J. JOHNSON.

MUSIC LEAF TURNER.

APPLICATION FILED MAR. 15, 1911.

1,067,343.

Patented July 15, 1913.

4 SHEETS—SHEET 1.

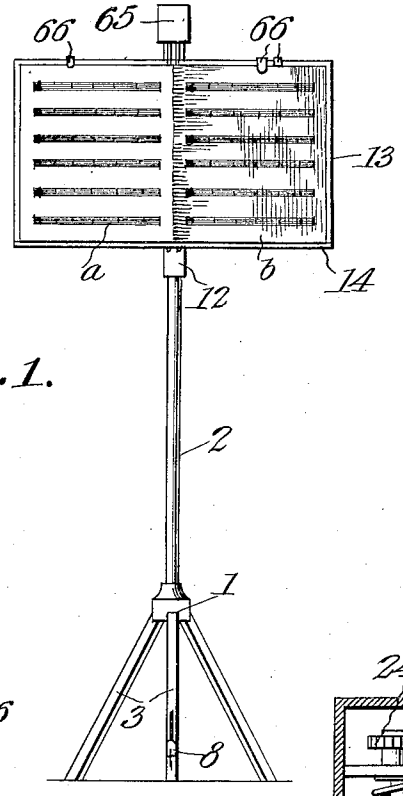


Fig. 1.

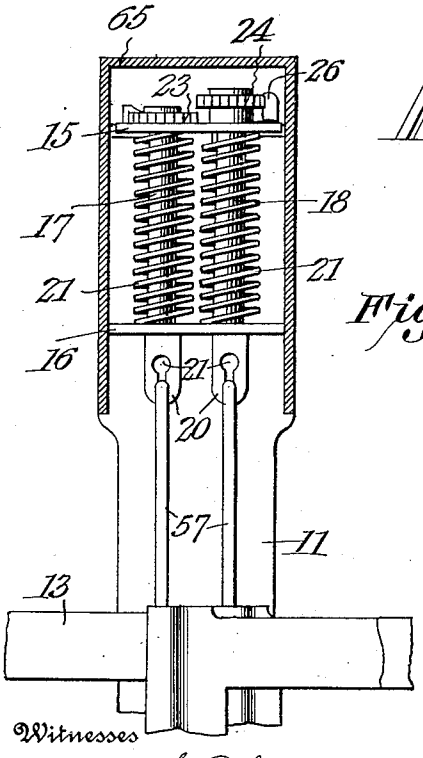


Fig. 2.

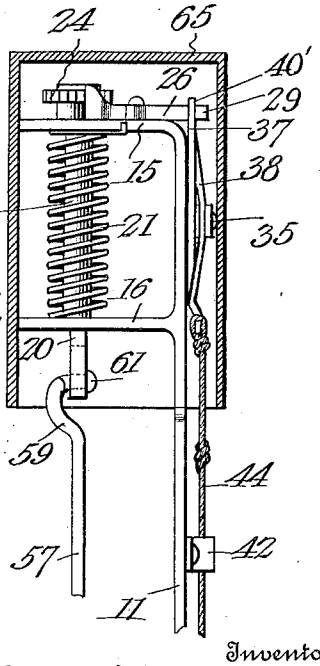


Fig. 3.

Witnesses

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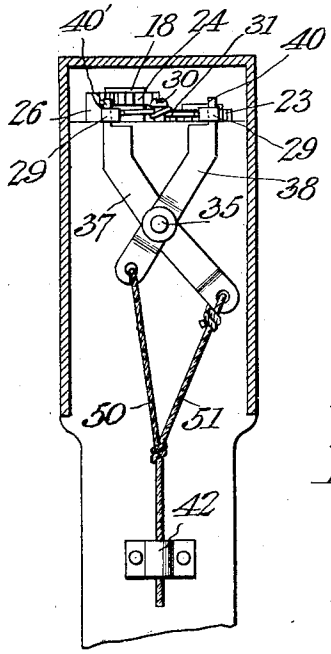


Fig. 4.

