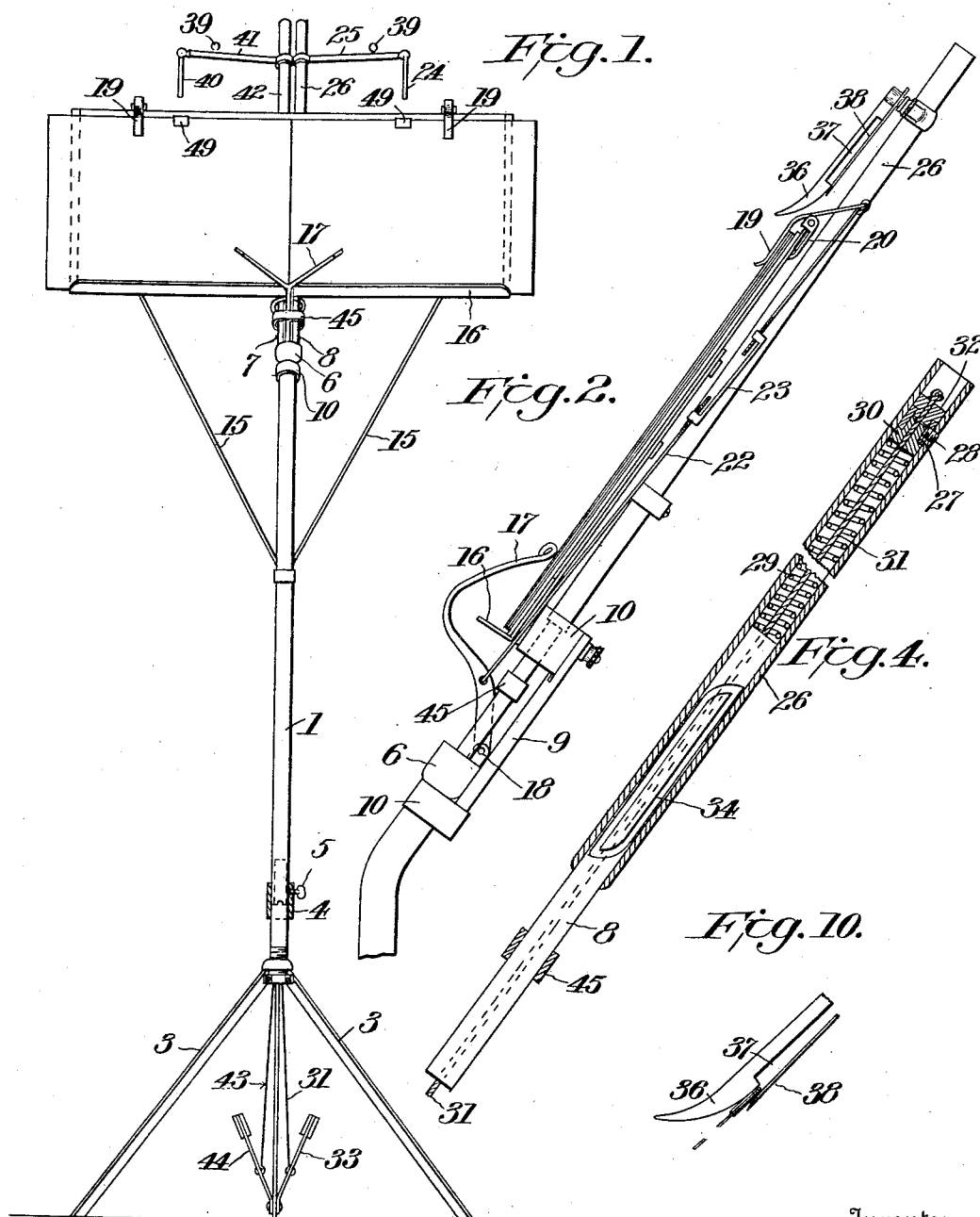


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LEAF TURNING DEVICE.
APPLICATION FILED MAR. 4, 1911.

1,008,092.

Patented Nov. 7, 1911.
2 SHEETS-SHEET 1.

