910.

3 SHEETS—SHEET 3.

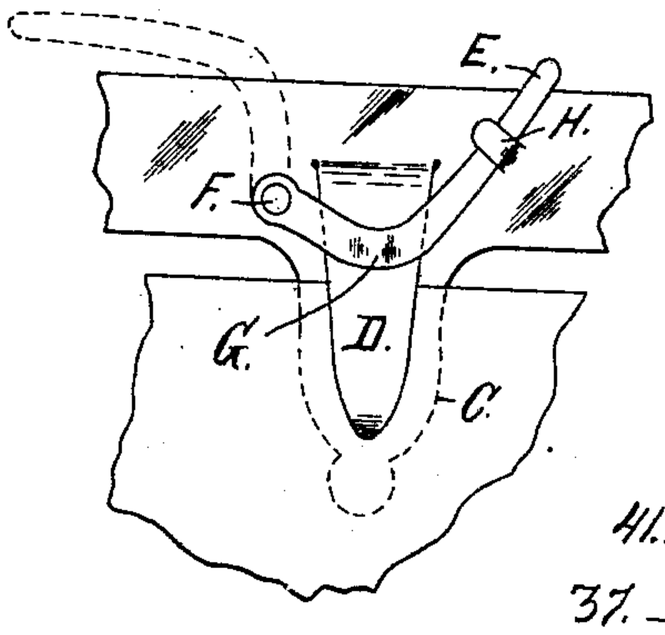

Fig. 8.

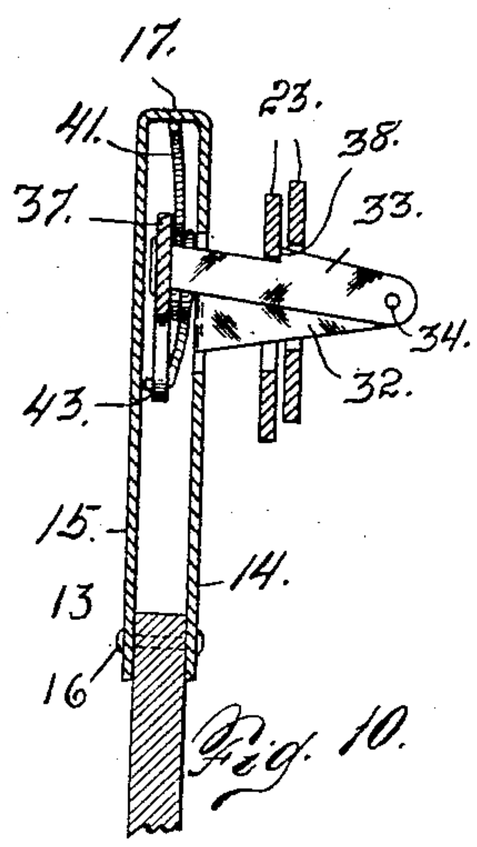

Fig. 10.

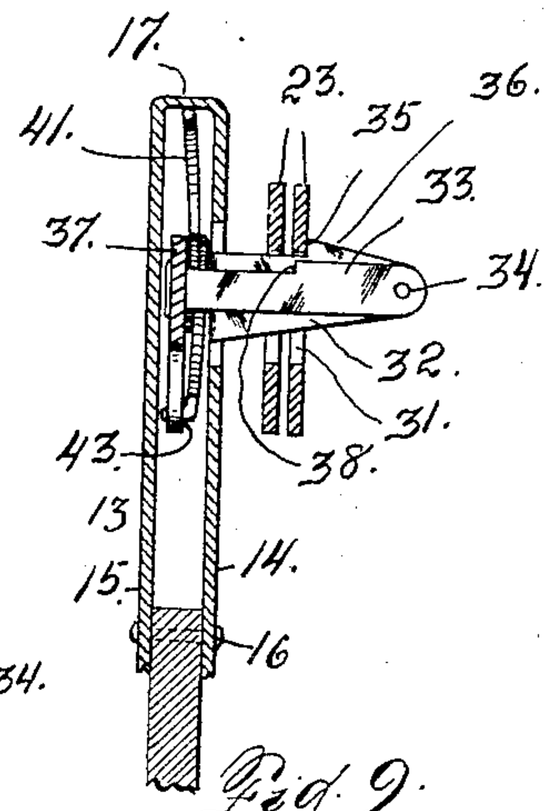

Fig. 9.

