

APPLICATION FILED MAY 10, 1911.

Patented Oct. 15, 1912.

2 SHEETS--SHEET 1.

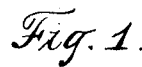


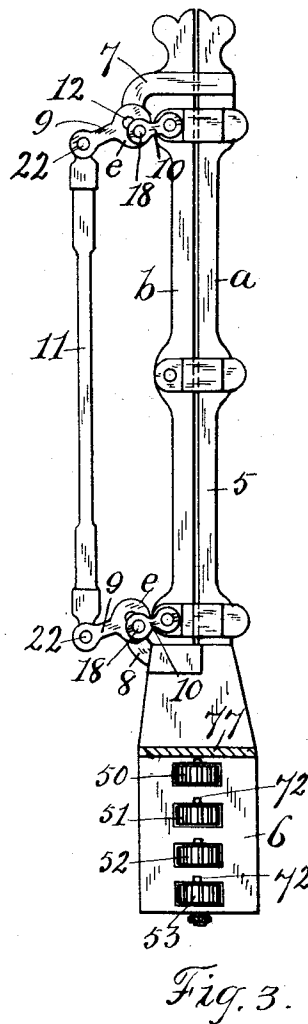
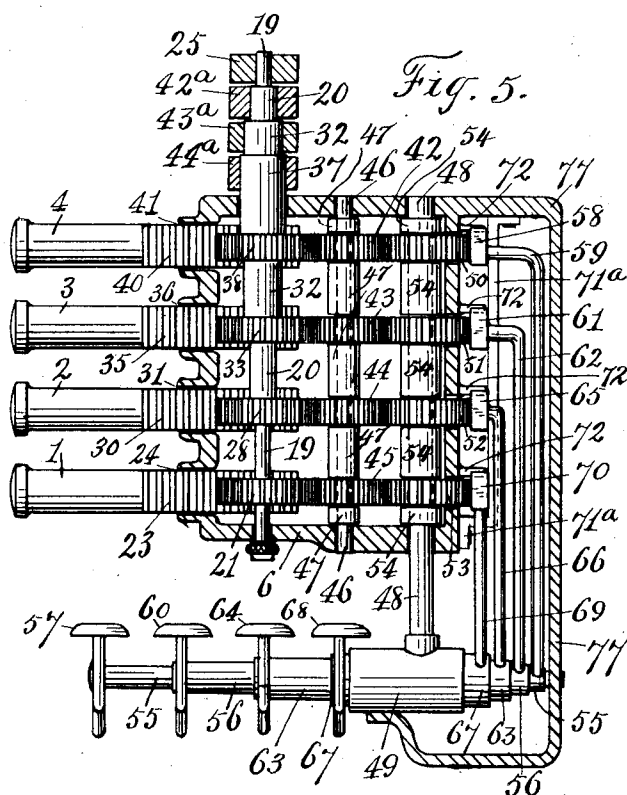
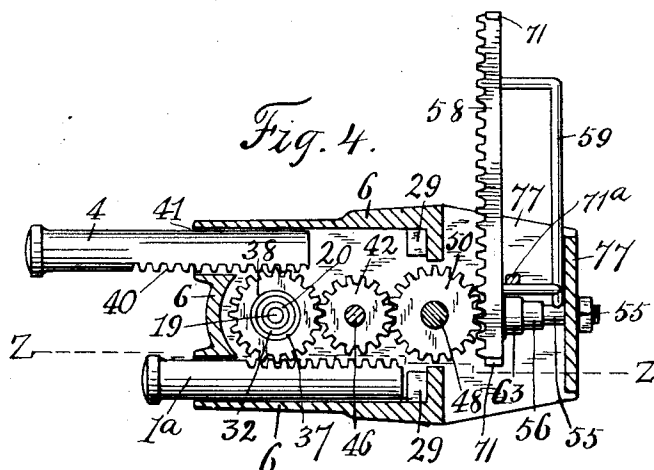
Fig. 2.

Inventor
Edith I. Cox
By P. J. Edmunds
attorney

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2 SHEETS—SHEET 2.



Witnesses
J. S. Edmunds
S. Hardy

Inventor
Edith I. Cox
By P. J. Edmunds
Attorney

UNITED STATES PATENT OFFICE.

EDITH I. COX, OF LONDON, ONTARIO, CANADA.

MUSIC-LEAF TURNER.

1,041,600.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDITH I. COX, a subject of the King of Great Britain, and a resident of the city of London, in the county of Middlesex, in the Province of Ontario, Canada, have invented a new and useful Music-Leaf Turner, of which the following is a specification.

