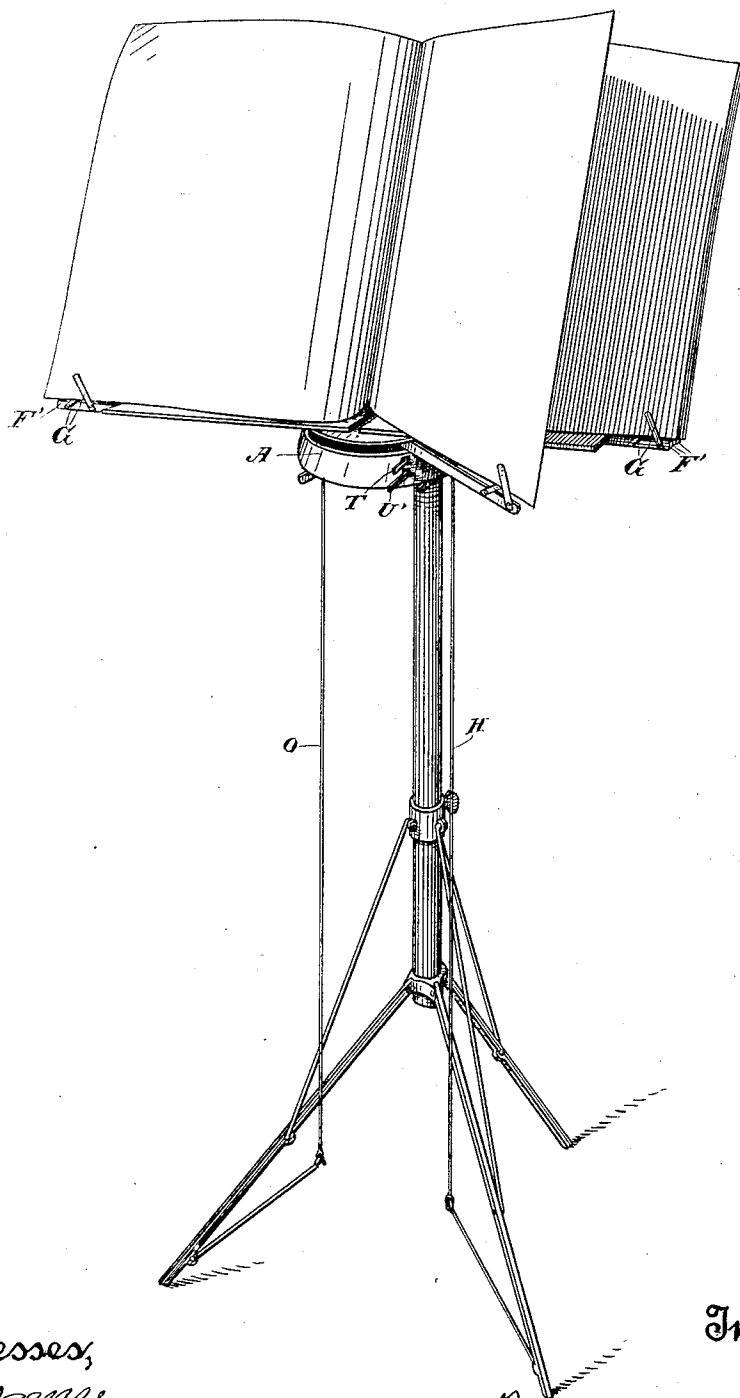


F. A. MEYER.
MUSIC LEAF TURNER.

No. 522,074.

Patented June 26, 1894.

Fig. 1.



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Fig. 2.

