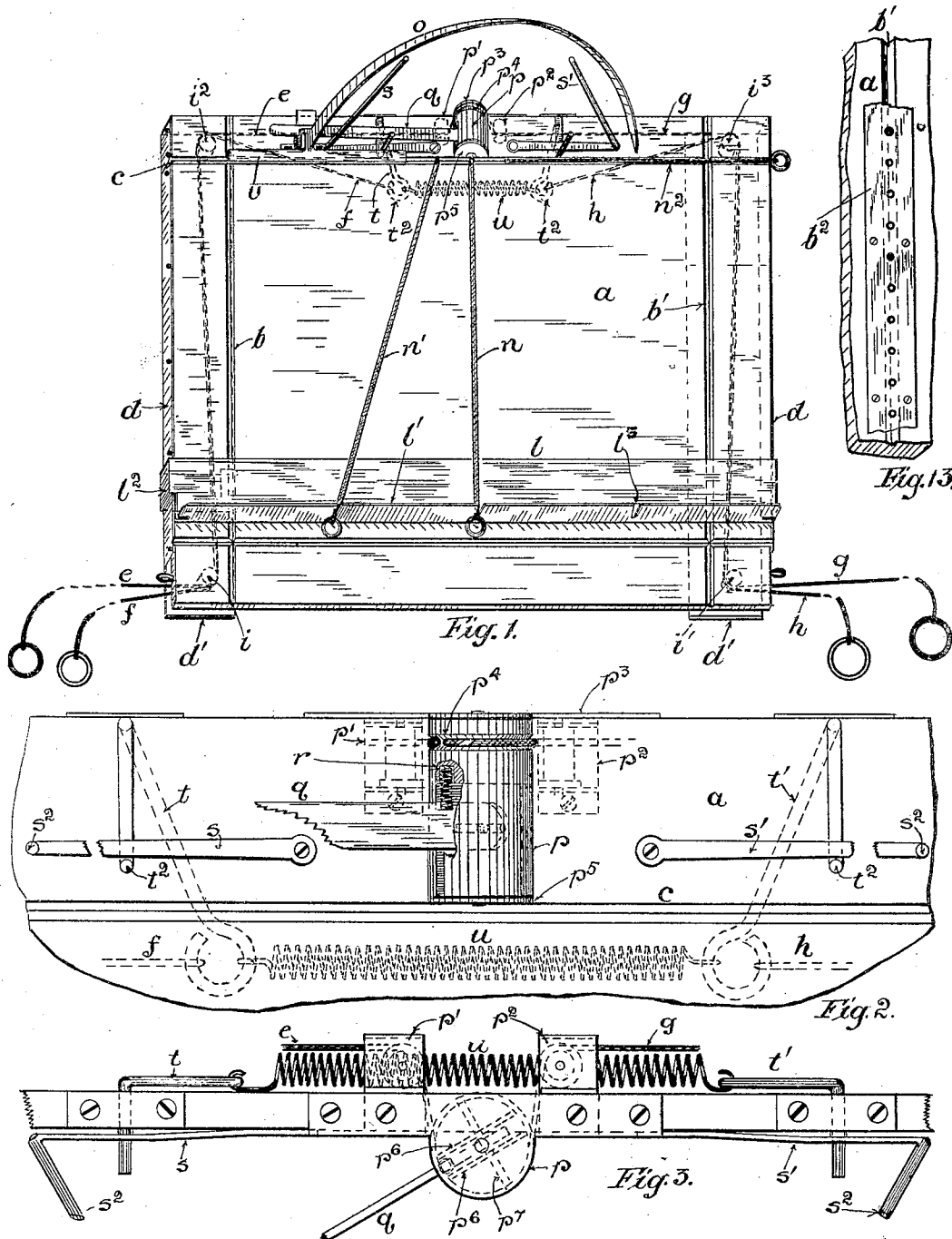


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MUSIC LEAF TURNER.
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949,932.

Patented Feb. 22, 1910.

2 SHEETS—SHEET 1.



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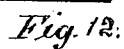


Fig. 14. Inventor:
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UNITED STATES PATENT OFFICE.