This invention relates to a device for holding and turning the leaves of sheet music or the leaves of a music book. And it consists of the improved construction and novel combination of parts of the same as will be hereinafter first fully set forth and described and then pointed out in the claims.

Reference is had to the accompanying drawings forming part of this specification wherein:

Figure 1 is a front view of a music holder and leaf turner embodying my invention. Fig. 2 is an enlarged view of the leaf-holding means. Fig. 3 is a detail rear view of the music support and casing. Fig. 4 is an enlarged detail sectional view of the case on the line *x, x*, of Fig. 1. Fig. 5 is an enlarged detail sectional view on the line *z, z*, of Fig. 4. In this view the keys on one side, and one side of the case, are removed, and the latter and the music arms are shown in section.

In the accompanying drawings the numeral 5 indicates a support secured to or forming part of the case 6. This support 5 is formed in two sections *a, b*, of which the section, *a*, is stationary and secured to or forms part of the case 6, and the section, *b*, is adjustably secured to the section, *a*, of this support 5.

7 indicates an upper and 8 a lower bracket rigidly secured to or forming part of the stationary section, *a*, of the support 5. To each of these brackets 7 and 8, the enlarged end, *e*, of the link 9 is pivotally secured, and the other end of each of these links 9 is pivotally secured to the bar 11, as shown in Fig. 3.

10 are links one end of which is pivotally secured to the enlarged end, *e*, of the link 9 off the center, and at the other end said links 10 are pivotally secured to the adjustable section, *b*, of the support 5, so that by adjusting this bar 11 upward or downward the movable section, *b*, is adjusted to or from the stationary section, *a*, of the support 5, as shown by dotted lines in Fig. 1, and between these sections, *a*, and, *b*, of the

support 5, the back of the music, book or manuscript is inserted and the adjustable section, *b*, of the support 5 tightened thereon, and this adjustable section, *b*, of the support 5 is held in this position by tightening the thumb screw 12, which passes through the upper bracket 7 and into the enlarged end, *e*, of the link 9; or this thumb screw 12 may be done away with by adjusting the pivots 22 of this bar 11 below the pivots 18 at the inner end of the link 9, as shown in Fig. 3.

13 is a standard provided with indentations, *c*, to which indentations, *c*, the adjacent sides of the sections, *a*, and, *b*, of the support 5 are fitted.

14 is a mark securely held in a slot 15 of the standard 13 by the thumb screw 16. And this mark 14 is provided with the pivotal extensions 17 so that by adjusting the indentations, *c*, of this standard 13 between the sections, *a*, and, *b*, of the support 5, it may be adjusted to any elevation in the sections, *a*, and, *b*, of the support 5, as required, and when extended the mark 14 and pivotal extensions 17 extend over a piece of music or a music book, when the leaves of the music are not required to be turned; and when not required the standard 13 may be adjusted upward in or be altogether removed from the support 5.

At the lower end of the support 5 is a case 6 in which a shaft 19 oscillates. This shaft 19 oscillates in bearings in the case 6 and in the sleeve 20, and to this shaft 19 a gear wheel 21 is secured, and 1 is a key provided with the toothed rack 23 which is fitted to and meshes with the teeth of the gear wheel 21.

24 is a guide or an opening in the case 6 in which the key 1 moves inward or outward.

25 is a music arm rigidly secured near one end to the shaft 19, and this music arm 25 is formed partly hollow, as shown at, *f*, in Fig. 1; and, *d*, is an outer supplemental adjustable section which is adapted to telescope or move back and forth in said hollow portion, *f*, of said music arm 25, so that said supplemental adjustable section, *d*, may be projected into said hollow portion, *f*, of said music arm 25 to occupy less space during transportation or storage, or it may be adjusted outward to hold a large sheet of music.

26 are steel wires secured to the supple-

mental telescoping section, *d*, of the music arm 25, as shown, which wires are placed between the music leaves for the purpose of separating and holding apart the leaves of the music while stationary or when moving from one side to the other.

27 is a shelf secured to and near the lower end of the support 5, on which the music or music book is placed.

20 is a sleeve which extends around and oscillates on the shaft 19 and to the end of this sleeve 20 the gear wheel 28 is secured, which gear wheel 28 is operated by the key 2 provided with the gear teeth 30, and this key 2 extends through the guide or opening 31 in the case 6.