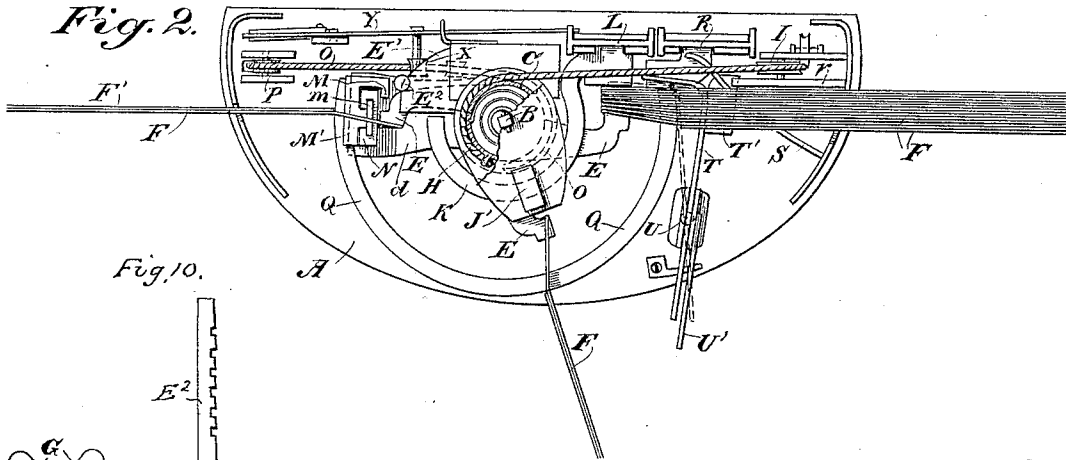


Fig. 10.

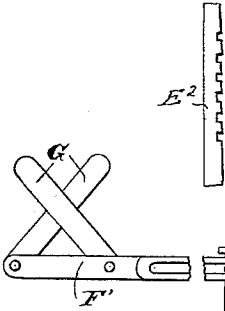


Fig. 3.

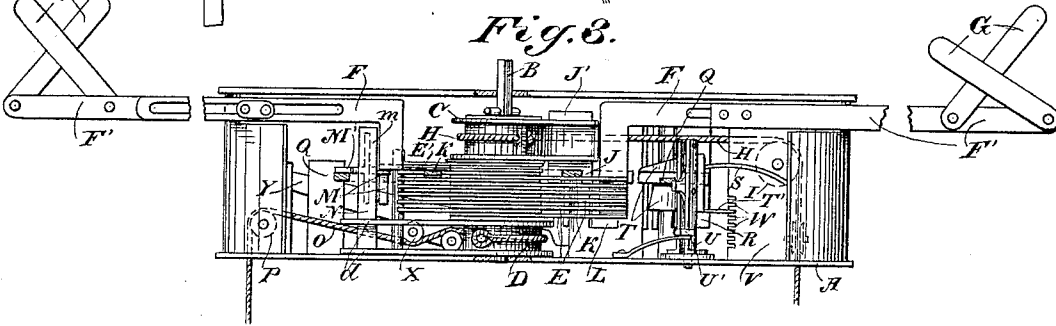


Fig. 4.

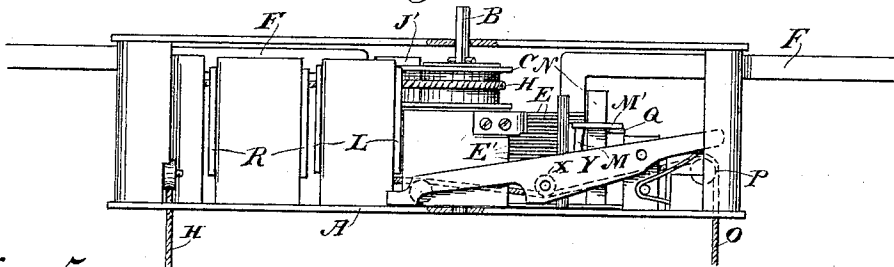


Fig. 5.

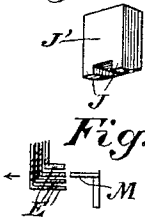


Fig. 9.



Fig. 6.

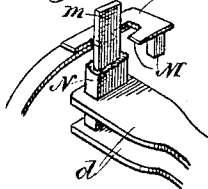


Fig. 7.

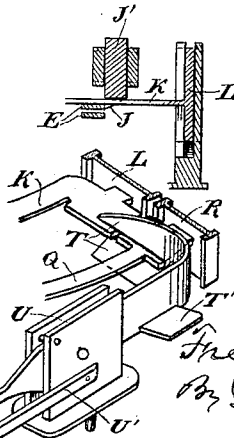


Fig. 8.



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UNITED STATES PATENT OFFICE.

FREDERICK A. MEYER, OF SAN FRANCISCO, CALIFORNIA.

MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 522,074, dated June 26, 1894.

Application filed March 28, 1894. Serial No. 505,486. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK A. MEYER, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Music-Leaf Turners; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device for turning the leaves of sheet music, or any leaves which it is desirable to turn to one side or the other.

