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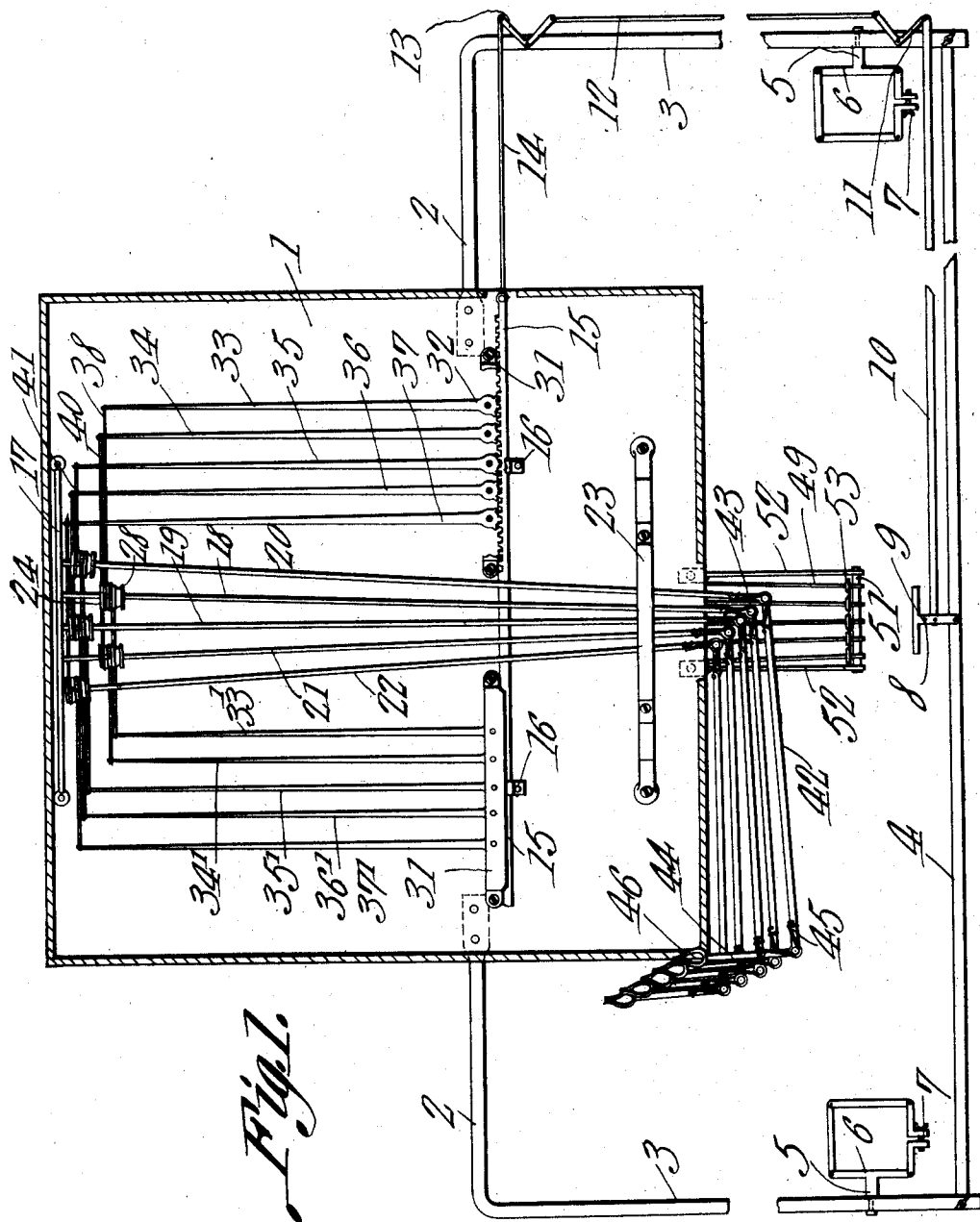


Fig. 1.

