No. 751,449. PATENTED FEB. 9, 1904.

W. BAUER.

MUSIC LEAF TURNER.

APPLICATION FILED FEB. 9, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

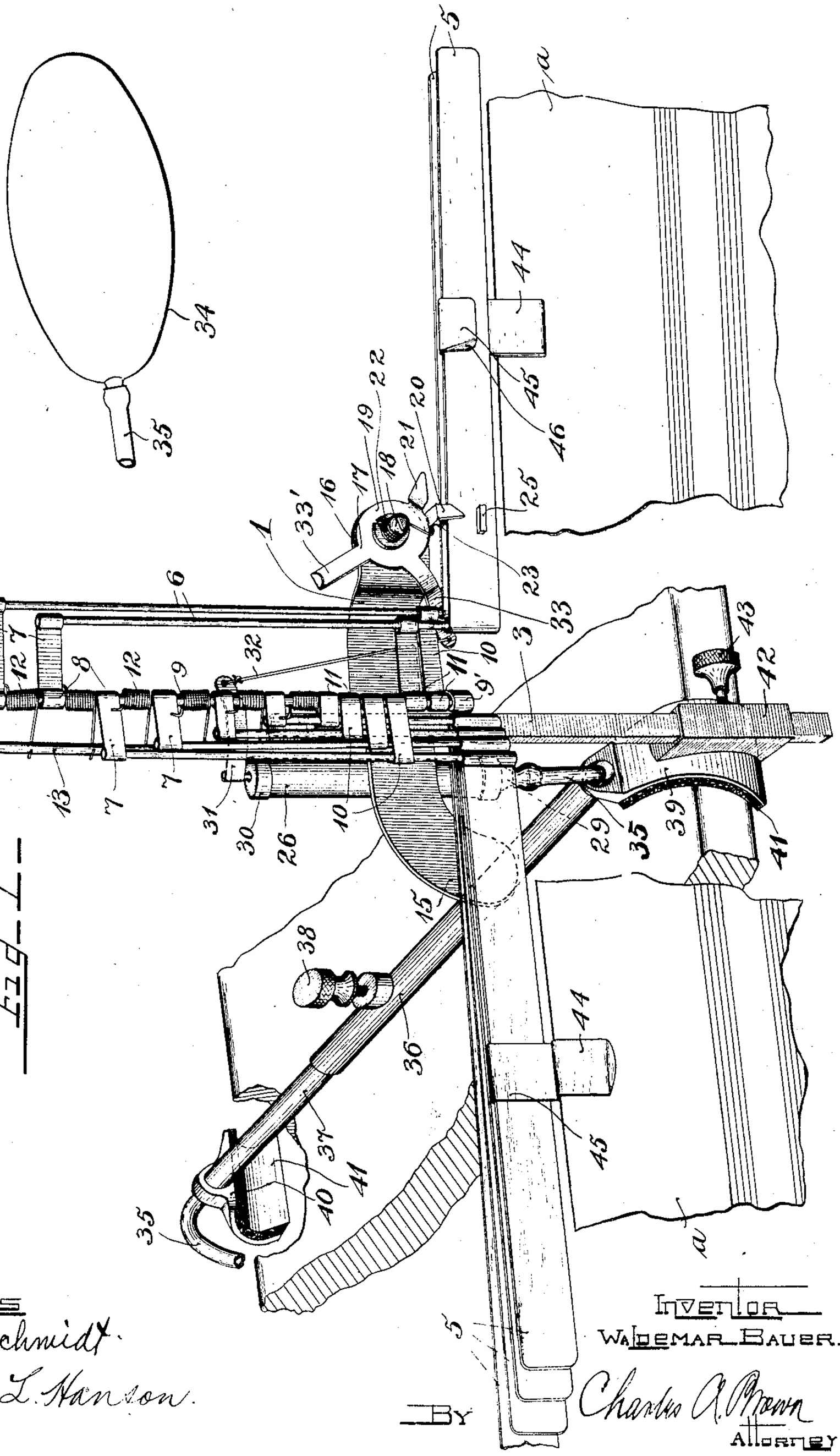

FIG. 1.

Witnesses
Chas. J. Schmidt.
Harvey L. Hanson.

Inventor
Waldemar Bauer.
By Charles A. Brown
Attorney

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NO MODEL. 2 SHEETS—SHEET 2.