It consists in certain details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a view of a music rack showing my device attached to it. Fig. 2 is a plan view of the casing containing the mechanism, the top cover being taken off. Fig. 3 is a front elevation of my device. Fig. 4 is a rear view of the same. Fig. 5 is a detail view of the sliding block J'. Fig. 6 is a detail of the mechanism to return the sheets. Fig. 7 is a vertical section through the block J' and connections. Fig. 8 is a detail of the device for the raising and lowering of the rings. Fig. 9 shows the working of the lug M. Fig. 10, is a detail of the notched post E².

The object of my invention is to provide a simple apparatus which is adapted to turn the leaves of sheet music to any desired number, to turn the leaves back again for the purpose of repeating either from the beginning or from any point in the piece, and a means for adjusting the arms which carry the leaves to suit the size of the leaves.

A is a base plate having a central post B upon which are journaled two drums C and D at a sufficient distance apart to allow the introduction of as many thin flat plates E as may be desired, these plates carrying the arms F by which the sheets are turned. Intermediate washers E' are fixed between the plates E and extend to the left where their outer ends engage slots in a notched vertical post E² which holds them at such a distance apart, that the edges of the plates E will enter between them when turned to the left, and thus be prevented from raising or lowering. This retains the plates E in the right position to be engaged by the returning device.

The plates E are shown in the present case

as being formed by turning the plates up at right angles, and then extending them parallel with the base plate to any desired length. In the present case I have shown these extensions or arms F as slotted and correspondingly shaped extensions F' fitted with pins which pass through the slots, thus allowing the extensions to be drawn out to suit any sized sheet which it is desired to turn. Upon the outer ends of the extensions are pivoted the up-turned arms G which overlap each other and serve to clasp the lower edge of the sheet to be turned. As many of the plates E may be introduced between the two drums C and D as desired. The uppermost drum C is normally turned toward the right by a coil spring contained within it having one end attached to the interior of the drum and the other to the vertical post around which the drum turns and the drum is rotated to the left whenever desired, by means of a cord H which passes around the drum, leads thence over a pulley I at one side of the frame, and from this point to the point from which it is operated. If used on an ordinary music rack, the cord leads to a foot lever which is fulcrumed at the bottom of the rack.

Projecting through the top and bottom plates of the drum is a vertically sliding block J' with lugs J which are adapted to engage the plate E of each arm near the point where the up-turned portion commences so that when the drum is rotated toward the left by pulling upon the cord, this lug will engage the uppermost of the plates E and will carry it around a semi-circular path, thus turning the leaf from the right to the left. This block J' has a free movement in a vertical channel and its central portion travels upon a semi-circular ring K which curves around the central post and has its right end attached to a vertically sliding plate L, which moves in guides projecting upwardly at the inner or back part of the base plate. This semi-circular ring rests upon the uppermost plate E which remains in readiness with its arm F to turn the next leaf, and the lugs J extend just enough below the thickness of this ring to engage this uppermost plate E when the drum C is turned by pulling upon its cord H. This operation causes the drum to rotate about the central post, and the movement of the block J'

and its projecting lug carries the uppermost plate E which it has engaged around the center, thus sweeping the arm F around and turning the leaf which is connected with it. The left end of the semi-circle stops just short of the point where the arms rest when they are turned, and as each of the plates E passes the end of the semi-circle, the semi-circle is allowed to drop upon the next plate by reason of the sliding plate L which carries it and which moves freely by gravitation in its guide, thus allowing the semi-circle to drop the thickness of each plate and intervening washer after the plate has passed beyond its end. In this manner all the plates E and the arms F connected with them may be moved about a semi-circle, turning the leaves which are connected with the arms successively to the left until all or as many of the leaves are turned as may be desired. The arms are returned to their original position by means of a lug M projecting downwardly from the plate M' which plate has a vertical slide *m* traveling freely in guides N. These guides project upwardly from the outer ends of extensions *d* of the top and bottom plates, forming the lower drum D. This lower drum stands normally with these extensions turned to the left. It contains a coil spring similar to that described within the drum C and this spring retains the drum upon the left side, in the same manner that the drum C is normally retained upon the right side. A cord O passes around the drum D and thence over a direction pulley P from which the cord passes down to a foot lever similar to that over which the cord of the drum C passes. Whenever this cord is pulled it acts to rotate the drum D toward the right, and if one or more of the arms F have been turned to the left, the lug M on the plate M' which is carried by the standards or guides on the extensions of the drum D, will engage the arms F and will force them all around to their normal position at the right side, thus turning all the leaves connected with these arms to their original position. The plate M' rests upon a semi-circular ring Q upon which it travels in making its circuit to return the levers to the right side. This ring has its left end free to move up and down, and carry the plate M' with it, the plate sliding in its vertical guides as before described. The right end of the semi-circle Q is attached to a vertical sliding plate R moving in guides by the side of the vertically sliding plate L. This vertically sliding plate is normally held down by a spring S.