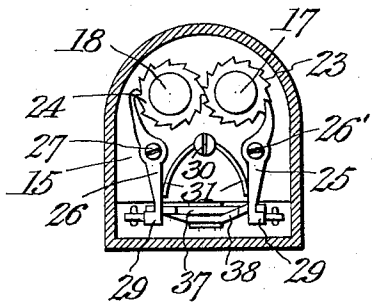


Fig. 5.

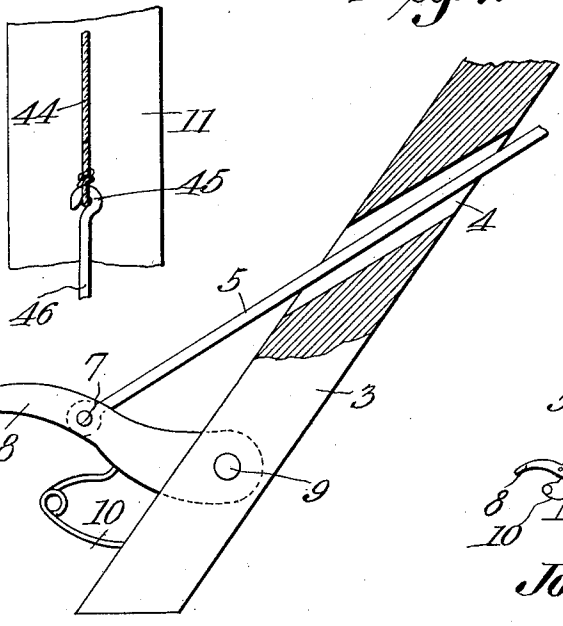


Fig. 7.

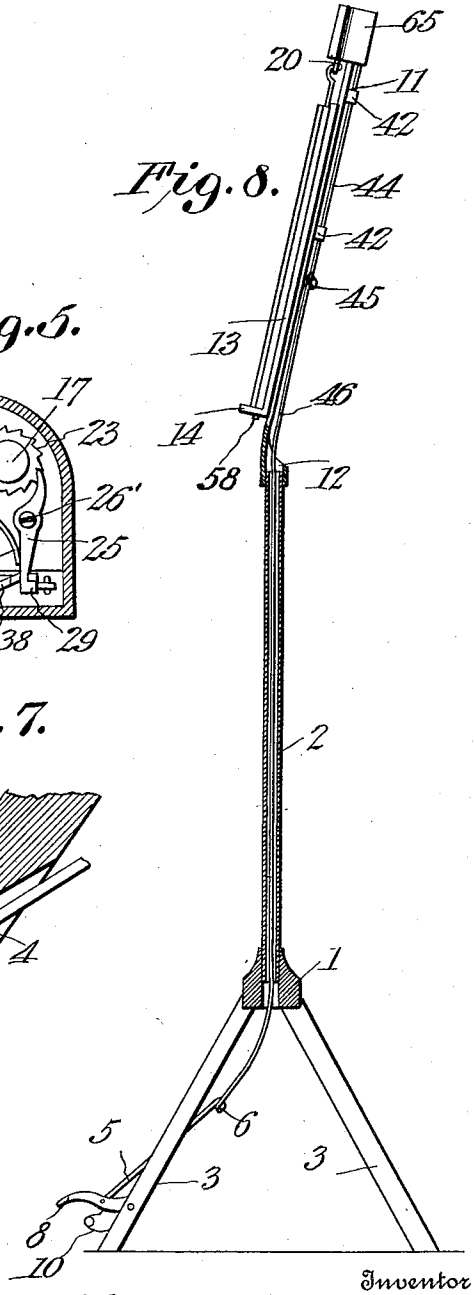


Fig. 8.