32 indicates a sleeve which extends around and oscillates on the sleeve 20, and to the end of this sleeve 32 the gear wheel 33 is secured, which gear wheel 33 is operated by the key 3 provided with the gear teeth 35, and this key 3 extends through the guide or opening 36 in the case 6; and again the sleeve 37 extends around and oscillates on the sleeve 32 and to the end of this sleeve 37 a gear wheel 38 is secured which gear wheel 38 is operated by a key 4 provided with the gear teeth 40, and this key 4 extends through the guide or opening 41 in the case 6; and so on, any number of keys and attachments may be used according to the number of leaves of music required to be turned. And the partly hollow music arm 42^a is secured to one end of the sleeve 20, the partly hollow music arm 43^a is secured to one end of the sleeve 32, and the partly hollow music arm 44^a is secured to one end of the sleeve 37; and each of these music arms is provided with a supplemental section, *d*, which is adapted to move back and forth or telescope in these music arms, and these sections, *d*, are each provided with steel wires as before described. And there are two of these sets of keys, one set marked 1, 2, 3 and 4 on one side, and another set marked 4^a, 3^a, 2^a and 1^a, on the other side of the gear wheels 21, 28, 33 and 38 before referred to, as shown in Fig. 1, so that as the key 1 is adjusted inward the other or opposite key, 4^a, is automatically pushed outward; when the keys 1, 2, 3 and 4 on one side are all pushed inwards, the keys 4^a, 3^a, 2^a and 1^a on the other side are all pushed out ready to be operated in the case of a repeat. Again when it is desired to turn over more than one leaf or sheet of music at one time, by touching the key bearing the desired number on either side, the music may be turned to either side as desired. After the repeat and when desiring to continue the music, the keys 1, 2, 3 and 4 of one section or part of them are out ready for the continuance of the music. And by touching the key of the desired number it will turn the corresponding number of leaves, and this device will operate

in either direction as described. This demonstrates the fact that the pressing only on one key or any desired number will turn the desired number of leaves in either direction as required.

29 indicates a stop in the case 6 against which stop the keys abut to limit the movement of said keys, so that the music arms will only operate in a semicircle, that is from one side to the other.

42, 43, 44 and 45 indicate gear wheels loosely mounted on the stationary shaft 46 and the latter is rigidly secured to the case 6, and between these gear wheels 42, 43, 44 and 45 on the shaft 46 are the collars 47 to hold said gear wheels 42, 43, 44, 45 in line with or opposite to, and in engagement with the gear wheels 21, 28, 33 and 38 as shown in Fig. 5. Again 48 indicates a stationary shaft rigidly secured to the case 6, and beyond the latter this shaft 48 extends and is rigidly secured to the supplemental case 49.

50, 51, 52 and 53 indicate gear wheels loosely secured on the shaft 48, and between these gear wheels 50, 51, 52 and 53 on the shaft 48 are the collars 54 which hold the gear wheels 50, 51, 52 and 53 in line with or opposite to and in engagement with the gear wheels 42, 43, 44 and 45 on the shaft 46.

55 is a shaft which is mounted and oscillates or turns in the sleeve 56; and 57 is a lever on the outer end of this shaft 55.

58 is a toothed segment the teeth of which engage with the teeth of the gear wheel 50, and the teeth of this toothed segment 58 are held in place and in engagement with the teeth of the gear wheel 50 by the rods 59, and these rods 59 rigidly connect the toothed segment 58 with the shaft 55.

56 is a sleeve oscillating or turning on the shaft 55, and on the outer end of this sleeve 56 a lever 60 is secured.

61 is another toothed segment the teeth of which engage with the teeth of the gear wheel 51, and 62 are rods which rigidly connect the sleeve 56 with the toothed segment 61, and these rods 62 also hold the teeth of said toothed segment 61 in contact with the teeth of the gear wheel 51.

63 is a sleeve which oscillates or turns on the sleeve 56 and to the outer end of this sleeve 63 a lever 64 is rigidly secured.

65 is another toothed segment the teeth of which engage with the teeth of the gear wheel 52, and 66 are rods which are rigidly secured at one end to the sleeve 63 and at the other end to the toothed segment 65, and these rods 66 hold the teeth of said toothed segment 65 in contact with the teeth of the cut gear wheel 52.

67 is a sleeve which oscillates or turns on the sleeve 63 and in the supplemental case 49 and to the outer end of this sleeve 67 a lever 68 is rigidly secured, and 69 are rods which rigidly connect the sleeve 67 with the

toothed segment 70, and holds the teeth of the toothed segment 70 in engagement with the teeth of the gear wheel 53.

71 are projections formed on both ends of the toothed segments 58, 61, 65 and 70, as shown in Fig. 1, and 72 are stops formed on the case 6 which are adapted to come in the path of the projections 71, so that said segments will only move from one end to the other which is in proportion to the segmental travel of the music arms or travel of these arms from one side to the other.