T is a lever fulcrumed in the post U which is pivoted to turn upon a vertical axis exterior to the semi-circular ring Q at the right side of the base plate A. This lever has its inner end bent at right angles and slotted so as to clasp the end of the semi-circular ring Q near its point of connection with the vertical slide R. Upon the opposite side of the lever T is a projecting plate T'.

V is a vertical plate having notches W, into

any one of which the projection T' may be entered by swinging the fulcrum post U so as to turn the inner end of the lever to the right. It is disengaged from these notches by turning the parts to the opposite side by means of a lever U' fixed to the post. The object of this device will be more fully explained hereinafter. As the semi-circular ring K under which the plates E of the arms move when they are turned from right to left, is described as dropping after each of the plates E has passed beyond its free end, it will be manifest that in order to return the plates beneath this ring, the ring must be raised from the point to which it has been allowed to drop by the successive passages of the plates E over the end of the ring, to its normal position close to the bottom of the drum C and above the plates E. In order to do this the cord O passes beneath a vertical pulley X which is located between the drum D and the guide pulley P over which the cord changes its direction. This pulley X is journaled upon a vertical lever Y fulcrumed behind the drums and essentially in line with the vertically sliding plate L which carries the semi-circular ring K. One end of the lever connects with this sliding plate L, the other is acted upon by a spring which normally throws it up and depresses the end of the lever which is connected with the sliding plate L and correspondingly depresses the semi-circular ring K, so that as the plates E and the turning arms F are successively turned to the left in turning the sheets of music, as each plate E passes off the end of the semi-circle the semi-circle and the slide L drop the thickness of one plate and washer, the pulley X remains at its lowest point, bearing upon the cord O and bending it downward out of a straight line so that if all the arms have been turned around the slide L will have dropped to the bottom, and will rest upon the point of the lever Y, which is in readiness to raise it when the returning cord is pulled. Now, when the cord O is pulled for the purpose of returning the arms, the first operation which takes place is to cause such a tension on the cord O between the drum D and the pulley P that it will be drawn into a nearly or quite straight line, and acting upon the pulley X it raises it up. This correspondingly raises the lever Y and with it the plate L which carries one end of the semi-circle K, and this action lifts the whole semi-circle up so that the continuation of the pull on the cord O will cause the lug M on the carrying plate M' to engage the lever arms F, and swing them around to the right, while the plates E from which they project will all pass beneath the semi-circle K. When the arms have thus been returned to the right the cord O is released and the spring within the drum D again coils it upon the drum and returns the carrying plate M' with its lug M to the left side in readiness to again return the arms when they have been moved to the left.

If it be desired to return only a portion of the leaves to the right after the music has been turned in playing it through once, as in a case where it is desired to repeat from some page subsequent to the first, the required number of leaves may be first turned as previously described, to the point from which it is desired to repeat the subsequent leaves and the fulcrum post U is then turned about its pivot so as to release the projection T' from the upper notch W in the plate V, and it is allowed to drop by reason of its connection with the vertically sliding plate R which carries the ring Q and with which the lever arm T is connected as previously described. It drops in this manner until it is arrested by the ring K near its attachment to the slide L, and is thus opposite the notch W in the plate V which corresponds with the next leaf to be turned to the left, and the vertical post U is then turned until the catch or projection T' engages the corresponding notch. This leaf will always be turned back to the right by the reversing device, and carry with it all leaves which have been turned subsequently. It will then be found that when the operations are performed as previously described for turning the leaves back after they have once been turned forward in performing the piece, only those leaves will be returned which correspond with the remaining notches in the plate V. By turning the vertical post U until the clutch at the end of the lever T is released from the plate L and ring K, and pressing upon the lever T, the latter may be raised to any one of the notches W and all the plates and arms below that particular notch will then be returned by the rotation of the pulley D, while those above will remain in the position to which they were first turned. By raising the catch T to engage with the upper notch W, the mechanism will be in such shape that the ring K will be raised as previously described, when the pull is made upon the cord O, until it is above the plates E, and the movement of the carrying plate M' will then act to return all of the arms carrying the sheets of music. The mechanism is all inclosed within a suitable casing which protects it from dust and observation.