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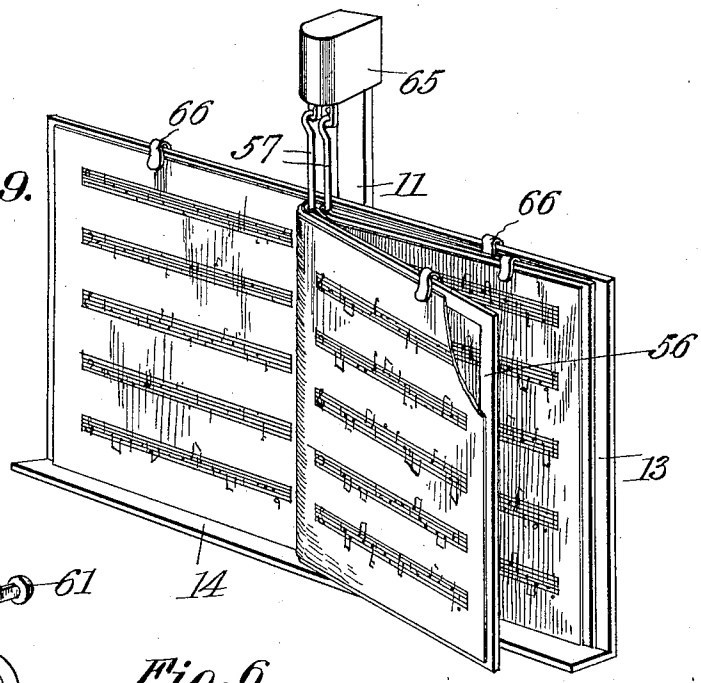
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4 SHEETS—SHEET 3.

Fig. 9.



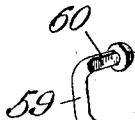
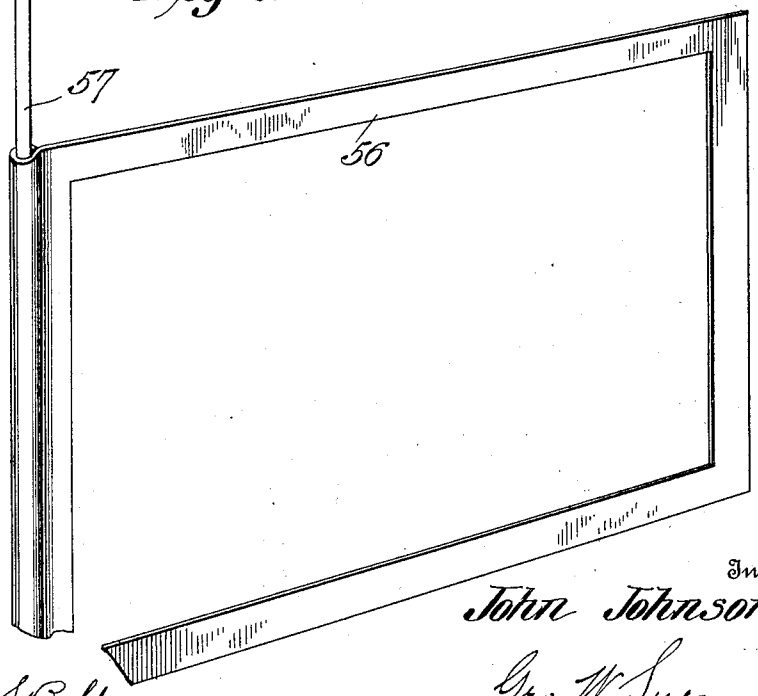


Fig. 6.



Witnesses

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4 SHEETS—SHEET 4.

Fig. 10.