71^a is a brace which is rigidly secured at one end to the case 6 and at the other end to the base 77 between the rods 59, 62, 66 and 69, so that as the toothed segments are reciprocated from one side to the other the rods 59, 62, 66 and 69 thereof strike against the brace 71^a, and further assist in preventing the excessive movement of said toothed segments; and at the same time this brace 71^a abuts against the plain side opposite to the teeth of said toothed segments to hold the teeth of the latter up to the gear wheels, so that the teeth thereof will always be in contact with the teeth of the adjacent gear wheels.

77 is a projecting base connected at one end to the case 6 and at the other end to the supplemental case 49 for the purpose of protecting the rods, toothed segments and sleeves below the case 6. The case 6 and support 5 may be secured together as shown, or the support 5 may be offset or set behind and back from the base 6 or separated therefrom as desired.

The operation is as follows: the music, music book or manuscript is placed on the shelf 27, and if the leaves of the music are required to be turned, they are placed between the piano wires 26, and these wires 26 are formed double as shown in Fig. 3, so that the leaf of music is not only easily placed between them and securely held while playing, but being held between these wires 26 the sheet of music is safely and securely held from tearing, while automatically and instantaneously turning over the music from one side to the other. When wishing to safely and securely hold the music, the back of the music is placed between the sections, *a*, *b*, of the support 5 and the adjustable section, *b*, closed on the back of the music. This clamps the back of the music between the sections, *a*, *b*, of the support 5 and these sections, *a*, *b*, are held in this position by tightening the thumb screw 12 in the bracket 7 and the link 9; or the thumb screw 12 may be dispensed with for this purpose, when the pivots 22 of the bar 11 are adjusted below the pivots 18 of the links 9 and 10.

When adjusted as described the back of the music is safely and securely held between the sections, *a*, *b*, of the support 5

when the music is stationary or when moving or turning it from one side to the other.

A device so constructed is adapted to safely and securely hold leaves of any number and varying in size of sheet music, manuscript or books, and when not required or when not in use, the adjustable sections, *d*, may be adjusted, telescoped or moved into the music arms so as to occupy very little space during transportation or storage, or these arms, *d*, may be adjusted or extended outward to hold large sheets of music when it is so required. Again, the leaves of music so held are easily and quickly turned, or moved from one side to the other by simply touching one of the keys on one side, thus, by pressing the key 1 inward one of the sheets of the music is turned over in a semi-circle from one side to the other. The result of pressing the key 1 inward is to cause the teeth 23 thereof to engage with the teeth of the gear wheel 21, which is rigidly secured to the shaft 19, and the action of the shaft 19 oscillating or turning is to turn the music arm 25 and with it the leaf of music held thereon by the piano wires 26, and when pressing the said key 1 inward, the key 4^a through the teeth thereof engages with and is adjusted by the gear wheel 21 outward, so that the key 4^a is moved or adjusted outward at the same time as the key 1 moves inward. The result of pressing the key 2 inward is to cause the teeth 30 thereof to engage with the teeth of the gear wheel 28, which is secured rigidly to the sleeve 20, and the action of the sleeve 20 oscillating or turning on the shaft 19 is to oscillate or turn the music arm 42^a and with it the leaf of music held thereon by the piano wires 26, and when pressing said key 2 inward, the key 3^a through the teeth thereof engages with and is adjusted by the gear wheel 28 outward, so that the key 3^a is moved or adjusted outward at the same time as the key 2 moves inward.

The result of pressing the key 3 inward is to cause the teeth 35 thereof to engage with the teeth of the gear wheel 33, which is rigidly secured to sleeve 32, and the action of the sleeve 32 oscillating or turning on the sleeve 20 is to oscillate or turn the music arm 43^a, and with it the leaf of music held thereon by the piano wires 26, and when pressing said key 3 inward, the key 2^a through the teeth thereof engages with and is adjusted by the gear wheel 33 outward, so that the key 2^a is moved or adjusted outward at the same time as the key 3 moves inward. Again the result of pressing the key 4 inward is to cause the teeth 40 thereof to engage with the teeth of the gear wheel 38, which is rigidly secured to the sleeve 37, and the action of the sleeve 37 oscillating or turning on the sleeve 32 is to oscillate or turn the music arm 44^a and

with it the leaf of music held thereon by the piano wires 26, and when pressing the said key 4 inward the key 1^a through the teeth thereof engages with and is adjusted by the gear wheel 38 outward, so that the key 1^a is moved or adjusted outward at the same time as the key 4 moves inward.