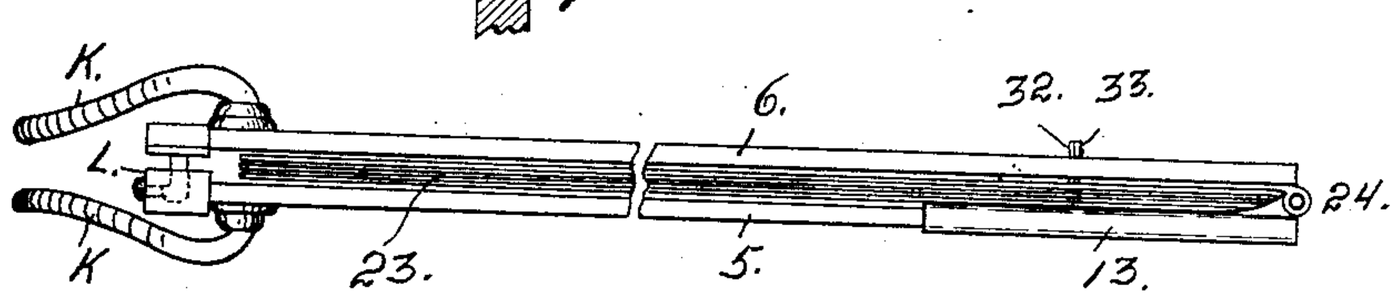

Fig. 11.

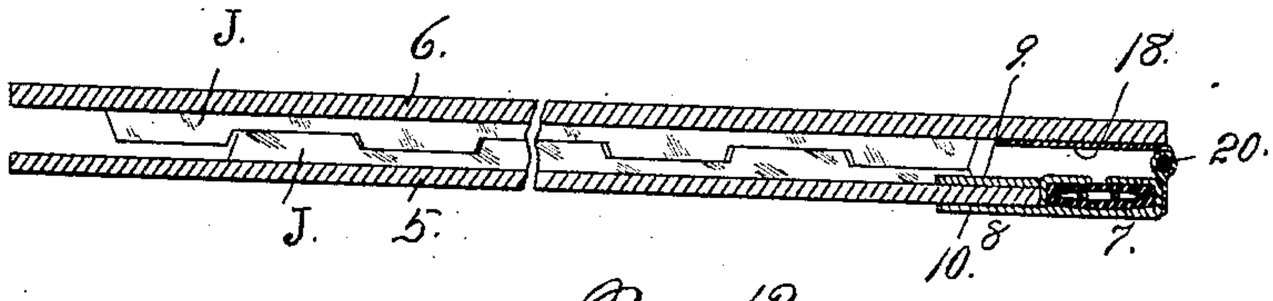

Fig. 12.

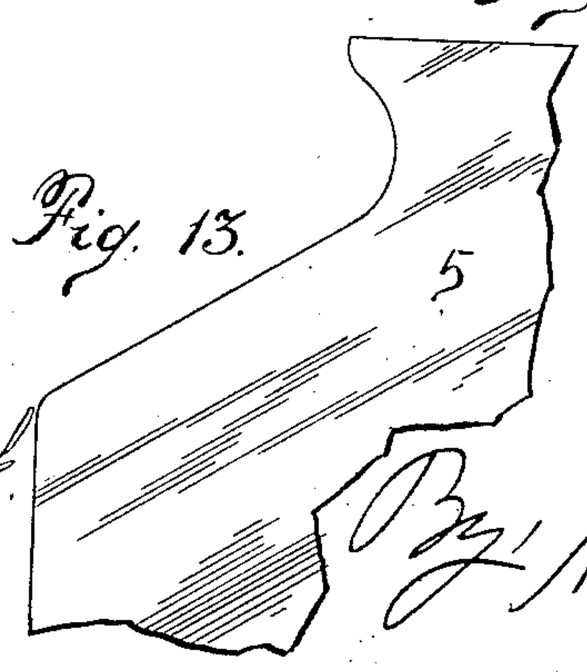

Fig. 13.