FIG. 5.

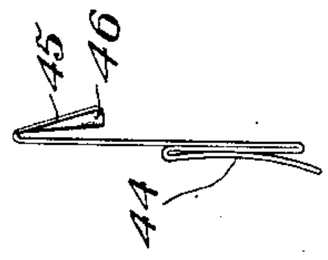


FIG. 4.

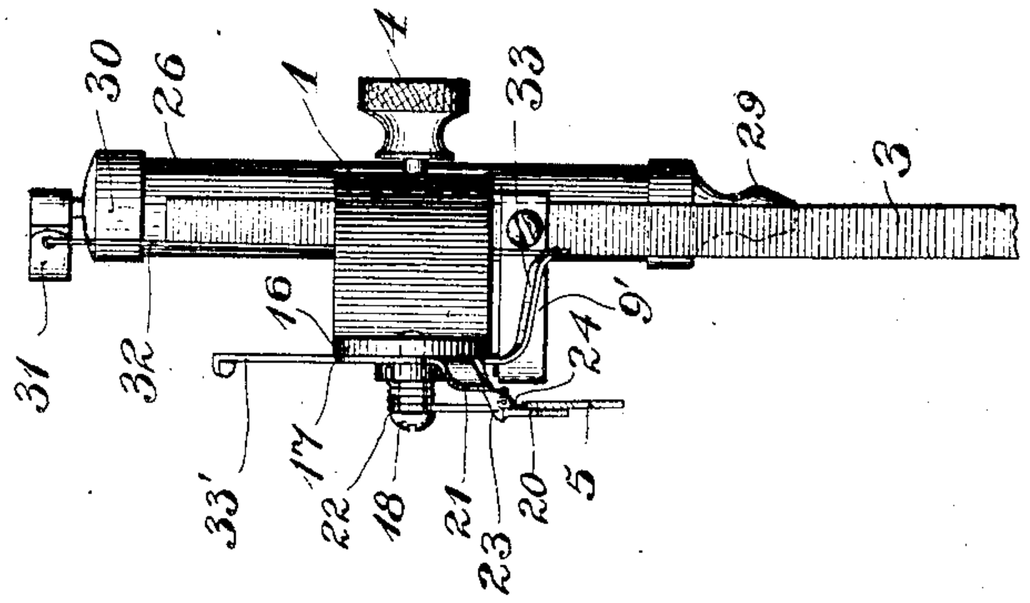


FIG. 3.