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MUSIC-LEAF TURNER.

949,932.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANZ CARL JUNGSMANN, a citizen of the United States, and a resident of Portland, in the county of Multnomah and State of Oregon, have invented a certain new and useful Improvement in Music-Leaf Turners, of which the following is a specification, reference being had to the accompanying drawings as constituting a part thereof.

This invention has for its object to obtain a music-leaf turning device of simple and inexpensive construction, reliable in its operation, and adapted to be applied to the rack of any music stand, or to a music rack of an instrument like the piano; and to this end my invention relates to the construction, arrangement and combination of parts hereinafter fully described and pointed out in the claims.

In the accompanying drawings of my invention: Figure 1 is a front elevation of my music-leaf turner; Fig. 2 is a partial front view, on enlarged scale, of the upper part of the supporting back-board of my device, showing in part the mechanical details whereby the turning of the music-leaf is accomplished; Fig. 3 is a top view of the same parts as shown in Fig. 2, and on the same scale; Figs. 4 and 5, taken together, show an elevation of what I term the leaf-finger, which is affixed to the upper edge of the music sheet to be turned by my device; the parts of the leaf-finger being separated and their union, as in practice, being illustrated in Fig. 6, which shows an end view of the device last referred to; Figs. 7 and 8 are details of the means for fastening the two parts of a leaf-finger together; Fig. 9 is a detail of a movable block supported on the bow-like rest over which travels the pivoted arm by which the turning of a leaf in one direction or the other is effected; Fig. 10 is a perspective detail of construction, illustrating means for securing in place the slidable bottom-rail of my device, on which rail the musical composition is supported on my rack; Figs. 11 and 12, taken together, show a detail of a pulley and guide over which the cords of the pivoted operating arm are guided; Fig. 13 is a detail of a reinforcing perforated plate, which may be used as part of the means for locking the slidable bottom-rail in place; and Fig. 14

is a detail of a clamp which may be used in connection with my device, the clamp being adapted to be fastened on the knee, and to have the ends of the cords by which my device is operated attached thereto.

Referring now to the letters in the several views: The back-board, *a*, may be made of any convenient material, and is provided on its upper face with vertical grooves *b*, *b'*, at the two ends, and horizontal grooves *c*, *c'* at the top and bottom; the bottom grooves merely serving to give a uniformity to the appearance of the back-board. To the outer ends of the back-board are fastened guide-bars, *d*, bent in right angle, the lower portions *d'* of which are spaced apart from the under surface of the back-board, *a*, so as to provide a space in which to receive the operating cords *e*, *f*, *g*, *h*. Guide-pulleys *i*, *i'* are provided at the bottom of the back-board, on the under side, as shown in Fig. 1; said guide-pulleys being journaled in a box *j* as shown in Figs. 11 and 12. Like pulleys as *i*, *i'* are also provided at the top, viz: *i²*, *i²'*, to guide the upper ends of the cords *e*, *f*, *g*, *h*. The guide-pulley *i* is omitted from the detail Fig. 10. All the operating cords *e*, *f*, and *g*, *h* are lead through boxes like *j* over said pulleys to prevent the cords getting off the pulleys.

On the back-board is slidably mounted a bottom-rail *l*, provided at its lower end with a lip *l'*; and its two lateral ends are provided with clamping members *l²*, having right-angle extensions *l³*, embracing the members *d'* of the guide-bars *d*. The members *l³* of the rail, *l*, are provided on their inner ends with lips *l⁴*, formed by a return bend, and said lips ride on the edges, *d²*, of the members, *d'*, of the guide rails *d*. The arrangement just described is more clearly shown in Fig. 10, and the purpose thereof is to give a steadiness and guidance to the rail *l*, making it convenient to adjust the latter to any height on the back-board *a*. At the two ends of the rail, *l*, are provided locking means for holding the rail, *l*, in the position to which adjusted. These locking means are conveniently made of two spring arms *m* (see Fig. 10) fastened to the under side of the rail, *l*, and provided with bent points *m'* positioned over the vertical grooves *b*, *b'*. The back-board, *a*, being of wood, in order to lock the rail, *l*, in the place to which ad-

justed, it is but necessary to bear on the rail, l , over the locking members m ; and when desiring to move the position of the rail l , it is only necessary to lift the ends of the rail, l , a trifle from the back-board, a , so as to disengage the points m' of said locking members m .