Witnesses
Otto E. Hoddick.
Dena Nelson.

Inventor
E. N. Walter
By A. D. Bailey
Attorney

UNITED STATES PATENT OFFICE.

EARL N. WALTER, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO HARRY ZIMMERHACKEL, OF DENVER, COLORADO.

MUSIC-LEAF TURNER.

969,317. Specification of Letters Patent. Patented Sept. 6, 1910.

Application filed February 24, 1908. Serial No. 417,428.

To all whom it may concern:

Be it known that I, EARL N. WALTER, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Music-Leaf Turners; and I 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 and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in leaf turners, being more especially intended for use in turning the leaves of sheet music, to relieve the operator from the necessity of actually taking hold of the leaf when it is required to be turned. The device is also adapted for use as a music holder, since the mechanism is mounted upon two members which are hinged to fold and may be closed when not in use for leaf turning purposes. These folding members are supplied with handles which when the device is in the closed position, approach each other sufficiently to form a handhold in carrying the device. This device therefore forms a holder in which the leaves of the music are kept straight as distinguished from being rolled when carried in the ordinary music roll.

The invention will now be described in detail reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a front view of my improved device, the leaf-turning arm being shown in the position it occupies after a leaf is turned thereby. Fig. 2 is a fragmentary view of the same, the parts being shown on a larger scale. Fig. 3 is a perspective view of the lever and its attachments which serve to hold the leaf-turning arms against the turning movement until the lever is actuated to release the arms. Fig. 4 is a longitudinal section taken through the casing in which the lever-actuating devices are located. In this view parts of the device are shown in elevation. Fig. 5 is a cross section taken on the line 5—5 Fig. 2. Fig. 6 is a fragmentary view of one of the leaf-turning arms, illustrating a portion of the construction for grasping the leaves. Fig. 7 is a view looking in the direction of arrow 7 Fig. 6. Fig. 8 is a similar view illustrating another leaf-holding feature with which the leaf-turning arm is provided. Fig. 9 is a detail section taken on line 9—10 Fig. 2 viewed in the direction of the arrow omitting the cover member and showing the position of the member 13 with relation to the mechanism which controls the leaf turning arms. Fig. 10 is a similar view showing the parts in a different relative position and also omitting the cover member. Fig. 11 is an end view of my improved device shown in the closed position or the position for carrying the sheet music. Fig. 12 is a fragmentary sectional view taken through the device when in the closed position. Fig. 13 is a fragmentary view of the upper left-hand corner of one of the cover members, showing the cutaway portion to provide room for operating mechanism.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate one of the cover members, and 6 the other cover member. An elongated metal casing 7 is secured to the casing 5 by metal clips 8 which are secured to the casing at one extremity and straddle the inner edge of the member 5 which they embrace on opposite sides. Each clip is therefore composed of two parts 9 and 10. These clips may be secured to the cover 5 by rivets 12 or other suitable fastening devices. To one extremity of the casing 7 is attached a larger clip 13 composed of two members 14 and 15 which also straddle the inner edge of the cover member 5 and embrace the same on opposite sides, the cover being secured to the clip by rivets or other fastening devices 16. The clip 13 is closed at its upper edge as shown at 17 where it engages the corresponding edge of the cover member 5. The cover member 6 is hinged to the casing 7 by means of small plates 18 which are secured thereto by rivets or other suitable fastening devices 19. The plates 18 are connected with the casing by passing a pintle 20 through an eye 21 formed on the plate and sleeves 22 with which the said casing is provided. The casing 7 is therefore hinged to the member 6 at the inner edge of the member, the casing overlapping the member 5. The two members 5 and 6 may therefore be folded together or closed (see Figs. 11 and 12). At the upper extremity of the metal casing 7 and adjacent