Witnesses

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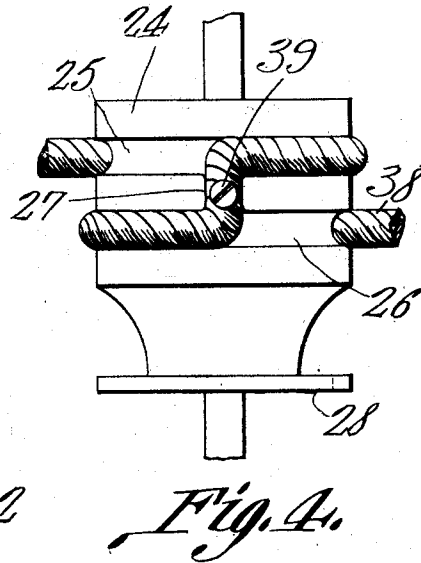
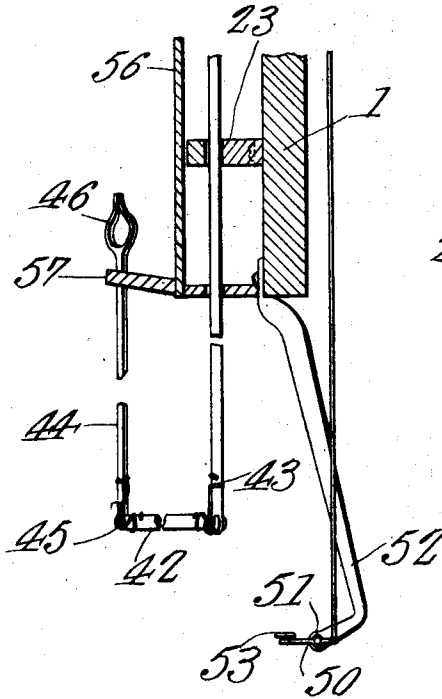
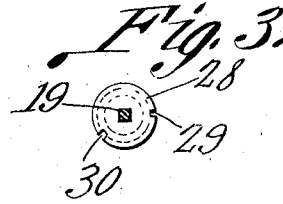
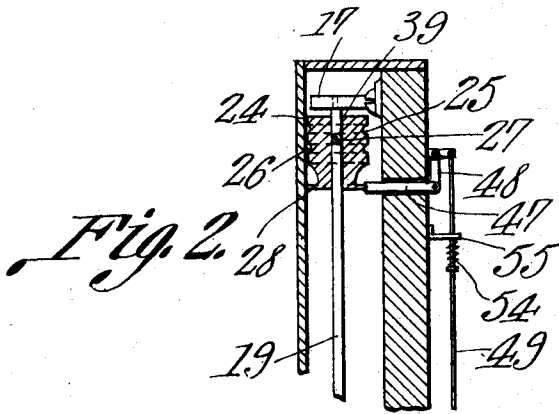
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W. W. DUCK.
MUSIC LEAF TURNER.
APPLICATION FILED JULY 6, 1910.

Patented Jan. 10, 1911.

2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM W. DUCK, OF STILLWATER, OKLAHOMA.

MUSIC-LEAF TURNER.

981,250.

Specification of Letters Patent.

Patented Jan. 10, 1911.

Application filed July 5, 1910. Serial No. 570,481.

To all whom it may concern:

Be it known that I, WILLIAM W. DUCK, a citizen of the United States, residing at Stillwater, in the county of Payne and State of Oklahoma, have invented a new and useful Music-Leaf Turner, of which the following is a specification.

This invention relates to music leaf turners and its object is to provide a device of this character which is comparatively simple in construction and which can be readily operated for the purpose of turning a sheet of music in either direction desired, the mechanism being easily controlled.

A further object is to provide a device of this character which can be readily applied to a piano or other instrument.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a front elevation of the device, portions of the attached frame being broken away, and the base board and ledge being removed. Fig. 2 is a vertical section through a portion of the device and showing one of the spindles and coöperating parts in elevation. Fig. 3 is a bottom plan view of one of the spools, the spindle therein being shown in section. Fig. 4 is an enlarged elevation of a spool and showing the arrangement of a cord thereon.

Referring to the figures by characters of reference 1 designates the back board of the body of the device, there being arms 2 extending in opposite directions from the sides thereof and merging into parallel side rods 3 which are connected at their lower ends by a cross strip 4. This strip is detachably secured to the side members 3 and stems 5 are swiveled within said side members close to the lower ends thereof and carry clamps 6, each of which is preferably formed of pivotally connected members, there being a clamping screw 7 or the like engaging the free ends of the clamps so that, after the clamps have been placed around the forwardly extending base strips such as found at the side of a piano or the like, they can be readily tightened upon said strips so as to secure the mechanism to a piano.

It is to be understood that the strip 4 is to be extended transversely under the piano

and close to the pedals while the back-board 1 is to rest upon the ordinary music lid found above the keyboard.