The sleeve 67 oscillates or turns in the supplemental case 49, and the shaft 55 oscillates or turns in the sleeve 56 and the base 77, and the shaft 55, sleeves 56, 63 and 67 correspond with the sleeves 37, 32 and 20 oscillating or turning on and with the shaft 19, and these sleeves 67, 63 and 56 and shaft 55 are connected with the toothed segments 70, 65, 61 and 58 by the rods 69, 66, 62 and 59, and the teeth of said toothed segments are adapted to mesh with the teeth of the gear wheels 38, 33, 28 and 21 as before described, and these levers 57, 60, 64 and 68 are connected to connecting bars, not shown, which extend therefrom to the ground so that this device may be operated by foot power. The result is that the teeth of the toothed segments 70, 65, 61 and 58 may engage with the third series of gear wheels 50, 51, 52 and 53 or with the teeth of the gear wheels 38, 33, 28 and 21 as found most suitable or convenient.

30 The keys 1, 2, 3 and 4, or any number thereof and the opposite keys 4^a, 3^a, 2^a and 1^a, or any number thereof, are operated by the hand, or by the foot.

This arrangement provides a device in which the hand part, or foot part, may be used separately, if desired, for the adjusting of this automatic and instantaneous music-leaf turner and binder to any musical instrument, or for the holding and adjusting of manuscripts for public speakers.

This device renders it possible for musicians to render music correctly as written without memorizing, cutting out or skipping parts of the music at the point where the leaves have to be turned, or otherwise secure an assistant to turn the music.

Thus by the adoption of this device the music is rendered without losing a beat, or interfering with its tempo. Again it is impossible for the musician to turn the leaves of the music in the ordinary way without removing his fingers from the instrument, but by the use of this device and the aid of a foot operating attachment he has the full control of the instrument as well as the turning of the leaves. And this device provides for the holding of the back of the music and prevents the frequent tearing and throwing of the leaves of music, especially the loose leaves, on the floor during the act of turning.

A device constructed as described occupies very little space, and can be operated by the hand or foot as found most suitable or convenient. The number of leaves required

to be turned back in the case of a repeat are instantly turned back by touching one key only, and provides a device that is simple, strong and durable, one inexpensive to make, and one efficient in practical use.

I have found by experiment that the construction herein shown and described gives the best results, and while I prefer the same, I do not wish to limit myself to the details thereof, as they may be modified in various ways without departing from the spirit of my invention.

Having thus described my invention, I claim:

1. A music leaf turner comprising a shaft adapted to oscillate, a plurality of separate and independent sleeves adapted to oscillate and concentrically arranged upon said shaft, a music turning arm rigidly secured to said shaft, a music turning arm rigidly secured to each of said sleeves, music-sheet holding wires upon each of said arms, and two sets of operating means adapted to operate said shaft and sleeves and arranged for movement perpendicularly to each other.

2. A music leaf turner comprising a casing, toothed racks slidably-mounted transversely of said casing, a shaft journaled in said casing and operatively connected with one of said racks, a plurality of telescoping sleeves mounted upon said shaft and each of said sleeves being operatively-connected with one of the others of said racks, a music turning arm rigidly secured to said shaft, a music turning arm rigidly secured to each of said sleeves, and means for oscillating said shaft and sleeves in one direction and further means adapted for movement in a direction perpendicularly to the line of movement thereof adapted to shift the said racks.

3. A music leaf turner comprising a casing, toothed racks slidably-mounted transversely of said casing, a shaft journaled in said casing and operatively connected with one of said racks, a plurality of telescoping sleeves mounted upon said shaft and each of said sleeves being operatively-connected with one of the others of said racks, a music turning arm rigidly secured to said shaft, a music turning arm rigidly secured to each of said sleeves, another shaft, a plurality of telescoping sleeves upon said latter shaft and said shaft and sleeves rigidly connected to said racks, means for oscillating said first-named shaft and sleeves in one direction, and further means adapted for movement in a direction perpendicularly thereto for oscillating said shaft and sleeves in a reverse direction through the second named shaft and sleeves and said racks.

4. A device of the class described comprising music leaf contacting arms, horizontal movably-reciprocating means adapt-

ed for moving said arms in one direction,
and vertically-movable rocking means
adapted for moving said arms in the oppo-
site direction.

5 5. A device of the class described com-
prising a casing, arms adapted for engage-
ment with sheet music, reciprocating rods
journaled in said casing and horizontally-
movable adapted for turning said arms,
10 and vertically-movable oscillating means

carried by said casing adapted for moving
said arms in the opposite direction.

In testimony whereof, I have signed in
the presence of the two undersigned wit-
nesses.

EDITH I. COX.

Witnesses:

P. J. EDMUNDS,
S. HARDY.

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