In Fig. 13 I have shown a detail of perforated plates b^2 , one of which may be fastened over each of the grooves b , b' to save said grooves from wear. The locking points m' of the spring arms, m , would, under such circumstances, be inserted in the perforations of the plates b^2 .

To hold the piece of music securely on my rack, I provide elastic cords n , n' , n^2 , the cord n being arranged at the center, and the cords n' , n^2 being used to hold the cover, and those leaves of the music sheet not to be turned, firmly in place. To secure the bottom ends of said cords, the rail l is made with notches l^5 . When the cords n' , n^2 , or either thereof, are not to be used, the same may be arranged as illustrated of the cord n^2 , in Fig. 1, that is, laid in one branch of the groove c .

At the top of the back-board, a , is affixed a bow-shaped rest o .

p is a short axle journaled between two plates p^3 , p^5 ; and in the axle p is pivoted an arm q . The ends of the cords e , g , are fastened to the axle p in such wise as to lie in the grooves p^4 . See Fig. 2.

On the rear of the back-board, at the top, are provided boxes p' , p^2 , in which are pivoted small rollers, as guiding means for the cords e , g , which are led over said rollers and thence over the pulleys i^2 , i^3 .

A coil-spring is provided in the slit of the axle-member p , to bear on the arm q and normally hold the same down on the bow-rest o .

Pivoted to the back-board, a , are two laterally extending fingers s , s' , having each projecting ends s^2 . Pivottally supported at the upper end of the back-board are levers t , t' , provided respectively with eyes t^2 , and controlled by a coil-spring u . The ends of the cords f , h are fastened to eyes t^2 of the levers t , t' , as shown in Figs. 1 and 2.

The function of the levers t , t' is to lift one or the other of the fingers s , s' , and thereby disengage the arm q from the engaged leaf-fingers v , clamped on the top edge of the leaf. The construction of said leaf-finger, v , is shown in Figs. 4 and 5. It comprises two pieces v^a , w . The piece v^a is made with an extension v' and is provided with lips v^2 , v^3 , adapted to be engaged by the arm q , as presently will be explained. The piece v^a is further provided with spring clasps v^4 , v^5 , a detail of which is shown in Figs. 7 and 8. The same comprising a bearing v^6 , having serrated ends v^7 , the other member being a V-shaped clasp v^8 , provided with trunnion pins v^9 , and having serrated bearing faces v^{10} , whereby the clasp v^8 is adapted to be ar-

ranged and held either in a pendent or extended position, as shown in Fig. 6.

The companion-member of the leaf-finger consists of a bar w provided with apertured lugs w' , adapted to receive the spring clasps v^4 , v^5 , and being locked by arranging the clasping members v^4 , v^5 in their pendent position.

The top of the music sheet to be turned is clamped between the members v^3 , w , of the leaf-fingers v . The slitted center v^{11} of the member v^a of the leaf-finger v is, in the first instance, placed on the bow-rest, o , and by then securing the companion-member w in place, the edge w^2 will bear lightly against the under side of the bow-rest o , and in so doing prevent the clamping bar from being upset; that is to say, thrown over on its side by the impact of the arm q when thrown against the extension v' of one of the leaf-fingers in the act of turning a leaf.

The operation is as follows: By pulling on either of the cords e , g , the arm q can be thrown in one direction or the other, the arm striking the extension v' of the leaf-clamp v and then dropping behind one of the lips v^2 , v^3 , being caused to drop behind the said lips by the impulse of the coil-spring u . In order to relieve the coil-spring u , one of the cords f , h is pulled to operate one of the levers t , t' , thereby lifting one of the fingers s , s' , and disengaging the arm q from the lip v^2 or v^3 of the leaf-finger v . The same operation is also used to cause the arm q to be lifted over the extension v' of a leaf-finger, and permit the arm to be brought into engagement with the like extension of another leaf-finger. There are as many leaf-fingers riding on the bow-rest, o , as there are leaves in the musical composition to be turned over.

