No. 791,646. PATENTED JUNE 6, 1905.

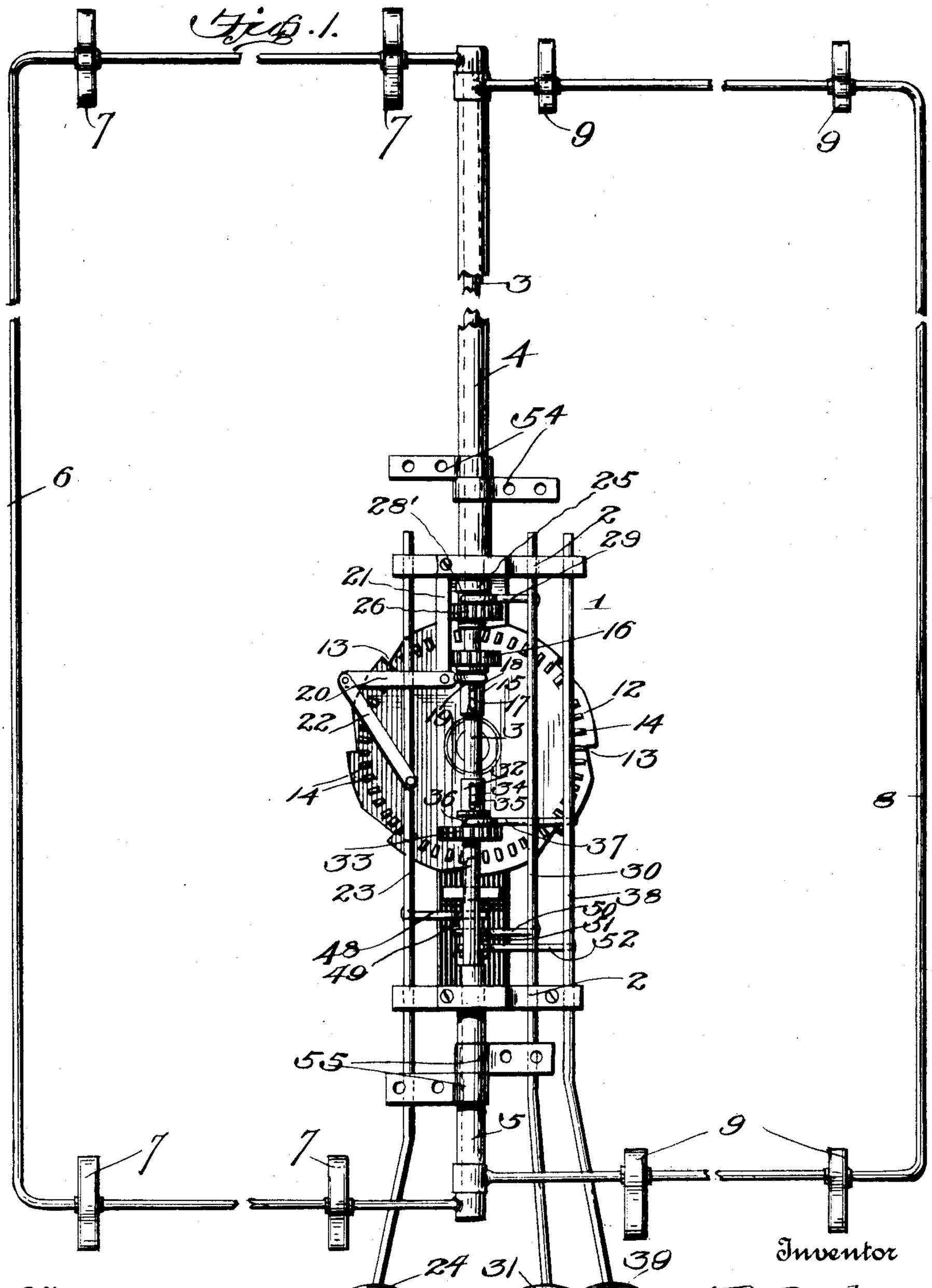
F. P. PARKER.

MUSIC LEAF TURNER.