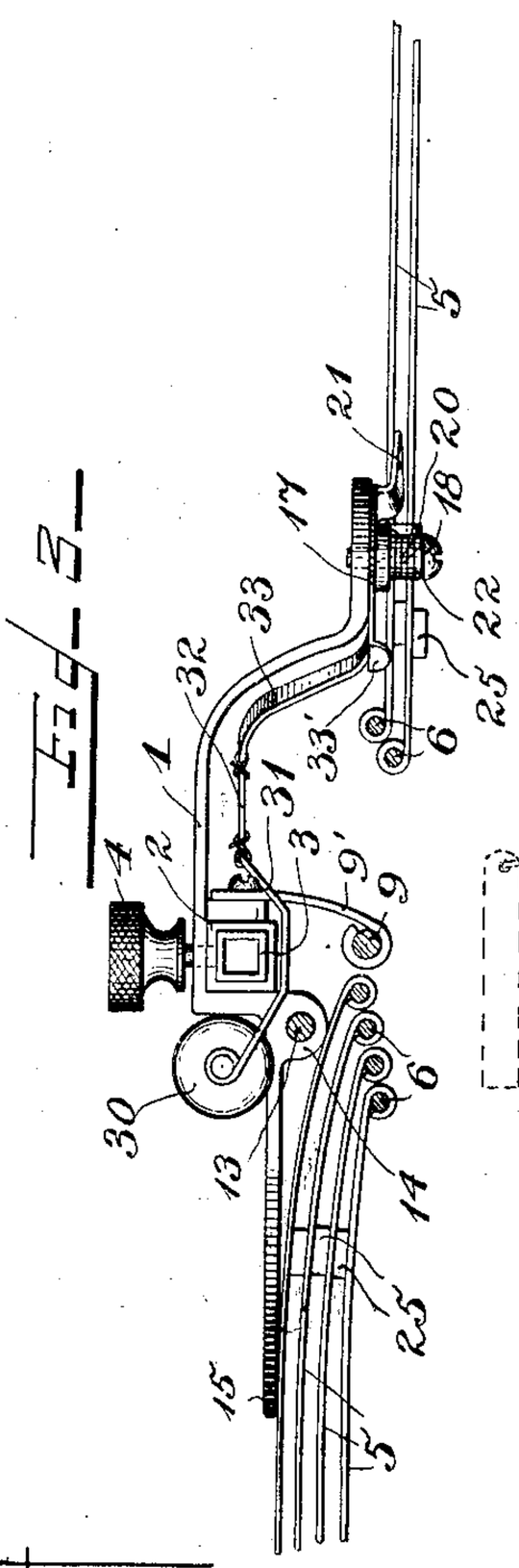
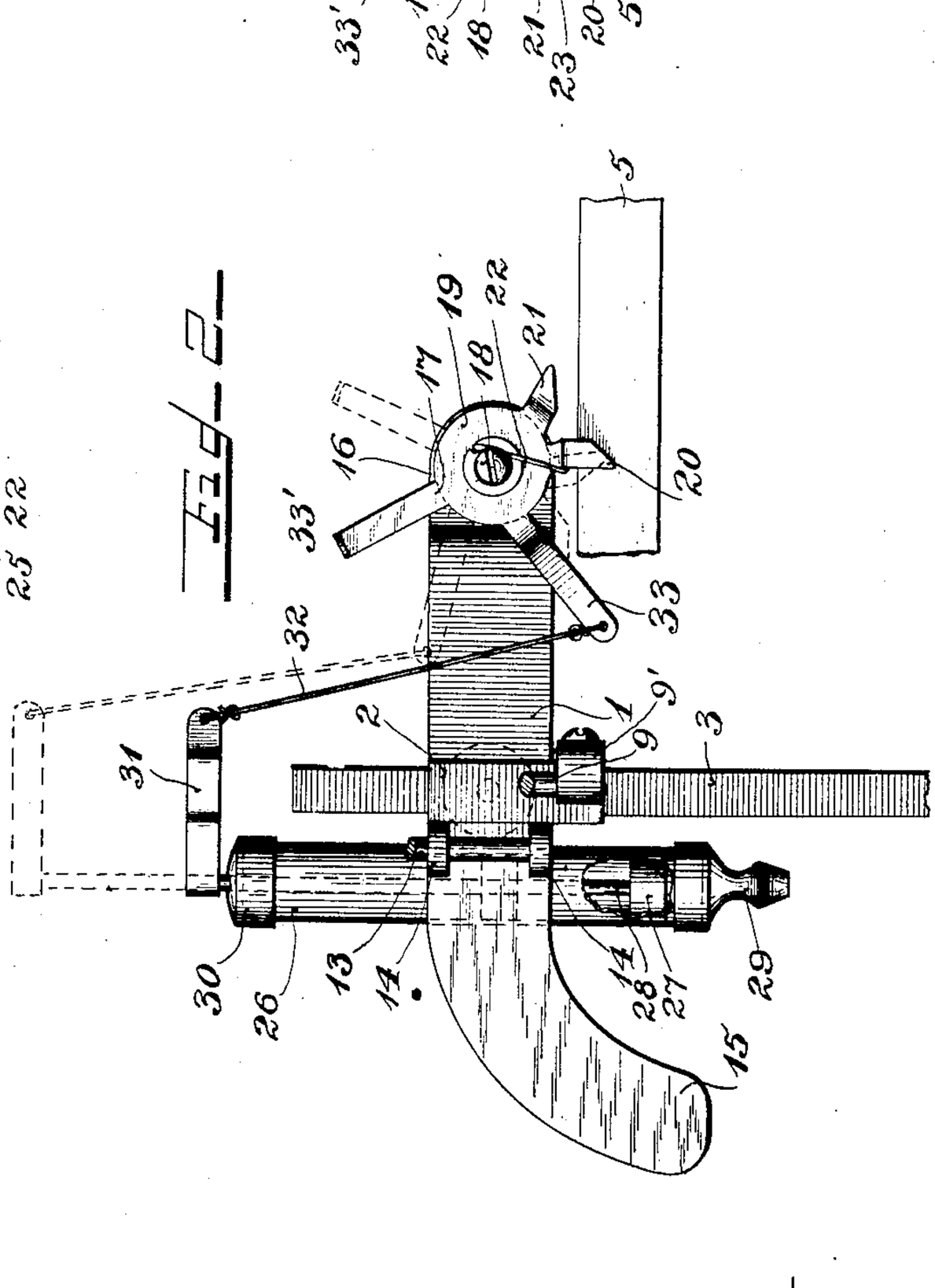


FIG. 2.