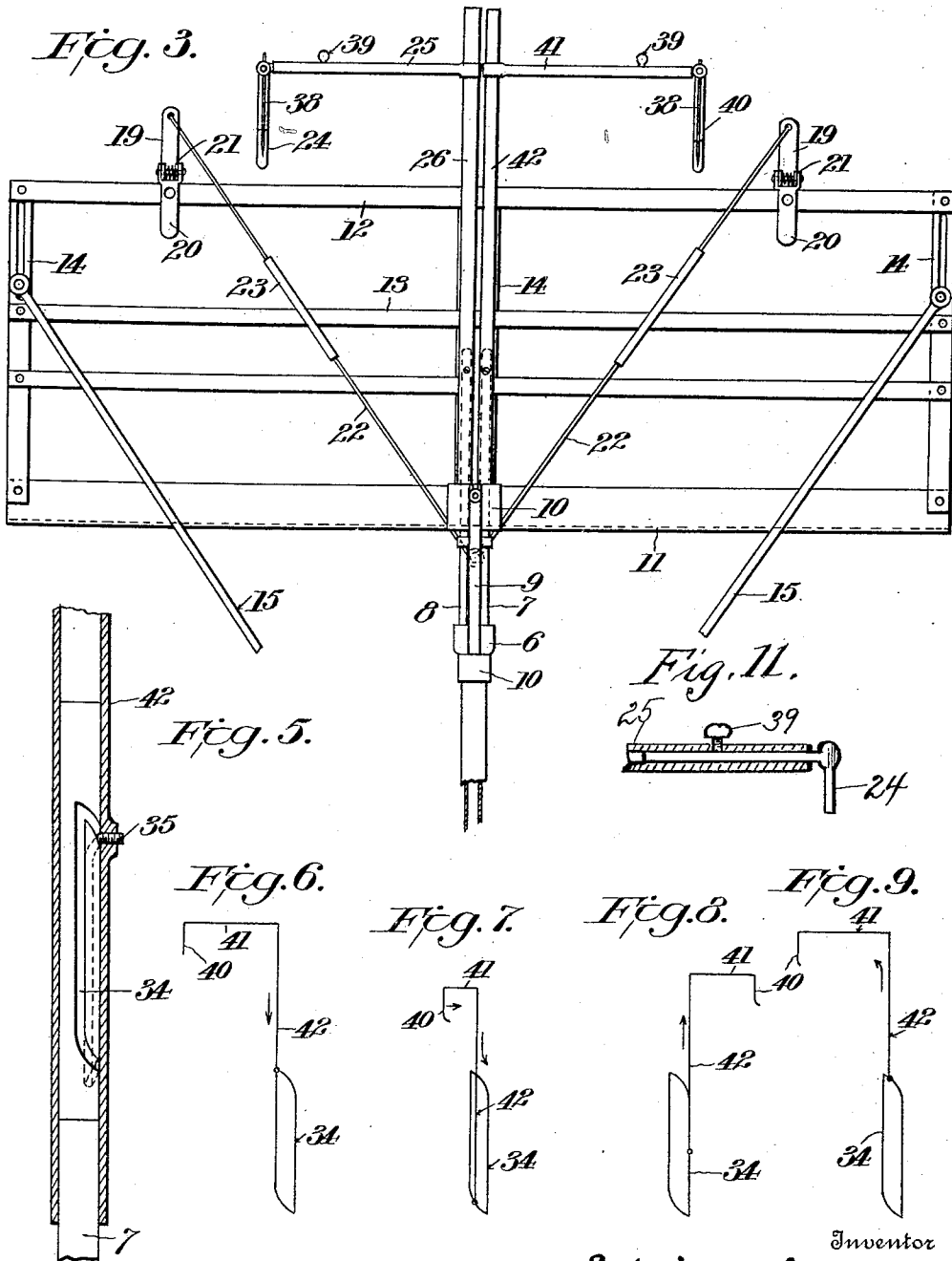


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LODOVICO VALENZA, OF SOUTH BETHLEHEM, PENNSYLVANIA.

LEAF-TURNING DEVICE.

1,008,092.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed March 4, 1911. Serial No. 612,309.

To all whom it may concern:

Be it known that I, LODOVICO VALENZA, a citizen of the United States, residing at South Bethlehem, in the county of Northampton, State of Pennsylvania, have invented certain new and useful Improvements in Leaf-Turning Devices, of which the following is a description, reference being had to the accompanying drawing and to the letters and figures of reference marked thereon.