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

1. In a music leaf turner, a series of flat plates journaled to turn about a central post having upwardly and outwardly turned arms adapted to carry independent leaves of music, a drum turnable about the central post, having a cord wound around it by which it is turned to the left, and a spring contained within the drum by which it is normally held at the right side, a horizontally semi-circular ring surrounding the central post below the drum, a vertical block sliding loosely through the extension of the drum at one side, having a lug or lugs adapted to engage the turning plates below the ring whereby they are turned

successively from right to left as herein described.

2. A music leaf turner consisting of a drum, a cord by which it is rotated to the left about a central post, a spring by which it is returned to the right when released, a series of flat plates turnable about the central post having extensions outwardly which are adapted to engage the leaves to be turned independently, a semi-circular ring connected with a vertical slide at the rear and extending around the central post above the plates which carry the turning arms when said plates are in their normal position at the right, a vertical sliding block movable in a slot in the extension of the drum having a lug projecting below the semi-circular ring sufficiently to engage the first of the plates situated below it, whereby said plate and its arm are turned around the central post until the plate passes the free end of the semi-circle, and allows the latter to drop the thickness of the plate and interposed washer whereby the carrier is returned in position to engage the following plate.

3. In a music leaf turner, a drum rotatable about a central post having a sliding block and lug, leaf carrying arms projecting outwardly from flat plates surrounding the posts and situated beneath the drum, a semi-circular ring connecting with a vertically sliding plate at one end, having the other end free so that when the leaves are turned, the ring is allowed to drop successively the thickness of each plate and washer after it has passed, a second drum movable in the opposite direction having a carrying plate attached to it adapted to engage the arm carrying plates from the opposite side, and a cord whereby said drum is rotated to move the plates in the opposite direction and return the plates and arms to their original position.

4. In a music leaf turner, the oppositely moving drums with cords adapted to rotate them, one in a direction to turn the leaves to the left and the other in a direction to turn the leaves to the right, flat plates journaled around a central post upon which the drums turn, and between the upper and lower drums, a vertically sliding block connected with the upper drum having a lug adapted to engage the plates and turn them successively to the left, a semi-circular ring situated between the upper drum and the arm carrying plates, having one end connected with a vertically moving slide, and the other terminating at a point beyond which the plates move when the leaves are turned whereby the ring is allowed to drop the thickness of each plate and washer after the leaf has been turned and the plate has passed its free end, a returning plate connected with the lower drum, a lever fulcrumed at the rear of the apparatus having its end connected with the vertical slide which carries the semi-circular ring and having a pulley journaled upon it which acts normally to depress the cord whereby a pull

upon the cord first acts to straighten the cord and raise the lever, the slide, and the semi-circular ring, to a position above the arm carrying plates, so that the latter are returned

5 beneath the ring.

10 5. In a music leaf turner, the oppositely rotating drums turning about a central post and cords by which they are moved, a series of plates turnable about said post between
15 the drums, and carrying arms by which the leaves of music are independently turned, a semi-circular ring surrounding the plates and central post having one end connected with a vertically moving slide and the other end
20 terminating at a point where the plates will pass beyond it in turning the leaves to allow it to drop successively the thickness of a plate, a vertically sliding carrier connected with the upper drum adapted to drop with
25 the ring and engage each successive turning plate and arm to turn a leaf, a second semi-circular ring of larger diameter connected with a second vertically sliding guide plate at one end, and acting as a guide and carrier for the returning plate which is actuated by the

lowermost drum, a lever fulcrumed in a vertical post which is turnable about its point of support, said lever having a clutch at the end adapted to engage the vertical sliding carrier of the outer ring when the post is turned in one direction, and having a projection upon the opposite side adapted to engage notches in a stationary vertical post upon the opposite side, whereby the ring is held at any desired elevation.

6. In a music leaf turner, flat plates turnable about a central post and having arms adapted to engage and turn the leaves successively, and washers interposed between the turning plates having extensions at one end which engage notches in a standard exterior to the plates, so that the extensions receive and support the turning arms after the leaves have been turned.

In witness whereof I have hereunto set my hand.

FREDERICK A. MEYER.

Witnesses:

S. H. NOURSE,

J. A. BAYLESS.