Witnesses
Chas. J. Schmidt.
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Inventor
Waldemar Bauer
By Charles A. Brown
Attorney

No. 751,449. Patented February 9, 1904.

UNITED STATES PATENT OFFICE.

WALDEMAR BAUER, OF CHICAGO, ILLINOIS, ASSIGNOR TO ALEXIA MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 751,449, dated February 9, 1904.

Application filed February 9, 1903. Serial No. 142,445. (No model.)

To all whom it may concern:

Be it known that I, WALDEMAR BAUER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Music-Leaf Turners, (Case No. 1,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to music-leaf holding and turning devices, and has for its object an improved, simplified, and reliable construction therefor, and particularly the provision of means for operating such device independently of the hands of the player.

Although there are several devices of the class referred to upon the market, they are all more or less clumsy, inefficient, and unreliable. Furthermore, they are designed to be operated manually by the player, thus interfering with the playing, and generally causing loss of time.

In my improved device I preferably employ pneumatic means for accomplishing the turning of the sheets of music, the means being preferably controlled by the player's foot. I do not wish to be limited to pneumatic means, however, as other means controlled by the player's foot may readily be employed—as, for instance, means operated electromagnetically or means operated by any fluid under pressure.

My improved device may be adapted for adjustable attachment to any instrument, music-stand, or other support, and, in general, comprises a plurality of wings or arms hinged near the center of the device and adapted to be swung from one side to the other to turn sheets or leaves suspended therefrom, the swinging being accomplished by the actuation of an escapement device by pneumatic or other fluid means controlled by the player's foot to successively release the wings to allow them to be swung by suitable springs to turn the sheets or leaves. The leaves are preferably suspended by means of clips which clamp over the top edges of the leaves and hook over the top edge of the wings.

I shall describe my invention more fully and more clearly by reference to the accompanying drawings, in which—

Figure 1 is a perspective view of the device. Fig. 2 is a front view thereof, the wings and their supports being removed. Fig. 3 is a plan view thereof, partly in section, part of the wing-supports being removed. Fig. 4 is a side view thereof, the wings and their supports being removed. Fig. 5 is a side view of the clips employed for suspending the leaves from the wings.

A horizontally-disposed supporting-frame 1 has preferably near its middle a bearing 2, whereby said frame may be slidably mounted upon an upright post 3 and adjustably secured thereto by a thumb-screw 4. A plurality of horizontally-disposed wings or arms 5 5, from which may be suspended sheets or leaves *a*, fastened at their inner ends to the lower ends of vertical rods 6 6. Horizontal arms 7 7, one at the top of each of said rods 6, terminate in bearings 8 8, engaging an upright rod 9, mounted at its lower end in a support 9′, extending forward from frame 1. To afford rigidity, additional horizontal arms 10 10 are disposed at the lower ends of rods 6 and terminate in bearings 11 11, also engaging the upright rod 9. Coil-springs 12 12 are sleeved upon said rod 9, one under each of the top bearings 8 8, one end of said springs engaging the horizontal arms 7 7, the other end engaging a vertical rod 13, mounted at its lower end upon supporting-frame 1, preferably in lugs 14 14. Rods 9 and 13 are preferably integral for mutual support and preferably formed of a piece of wire bent upon itself. Wings 5 5 are normally horizontally disposed one against the other to the left of rod 9 and rest against the depending end 15 of the frame 1, the tendency of the coil-springs being to retain the wings in this position. The right end 16 of frame 1 supports upon the front of its end an escapement device 17, rotatably mounted upon a screw or shaft 18. The es-