The invention relates to new and useful improvements in music leaf turners, and more especially to devices of this character which are attached to a music stand.

An object of the invention is to provide a music leaf turner wherein a single device may be operated to engage and turn a plurality of leaves in succession.

A further object of the invention is to provide a device for turning leaves, which may be operated to turn the leaves in either direction.

A further object of the invention is to provide together with devices for turning the leaves, devices for clamping the leaves in open position, and also devices for automatically releasing the clamping devices upon the operation of the turning devices.

These and other objects will in part be obvious, and will in part be hereinafter more fully disclosed.

In the drawings which show by way of illustration one embodiment of the invention; Figure 1 is a front view of a music stand, having my invention applied thereto. Fig. 2 is an enlarged edge or side view, of the upper portion of the stand; Fig. 3 is a rear view of the part shown in Fig. 2, with the music book removed; Fig. 4 is a sectional view through the supporting and operating device for the turner; Fig. 5 is an enlarged view in section, showing the supporting sleeve and the cam device for turning the same; Figs. 6, 7, 8, and 9 are diagrammatic views, showing the leaf turner at the left of the stand in Fig. 1, in various positions. Fig. 10 is an enlarged detail of the leaf engaging device. Fig. 11 is a detail in section showing the manner of adjustment of the supporting arm for the leaf-engaging device.

In disclosing my invention, I have shown

a music stand which comprises a single tubular standard 1 mounted on folding supporting legs 3, which are of the usual construction. The standard 1 is preferably made in sections, which are secured together by a collar 4, which is secured in any desired way to one of the sections, and is held on the other section by a thumb screw 5. Mounted on the upper end of the standard 1, is a head 6, in which two rods 7 and 8 are rigidly fixed.

A bracket arm 9 is fixed to a collar 10, mounted adjacent the head 6, and said bracket arm is provided at its upper end with a tubular bracket 10. The music rack 11, is secured at its lower side to the tubular bracket 10. The music rack as herein shown, consists of a series of cross bars and a series of vertical bars. The upper bar may be adjustably attached to the lower parts of the rack in any desired way. As herein shown, the upper bar 12 and the bar 13 are connected to slotted vertical parts 14, and these vertical parts are adjustably secured by thumb screws so that the upper bar and the bar 13 may be moved vertically relative to the lower bar. Suitable brace rods 15 are secured to the outer vertical bars of the rack, and to the standard 1.

The music book is placed on the rack in the usual way and rests against a supporting ledge 16 on the lower bar. As a means for clamping the leaves of the music book, I have provided a forked clamping arm 17 which is pivoted to a lug 18 on the head 6, carried by the standard 1. Mounted on the upper bar 12, are two clamping jaws 19, which coöperate with a rigid finger or rest 20. The jaws 19 are pivoted in any suitable way, and springs 21 normally hold the jaws pressed against the leaves. The outer ends of the jaws 19, are deflected to the rear of the rack as shown in Fig. 2, and are connected by tie rods 22, to the forked clamping arm 17. The tie rods 22 are made adjustable by the turn-buckles 23. The springs 21 will therefore, not only serve to normally hold the clamping members 19 pressed against the leaves, but will also hold through the action of the tie-rods 22, the forked clamping arm pressed against the leaves. It will also be noted that by this structure, any swinging movement imparted

to the forked clamping arm 17, will through the tie-rods be likewise imparted to the clamping jaws 19.

As a means for turning the leaves from left to right, I have provided a leaf-engaging device 24. Said device 24 is carried by an arm 25 mounted on a sleeve 26, which in turn is mounted to slide on the rod 8. The rod 8 extends through the tubular bracket 10, which is made with sufficient clearance to allow the sleeve to slide freely up and down on the rod 8.

In the upper end of the sleeve 26, I have inserted the collar 27, which is fixed in the sleeve by a screw 28. A coiled spring 29 is located within the sleeve, and bears at one end against the rod 8, while its other end bears against a head 30 which rests against the fixed collar 27, and is formed with a projecting neck extending into the collar. This coiled spring normally holds the sleeve 26 forced outwardly or upwardly to the position shown in Figs. 1 and 3. A flexible cord 31, is secured to a cap 32, and extends downwardly through the rod 8 which is hollow, and the standard 1, and connects with a treadle 33. The cap 32 is formed with a reduced neck which extends into the fixed collar 27. By the construction of the parts 27, 30, and 32, it will be seen that the sleeve 26 may rotate freely relative to the parts 30 and 32, the coiled spring 29, and the rod 8.

