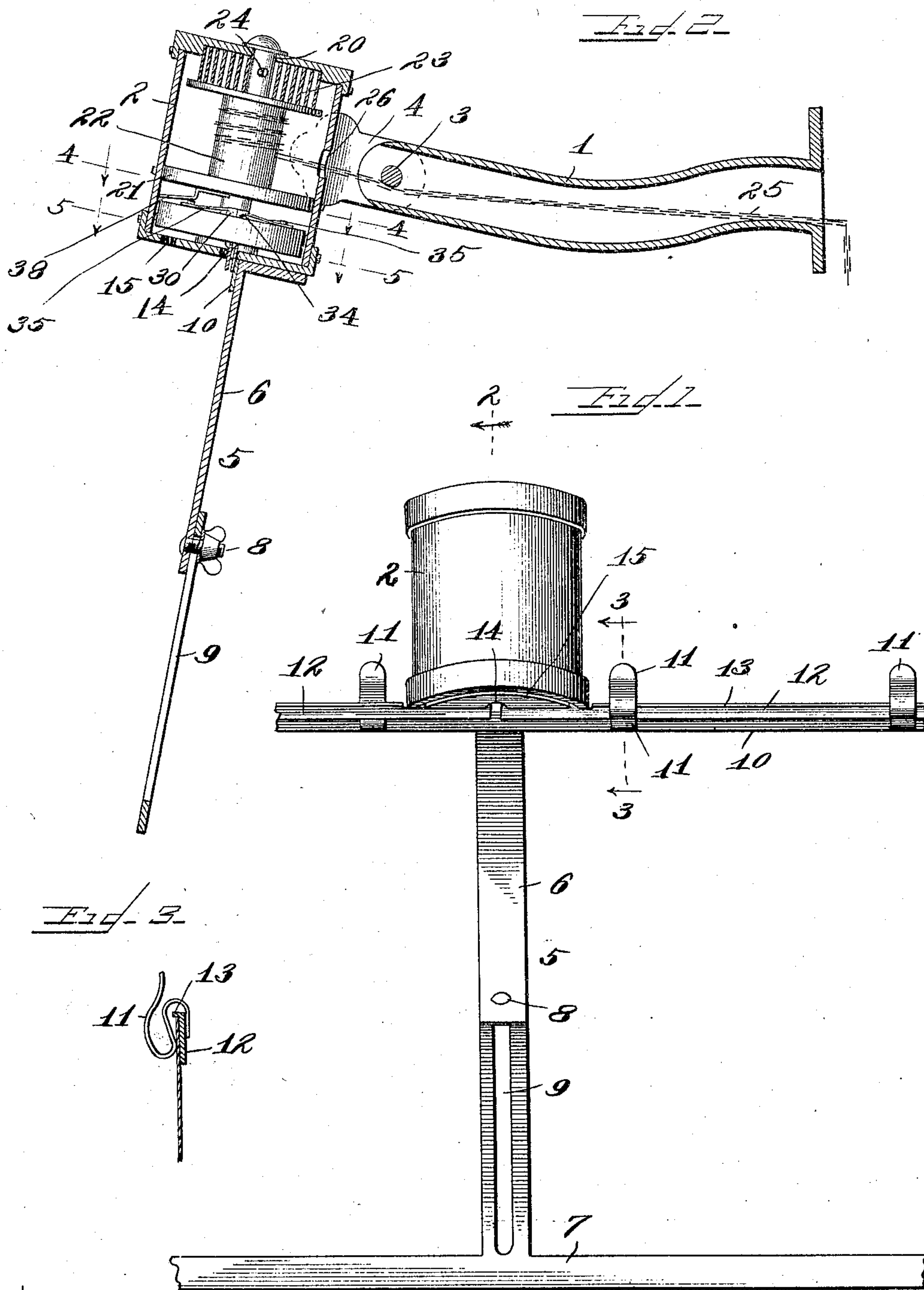


No. 793,950.

PATENTED JULY 4, 1905.