APPLICATION FILED SEPT. 19, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

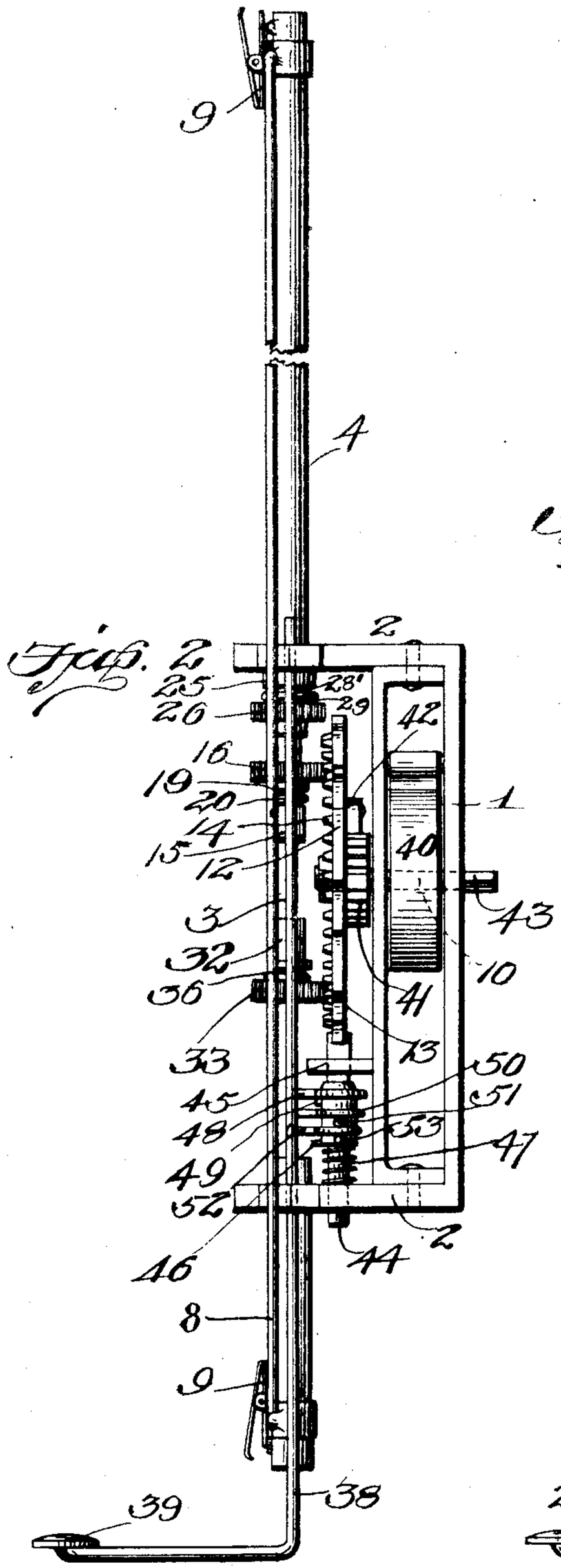
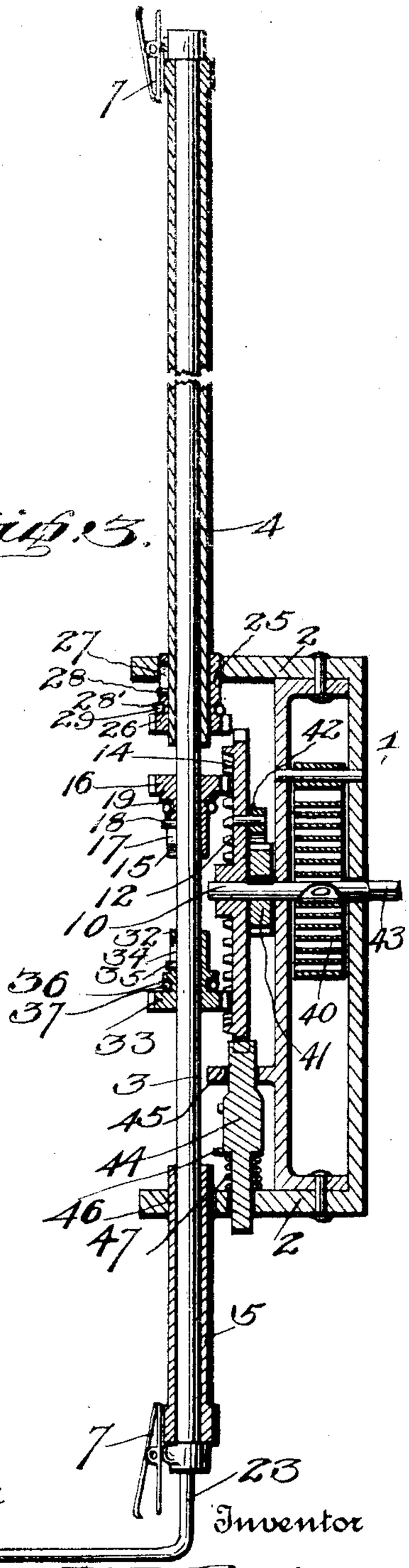


Fig. 3.