As a means for rotating the sleeve 26 as it reciprocates longitudinally of the rod 8, I have formed the rod 8 with a cam groove 34. This cam groove is constructed with parallel portions and curved end portions. A screw or stud 35 is mounted in the sleeve 26 and projects into the cam groove. This cam groove as above noted, is constructed with parallel portions and curved portions, and these portions are so shaped that the sleeve will first move downward, the stud or screw 35 following a straight portion in the groove, then the sleeve will turn through a portion of a rotation, and as the sleeve moves upward, the screw or stud will again follow a straight portion without any turning of the sleeve, and it will finally be turned backward to its original position.

The leaf engaging device 24 is formed with an upwardly turned end 36 and a cut-away part 37. A separating needle or finger 38 extends along the lower face of the device and is slightly spaced from the lower face of the upwardly turned end 36. As this device is moved downward, the upwardly turned end will engage the top leaf, and riding up on the same, will cause the separating finger or needle 38 to pass between the leaves, and the leaf to be turned, will thus be engaged between the separating finger 38 and the body portion of the turning device. It will thus be seen that I have

provided a turning device that will engage only one leaf regardless of the number of leaves on the rack to be turned.

I preferably secure to the upper edge of each leaf, a metal clip 49 which is folded over the edge of the leaf, and serves as a wear plate, and to assist the leaf-engaging device in grasping the leaves. The arm 25 is adjustably connected to the sleeve 26, so that it may be moved vertically thereon to positions for different size leaves. The arm 25 is also made in two parts adjustably secured together by a thumb nut 39, so that said turning device 34 may be spaced farther from the sleeve 26 for larger size leaves.

For turning the leaves from right to left, I have provided a separate turning device 40 which is constructed similarly to the turning device 24. The turning device 40 is carried by an arm 41, mounted on a sleeve 42, which slides on a rod 7. The construction of the parts for operating the sleeve 42 is in all respects, similar to that for operating the sleeve 26. The flexible cord 43 for the sleeve 42, is attached to a treadle 44. Loosely mounted on the rods 7 and 8, is a sliding collar 45, which rests against the shank of the forked clamping arm 17. When either the sleeve 26 or 42 moves downward, it will engage the collar 45, which in turn will move downward or outward the clamping arm 17, and thus release the leaves from the clamping devices.

In Fig. 5 I have shown the cam for operating the turning device 40, which cam is the reverse on construction, to the cam 34, shown in Fig. 4.

In the operation of my device, when it is desired to turn a leaf from right to left, as viewed in Fig. 1, the treadle 33 is depressed, which will carry the turning device downward until the curved end thereof engages a leaf, rides over the same, and the leaf is positioned between the separating finger and the body portion of the turning device. During this downward movement of the leaf-engaging device, the sleeve 26 has engaged the collar 45, and moved the clamping devices so as to release the leaves. A further downward movement of the treadle carries the screw or stud 35 into the curved portion of the groove 34, which will now cause the sleeve 26 to rotate, carrying the turning device and the leaf engaged thereby, so as to turn the leaf. Upon releasing the treadle, the leaf engaging device moves directly upward and is withdrawn from the leaf. This also releases the collar 45 and allows the clamping devices to return to a position in engagement with the leaves. As the leaf turning device reaches the upper end of the movement of the sleeve, the curved portion of the groove will again rotate the sleeve in a reverse direction, and bring the

turning device back to normal position. In turning the leaves from left to right, the leaf engaging device moves in precisely the same manner and the leaf turning device 5 24, except in the reverse direction. In Figs. 6 to 9 inclusive, I have shown diagrammatically, the movement of the turning device 40. Fig. 6, shows the parts in normal position. Fig. 7 shows the parts with the leaf 10 engaged and the leaf partly turned. Fig. 8 shows the parts in position with the leaf fully turned, and the leaf-engaging member moving upwardly, out of engagement with the leaf. Fig. 9 shows the parts with the 15 leaf engaging device returning to its normal position.

It is obvious that minor changes in the details of construction, and the arrangement of parts may be made, without departing 20 from the spirit of my invention as defined in the appended claims.