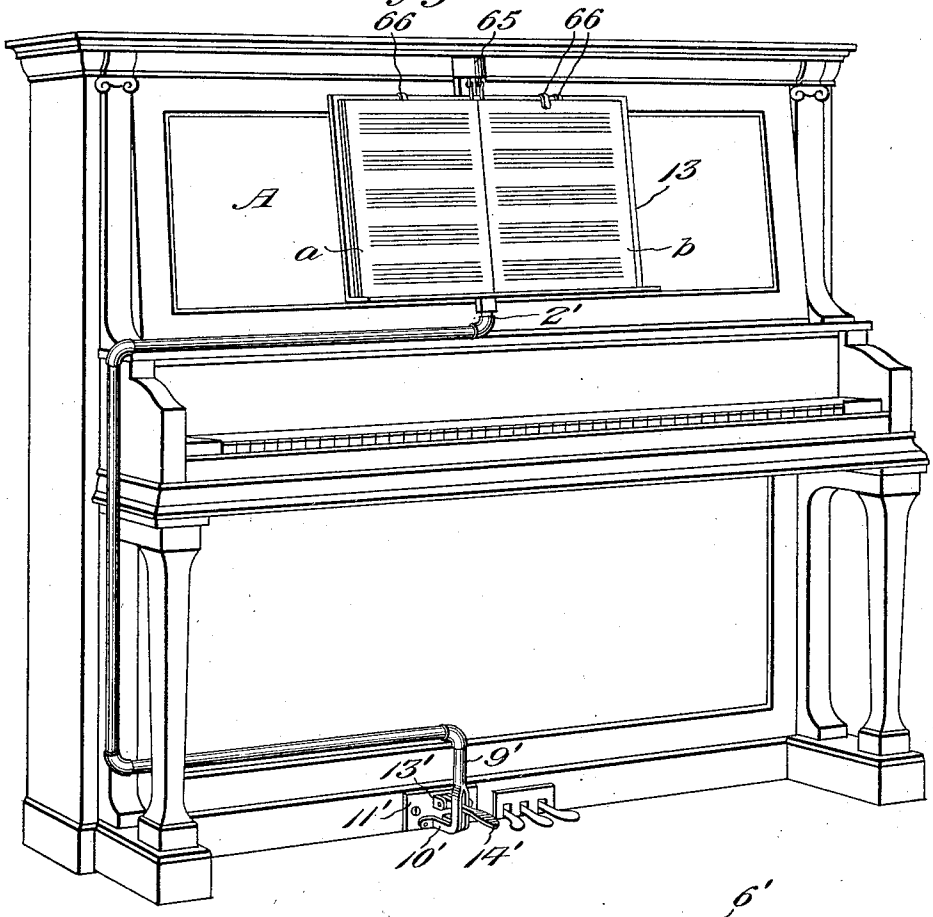


Fig. 12.

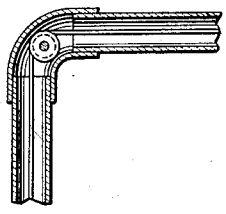
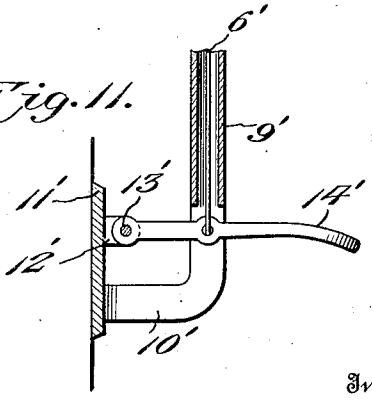


Fig. 11.



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UNITED STATES PATENT OFFICE.

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MUSIC-LEAF TURNER.

1,067,343. Specification of Letters Patent. Patented July 15, 1913.

Application filed March 15, 1911. Serial No. 614,677.

To all whom it may concern:

Be it known that I, JOHN JOHNSON, a citizen of the United States, and a resident of Antler, in the county of Bottineau and State of North Dakota, have invented certain new and useful Improvements in Music-Leaf Turners, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain new and useful improvements in music leaf turners.

The primary object of my invention is to provide a light, neat, compact, folding music leaf turner by means of which the leaves of a book or musical composition may be successively turned in simply depressing a releasing lever.

Another object is to so construct a music leaf turner as to permit ready accessibility to the leaf holding frames and to permit of the ready attachment of the frames to the turning mechanism.

