A. A. LEHMANN.

MUSIC LEAF TURNER.

APPLICATION FILED MAY 18, 1910.

997,839.

Patented July 11, 1911.

2 SHEETS—SHEET 1.

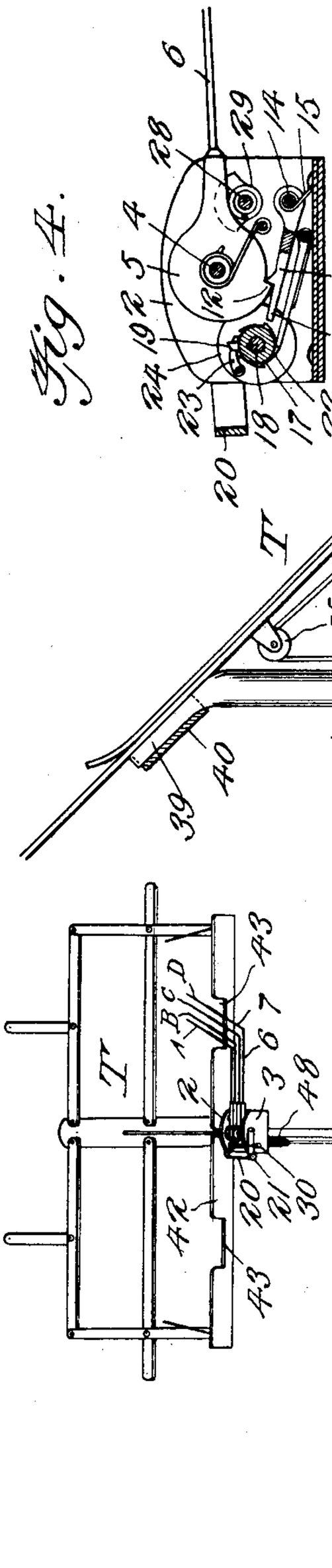

Fig. 4.

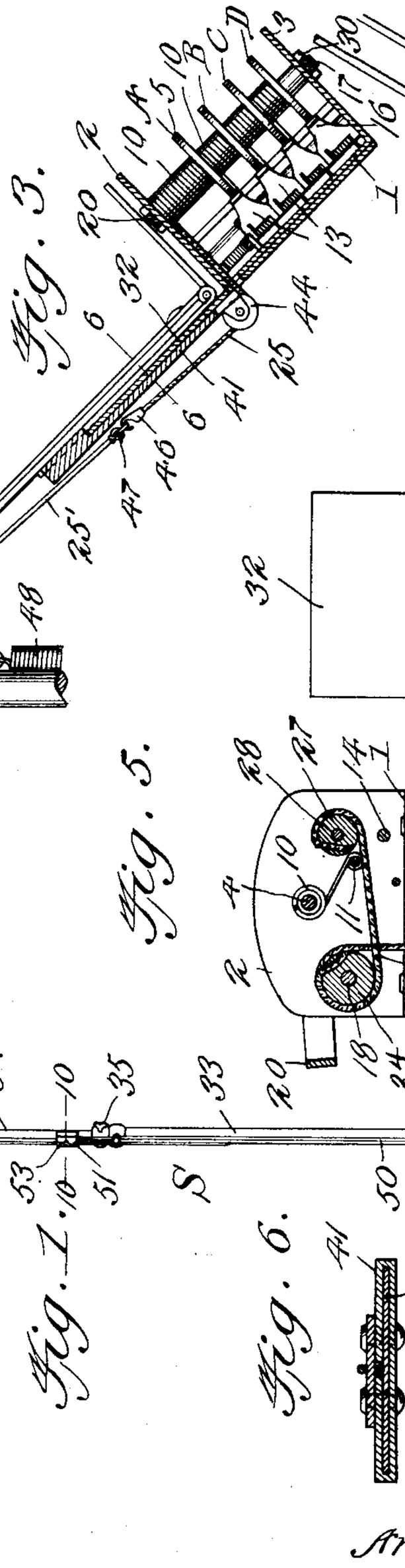

Fig. 3.

