I. SCOTT.

MUSIC LEAF TURNER.

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1,068,397.

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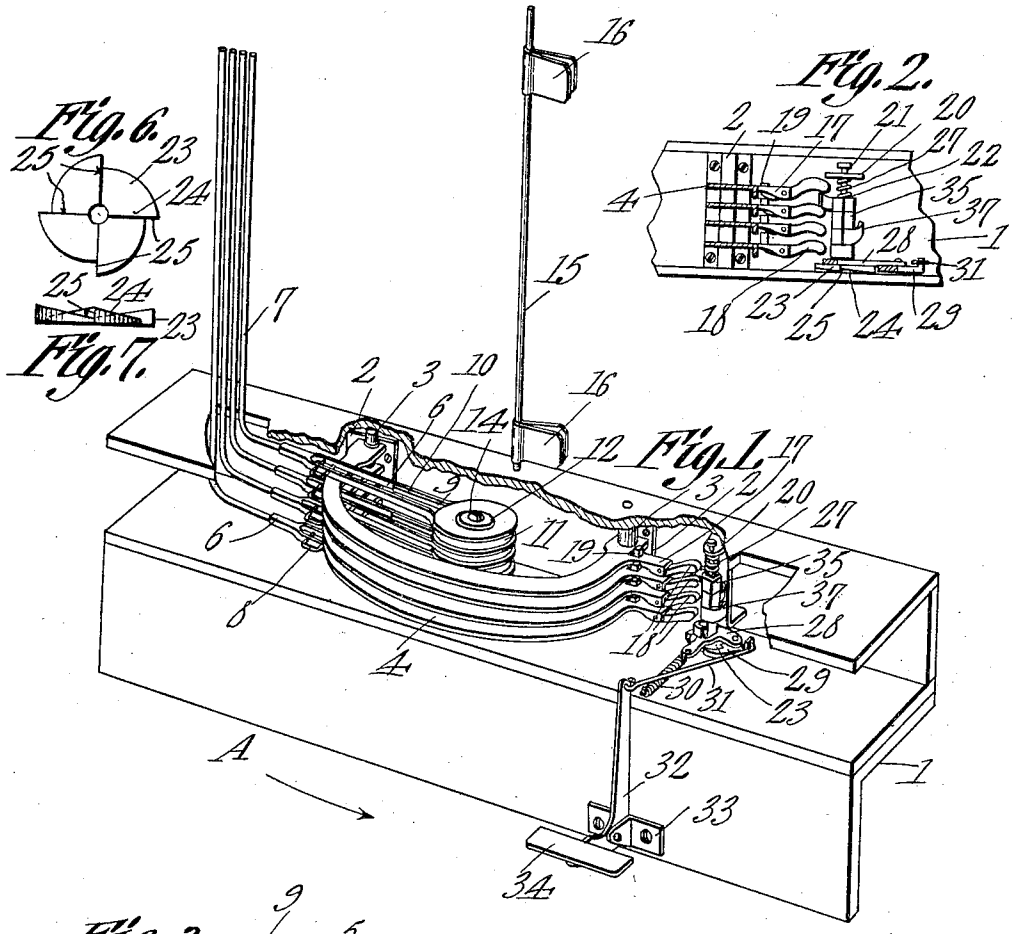