With these and other objects in view the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and finally pointed out in the appended claims, it being further understood that changes in the specific structure shown and described may be made within the scope of the claims, without departing from the spirit of the invention.

In the accompanying drawings forming a part of this specification, and in which like numerals of reference indicate similar parts in the several views: Figure 1, shows a front elevational view of a music leaf turner embodying my invention, the operating mechanism being covered by a cap. Fig. 2, shows an enlarged front view of the operating pintles the cap being shown in section. Fig. 3, shows an enlarged side view of the operating mechanism with the cap in section. Fig. 4, shows an enlarged rear view of the levers. Fig. 5, is an enlarged top view of the operating mechanism. Fig. 6, is an enlarged detached detail of one of the leaf turning frames. Fig. 7, is an enlarged broken detail of the foot lever. Fig. 8, is a central sectional view through the stand, showing the position of the operating bar. Fig. 9, shows the rack detached from the stand. Fig. 10, shows my music leaf turner as attached to an upright piano. Fig. 11, is an enlarged detached detail partly in section of the foot lever, and Fig. 12, is an enlarged sectional detail showing one of the cord guiding sheaves.

In carrying out the object of my invention I employ a socket 1, having a middle lengthwise running bore into which is inserted the tube 2, forming the stand carrying the music rack. This socket further has three openings arranged to receive the reduced ends of the supporting legs 3. One of the legs has an obliquely running opening 4, as shown in Fig. 7, through which passes the lever rod 5, which by means of the pin 7, is connected to the releasing lever 8, pivotally held to the leg 3, by means of the pin 9. Through the medium of the spring 10, the releasing lever 8, is normally forced in an upward direction. The upper end of the lever rod 5, ends in the hook 6, as disclosed in Fig. 8. The tube 2, at its upper end is arranged to removably receive the lower socket 12, of the stay bar 11, to which the music rack 13, is secured, this rack comprising a rectangular frame having the lower outstanding supporting ledge 14. This ledge is arranged to hold the sheet music or book, the leaves of which are to be successively turned and has two spaced openings.

Secured to the stay bar 11, as shown in Fig. 3, are two supporting ears marked 15 and 16, one held above the other and each ear has two apertures in alinement with the two openings within the supporting ledge 14. Revolubly held within the apertures of the ears 15 and 16, are two pintles marked 17 and 18, each pintle ending in a flat head 20, each head 20, having a key hole slot 21, as clearly disclosed in Fig. 2. Surrounding each pintle 17 and 18, and positioned between the ears 15 and 16, are the actuating coil springs 21, to normally hold the pintles under stress, one end of each spring 21, being secured to a pintle and the remaining end to one of the supporting ears. At its upper end each pintle carries a ratchet wheel, the ratchet wheel 23, being secured to the pintle 17, while the pintle 18, carries the ratchet wheel 24.

Secured to the upper ear 15, are two pallets, one being marked 25, and the other 26, held respectively upon the screws 26′ and 27. Each pallet ends in a hook 29. Positioned between the screws 26 and 27, is the screw 30, which gives support to the bow spring 31, the ends of which contact with the pallets 25 and 26, to insure said pallets being held normally in contact with the ratchets 23 and 24, as clearly disclosed in Fig. 5. The springs 21, normally tend to wind the pintles in a direction toward the left end of the music rack and the pallets 25 and 26, hold the spring actuated pintles 17 and 18, against casual movement.