O. G. PAINTER.
MUSIC LEAF TURNER.
APPLICATION FILED AUG. 5, 1904.

2 SHEETS—SHEET 1.



WITNESSES—

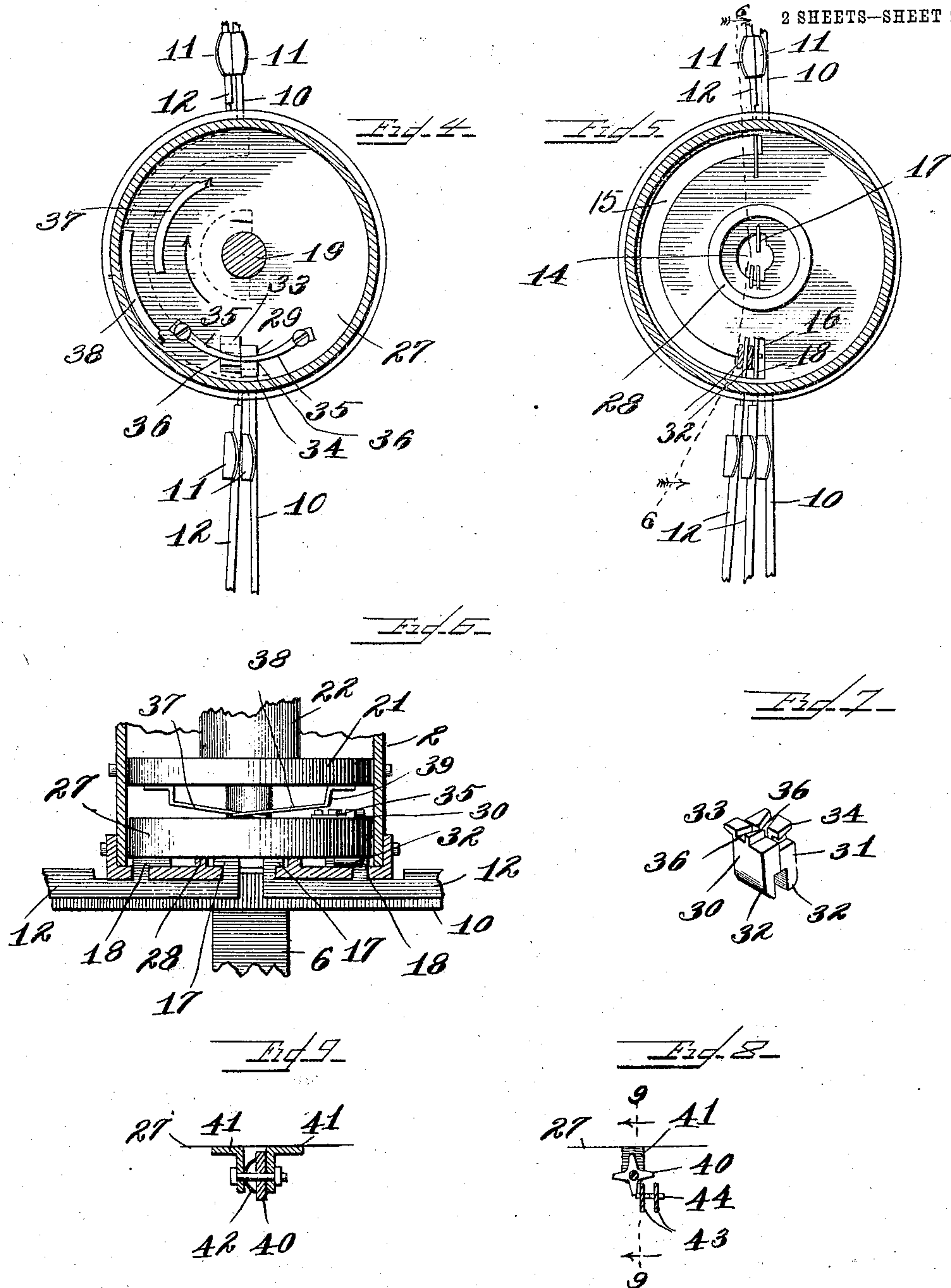
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 793,950, dated July 4, 1905.

Application filed August 5, 1904. Serial No. 219,673.

To all whom it may concern:

Be it known that I, OTTO G. PAINTER, a citizen of the United States, residing at Racine Junction, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Music-Leaf Turners, of which the following is a specification.

This invention relates to devices for turning sheet-music or the leaves of a music-book; and one of its objects is the production of an improved device of this kind adapted to be supported upon the instrument being played or upon a suitable stand.

Another object of the invention is to produce a music-leaf turner capable of turning the leaves or sheets in either direction—that is, from right to left or from left to right of the musician.

The invention further refers to the details of construction hereinafter set forth.