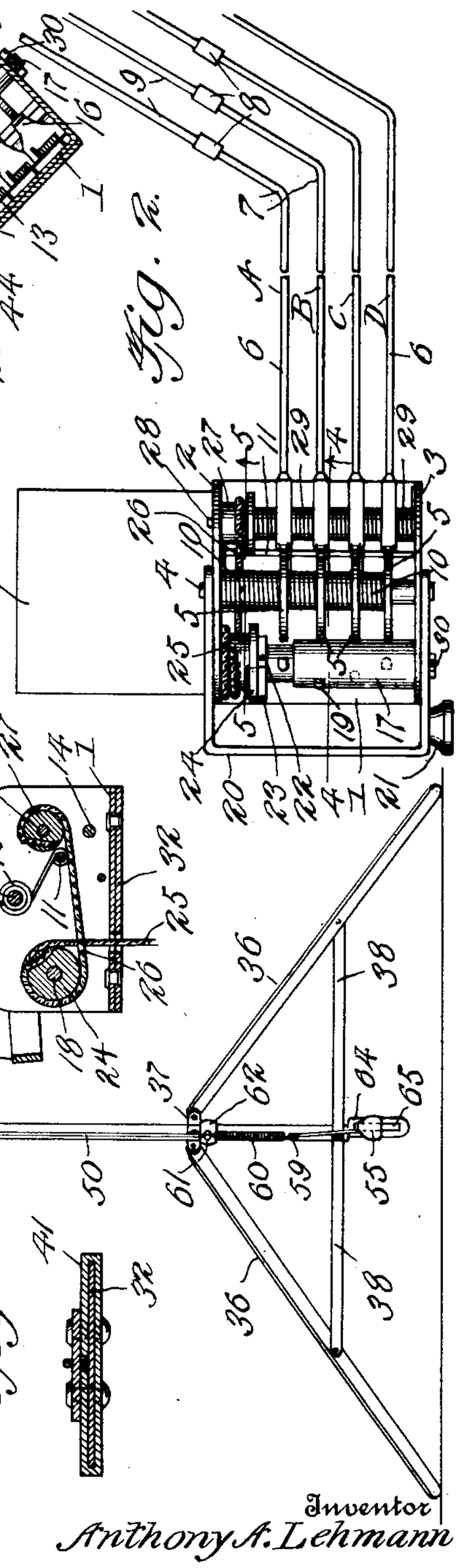

Fig. 2.

Fig. 5.

Fig. 1.

Fig. 7.

Fig. 6.

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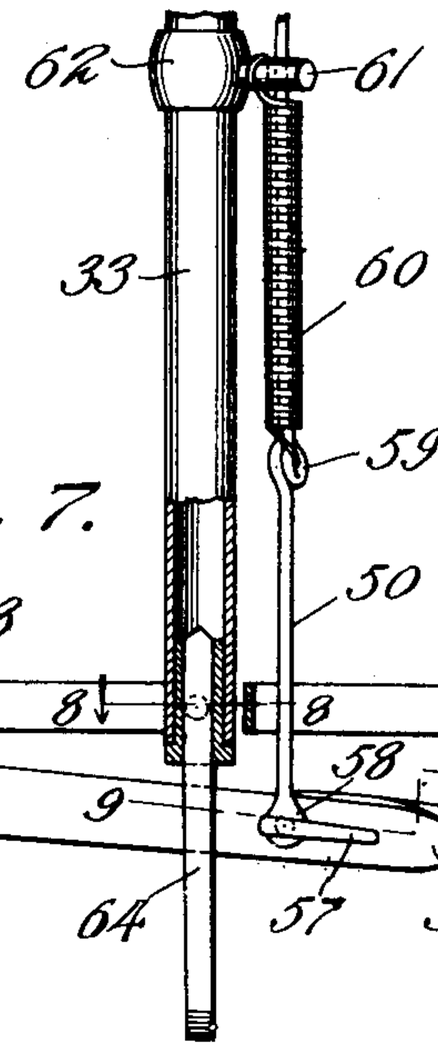

Fig. 7.

Fig. 11.