capement device serves to hold the wings in a position to the right of rod 9, and upon each actuation of the escapement device, by means to be more fully explained hereinafter, one of the wings is released and is swung back to its normal position to the left of rod 9 by means of the coil-springs 12 12. The escapement device is preferably formed of thin sheet metal and has a body portion 19, engaging shaft 18, and escapement-teeth 20 and 21, extending downward from the body portion and disposed one slightly back of the other. The forward tooth 20 serves to hold the wings in their position to the right and upon rotation of the escapement device allows the foremost wing to escape to assume its normal position to the left, the back tooth 21 at the same time assuming a position in front of the remaining wings to prevent their escape. A coil-spring 22 is sleeved upon shaft 18 and upon release of the actuating mechanism serves to return the escapement device to its normal position, tooth 20 replacing tooth 21 in front of the remaining wings, further actuation of the device releasing another wing, and so on. To allow any number of wings to be quickly turned back after having been released, I preferably provide the forward tooth 20 with a hinge 23, designed to allow the tooth to swing only backward. A spring 24 serves to return the tooth to its normal position after the turned-back wings have cleared it. To allow of free access to the escapement-teeth between the wings, I keep the wings properly spaced by means of lugs 25 25 thereon.

I employ novel means for effecting the actuation of the escapement device, which means may be operated by the player's foot, thus obviating the necessity of manual manipulation by the player of some mechanical member attached to the leaf-turner, as has been customary in the devices of the prior art. This means preferably consists of a pneumatic device operated by a slight pressure upon an air-bulb by the player's foot, each pressure resulting in the release of one wing by the escapement device and a consequent turning over of one of the sheets of music. The device consists of a cylinder 26, suitably mounted, preferably in a vertical position, upon the supporting-frame 1. A piston-head 27, engaging a piston-rod 28, is adapted to be forced upward upon the entry of air under pressure through an inlet 29 at the bottom of the cylinder. A cap 30 over the top of the cylinder serves to guide the piston-rod, said rod having secured to its upper end an arm 31. A chain or cord 32 connects the end of said arm with the end of a lever-arm 33, extending sidewise from and preferably integral with the body portion 18 of the escapement device. Thus upon motion of the piston-rod in an upward direction the escapement device is actuated. The escapement device may also be operated manually by means of a lever 33′. I preferably employ a rubber bulb 34, connected by a hose 35 with the inlet 29 of the cylinder, a slight pressure upon the bulb serving to force the piston-rod upward to actuate the escapement device.

When the leaf-turner is used in connection with an organ or other wind instrument, the air under pressure available in such cases would be perfectly adaptable for operating the piston-head and rod and the escapement device connected therewith.

Either directly or by the use of properly-shaped mountings my improved leaf-turner may be attached to any instrument, music-stand, or other support. I have shown a mounting adapted for attachment to any upright piano by being clamped over the top thereof and consisting of two preferably tubular parts 36 and 37, telescopically united and secured in any position of adjustment by means of a thumb-screw 38. Both parts terminate at the outer end in jaws 39 and 40, adapted to engage, respectively, the forward and rear edges of the piano-top, the jaws being provided with padding 41, preferably of felt, to prevent abrasion to the piano. A vertically-disposed bearing 42, attached to the front jaw 39, is adapted to be slidably engaged by the upright post 3, a thumb-screw 43 securing said post in any position of adjustment. The supporting-frame 1 may be secured to the post 3 in a position either above or below the bearing 42, a wide range of vertical adjustment being thus afforded. The hose 35 may conveniently be passed through the tubular parts 36 and 37 and around the back of the piano to the bulb or a valve near the foot of the player.

As a means for suspending the sheets or leaves from the wings I preferably employ clips 44, of thin sheet metal, adapted to clamp over the top edge of the leaves and having a hook portion 45 for engaging the top edge of the wings, the lower edge of the hook portion being flared at one end 46 to be more readily slid onto the wings. The clips are preferably clamped one back of the other and preferably over the middle of the several leaves, and when the wings are in the normal position the hook portion may be slipped thereon at the ends thereof, each successive wing being a trifle longer, whereby the first clip may gain a good seat on its wing before the next clip engages the next wing, and so on. The wings, with the leaves suspended therefrom, are now swung over to the right side to be held by the forward escapement-tooth 20, whereupon by actuation of the escapement device they are released and the sheets turned, as hereinbefore described.

Where a plurality of leaf-turners are employed—as, for example, in a band or orchestra—several or all may be actuated simultaneously by means of a master-bulb.