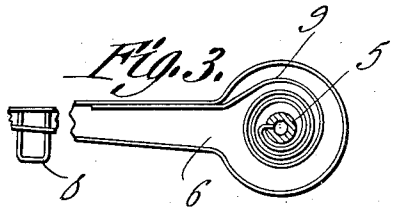

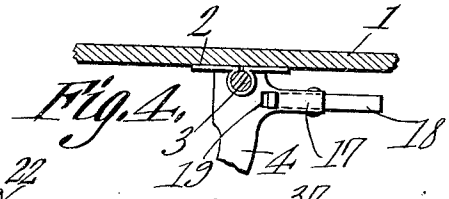

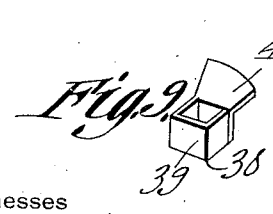

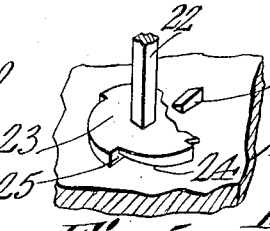

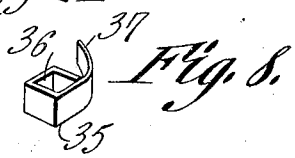

Witnesses

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UNITED STATES PATENT OFFICE.

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MUSIC-LEAF TURNER.

1,068,397. Specification of Letters Patent. Patented July 22, 1913.

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To all whom it may concern:

Be it known that I, ISAAC SCOTT, a citizen of the United States, residing at Washington, District of Columbia, have invented a new and useful Music-Leaf Turner, of which the following is a specification.

The present invention aims to provide novel means for holding and for releasing the spring actuated arms of a music leaf turner.

The invention aims further, to improve generally and to increase the utility of, devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 shows the invention in perspective, parts being broken away; Fig. 2 is an elevation of the latch mechanism and attendant parts; Fig. 3 is a bottom plan of one of the arms, parts being broken away; Fig. 4 is a fragmental top plan, showing the coöperation between the latches and the guides; Fig. 5 is a perspective showing the actuating ratchet wheel and the means whereby the ratchet wheel and its shaft are lifted; Fig. 6 is a plan of the ratchet wheel; Fig. 7 is an edge elevation of the ratchet wheel; Fig. 8 is a perspective of one of the pawls which are carried by the actuating shaft; and Fig. 9 is a perspective showing a modified form of pawl.

In carrying out the invention there is provided a base 1, equipped at spaced points along its rear wall with clips 2, supporting parallel, upright rods 3, receiving the ends of arched, forwardly extended, vertically spaced guides 4. Carried by the base 1 within the contour of the guides 4 is a shaft 5 upon which is journaled a plurality of arms 6, supported by the guides 4, the arms 6 terminating at their free ends in upright fingers 7. The arms 6 are equipped with forwardly projecting eyes 8. Coiled springs 9 are secured at their inner ends to the shaft 5, the free extremities of the springs 9 bearing against a flange 10 which depends from one of the longitudinal edges of the arms 6. Surrounding the shaft 5 and interposed between the arms 6 are spacers 11, the uppermost spacer 11 being held down by means of a washer 12, held in place by a screw 14 or the like which is threaded into the upper end of the shaft 5.

Fixed to and upstanding from the base 1, intermediate the rear ends of the guides 4 and to the rear of the guides 4 is an upright 15, carrying clips 16.

The guides 4 are provided at one end with extensions 17 in which are pivoted intermediate their ends, latches 18, provided at their inner ends with pawls 19 which project upwardly through openings in the guides 4, adjacent the line of union between the guides proper and the extensions 17. The free, outer ends of the latches 18 are counter weighted, so that the pawls 19 normally project above the upper faces of the guides 4.

Upstanding from the rear wall of the base 1 is a bracket 20, and in the bracket and in the horizontal portion of the base 1 are journaled the ends 21 of the polygonal shaft 22. Secured to the shaft 22 adjacent its lower end is a ratchet wheel 23, provided upon its lower face with a plurality of inclined surfaces 24, defining radial shoulders 25 in the lower face of the ratchet wheel. Fixed to the horizontal portion of the base 1 is a combined lifting and back stop member 26, located below the ratchet wheel 23. The upper end 21 of the shaft 22 is surrounded by a compression spring 27 one end of which abuts against the upper end of the polygonal portion of the shaft 22, the other end of which abuts against the outer end of the bracket 20. The spring 27 serves to depress the shaft 22 so that the inclined surfaces 24 of the ratchet wheel 23 are maintained in engagement with the combined lifting and back stop member 26.