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No. 791,646. Patented June 6, 1905.

UNITED STATES PATENT OFFICE.

FRANKLIN P. PARKER, OF CHICAGO, ILLINOIS.

MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 791,646, dated June 6, 1905.

Application filed September 19, 1904. Serial No. 225,060.

To all whom it may concern:

Be it known that I, FRANKLIN P. PARKER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Music-Leaf Turners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in music-leaf turners.

The object of the invention is to provide a device whereby the leaves of sheet-music may be automatically turned in either direction.

A further object is to provide a device of this character which will be simple, strong, and durable in construction, efficient and reliable in operation, and well adapted to the purpose for which it is designed.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a front elevation of an automatic music-leaf turner constructed in accordance with the invention. Fig. 2 is a side elevation of the same, and Fig. 3 is a central vertical longitudinal sectional view.

Referring more particularly to the drawings, 1 denotes a frame having at its upper and lower ends outwardly-projecting brackets 2, in which is revolubly mounted a vertically-disposed shaft 3, on the upper and lower portions of which are arranged sleeves 4 and 5. The ends of the shaft 3 are adapted to project slightly beyond the outer ends of the sleeves 4 and 5, and to said outer projecting ends of the shaft are fixed the ends of a music-leaf-supporting frame 6, on which are arranged clips 7 for holding the sheet of music in place. To the outer ends of the sleeves 4 and 5 are connected the ends of a second music-leaf-supporting frame 8, on which are arranged clips 9 for holding a sheet of music on this frame.

In the frame 1 is mounted a horizontally-disposed shaft 10, on the forward end of which is loosely mounted a tooth disk or gear wheel 12, having formed on the edge of the same a series of notches 13. The teeth 14 of the wheel 12 are formed on the front face of and project laterally from the same.

On the shaft 3, immediately below the upper edge of the gear-wheel 12, is slidably mounted a short sleeve 15, on the upper end of which is fixed a spur gear-pinion 16. In the sleeve 15 is formed a vertical slot 17, through which projects a pin 18, said pin being secured to the shaft 3. By this construction the sleeve 15 is adapted to have a limited sliding movement on the shaft 3, thereby permitting the pinion 16 on the end of the same to be brought into engagement with the teeth of the gear-wheel 12.

On the sleeve 15 is formed an annular groove 19, with which is adapted to be engaged the forked end of a shifting-lever 20. The lever 20 is pivotally mounted in the lower end of an arm 21, the upper end of which is connected to the upper bracket 2 of the frame 1. To the outer end of the lever 20 is pivotally connected the upper end of a link or bar 22, the lower end of which is pivotally connected to a vertically-disposed key-bar 23. The bar 23 is slidably mounted in the brackets 2 of the frame. On the lower end of the key-bar 23 is arranged a key 24, which when depressed will cause the link 22 to rock the shifting-lever 20, and thereby slide the gear-pinion 16 upwardly into engagement with the teeth 14 of the gear-wheel 12.

On the lower end of the upper sleeve 4 is slidably mounted a short sleeve 25, on the lower end of which is fixed a spur gear-pinion 26. In the sleeve 25 is formed a vertical slot 27, through which projects a pin 28, said pin being secured to the sleeve 4. By this arrangement the sleeve 25 and gear-wheel 26 are adapted to have a limited sliding movement on the lower end of the sleeve 4.

On the sleeve 25 is formed an annular groove 28′, with which is adapted to be engaged the forked end of a shifting arm or lever 29, the opposite end of which is connected

to the upper end of a key-bar 30. Said key-bar 30 is slidably mounted in the brackets 2 of the frame 1, and on the lower end thereof is arranged a key 31, whereby when said key is depressed the bar 30, through the shifting arm or lever 29, will slide the sleeve 25 and gear-wheel 26 downwardly into engagement with the teeth 14 of the gear-wheel 12.