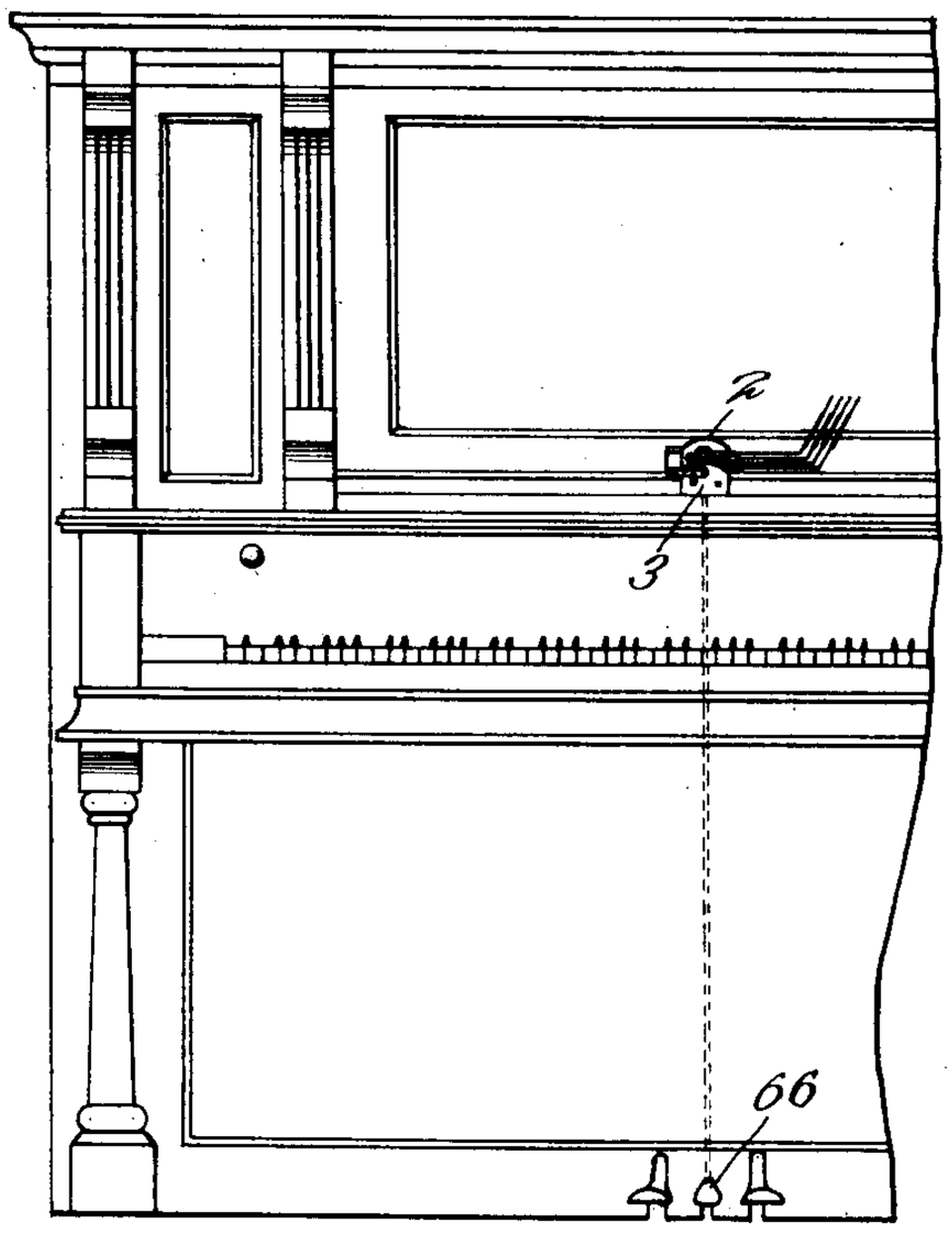

Fig. 8.

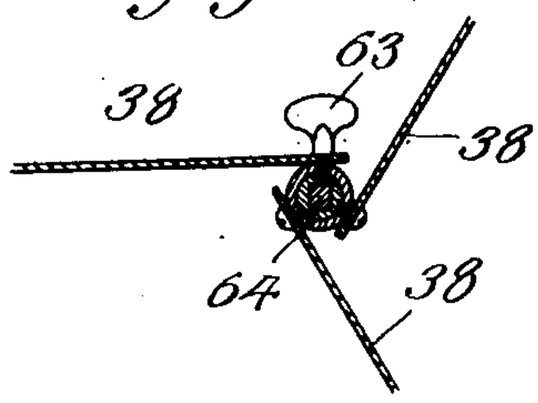

Fig. 9.