It is convenient to use in connection with my device a pair of knee-clamps such as illustrated in Fig. 14, consisting of a U-shaped spring-clamp, x , adapted to be clamped on the knee and provided with hooks, x' , to which to fasten the ends of the cords e , g and f , h . That is to say, two of the knee-clamps like x would be used, and on one of them the two ends of the cords e , g , would be fastened, whereby the arm q is thrown to one side or the other, to turn the leaf; and to the other knee-clamp would be fastened the two ends of the cords f , h , whereby to work the fingers s , s' , to disengage the arm q from the leaf-finger, and engage the same with another, as above described. When the arm q has passed over the extension v' of one leaf-finger, v , it will be in position to engage with the adjacent leaf-finger, and may in turn be disengaged from such adjacent leaf-finger and reengaged with the first leaf-finger, or with another leaf-finger, according to circumstances.

In Fig. 9 I have shown movable blocks, y ,

clamped by a set-screw *y'* on the bow rest *o*. The purpose of such blocks is to position the same in front of the leaves of the composition which are not to be turned, so as to receive the impact of the leaf-fingers when thrown one way or the other by the operation of the arm *g*, to turn over a music leaf. In other words, they save wear and tear of the underlying leaves; and said blocks *y* assure also a proper action of my device by providing an abutment for the leaf-fingers *v* to rest against when receiving the impact of the arm *g*, and thus also serving to prevent the throwing of the leaf-finger over on its side, by such impact.

I claim:

1. A music-leaf turner comprising a back-board, a lateral arm swinging on a vertical axis at the top center of the back-board, and adapted to be lifted at its end, a projecting bow rest over which said arm swings, operating cords attached to said arm, fingers operable to lift the arm, operating cords attached to said fingers, a leaf-finger adapted to be fastened to the top of a sheet, said leaf-finger being movably mounted on said bow rest and being provided with an upwardly projecting piece having lateral lips arranged to be engaged by said swinging arm, guiding means for the cords, and a rail slidable on the back-board.

2. A music-leaf turner comprising a back-board, a lateral arm swinging on a vertical axis at the top center of the back-board, and adapted to be lifted at its end, a projecting bow rest over which said arm swings, operating cords attached to said arm, fingers operable to lift the arm, operating cords attached to said fingers, a leaf-finger adapted to be fastened to the top of a sheet, said leaf-finger being movably mounted on said bow rest and being provided with an upwardly projecting piece having lateral lips arranged to be engaged by said swinging arm, guiding means for the cords, blocks adjustable on the bow rest to receive the impact of said swinging arm, and a rail slidable on the back-board.

3. A music-leaf turner comprising a back-board, a lateral arm swinging on a vertical axis at the top center of the back-board, and adapted to be lifted at its end, a projecting bow rest over which said arm swings, operating cords attached to said arm, spring-controlled fingers operable to lift the arm, operating cords attached to said fingers, a leaf-finger adapted to be fastened to the top of a sheet, said leaf-finger being movably mounted on said bow rest and being provided with an upwardly projecting piece having lateral lips arranged to be engaged by said swinging arm, guiding means for the cords, blocks adjustable on the bow rest to receive the impact of said swinging arm, and a rail slidable on the back-board.

4. A music-leaf turner comprising a back-board, a lateral arm swinging on a vertical axis at the top center of the back-board, and adapted to be lifted at its end, a projecting bow rest over which said arm swings, operating cords attached to said arm, spring-controlled fingers operable to lift the arm, operating cords attached to said fingers, a leaf-finger comprising two members, and means for locking said members together upon a sheet, said leaf-finger being adapted to be removably mounted on said bow rest and riding on the latter, and being also provided with an upwardly projecting piece having lateral lips arranged to be engaged by said swinging arm, guiding means for the cords, and a rail slidable on the back-board.