Mounted to swing upon the lower end 21 of the shaft 22 is an angular lever 28, to one end of which is pivoted, intermediate of its ends, a pawl 29, adapted to engage the ratchet wheel 23. To the other end of the lever 28 is secured a helical, retractile spring 30, the same being attached at one end to the base 1. To the free end of the pawl 29 is pivoted a link 31 pivotally connected with the upper end of an upright

lever 32, fulcrumed upon a bracket 33 carried by the base 1, the lower end of the lever 32 terminating in a transverse finger piece 34.

Mounted upon the polygonal portion of the shaft 22 is a plurality of superposed pawls, denoted generally by the numeral 35, one of the pawls 35 being shown in detail in Fig. 8. Each of the pawls 35 comprises a polygonal socket 36, from which projects a tangential finger 37. The sockets 36 of the pawls 35 engage the polygonal portion of the shaft 22, so that when the shaft 22 is rotated, the pawls 35 will be actuated likewise. The fingers 37 of the pawls 35 are disposed in successive order around the shaft 22, the pawls being supported upon the lever 28.

In Fig. 9, a modified form of pawl is shown and denoted generally by the numeral 38. The pawl 38 comprises a polygonal socket 39, at one end of which is formed a transverse finger 40. The finger 40 of the pawl 38 exercises the same function as the finger 37 of the pawl 35, and in describing the operation of the invention, the pawl 35 alone will be considered.

The book or sheet of music, the leaves of which are to be turned, is engaged at its rear edge by the clips 16 which are carried by the upright 15. The fingers 7 of the arms 6 are engaged with the leaves of the sheet or book, the fingers 7 being swung around in the direction of the arrow A in Fig. 1, the arms 6 riding upon the guides 4. Ultimately, the eyes 8 which are carried by the arms 6 will engage with the upstanding pawls 19 which are formed at the inner ends of the latches 18. During the operation above described, the actuating springs 9 of the arms 6 will be put under tension, so that when the arms are released, one after another, the arms and the fingers 7 will swing into the position shown in Fig. 1, thereby effecting a turning of the leaves. The finger of the operator is placed upon the portion 34 of the lever 32, effecting a swinging of the lever 32 upon the fulcrum bracket 33, tension being thereby imparted to the link 31 and the pawl 29 being tilted so that the free end thereof will engage with the teeth of the ratchet wheel 23. Thereupon, the lever 28, the pawl 29 and the ratchet wheel 23 will move together, the spring 30, being put under tension. When the ratchet wheel 23 is rotated in the manner hereinbefore described, rotatory motion will be imparted to the shaft 22, the pawls 35, one after another, passing beneath the outer ends of the latches 18. When the ratchet wheel 23 is rotated, the inclined surfaces 24 upon the lower face of the ratchet wheel will ride along the combined lifting and back stop member 26, and so that the shaft 22 will be elevated, thus putting the spring 27 under compression, that pawl 35 which has been swung beneath the outer end of one latch 18 being elevated, along with the shaft 22, thereby tilting the latch 18 and withdrawing the pawl 19 of the latch 18 from the eye 8 of the arm 6. The appropriate arm 6 is thus released, whereupon such arm under the actuation of the spring 9, will swing into the position shown in Fig. 1, and effect a turning of a leaf. The spring 27 serves to hold the radial shoulder 25 which is formed upon the lower face of the ratchet wheel 23, in engagement with the member 26, thereby preventing a reverse rotation of the shaft 22 and the ratchet wheel 23. When further rotation is imparted to the shaft 22, another pawl 35 will exercise its function, thereby effecting a release of the next succeeding arm 6. When manual pressure is released from the portion 24 of the lever 32, the spring 30 will retract the lever 28 and will position the pawl 29 to obtain a new hold upon the ratchet wheel 23, it being recalled that the ratchet wheel 23 is held against reverse rotation by the member 26. The arms of lever 28 are disposed at such an angle to each other that when lever 32 is actuated to its greatest extent, the resultant rotation of lever 28 will be just sufficient to actuate wheel 23 one step.