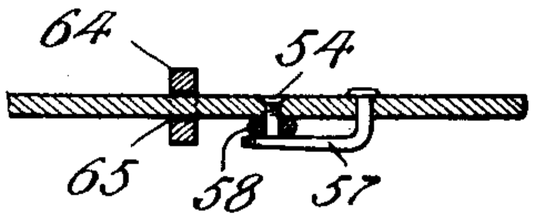

Fig. 10.

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UNITED STATES PATENT OFFICE.

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MUSIC-LEAF TURNER.

997,839. Specification of Letters Patent. Patented July 11, 1911.

Application filed May 18, 1910. Serial No. 562,006.

To all whom it may concern:

Be it known that I, ANTHONY A. LEHMANN, a citizen of the United States of America, residing at Baltimore city, in the State of Maryland, have invented new and useful Improvements in Music-Leaf Turners, of which the following is a specification.

This invention relates to music leaf turners, and it has for its object to produce a simple and efficient device of this character which may be conveniently used with ordinary music stands, with the music supports of pianos, organs and the like.

A further object of the invention is to provide a music leaf turner which may be readily connected with or disconnected from the music support, thus enabling the improved device to be readily applied to various forms of supporting devices.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations, and modications within the scope of the invention may be resorted to when desired.

In the drawings,—Figure 1 is a front elevation showing an ordinary music stand of a well known foldable variety to which the invention has been applied. Fig. 2 is a top plan view showing the leaf turner detached. Fig. 3 is a vertical sectional view showing the leaf turner attached to the music support of a folding stand. Fig. 4 is a transverse sectional view taken on the line 4—4 in Fig. 2. Fig. 5 is a transverse sectional view taken on the line 5—5 in Fig. 2. Fig. 6 is a transverse sectional detail view taken on the line 6—6 in Fig. 3. Fig. 7 is a vertical sectional detail view of the lower portion of the music stand to which the device has been applied. Fig. 8 is a sectional detail view taken on the line 8—8 in Fig. 7. Fig. 9 is a sectional detail view taken on the line 9—9 in Fig. 7. Fig. 10 is a sectional detail view enlarged, taken on the line 10—10 in Fig. 1. Fig. 11 is a front elevation showing the invention applied to the music support of a piano.

Corresponding parts in the several figures are denoted by like characters of reference.

The improved leaf turner may be described as embodying a casing consisting of a bottom member 1 having upturned flanges 2, 3 adjacent to its upper and lower edges. The flanges 2, 3 afford bearings for a shaft 4 upon which a plurality of leaf turners A, B, C and D are pivotally supported, it being understood that any desired number of leaf turners may be used. Each of said leaf turners includes a head or disk 5 pivoted directly upon the shaft 4 and having a radially extending arm 6, the outer extremity of which is upturned at an oblique angle, as shown at 7, it being understood that the portions 6 and 7 of the respective arms are equally spaced throughout, as will be best seen by reference to Fig. 2. The upturned portion 7 of each arm is equipped with a sleeve 8 for the purpose of retaining in position a spring clip or finger 9 between which and the arm portion 7 a music leaf may be inserted. The leaf turners are spring-actuated to turn to the left for the purpose of turning the leaves by means of springs 10 which are suitably coiled upon the shaft, one end of each spring being suitably connected with the leaf turner, and the other end of each spring being connected with a cross piece or rod 11 extending between and supported by the upturned flanges 2 and 3.

Each of the disks or heads 5 is provided with a tooth 12 adapted to be engaged by a trigger member 13 which is pivoted upon a shaft 14 in the casing and actuated in the direction of the head 5 by means of a suitable spring 15. The nose 16 of each trigger member extends in the direction of a cylindrical sleeve 17 supported for rotation with a shaft 18, as clearly seen in Fig. 4 of the drawings. The cylinder or sleeve 17 is provided with a number of projections or tappets 19 which are disposed spirally upon said sleeve so that when the latter is rotated the triggers will be successively engaged thereby, the trigger pertaining to the leaf turner A being actuated first, and the remaining triggers in regular succession thereafter, until each trigger has been actuated. The teeth 12 of the disks 5 are so located as to be engaged by the triggers when the leaf turners are turned to the right as far as they