Secured to the rear of the stay bar 11, is a pin 35, which gives pivotal support to the cross-wise secured levers 37 and 38, the lever 38, ending in the pin 40, while the lever 37, has a similar pin 40′, these pins engaging the hooked ends 29, of the pallets as will be understood in referring to Figs. 4 and 5. The pin 35, marks the fulcrum upon which the levers 37 and 38, operate and in referring to Fig. 4, it will be noticed that the lower end of the lever 37, is considerably longer than the lower end of the lever 38, so that one lever has a short operating end and the other a somewhat longer operating end, each of these operating ends having a suitable opening. Secured to the rear of the stay bar 11, at suitable points are the guiding ears 42, through which a chain or strand 44 passes, the lower end of which is secured to the upper hooked end 45, of a connecting wire 46, the lower end of said wire engaging the hooks 6, of the member 5, secured to the releasing lever 8, as disclosed in Fig. 8. This member 44, has its upper end forked to provide the two ends marked 50 and 51, the end 51, being somewhat shorter than the member 50, the first mentioned end being connected to the trip lever 37. The pintles 17 and 18, are held in parallel spaced relation with their key slotted heads 20, projecting below the lower supporting ear 16, as clearly disclosed in Fig. 2.

From the foregoing description it will be noted that the springs 21, normally tend to unwind the pintles, while the pallets 25 and 26, hold these pintles against this unwinding movement. As the spring 10, normally forces the foot or releasing lever 8, upward there is no tendency of the connecting members 44 and 46, to carry the lower ends of the trip levers toward one another, so that the tension of the spring 31, is exerted in holding the pallets to their ratchets.

In connection with my present music leaf turner which has been shown and described as a means to hold a six page composition, I employ two leaf holding frames marked 56, one of them being shown in detail in Fig. 6. These leaf holding members may be made of sheet metal as shown, or they may be in the form of a wire frame each having an operating shaft 57, the lower end 58, of which extends below the supporting ledge 14, while the upper end of each shaft ends in a key head 59, including the flattened portion 60, and the terminal enlargement or button 61. The heads 59, are of a size to snugly fit into the key slots 20, as disclosed in Figs. 2 and 3.

As shown in Fig. 2, in order to economize space and bring the two operating shafts or pintles 57, as close together as possible, the ratchet 24, overlaps the ratchet 23. The operating mechanism including the pintles and pallets is closed by means of a cap 65, shown in Fig. 9. The rack is properly in three sections, the intermediate section including the standard 2, and socket 1, the rack 13, carrying the stay bar and operating mechanism, and the legs 3, which are arranged to be detachably secured to the socket 1.

In Fig. 9, the rack is shown as giving support to a six page musical composition. The leaf carrying frames are secured to the composition by means of the clamps 66. The leaf carrying frames are inserted between the pages by detaching the heads 59, from the pintles and placing them between the proper leaves when the lower ends 58, of the shafts 57, are placed within the ledge openings when the upper hook ends 59, can be carried into the proper key slot. The frames are then swung to the right which can be easily done as the ratchets in this movement work under the pallets. In this position one leaf carrying frame 56, is held against the other as shown in Fig. 9. The performer then has before him the first and second pages of the composition. When it is desired to play the music upon the third and fourth pages, the operator slightly depresses the lever 8, which results in drawing the connecting member 44, downward. This downward movement of the connection 44, results in both levers 37 and 38, being rocked. However, as the end of the lever 38, below the fulcrum pin 35, is shorter than the lower end of the lever 37, the upper end of the lever 38, travels farther with the same pull of the members 44, than does the lever 37, resulting in the pallet 25, being tripped first. As soon as the first leaf carrying frame is swung the movement of the member 44, must cease. Otherwise the movement of the member 44, will result in springing the second pallet. As soon as the pallet 25, is actuated the spring 21, secured to the pintle 17, promptly swings the leaf carrying frame in a half circle so that the frame strikes the music rack exposing page 3, of the music upon the opposite side of the first actuated frame, while page four of the composition will be exposed upon the outer side of the second leaf carrying frame, as

will be understood in referring to Fig. 9. Now, as the members 50 and 51, are both connected to the same operating member 44, it is important that the downward movement of the operating lever be nicely regulated; otherwise both leaf carrying frames will be released. Where carefully operated but one frame at a time will be released. When it is desired to expose pages 5 and 6, of the composition, the operator again depresses the lever, this time a distance greater however, than he did at first, so that the second pintle is released. In this second and greatest depression of the releasing lever 8, both pallets are released from their connected ratchets, but as the first actuated leaf carrying frame is in contact with the music rack, no advance of this first actuated frame is possible. Should it be desired to repeat the piece, the operator would simply swing both the leaf carrying frames to the right their full limit of movement, in doing which the pallets will automatically operate to engage their respective ratchets.