In the accompanying drawings, Figure 1 is a front elevation of a music-leaf turner embodying the features of my invention. Fig. 2 is a vertical central section through the turner on dotted line 2 2 of Fig. 1. Fig. 3 is a detail sectional view through one of the sheet-holding clips on dotted line 3 3 of Fig. 1. Fig. 4 is a sectional view through the casing on dotted line 4 4 of Fig. 2. Fig. 5 is a similar view on dotted line 5 5 of Fig. 2. Fig. 6 is a fragmental vertical sectional view taken on a plane at right angles with the plane of Fig. 2. Fig. 7 is a detail perspective view of the dogs for grasping the leaf-holding arms. Figs. 8 and 9 illustrate a modified construction of the means for engaging the leaf-holding arms, Fig. 8 being a front elevation, and Fig. 9 a vertical section on dotted line 9 9 of Fig. 8.

In the embodiment herein shown of this invention the music-leaf turner is supported upon a tubular arm 1, intended to be secured in any suitable way to the instrument or to a stand. The inclosing casing 2 for the operating mechanism of the turner is adjustably secured to the supporting-arm 1 by means of a screw 3, passing through said tube and through ears 4, fixed to said casing, the screw 3 being provided with a wing-nut. (Not shown.)

This construction permits of tilting the turner to any desired angle with a vertical line.

The music rests upon a support 5, comprising the arm 6, fixed to and extending downwardly from the casing 2, to which arm 6 is adjustably secured a T-shape arm 7 by means of a clamping-screw 8, passing through the lower end of the arm 6 and an elongated slot 9 in the arm 7. The adjustment just described is provided in order to adapt the support 5 to sheets of varying size. The support 5 also comprises a horizontal bar 10, fixed to the arm 5, which bar 10 is furnished with spring-clips 11, adapted to grasp the upper edges of the covers of a book or the first and last sheets of a piece of sheet-music. The remaining sheets, being those that require to be turned, are each held by an arm 12, provided with spring-clips 11 and having a top flange 13, against which the upper edge of the leaf may abut. The arms 12 are supported in the manner to be next described, so as to have a swinging movement from one side to the other of the support 5.

In the lower end wall of the casing 2 are formed a central opening 14 and a semicircular slot 15, concentric with said opening. At one of its ends the slot 15 communicates with a short radial slot 16. Each of the arms 12 is provided at one end with two angular upwardly-extending projections 17 and 18, the projection 17 being adapted to enter the central opening 14 and the projection 18 the radial slot 16. When the projections 17 and 18 are inserted into the opening 14 and the slot 16, respectively, the arm 12 may be swung from side to side of the casing 2 and the support 5, the vertical portion of the projection 18 moving through the semicircular slot 15.

The mechanism for moving the arms 12, and thus turning the sheets of music, will next be described. A shaft 19 is rotatably supported in the longitudinal center of the casing 2, its upper end lying within an opening 20 in the upper end of said casing. Intermediate its ends the shaft 19 extends through a partition 21, fixed within the casing and extending transversely thereof. Above the partition 21 the shaft 19 carries a barrel 22,

and between said barrel and the upper end wall of the casing 2 is a coil-spring 23, secured at one end to the casing and at its other end to the shaft 19 in any suitable manner, as by the pin 24. The spring 23 tends to rotate the shaft 19 toward the right, Figs. 1 and 2. For rotating the shaft in the opposite direction I provide a chain 25, fastened at one end to the barrel 22 and extending around said barrel, through an opening 26 in the side wall of the casing 2, through the tubular supporting-arm 1, and downward to a pedal. (Not shown.) Depressing the pedal will rotate the shaft 19 to the left, Figs. 1 and 2, against the tension of the coil-spring 23.

A disk 27, rigidly mounted upon the shaft 19 and rotating in contact with a circular flange or track 28, carries in an opening 29 near the edge of said disk two dogs 30 and 31 for engaging the arms 12. The lower end of each of the dogs is rounded, as at 32. At its upper end and on the side toward the center of the disk 27 the dog 30 is provided with a projection 33, having an inclined lower face. The dog 31 at its upper end, on the side toward the periphery of the disk 27, is provided with a similar projection 34. Flat springs 35, fixed at one of their ends to the disk 27 and at their other ends engaging recesses 36 in the dogs 30 and 31, hold said dogs downward. The dogs 30 and 31 are moved upward against the tension of the springs 35 by means of cam-fingers 37 and 38. These fingers are formed of spring material and have integral offset bases 39, by means of which they are secured to the partition 21. When the disk 27 is rotated in the direction of the arrow, Fig. 4, the projection 33 on the dog 30 will ride upon the cam-finger 37, raising said dog. Upon a rotation of the disk 27 in the opposite direction the projection 34 on the dog 31 will ride up on the cam-finger 38 and said dog thereby be raised. As soon as the projections 33 and 34 pass their respective cam-fingers the flat springs 35 return the dogs to their normal lower position.