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

25 1. A leaf turner including in combination, a support for the leaves, a leaf-engaging device, a separating device carried by and positioned relative to the leaves by said leaf-engaging device, and means for operating 30 said leaf-engaging and separating devices, whereby the same are simultaneously moved bodily longitudinally into engagement with the leaf, thence laterally to turn the leaf, thence in a longitudinal direction to release 35 the leaf, and again laterally to normal starting position.

2. A leaf turner including in combination, a support for the leaves, a sleeve lying in a vertical plane cutting said support, a leaf- 40 engaging device carried by said sleeve, a separating device carried by and positioned relative to the leaves by said leaf-engaging device, and means for moving said sleeve longitudinally to bring said leaf-engaging 45 device and said separating device into engagement with a leaf, for oscillating said sleeve to turn the leaf, for moving the same longitudinally to release the leaf, and again oscillating the sleeve to return said leaf en- 50 gaging device to its normal starting position.

3. A leaf turner including in combination, a leaf-engaging device, a separating device carried by and positioned relative to the leaves by said engaging device, a sleeve, an 55 arm mounted on the sleeve and carrying said leaf-engaging and separating devices, a supporting rod for said sleeve, means for moving said sleeve lengthwise on said rod, turning said sleeve on said rod, moving said 60 sleeve in the opposite direction lengthwise of the rod, and again turning the sleeve on the rod, to normal position.

4. A leaf turner including in combination, a leaf separating and engaging device, a

sleeve, an arm mounted on the sleeve, and 65 carrying said leaf engaging device, a supporting rod for said sleeve, a cam groove formed in the rod, a stud carried by the sleeve and engaging said cam groove, a spring for moving the sleeve in one direc- 70 tion, and a treadle for moving the sleeve in the other direction, said cam groove being shaped to cause the sleeve to move lengthwise of the supporting rod, then to turn on the rod, then to move lengthwise of the rod, 75 and again turn on the rod to normal position.

5. A leaf turner including in combination, a leaf separating and engaging device, a sleeve, an arm mounted on the sleeve, and carrying said leaf engaging device, a sup- 80 porting rod for said sleeve, a cam groove formed in said rod, a stud carried by the sleeve and engaging said cam groove, a spring for moving the sleeve in one direc- 85 tion, and a treadle for moving the sleeve in the other direction, said cam groove being shaped to cause the sleeve to move lengthwise of the supporting rod, then to turn on the rod, then to move lengthwise of the rod, and again turn on the rod to normal posi- 90 tion, clamping members for engaging the leaves, and means operated by said sleeve for causing the clamping members to release a leaf so that it may be turned, and again 95 clamp the same.

6. A leaf turner including in combination, a support for the leaves, and devices for turning said leaves in opposite directions, each device including a leaf separating and engaging member and means for operating 100 said member to cause the same to engage a leaf, to turn the leaf, to release the leaf, and return to normal position, out of engagement with the leaf.

7. A leaf turner including in combination, 105 a support for the leaves, devices for turning said leaves in opposite directions, each device including a leaf separating and engaging member, means for operating said member to cause the same to engage a leaf, to 110 turn the leaf, to release the leaf, and return to normal position out of engagement with the leaf, clamping members for the leaves and means operated by either turning de- 115 vice, for releasing the clamping members, whereby a leaf may be turned, and to subsequently allow said clamping members to engage the leaves.

8. A leaf turner including in combination, a support for the leaves and a device for en- 120 gaging and turning the leaves including a member having a curved portion for engaging the edge of the leaf, and a separating finger positioned by said curved portion, whereby said separating finger will pass be- 125 neath the leaf.

9. A leaf turner including in combination, a standard, a rack supported thereby, par-

allel rods mounted on said standard, sleeves supported on said rod, arms carried by said sleeves, a turning device on each arm, a coiled spring located within each sleeve for moving the sleeve outward on the rod, a flexible member connected with each sleeve for moving the sleeve against the action of the spring, a treadle to which said flexible member is connected, said rod having a cam groove formed therein for moving the sleeve to turn the leaves, and a stud carried by the sleeve and engaging said cam groove.

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

LODOVICO VALENZA.

Witnesses:

TONEY ROMANO,
ANTONIO MASCIA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."