A T-shaped pedal 8 is pivotally mounted upon the strip 4 adjacent the center thereof and has a rod 10 secured to it and also to a bell crank lever 11 which is fulcrumed on one of the side members 3. A rod 12 connects this bell crank lever with another bell crank lever 13 fulcrumed upon one end portion of one of the side members 3 and having a rod 14 pivotally attached to it. This rod is pivotally connected to one end of a rack bar 15 which is slidably mounted on guide brackets 16 secured to the front face of the board 1.

A bearing strip 17 is secured to the board 1 adjacent the top thereof and journaled within this strip are the upper ends of spindles 18, 19, 20, 21 and 22 which converge downwardly, and bear, adjacent their lower ends, within a strip 23 secured to the board 1. These spindles are grouped adjacent the longitudinal center of the board 1 and each spindle is provided, near its upper end, with a spool 24 having spaced annular grooves 25 and 26 therein, said grooves communicating through a longitudinal groove or recess 27. An annular flange 28 is formed at the lower end of each spool and has two recesses 29 and 30 extending thereinto as clearly indicated in Fig. 3.

Bearing or housing strips 31 are secured to the board 1 at opposite sides of the group of spindles 18 to 22 and mounted between each of these housing strips and the board 1 is a series of gears 32. These gears all mesh with the rack bar 15 and spring arms 33, 34, 35, 36 and 37 extend upwardly from the peripheries of the gears of one series, while spring arms 33', 34', 35', 36', and 37' extend upwardly from the peripheries of the gears 32 of the other series, each arm being substantially radially disposed relative to its gear. The arms 33 and 33' are connected by a cord 38 which is wrapped about the spool 24 on spindle 18 and is seated within the two grooves 25 and 26 and within the groove 27 in said spindle, there being a set screw 39 or the like located within the groove 27 and which serves to both secure the cord to the spool and also to fasten the spool to its spindle. Another cord 40 connects the spring arms 34 and 34' with the spool 19 and a cord 41 connects the spring arms 35 and 35' with the spool 20. The other arms are

similarly connected with the remaining spools.

Each of the spindles 18 to 22 inclusive extends below the board 1 and is provided, at its lower end, with an arm 42 hingedly connected to it and normally supported, substantially at right angles thereto, by means of a spring 43. An extension 44 is hingedly connected to the free end of each of the arms 42 and is held normally substantially at right angles to the arm, by means of a spring 45. A spring clip 46 is arranged at the free end of the extension 44 and is adapted to engage the lower edge of a sheet of music. These arms 42 and their extensions 44 are arranged beyond the board 1 and are adapted to swing toward either side of said board when the spindles are rotated in one direction or the other.

Arranged within the board 1 directly back of each of the spools 24, is a locking bolt 47 pivotally connected to a bell crank lever 48. A rod 49 extends downwardly from the bell crank lever and is connected to a lever 50 fulcrumed upon a cross rod 51. This rod is supported by hangers 52 depending from the board 1 and each lever 50 has a key 53 at its front end. A spring 54 may be connected to each rod 49, said spring bearing upwardly against the bracket 55 and serving to hold the bolt 47 normally projected into one of the recesses or notches 29 and 30. When the bolt 47 is seated within one of the notches, the arm extending from the spindle of said spool will be held extended to the right of the board 1 whereas, when the bolt 47 is seated within the other notch or recess, said arm or the spindle will be extended toward the opposite side of the board.

A face board 56 extends in front of the spindles, spring arms, and bearing members and is secured in any preferred manner to the board 1, the two boards thus serving to house the parts mentioned and to protect them from injury. This face board has a ledge 57 extending forward from the bottom portion thereof and on which the sheet music to be turned may be placed. When it is desired to use the mechanism herein described, the board 1 is placed upon the music ledge of a piano or similar instrument and the side members 3 are extended downwardly along the sides of the instrument and attached to the lower portions of the sides thereof by means of the clamps 6. By pressing downwardly on the left side of the pedal 9, the bell crank lever 11 will be caused to pull downwardly on the lever 13 and the rack bar 15 will therefore be moved to the right. As the various spools 24 are held against rotation by the bolts 47, it will be seen that when all of the gears 32 are rotated by the rack during its movement, the arms 33 to 37 inclusive will be swung toward the spindles 18 to 22 inclusive, while the arms 33' to 37'