On the shaft 3, immediately above the lower edge of the gear-wheel 12, is slidably mounted a short sleeve 32, on the lower end of which is fixed a gear-pinion 33. In the sleeve 32 is formed a vertically-disposed slot 34, through which is adapted to project a pin 35, said pin being secured to the shaft 3. By this arrangement the sleeve 32 and the gear-wheel 33 are adapted to have a limited sliding movement on the shaft 3.

On the sleeve 32 is formed an annular groove 36, with which is adapted to be engaged the forked end of a shifting arm or lever 37, the opposite end of which is connected to a vertically-disposed key-bar 38. On the lower end of the key-bar 38 is arranged a key 39, which when depressed will cause the key-bar 38 and the shifting-arm 37 to slide the sleeve 32 and pinion 33 downwardly, thereby bringing said pinion into engagement with the teeth on the gear-wheel 12.

On the shaft 10, in the rear portion of the frame 1, is mounted a coil-spring 40, the inner end of which is connected to said shaft 10, while the outer end of the same is connected to the frame 1. On the shaft 10, adjacent to the rear side of the gear-wheel 12, is fixedly mounted a ratchet-wheel 41, with which is adapted to be engaged a pawl 42, which is pivotally mounted upon the rear side of said gear-wheel 12, whereby when said ratchet-wheel 41 is turned in one direction the gear-wheel 12 will be turned thereby through the medium of the pawl 42. When the ratchet-wheel 41 is turned in the opposite direction, the pawl 42 will slide loosely over the teeth of said ratchet-wheel, so that the wheel 12 will not be turned with said ratchet-wheel. The end of the shaft 10 is adapted to project beyond the rear side of the frame 1 and is square, as shown at 43, to form a winding-stem with which is adapted to be engaged a winding-key, whereby said shaft 10 is revolved and the spring 40 wound up. In order to prevent the spring 40 from unwinding, a detent is provided to hold the wheel 12 against rotation, said detent being in the form of a plunger-bar 44. The plunger-bar 44 is slidably mounted in a guide-bracket 45, arranged in the lower end of the frame 1. Near the lower end of the plunger-bar 44 is arranged a laterally-projecting pin or stud 46, and between said pin or stud and the lower bracket 2 is arranged a coil-spring 47. The tension of said spring 47 is exerted to normally force the plunger rod or bar 44 upwardly into engagement with the edge of the wheel 12 and into one of the notches 13, formed in said edge, thereby holding the wheel 12 against movement by the spring 40.

On the key-bar 23 is fixed a laterally-projecting releasing-bar 48, having a forked inner end, whereby the same is engaged with the plunger-bar 44 immediately above a pin or lug 49, which projects laterally from said plunger-bar, whereby upon the downward movement of the key-bar 23 when the key 24 is depressed the plunger-rod will be disengaged from the gear-wheel 12 simultaneously with the engagement of the pinion 16 with the teeth 14 of said gear-wheel. The disengagement of the plunger-rod 44 permits the spring 40 to unwind, thereby turning the gear-wheel 12, which movement will be imparted to the shaft 3 through the pinion 16 to cause the same to make a half-revolution, thereby moving the frame 6 and the music-leaf carried thereby to the left, thus turning the page of music.

On the key-bar 30 is fixed a laterally-projecting releasing arm or bar 50, having a forked outer end, whereby the same is engaged with the plunger-bar 44 immediately above the laterally-projecting pin 51, whereby upon the downward movement of said key-bar by the depression of the key 31 the plunger-bar 44 will be disengaged from the gear-wheel 12 simultaneously with the engagement of the pinion 26 with the teeth 14 of the same, thereby permitting the wheel 12 to turn said gear-pinion 26 and through the same to turn the sleeve 4 and the music-leaf frame 8, fixed thereon, to the left, thus moving or turning the second sheet of the music supported by the turning device.

On the key-bar 38 is fixed a laterally-projecting releasing-bar 52, the outer forked end of which is adapted to be engaged with the plunger-bar 44 immediately above a laterally-projecting pin or stud 53. Thereby upon the downward movement of said key-bar 38 by the depression of the key 39 the plunger-bar will be disengaged from the gear-wheel 12 simultaneously with the engagement of the pinion 33 with the teeth 14 on the lower edge of said wheel, thus permitting the wheel 12 to turn said pinion and the shaft 3, on which the same is mounted, to the right, causing the frame 6 to turn the sheets of music back again to their original position. The coil-spring 47 on the plunger-rod will project the same upwardly into engagement with the wheel 12 as soon as the key-bars are released, said upward movement of the plunger-rod also raising the key-bar, and thus disengaging the pinions from the teeth of the gear-wheel 12, which will stop the movement of the shaft 3 or sleeve 4 and the music-supporting frames carried thereby. The notches 13 in the edge of the gear-wheel 12 and the teeth 14, formed on the front face of the same, are so arranged with respect to the pinions on the shaft 3 and

sleeve 4 that said shaft and sleeve will make but a half-revolution when said gear-wheel is released by the plunger 44.