In use the sheets of music are secured to the stationary bar 10 of the support 5 and to the swinging arms 12 by means of the clips 11. As many arms 12 are provided as there are sheets to be turned. The dogs 30 and 31 are normally in engagement with the projection 18 on the outermost of the arms 12 at the right, Fig. 1. When it is desired to turn a sheet to the left, the operator depresses the pedal, the shaft 19 being rotated, by reason of the chain connection 25 between said pedal and said shaft, against the tension of the coil-spring 23. The disk 27 being fixed upon the shaft 19 rotates therewith and carries the dogs 30 and 31, holding between them the foremost arm 12 around to the other side of the support 5. Upon completing a quarter rotation the projection 33 on the dog 30 comes into engagement with the cam-finger 37 and

said dog is raised, permitting the arm 12 to fall by gravity to the left. The pedal being released, the coil-spring 23 rotates the disk 27 to the right, in which movement the rounded lower end of the dog 31, striking against the projection 18 on the then foremost arm 12, rides over said projection and drops down upon the other side thereof. Said arm is now held between the dogs 30 and 31 ready to be turned to the left. When it is desired to move the music-sheets from the left to the right, the pedal is depressed far enough to move the disk 27 to the extreme left. When the dog 30 strikes the foremost arm 12 on the left-hand side of the support 5, it is forced over said arm. When the pedal is released, the coil-spring 23 rotates the disk 27 to the right, said disk carrying with it the arm 12, which had been grasped by the dogs 30 and 31. Upon reaching the middle point of its movement the projection 34 on the dog 31 engages the cam-finger 38, and said dog is raised, releasing the arm 12 and allowing it to fall by gravity to the extreme right. The disk 27 is now returned by the operation of the pedal to the left, where the dogs 30 and 31 grasp another arm 12.

In Figs. 8 and 9 I have illustrated a slight modification in which a star-wheel is substituted for the dogs 30 and 31. 40 is the star-wheel mentioned, said wheel being rotatably mounted in a suitable support 41, fixed with relation to the shaft 19. The free rotation of the wheel 40 is prevented by any suitable means, as by a spring 42 frictionally engaging said wheel. In this modified construction the sheet-carrying arms 43 are held a suitable distance apart by means of transverse pins 44 extending therethrough. Upon being rotated by the coil-spring 23 to the extreme right or by means of the pedal to the extreme left one tooth of said star-wheel strikes against the foremost arm 43, and said wheel is rotated sufficiently to move the next succeeding tooth into the space between the two foremost arms. Upon a movement of the shaft in the opposite direction the star-wheel 40 will carry to the other side the arm 43 that lies in front of it.

My invention is not restricted to the precise construction and arrangement of parts herein shown and described, as such construction and arrangement may be changed or modified without departing from the spirit and scope of the invention.

I claim as my invention—

1. In a music-leaf turner, in combination, a pivotally-supported leaf-holding member; two dogs adapted to hold said leaf-holding member between them; means for moving each of said dogs with relation to the other to release said leaf-holding member; and means for moving said dogs to move said leaf-holding member upon its pivot.

2. In a music-leaf turner, in combination,

a pivotally-supported leaf-holding member; two dogs adapted to hold said leaf-holding member between them; a pivoted member upon which said dogs are slidably mounted; means for moving said pivoted member to move said leaf-holding member upon its pivot; and means for moving one of said dogs with relation to said member to release said member.

3. In a music-leaf turner, in combination, a pivotally-supported leaf-holding member; two dogs adapted to hold said member between them; a pivoted member upon which said dogs are slidably mounted; means for moving said pivoted member to swing said leaf-holding member; and a cam-finger for sliding one of said dogs to release said member.

4. In a music-leaf turner, in combination, a pivotally-supported leaf-holding member; two slidably-mounted dogs adapted to hold said member between them; means for moving said dogs to swing said member; and a cam-finger adapted to slide one of said dogs to release said member after said member has completed substantially one-half its pivotal movement.