inclusive will be held at their upper ends by the cords connected to them and will, therefore, be bowed or placed under stress. Those portions of the cord to the right of the spools will become slack as a result of the swinging of the arms 33 to 37 inclusive. With the parts thus adjusted the keys 53 can be successively or simultaneously depressed, thus releasing the spools and the springs 33' to 37' will therefore pull on their cords and cause the spools to rotate and thus take up the slack in said cords and swing the arms 42 toward the other side of the board 1. The sheets of music can then be placed on the ledge and inserted into the clips 46, the first sheet engaging the clip of the forward arm and the other clips being in engagement with the remaining sheets in proper order. Pedal 9 can then be depressed toward the right and will push against the bell crank lever 11 through rod 10 and rod 12 will thus swing upwardly against bell crank lever 13 and shift the rack bar 15 to the left of the board 1. As the spools are held against rotation by the bolts 47, the gears 32, when rotated by the rack bar 15, will bow the arms 33 to 37 inclusive because the upper ends of said arms are held by the cords. At the same time the arms 33' to 37' will be swung toward the spindles so as to slacken the cords between the arms and the spools. When it is desired to turn the first sheet of music the key 53 controlling the spool to which the first arm is operatively connected, is depressed and the bolt 47 thus disengaged from the spool. The spring arm connected to said spool is thus released and will promptly shift its cord so as to rotate the spool and cause the arm connected to the spindle thereof, to swing to its other position, thus carrying the sheet therewith. The other sheets can be successively turned in the same manner, by depressing the proper keys. Should it be desired, at any time, to move a sheet back to its initial position for the purpose of repeating the music thereon, it becomes merely necessary to shift the pedal 9 so as to place the opposite series of arms 33 to 37 inclusive under stress and then depress the proper key so as to cause the spool and the arms movable therewith, to turn in the desired direction.

Various changes can of course be made in the construction and arrangement of the parts without departing from the spirit or sacrificing any of the advantages of the invention as defined in the appended claims.

What is claimed is:—

1. A music leaf turner including a revoluble member, opposed upstanding resilient actuating devices, a flexible connection between said devices and the member, said connection being wrapped about the member, means for holding said member against movement, means for placing either of said

devices under stress, and means for releasing the revoluble member.

2. A music leaf turner including a revoluble member, opposed upstanding resilient
5 actuating devices, means for bowing either of said devices to place it under stress, locking means normally engaging the revoluble member, and a flexible element secured at its ends to said devices and wrapped at
10 an intermediate point about the revoluble member.

3. A music leaf turner including a revoluble member, opposed upstanding actuating
15 devices, a flexible connection between said devices, said connection being attached to and wrapped about said revoluble member, means for storing energy in either of said devices, means for automatically locking
20 either member against rotation, and means for releasing said member.

4. A music leaf turner including a revoluble member, opposed actuating devices, flexible connections between said devices and the member and wrapped about said member,
25 means for simultaneously shifting said devices to store energy within one of the devices to hold taut its flexible connection and to slacken the other connection and relieve the member from the action of the other device,
30 means for holding the member against movement and means for releasing said member.

5. A music leaf turner including revoluble members, leaf engaging devices movable
35 therewith, spaced series of actuating springs, a flexible connection between each revoluble member and one spring of each series, said connection being wrapped about the revoluble member, means for placing the two series
40 of springs under stress alternately, means for locking the revoluble members against rotation, and means for releasing said members.

6. A music leaf turner including revoluble members, leaf engaging devices movable
45 therewith, spaced series of actuating springs, a flexible connection between each member and a spring of each series, said connection

being wrapped about the revoluble member, means for alternately placing the
50 springs of the two series under stress, a locking bolt engaging each of the members to hold it against rotation, and means for shifting the bolt to release the member.

7. A music leaf turner including spindles, 55
spools revoluble therewith, leaf engaging devices carried by the spindles, spaced series of actuating devices, a flexible connection between each spool and one of the actuating
60 devices in each series, means for alternately setting the two series of devices to store energy therein, means for locking the spools against movement, and means for releasing the spools.

8. A music leaf turner including spindles, 65
spools secured thereto, leaf engaging devices connected to the spindles, spaced series of gears, spring arms extending from the gears, a flexible connection between each spool and an arm of each series, means for simulta- 70
neously actuating all of the gears to place the arms of one series under stress and to remove the stress of the arms of the other series, means for locking the spools against rotation, and means for unlocking said 75
spools to permit their actuation by the tensioned springs.

9. A music leaf turner including revoluble members, music leaf engaging devices
movable therewith, spaced series of resilient 80
actuating devices, a connection between each revoluble member and one of the devices in each series, a slidable element, means operated thereby for alternately placing the
85 actuating devices of the two series alternately under stress, a foot operated device, and means operated thereby for shifting said element to place either of said series under stress.

In testimony that I claim the foregoing 90
as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM W. DUCK.

Witnesses:

R. H. MOORE,
R. H. DE BIRD.