5. A music-leaf turner comprising a back-board, a lateral arm swinging on a vertical axis at the top center of the back-board, and adapted to be lifted at its end, a projecting bow rest over which said arm swings, operating cords attached to said arm, spring-controlled fingers operable to lift the arm, a leaf-finger adapted to be fastened to the top of a sheet, said leaf-finger being movably mounted on said bow rest and being provided with an upwardly projecting piece having lateral lips arranged to be engaged by said swinging arm, guide-bars affixed to the ends of the back-board and having angular members spaced apart from the under side of the back-board, guiding means for the cords, blocks adjustable on the bow rest to receive the impact of said swinging arm, a rail provided with lateral members arranged to embrace and ride on said guide-bars at the ends of the back-board, and means for locking said rail in place.

6. A music-leaf turner comprising a back-board, a lateral arm swinging on a vertical axis at the top center of the back-board, and adapted to be lifted at its end, a projecting bow rest over which said arm swings, operating cords attached to said arms, spring-controlled fingers operable to lift the arm, a leaf-finger adapted to be fastened to the top of a sheet, said leaf-finger being movably mounted on said bow rest and being provided with an upwardly projecting piece having lateral lips arranged to be engaged by said swinging arm, guide-bars affixed to the ends of the back-board and having angular members spaced apart from the under side of the back-board, guide-pulleys for the operating cords, which pulleys are located in the spaces between the said angular members of the guide-bars and the under side of the back-board, blocks adjustable on the bow rest to receive the impact of said swinging arm, a rail provided with lateral members arranged to embrace and ride on said guide-bars at the ends of the back-board, spring locking members on the under side of the rail, said spring locking means being pro-

vided with bent extremities, and means on the back-board with which said locking members engage.

7. A music-leaf turner comprising a back-board, a lateral arm swinging on a vertical axis at the top center of the back-board, and adapted to be lifted at its end, a projecting bow rest over which said arm swings, operating cords attached to said arm, fingers operable to lift the arm, operating cords attached to said fingers, a leaf-finger adapted to be fastened to the top of a sheet, said leaf-finger being movably mounted on said bow rest and being provided with an upwardly projecting piece having lateral lips arranged to be engaged by said swinging arm, guiding means for the cords, a rail slidable on the back-board, and knee-clamps adapted to be attached to the ends of the operating cords.

8. A music-leaf turner comprising a back-board, a lateral arm swinging on a vertical axis at the top center of the back-board, and adapted to be lifted at its end, a projecting bow rest over which said arm swings, operating cords attached to said arm, spring-controlled fingers operable to lift the arm, operating cords attached to said fingers, a leaf-finger adapted to be fastened to the top of a sheet, said leaf-finger being movably mounted on said bow rest and being provided with an upwardly projecting piece having lateral lips arranged to be engaged by said swinging arm, guide-bars affixed to the ends of the back-board and having angular members spaced apart from the under side of the back-board,

guide-pulleys for the operating cords, which pulleys are located in the spaces between the said angular members of the guide-bars and the under side of the back-board, blocks adjustable on the bow rest to receive the impact of said swinging arm, a rail provided with lateral members arranged to embrace and ride on said guide-bars at the ends of the back-board, spring locking members on the under side of the rail, said spring locking members being provided with bent extremities, and means on the back-board with which said locking members engage, and knee-clamps adapted to be attached to the ends of the operating cords.

9. A music-leaf turner comprising a back-board, a lateral arm swinging on a vertical axis at the top center of the back-board, and adapted to be lifted at its end, a projecting bow rest over which said arm swings, operating cords attached to said arm, spring-controlled fingers operable to lift the arm, operating cords attached to said fingers, a leaf-finger comprising two members, and means for locking said members together upon a sheet, said leaf-finger being adapted to be removably mounted on said bow rest and riding on the latter, and being also provided with an upwardly projecting piece having lateral lips arranged to be engaged by said swinging arm, guiding means for the cords, a rail slidable on the back-board, and means for locking said rail in place.

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