On the frames 6 and 8 may be arranged, if desired, a backing of pasteboard or other suitable material. (Not shown.) The inner edges of said backing are hingedly connected at their upper ends to the shaft 3 by means of hinges 54 and at their lower ends to the sleeve 5 by means of hinges 55.

The frame 1 may be attached to a musical instrument or supported in any suitable manner within convenient reach of the musician.

By the use of a music-leaf turner such as herein shown and described it is simply necessary for the musician to depress one or the other of the keys in order to turn the leaves of the music, thereby enabling him to keep his hands upon the instrument which he may be playing except for the moment of time required to depress one of said keys.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In a music-leaf turner, the combination with a supporting-frame, of a shaft revolubly mounted in the same, upper and lower sleeves mounted on said shaft, music-leaf-supporting frames fixed on said shaft and sleeves, a gear-wheel mounted in said frame, means whereby said wheel is driven, means for holding the same against rotation, pinions slidably mounted on said shaft and sleeves, and means whereby said pinions are brought into engagement with the teeth on said gear-wheel, by which the same and said shaft and sleeves are turned, motion being thereby imparted to said music-leaf frames, substantially as described.

2. In a music-leaf turner, the combination with a supporting-frame, of a shaft revolubly mounted in the same, upper and lower sleeves mounted on said shaft, music-leaf-supporting frames fixed on said shaft and sleeves, a spring-actuated gear-wheel mounted in said frame, a detent adapted to hold said wheel against rotation, pinions slidably mounted on said shaft and upper sleeve, and means whereby said pinions are brought into engagement with said gear-wheel, substantially as described.

3. In a music-leaf turner, the combination with a supporting-frame, of a shaft revolubly mounted in the same, upper and lower sleeves mounted on said shaft, music-leaf-supporting frames fixed on said shaft and sleeves, a spring-actuated gear-wheel mounted in said frame, a spring-projected detent adapted to normally hold said wheel against rotation, pinions slidably mounted on said shaft and upper sleeve, means whereby the same are brought into engagement with said gear-wheel, and means whereby said detent is retracted and disengaged from said gear-wheel simultaneously with the engagement of any of said pinions with the same, substantially as described.

4. In a music-leaf turner, the combination with a supporting-frame, of a shaft revolubly mounted in the same, upper and lower sleeves mounted on said shaft, music-leaf-supporting frames fixed on said shaft and sleeves, a spring-actuated gear-wheel having formed on its outer edge spaced notches, a spring-projected detent adapted to engage said notches and normally hold said wheel against rotation, pinions having a limited sliding engagement with said shaft and upper sleeve, key-bars mounted in said frame, means whereby said key-bars are loosely connected to said pinions and said detent, and means for actuating said key-bars to engage said pinions with said gear-wheel and simultaneously disengage said detent from the same, substantially as described.

5. In a music-leaf turner, the combination with a supporting-frame, of a shaft revolubly mounted in the same, upper and lower sleeves mounted in said shaft, music-leaf-supporting frames fixed on said shaft and sleeves, a spring-actuated gear-wheel mounted in said frame, a spring-projected detent adapted to engage said wheel and normally hold the same against rotation, pinions slidably mounted on said shaft and upper sleeve adjacent to the teeth on the upper edge of said gear-wheel, means whereby said pinions may be brought into engagement with said teeth thereby turning said music-leaf frames in one direction upon the release of said gear-wheel, a pinion slidably mounted on said shaft adjacent to the teeth on the lower side of said gear-wheel, means whereby said pinion is engaged with the teeth on said lower side of the wheel to turn said music-leaf frames in the reverse direction, and means whereby said detent is disengaged from said wheel simultaneously with the engagement of any of said pinions with the same, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANKLIN P. PARKER.

Witnesses:
W. S. HECTOR,
T. F. WALKER.