The construction described provides a regularly operated and simply constructed music leaf turner which can be used in connection with a musical composition including more than six pages. If the rack is desired to operate a great number of pages, I would duplicate the operating instrumentalities and use two foot releasing levers, first actuating the first series of these pages and then the second set of pages in the identical manner that the first was actuated and operated.

From the foregoing it will be noticed that the pallets act as detents to hold the leaf carrying members in proper position. The leaf carrying members are further at all times yieldingly held.

While I have shown the levers 37 and 38, secured cross-wise and held upon a single pivot 35, it should be understood that the levers could be secured in parallel upon separate pins, it only being necessary that the distance from the fulcrum to the power point be different in the two levers. So also while the member 44, ends in two sections marked 50 and 51, the member 44, could terminate in a loop which loop would pass through the openings within the two levers.

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

1. In combination, a support, two pintles pivotally mounted on said support, a spring surrounding each pintle secured at one end to said support and at the other end to a pintle, a ratchet carried by each pintle, a pivotally held pallet contacting with each ratchet, two pivotally held levers having arms of different lengths pivotally mounted on a base back of said support, a connection common to both of said levers, means to actuate said connection, two leaf carrying members actuated by said pintles.

2. In combination, two pintles held in parallel, a music rack pivotally supporting said pintles and having a ledge with two spaced openings, each of said pintles having a projecting end provided with a key slot, a spring surrounding each pintle having one end secured to a pintle and the other end to said rack, a ratchet carried by each pintle, a pallet contacting with each ratchet, two pivotally held levers mounted on said rack having arms of different lengths one lever contacting with each of said pallets, an operating member connected to both of said levers, means to operate said connection, and two leaf carrying members each having a projecting shaft, one end arranged to work into said key slots the opposite end held within said openings as and for the purpose set forth.

3. In combination, a music rack including a leaf supporting ledge having two spaced openings, two supporting ears extending from said rack one above the other each having an aperture in alinement with said openings, two revolubly mounted pintles in parallel spaced relations within said apertures, a ratchet secured to the upper end of each pintle, an actuating spring surrounding each pintle secured at one end to the rack and at the other end to the pintle, said springs being normally under stress, a pivotally mounted spring held pallet in contact with each of said ratchets, two pivotally mounted trip levers each contacting with one of said pallets one of said levers having a shorter power arm than the other, a suitably secured releasing lever, a connection extending from said releasing lever and secured to both of said trip levers, and two leaf carrying frames each having a shaft arranged for contact at the upper end with a pintle and held at the lower end within one of said ledge openings.

4. In combination, a music rack including a leaf supporting ledge having two spaced openings, two supporting ears extending from said rack one above the other each having an aperture in alinement with said openings, two revolubly held pintles in parallel spaced relation within said apertures each having a key slot within the lower end, a ratchet wheel secured to the upper end of each pintle, an actuating spring surrounding each pintle secured at one end to the rack and at the other end to the pintle said springs being normally under stress, a pivotally mounted spring held pallet in contact with each of said ratchets, two pivoted cross-wise held trip levers each contacting with one of said pallets one of said levers being shorter than the other, a suitably secured releasing lever, a spring to normally force said lever in one direction, a connec-

tion extending from said releasing lever having two ends secured to said trip levers, and two leaf carrying frames each having a shaft with a key head for co-action with said slots the lower ends of said shafts being removably held within said ledge openings.

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

JOHN JOHNSON.

Witnesses:
H. N. ANDERSON,
C. J. SMITH.

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