the clip 13, a number of leaf turning arms 23, are hinged as shown at 24. The hinged extremities of these arms are centrally cut away and their remaining outer portions are turned edgewise as shown at 25, whereby a number of these parts 25 may occupy positions side by side. They are apertured to receive a hinge pin 26, which also passes through eyes formed in parts 27 formed upon the clip 13 and the casing 7, respectively. The said casing and the said clip are rigidly connected together and therefore virtually constitute an integral construction whereby the clip 13 may be said to constitute a part of the casing.

Each arm 23 is actuated by a spring 28 which is coiled around the hinge pin, one extremity 29 engaging the member 15 of the clip 13 while the other extremity 30 engages the arm 23. It will be understood that there is a spring 28 for each leaf-turning arm. Each arm 23 is provided with an opening 31 to receive a stationary projection 32 and an arm 33 pivoted to the outer extremity of the projection 32 as shown at 34. The projection 32 is made fast to the member 14 of the clip 13 and is provided with an offset 35. The outer extremity of the arm bevels toward said offset as shown at 36. As an arm 23 is pushed toward the back of the device whereby the projection 36 is allowed to enter its opening 31, the edge of the arm surrounding this opening engages the bevel 36 and springs the arm slightly edgewise so that when the arm reaches the proper plane, it springs into engagement with the offset 35 (see Fig. 9). The outermost arm 23, always engages the offset 35 and when this is released and moved as in the act of turning a leaf, the next arm takes its place in engagement with the offset and so on.

Assuming that two of the arms are in the position shown in Fig. 9, and that the leaves to be turned are connected with said arms, the outermost arm 23 may be released by actuating a lever 37 fulcrumed as shown at 40 upon the member 14 of the clip 13 and occupying a position between the said member and the cover member 5. Upon this lever is loosely riveted the arm 33 which is provided with an offset 38 and normally occupying a position slightly below the offset 35 of the projection 32. A spring 41 engages the closed upper edge of the clip 13 at one extremity and is attached to one arm of the lever as shown at 43 at its opposite extremity, whereby the lever is normally held in the position shown in Figs. 1, 2 and 9 thus maintaining the arm 33 in a corresponding position. Connected with the arm of the lever opposite that where the arm 33 is located, is a link 44. This link is pivoted to the lever as shown at 45 at one extremity, and to its opposite extremity is attached a flexible device 46 which may consist of a cord, wire or other suitable flexible article hereinafter for convenience termed a cord. This cord passes downwardly from the link 44 within the casing 7 and passes between the two layers 47, of a flexible sheath preferably composed of leather, located within the metal casing 7 and movable longitudinally therein. Attached to the lower extremity of one member of the flexible sheath, is a guide plate 48 having flanges 48[a] at its opposite edges. Movably mounted within this guide is a plate 49 having a sort of push button 50 hinged to its lower extremity whereby it may be turned up upon the plate if desired. When in use, however, it is thrown outwardly whereby it occupies a position at right angles to the body of the plate. Upon the upper extremity of the plate 49 is rotatably mounted a pulley 51 around which the cord 46 passes. This cord passes upwardly from the pulley 51 and passes over a second pulley 52 mounted upon the sheath 47, 47 and thence downwardly to a point 53 where it is attached to the metal casing 7. The slidable plate 49 is reinforced upon its upper surface as shown at 54 and its upward movement is limited by a transverse stop 55 forming a part of the plate 48 and connecting the two flanges 48[a] thereof (see Figs. 2 and 4).