Having thus described the invention what is claimed is:

1. A device of the class described including a leaf engaging arm, a liftable latch for holding it in one position, an actuating member, means for shifting the member into position beneath the latch, and coöperating means for successively elevating the member against the latch during such movement to lift the latch and to hold the member against return movement.

2. A device of the class described including superposed leaf engaging arms, liftable latches for holding the respective arms in one position, separate actuating members mounted for rotation together about a common axis, one member being provided for each latch and said members being movable successively into position under their respective latches, and means for elevating the members during the movement of each of them under its latch to lift the latch and release the arm engaged thereby.

3. In a device of the class described a plurality of leaf engaging devices, liftable latches for holding the respective devices normally in one position, a series of latch engaging members mounted for rotation together about a common axis, and for movement successively into position below their respective latches during the rotation of the members, one of said members being provided for each latch, means for intermittently rotating said members, and means for raising each member during its move-

ment under its latch to lift the latch and release the leaf engaging device engaged thereby.

4. In a device of the class described the combination with a leaf engaging arm and a liftable latch for holding the arm normally in one position, of an actuating device, means for rotating the same to position it under the latch, and coöperating fixed and movable means for elevating said device against the latch during such movement to lift the latch and release the arm.

5. In a device of the class described the combination with a leaf engaging arm and a liftable latch for holding the arm normally in one position, of an actuating device, means for rotating the same to position it under the latch, and means for successively raising and lowering said device during such movement to lift the latch and release the arm.

6. In a device of the class described the combination with a leaf engaging arm and a liftable latch for holding it in one position, of a latch actuating device, a combined lifting and back stop member fixedly mounted, a wheel revoluble with said device and movable over the lifting and back stop member, means for imparting an intermittent rotation to the wheel and to the actuating member, and means upon the wheel and coöperating with the lifting and back stop member for elevating said actuating member against the latch during such rotation to lift the latch and release the arm engaged thereby.

7. In a device of the class described the combination with a leaf engaging arm and a latch for holding it in one position, of a latch actuating device adapted to move upwardly and downwardly, a combined lifting and back stop member fixedly mounted, a wheel revoluble with said device and movable over the lifting and back stop member, means for imparting an intermittent rotation to the wheel and to the actuating device, means upon the wheel and coöperating with the lifting and back stop member for elevating said actuating device against the latch during such rotation, and means for returning said actuating device and wheel to their lowermost positions subsequent to the actuation of the latch.

8. In a music leaf turner, a supporting structure; a shaft journaled for rotation therein; a ratchet wheel secured to the shaft and provided upon its lower face with inclined surfaces defining radial shoulders; a fixed member upon the supporting structure, and slidably engaged by the inclined surfaces and normally engaging the shoulders; whereby to elevate the shaft and to hold the shaft against rotation; a lever fulcrumed upon the shaft; resilient means for controlling the lever; a pawl pivoted to the lever and normally engaging the ratchet wheel; means for actuating the pawl; a yieldably supported arm; locking mechanism for engaging the arm; and means upon the shaft for disengaging the locking mechanism.

9. A device of the class described including leaf engaging arms, latches for holding the respective arms in one position, said latches being superposed, a series of superposed pawls mounted for rotation about a common upwardly extending axis, said pawls being movable successively into position under the respective latches and each pawl having its upper or active surface inclined outwardly and upwardly and means for rotating said series of pawls intermittently to move the pawls successively into engagement with and past the respective latches to release the respective leaf engaging arms successively.

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

ISAAC SCOTT.

Witnesses:
SELINA WILLSON,
MASON B. LAWTON.