will go, for the purpose of being engaged with the leaves that are to be turned. When the leaf turners are disposed to the extreme left of the device, subsequent to the turning of the leaves, there will be no engagement with the triggers. A yoke 20 having a handle 21 is pivoted upon the ends of the shaft 4 which project beyond the sides of the frame or casing of the device in the path of the arms 6 of the leaf turners, said yoke being serviceable to turn the entire series of leaf turners simultaneously from left to right, for the purpose of placing the teeth 12 in engagement with the triggers, thus holding the leaf turners in position to be engaged with the leaves to be turned.

The sleeve or cylinder 17 has been shown slightly reduced at one end for the convenient reception of a ratchet wheel 22 having a number of teeth at least equal to the number of tappets upon the cylinder, but preferably one tooth in excess of the number of tappets. Thus, the cylinder having been shown equipped with four tappets to actuate the triggers engaging the four leaf turners, a five-toothed ratchet has been shown, one tooth being in alinement with each tappet and one serving as a spacing tooth. The ratchet wheel 22 is engaged by the spring actuated pawl 23 pivoted upon a drum 24 which is journaled loosely upon the shaft 18, said drum having partly wound thereon a flexible operating member 25 by the partial unwinding of which the drum will be partly rotated to cause the pawl 23 to rotate the sleeve 17 to the extent of one notch. The drum 24 is retracted by means of a flexible element 26 partly wound upon said drum and partly upon a spring actuated drum 27 forming part of a shaft 28 upon which an actuating spring 29 is coiled, one end of said spring being connected with the shaft and the other end with the casing. One end of the sleeve 17 carries a pointer 30, whereby the position of the shaft relatively to the triggers may be ascertained, and whereby when desired said shaft may be rotated for the purpose of actuating the triggers in quick succession.

It will be readily seen that when the arms of the leaf turners are swung to the right, as shown in Fig. 1, the several spring holding sleeves 8 will be disposed in alinement, and the free ends of the retaining springs 9 will likewise be in alinement, as seen in Fig. 1, to enable the leaves of a music book to be inserted between the retaining springs and the arm portions 7. By partly rotating the drum 24 against the tension of the spring actuated drum 27 by means of the flexible element 25, the sleeve or cylinder will be partly rotated, and one tappet of said cylinder may engage one of the triggers, thus releasing one of the leaf turners and permitting it to swing under the tension of its actuating spring to the left, carrying with it one of the music leaves which will thus be quickly and efficiently turned.

Suitably connected with and extending from the frame or casing is a plate 32 which may be utilized as an attaching and supporting means for the device. It will be understood that the flexible operating member 25 will be guided through an aperture extending through the plates 1 and 32, as will be clearly seen in Fig. 5 of the drawings.

S designates a foldable music stand of ordinary well known construction including a standard which is composed of telescoping extension members 33 and 34, one of which may be retained in adjusted position within the other by means of a set screw 35. The legs 36 are pivotally connected with a sleeve 37 which is slidable upon the member 33, and link braces 38 serve to connect the lower end of the member 33 with the legs 36. The upper extremity of the member 34 is bent to form an obliquely disposed bracket 39, (see Fig. 3) adapted to engage a socket 40 upon the underside of the music support T, which latter is of the well known foldable variety. Secured upon the underside of the support T is a socket member 41 adapted for the reception of the plate 32 extending from the frame or casing of the leaf turner. The ledge 42 at the lower edge of the support T is provided with notches 43 to accommodate the arms of the leaf turners. Guide members, such as pulleys 44 and 45, are connected respectively with the socket member 41 and with the underside of the support T, said guide pulleys serving to guide the flexible member 25 and an extension 25′ of the same with which it is detachably connected by means of a hook and eye 46, 47. The member 25′ after passing over the guide pulley 45 is connected with one end of a helical spring 48, which in turn is connected with the upper end of a rod or link 49. The latter is adjustably connected with a second link rod or connecting rod 50 by means of a sleeve 51, (see Fig. 10) said sleeve being permanently connected with the rod 50 and apertured for the passage of the rod 49, which latter is held frictionally at any desired adjustment by the conical head 52 of an adjusting screw 53. The connecting rod composed of the links or members 49 and 50 may thus be very conveniently adjusted to correspond with the height to which the music stand is extended.