The lower extremity of the metal casing 7 is cut away at the top and the upwardly turned edges 7[a] of the said casing, are provided with apertured ears 7[b] which are engaged by journals 56 of a crescent-shaped locking device 57 having projections or teeth 58 adapted to engage the leather sheath on opposite sides of the two runs of the cords 46. When this device 57 is in the locking position as shown in Figs. 2 and 4, the leather sheath is locked against movement within the metal casing 7 and a downward push upon the button 50, will impart a corresponding movement to the plate 49 and its pulley 51, while the pulley 52 which is mounted upon the leather sheath cannot move bodily but of course rotates. The result is that there is a downward movement of the upper extremity of the cord 46 which acting on the link 44, actuates the lever 37 whereby its extremity upon which the arm 33 is mounted is pushed upwardly. When this occurs the arm 33 occupies the position shown in Fig. 10 and its movement to the position shown in said figure, pushes the outer leaf-turning arm 23 from engagement with the offset 35 of the stationary projection 32. This releases the leaf-turning arm and under the influence of its spring it is thrown over toward the left or to the position shown in Fig. 1 of the drawing. In Fig. 2 also one of the arms 23 is shown in this position. As soon as the arm 23 leaves

the projection 32, the adjacent inner arm, moves slightly outwardly but is prevented from following the released arm, by an offset 38 with which the arm 33 is provided. As soon as the push upon the button 50 ceases to act, the spring 41 returns the arm 33 to its normal position whereby its offset 38 releases the leaf-turning arm 23. In this event the offset 35 of the stationary projection 32, catches the said leaf-turning arm and prevents its turning movement until the push button is again actuated.

In the description heretofore the terms upward and downward have been used with reference to the assumed position of the device when used upon a piano, for instance it is assumed that the hinged covers forming the holder for the music and upon which the leaf-turning mechanism is also mounted, occupies an upright position upon the piano or a position slightly inclined as is generally the case with sheet music when in use by the performer.

The sheath 47, 47 within the metal casing is supposed to be composed of reasonably stiff leather or similar material but which at the same time shall be sufficiently flexible so that its lower extremity which consists of but a single member upon which the guide plate 48 is mounted, shall hang down in close proximity to the keys of the instrument so that it shall be in convenient position for use by the performer. In order to produce this result under all circumstances it is necessary that the leather sheath should be longitudinally adjustable within the metal casing 7, without actuating the lever 37. Hence when the locking device 57 is in the unlocked position, the leather sheath is free to move within the casing and a pull upon its lower extremity not only causes the pulley 52 directly mounted upon the sheath to move, but also carries the pulley 51 and its plate 49 with the sheath. It will be observed that during this movement, the two pulleys 51 and 52 are not separated but maintain their relative distance from each other. Hence under these conditions the upper extremity of the cord 46 does not have any downward movement but maintains the same position regardless of the longitudinal movement of the leather sheath within the casing. Hence this sheath may be adjusted at will in order to bring the push button 50 into proper position to suit the convenience of the performer. It may be necessary to vary this adjustment when the device is used in connection with different instruments. As soon as this adjustment has been made, the locking device 57 is thrown to the locked position, thus locking the leather sheath against longitudinal movement within the casing 7. As soon as this is done, a downward push upon the button 50, will move the pulley 51 downwardly while the pulley 52 maintains its position. This causes the upper extremity of the cord 46 to move downwardly, thus actuating the lever 37 to release the leaf-turning arm as heretofore explained.

Each leaf-turning arm is equipped with suitable means for holding the leaves of sheet music. This leaf-holding means may be of any suitable construction. As shown in the drawing the outer extremity of each arm is provided with integral tongues A and B, one being turned in one direction and the other in the opposite direction as shown in Fig. 7. The two tongues, however, are not essential since either will perform the required function. The leaf, however, may be inserted under the upper tongue or over the lower tongue. These tongues are not supposed to grasp the leaf very tightly but will allow it to enter and pass out easily. These tongues A and B project downwardly from the lower edge of the leaf-turning arm. Between the tongues A and B and the hinged extremity of each arm, is located a downward projection C out of which is cut a tongue D which is normally separated from the projection C to allow the leaf to readily enter. An arm E pivoted upon the leaf-turning arm at F and provided with a bend forming a sort of cam G, is employed to act upon the tongue D whereby the latter is caused to tightly grasp the leaf. The leaf-turning arm is also provided with a stop H to limit the movement of the arm E when placed in the locking position.