5. In a music-leaf turner, in combination, a pivotally-supported leaf-holding member; two dogs adapted to hold said member between them; separate means for moving said dogs to move said leaf-holding member upon its pivot in opposite directions; a projection on one of said dogs; and a spring cam-finger adapted upon a movement of the dog in one direction to engage said projection for moving said dog to release said member, and upon a movement of the dog in the opposite direction to spring over said projection.

6. In a music-leaf turner, in combination, a pivotally-supported leaf-holding member; two dogs adapted to hold said member between them each of said dogs being movable with relation to the other; a spring for moving said dogs to move said member upon its pivot; means adapted to be actuated by the operator for moving said dogs against the tension of said spring; and means for moving each of said dogs with relation to the other to release said leaf-holding member.

7. In a music-leaf turner, in combination, a pivotally-supported leaf-holding member; two dogs adapted to hold said member between them, each of said dogs being movable with relation to the other; a spring for moving said dogs to move said member upon its pivot; means adapted to be actuated by the operator for moving said dogs against the tension of said spring; and a cam-finger for each of said dogs for moving each of them with relation to the other to release said member.

8. In a music-leaf turner, in combination, a pivotally-supported leaf-holding member; two dogs adapted to hold said member between them; a pivoted support for said dogs, which

dogs are each movable with relation to the other; a spring for moving said pivoted support to move said member upon its pivot; means adapted to be actuated by the operator for moving said pivoted support against the tension of said spring; and cam-fingers adapted to move said dogs with relation to each other to release said member after said member has completed substantially one-half its pivotal movement.

9. In a music-leaf turner, in combination, a pivotally-supported leaf-holding member; two dogs adapted to hold said member between them; a spring for moving said dogs to move said member upon its pivot; means adapted to be actuated by the operator for moving said dogs against the tension of said spring; a projection on one of said dogs; and a spring cam-finger adapted upon a movement of the dog in one direction to engage said projection for moving said dog to release said member, and upon a movement of the dog in the opposite direction to spring over said projection.

10. In a music-leaf turner, in combination, an inclosing casing; a music-support fixed thereto; a leaf-holding member releasably connected with said casing and adapted to have a pivotal movement; a shaft rotatably supported in said casing; a coiled spring surrounding said shaft for rotating it in one direction; a chain wrapped about said shaft for rotating it in the opposite direction; and means carried by said shaft for releasably engaging said leaf-holding member.

11. In a music-leaf turner, in combination, an inclosing casing having in one of its ends an opening and a slot curved on the arc of a circle concentric with said opening; a leaf-holding member having hooked projections thereon adapted to extend through said opening and slot and thereby support said member upon said casing; and means in said casing for pivotally moving said leaf-holding member.

12. In a music-leaf turner, in combination, an inclosing casing having in one of its end walls an opening and a slot curved on the arc of a circle concentric with said opening; a leaf-holding member having angular projections thereon adapted to extend through said opening and slot and rest upon said end wall; and means in said casing for pivotally moving said leaf-holding member.

13. In a music-leaf turner, in combination, a cylindrical casing having closed ends; a leaf-holding member releasably connected with one of said end walls; a shaft rotatably supported in said casing; means on said shaft for rotating it in opposite directions; and a member fixed to said shaft and carrying means for engaging said leaf-holding member.

14. In a music-leaf turner, in combination, a cylindrical casing having closed ends; a leaf-holding member pivotally connected with one of said end walls; a shaft rotatably supported

in said casing; a coiled spring surrounding said shaft for rotating it in one direction; a chain wrapped about said shaft for rotating it in the opposite direction; a member fixed
 5 to said shaft and carrying two movably-mounted dogs for engaging said leaf-holding member; and two cam-fingers in said casing for moving said dogs to release said leaf-holding member.

10 15. In a music-leaf turner, in combination, a leaf-holding member; two dogs, each movable with relation to the other, for engaging said leaf-holding member; means for moving said dogs to swing said leaf-holding member
 15 in the arc of a circle; and two cam-fingers, one for each of said dogs, arranged to engage

and move said dogs at about the middle point of their pivotal movement.

16. In a music-leaf turner, in combination, a leaf-holding member; and means for moving said member comprising a rotatable member carrying means adapted to be moved by impingement upon either side of said leaf-holding member into position to drive said leaf-holding member before it, whereby said
 25 leaf-holding member may be moved in either direction.

OTTO G. PAINTER.

Witnesses:

C. H. JOHNSON,
 M. E. WHITE.