The lower end of the rod 50 is pivotally connected with the stud 54 upon a treadle 55, which latter is pivoted at 56 upon one of the braces 38. A locking device 57 is employed to retain the eye 58 at the lower end of the rod 50 in engagement with the stud 54, this simple construction being adopted in order to enable the parts to be readily disconnected and assembled. The rod 50 is formed with

an eye 59 which is connected by a retracting spring 60 with a stud 61 projecting from the sleeve 62 upon the member 33 of the standard, said stud 61 being apertured for the passage of the rod 59 which is thereby guided.

Suitably secured in the lower end of the tubular member 33 by means of a set screw 63, which may also constitute a pivot for one of the braces 38, is a guide member 64 having a vertical slot 65 for the passage of the treadle 55, the extent of the movement of which will be thereby limited.

It will be readily seen that when the parts are assembled, as illustrated in Fig. 1, downward pressure upon the treadle will depress the connecting member composed of the rods 49, 50, thus exerting tension upon the spring 48 and upon the flexible member 25′, 25, and thus partly rotating the drum 22 and actuating the sleeve 17 to cause one of the tappets 19 to engage a trigger 13, thereby releasing one of the leaf holders and permitting the latter to turn under the impact of its actuating spring. At the same time, the retracting spring 60 will be placed under tension. Should the movement of the treadle be longer or more extensive than is necessary to cause one of the triggers to be actuated, the spring 48 will be tensioned, thus avoiding injury to any of the parts of the device. Immediately upon releasing pressure upon the treadle, the parts will be restored to initial position.

As will be seen in Fig. 11, the improved leaf turner may be conveniently applied to the music support of a piano or other musical instrument, it being obvious that the flexible actuating member 25 may be suitably guided to and connected in any convenient manner with a treadle, here designated 66, by means of which the leaf turner may be actuated.

As will be seen from the foregoing description, I have provided a simple, inexpensive and thoroughly effective leaf turning device which may be readily applied to and used in connection with music supports of various descriptions.

Having thus described the invention, what is claimed as new, is:—

1. In a music leaf turner, a frame having side members, a plurality of shafts supported in said side members, leaf turning members including heads pivotally mounted upon one of the shafts, each head having a tooth, actuating springs for the heads coiled upon the shaft adjacent to said heads, spring actuated triggers engaging the teeth, trigger releasing means including a sleeve mounted upon one of the shafts and having radially extending tappets arranged in spiral series, a drum supported upon the sleeve carrying shaft and having a pawl, a ratchet secured upon the sleeve carrying shaft and engaged by the pawl and a drum secured upon a shaft spaced from the two before mentioned shafts, an actuating spring coiled upon the last mentioned shaft, a flexible element connecting the drum upon the last mentioned shaft with the drum upon the sleeve carrying shaft, and a flexible actuating element connected with, wound reversely upon and leading from the drum upon the sleeve carrying shaft which may thereby be partly rotated against the tension of the spring upon the spring actuated drum carrying shaft to partly rotate the tappet carrying sleeve, thereby actuating one of the triggers.

2. In a device of the character described, a casing containing a plurality of spring actuated leaf turning members, trigger means for retaining said members against the tension of their respective springs, and trigger releasing means, said casing having a laterally extending plate secured to the bottom thereof, in combination with a housing for said plate, guide means supported by said housing, and a flexible member guided over said guiding means and connected with the trigger releasing means to actuate the latter.

3. In a device of the character described, including a casing, spring actuated leaf turning members pivoted in said casing, trigger means to retain the leaf turning members against the tension of their respective springs, and trigger releasing means including a sleeve having trigger engaging tappets arranged in spiral order, a spring retracted drum and pawl and ratchet means connecting the drum with the tappet sleeve, in combination with a suitably guided flexible member connected with and wound upon the drum, a treadle, and connecting means betwen the treadle and the flexible member including a spring retracted connecting rod and a tension spring.

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

ANTHONY A. LEHMANN.

Witnesses:
JOHN W. HEWES,
GUSTAV A. WICH.