When the device is in use upon a piano, the different leaves of music to be turned, are first attached to the leaf-turning arms by the use of the means shown in the drawing or any other suitable attaching devices that it may be found desirable to employ. In this event the leaf-turning arms all occupy a position at the left or in engagement with the cover member 5.

Assuming that the sheath 47, 47 has been adjusted longitudinally within the casing 7, so that the push button 50 shall occupy a convenient position for the performer, the locking device 57 is thrown to the position shown in Figs. 2 and 4. Then when the performer wishes to turn a leaf, he simply pushes downwardly upon a button 50 which lowers the pulley 51 and pulls downwardly upon the cord 46 which actuates the lever 37 whereby the pivoted arm 33 is thrown to the position shown in Fig. 10, thus pushing the outer leaf-turning arm 23 from under the offset 35 of the projection 32, thus releasing the arm 23 and allowing the latter under the influence of its spring to turn over toward the left whereby the leaf is turned. In this event the actuated arm takes the position shown in Fig. 1 and also by the arm 23 at the left in Fig. 2. As soon as the outer arm 23 performs its leaf-turn-

ing function, the inner arm 23 moves outwardly but is first caught by the offset 38 of the arm 33. As soon as the pressure on the button 50 ceases to act, the arm 33 is turned to the position shown in Fig. 9 by the spring 41. In this event the leaf-turning arm 23 is disengaged from the offset 38 of the arm 33. The leaf-turning arm, however, is caught by the offset 35 of the projection 32 and held until the push button 50 is again actuated when the operation heretofore described is repeated.

Each of the hinged covers 5 and 6 is provided with a strip J extending transversely across its lower portion. These strips are notched to interlock when the covers are in the closed position, and serve to engage the sheet music and prevent the latter from escaping when the device is used as a carrying holder. The outer edges of the hinged covers 5 and 6 are provided with suitable handles K. The device is also provided with a lock L.

Having thus described my invention, what I claim is:—

1. The combination of an elongated casing, spring-actuated hinged leaf-turning arms connected with the casing, means for locking the leaf-turning arms in the inactive position, a flexible sheath passing through the casing and movable longitudinally therein, a pulley connected with the upper portion of said sheath, a plate slidably connected with the lower portion of the said sheath, a pulley mounted on said plate, a flexible device connected at one extremity with the leaf-turning-arm locking means, engaging both of said pulleys and connected at its opposite extremity with the casing, and means for locking the sheath against movement in the casing, while the flexible device is allowed to move in respect to both the sheath and casing, substantially as described.

2. A combined sheet music holder and leaf turner comprising covers hinged together, spring-actuated hinged leaf-turning arms connected with the said covers, a lever for locking the leaf-turning arms in the inactive position, an elongated casing connected with the said covers, and flexible means passing through the said casing and connected with the said lever for actuating the latter to release the leaf-turning arms, substantially as described.

3. A combined sheet music holder and leaf turner comprising covers hinged together, spring-actuated leaf-turning arms connected with the said covers, a lever for locking the leaf-turning arms in the inactive position, an elongated casing connected with the said covers, a flexible device passing through the said casing, connected with the lever and exposed at its lower extremity for actuating the lever to release the leaf-turning arms, substantially as described.

4. A combined sheet music holder and leaf turner comprising covers hinged together, spring-actuated, hinged leaf-turning-arms connected with the covers, a lever for locking the leaf-turning arms in the inactive position, means for actuating the lever to release the said arms, and a stop extending transversely across the lower portion of each hinged cover, to prevent the escape of the sheet music when the latter is used as a carrying holder, substantially as described.

5. A combined sheet music holder and leaf turner comprising covers hinged together, spring-actuated, hinged leaf-turning-arms connected in operative relation with the covers, and a stop extending transversely across the lower portion of each hinged cover, to prevent the escape of the sheet music when the latter is used as a carrying holder, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EARL N. WALTER.

Witnesses:
DENA NELSON,
ALODIA HUTCHISON.