Although I have shown and described a preferred embodiment of my improved device, I

do not wish to be limited thereto, as changes may readily be made without departing from the spirit of the invention.

I therefore claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination of a supporting-frame, an upright rod mounted thereon, a plurality of horizontally-disposed wings in hinged association with said rod and adapted to be swung about said rod from one side of the frame to the other, spring mechanism associated with and tending to retain said wings in a normal position at the left of said rod, an escapement device at the right of said rod, a body portion for said device rotatably mounted upon said frame, an escapement-tooth normally extending downward from said body portion, another escapement-tooth normally extending sideward from said body portion, said teeth being adapted upon rotation of said body portion to engage and to successively release said wings, a hinge on said downwardly-extending tooth for allowing said tooth to swing backward, a spring for retaining said tooth in its normal position, said tooth being disposed before the sidewardly-extending tooth, a lever extending from said body portion, and means associated with said lever for actuating said escapement device, substantially as described.

2. In a device of the class described, the combination of a supporting-frame, an upright rod mounted thereon, a plurality of horizontally-disposed wings in hinged association with said rod and adapted to be swung about said rod from one side of the frame to the other, spring mechanism associated with and tending to retain said wings in a normal position at the left of said rod, an escapement device at the right of said rod, a body portion for said device rotatably mounted upon said frame, an escapement-tooth normally extending downward from said body portions, said teeth being adapted upon rotation of said body portion to engage and to successively release said wings, a hinge on said downwardly-extending tooth for allowing said tooth to swing backward, a spring for retaining said tooth in its normal position, said tooth being disposed before the sidewardly-extending tooth, a lever extending from said body portion, and pneumatic means associated with said lever for actuating said escapement device, substantially as described.

3. In a device of the class described, the combination of a supporting-frame 1, a plurality of horizontally-disposed wings, vertical rods 6 6 secured at their lower ends to the inner ends of said wings, horizontal arms 7 7 extending from said rods and terminating in bearings, an upright rod 9 mounted upon said frame and engaged by said bearings, coiled springs sleeved upon said upright rod 9, an additional upright rod 13, one end of each of said springs engaging said additional upright rod, the other end engaging one of said horizontal arms 7, an escapement device at the right of said frame, a body portion 19 for said device rotatably mounted upon said frame, an escapement-tooth 20 normally extending downward from said body portion, another escapement-tooth 21 normally extending sidewardly from said body portion, said teeth being adapted upon rotation of said body portion to engage and to successively release said wings, a hinge 23 on said tooth 20, a lever 33 extending from said body portion, a cylinder 26 supported upon said frame, a piston-head, a piston-rod for said cylinder, means connecting the end of said piston-rod with the end of said lever, and means for introducing fluid under pressure into said cylinder, whereby said piston-rod and said lever connected therewith are actuated to oscillate said body portion carrying said escapement-tooth, substantially as described.

4. In a device of the class described, the combination of a supporting-frame 1, an upright rod 13 mounted thereon, a plurality of horizontally-disposed wings in hinged association with said rod and adapted to be swung about said rod from one side of said frame to the other, spring mechanism associated with and tending to retain said wings in a normal position at the left of said rod, an escapement device at the right of said rod, a body portion 19 for said device rotatably mounted upon said frame, an escapement-tooth 20 normally extending downward from said body portion, another escapement-tooth 21 normally extending sidewardly from said body portion, said teeth being adapted upon rotation of said body portion to engage and to successively release said wings, a hinge 23 for said downwardly-extending tooth, a lever extending from said body portion, and automatic means associated with said lever for actuating said escapement device, substantially as described.

5. In a device of the class described, the combination of a supporting-frame 1, a clamp adapted for adjustable attachment to a support, a supporting-post adjustably engaged with said clamp and by said frame, an upright rod mounted upon said frame, a plurality of horizontally-disposed wings in hinged association with said rod and adapted to be swung about said rod from one side of said frame to the other, spring mechanism associated with and tending to retain said wings in a normal position at the left of said rod, an escapement device at the right of said rod, a body portion 19 for said device rotatably mounted upon said frame, an escapement-tooth 20 normally extending downward from said body portion, another escapement-tooth 21 normally extending sidewardly from said body portion, said teeth being adapted upon rotation of said body portion to engage and to successively release said wings, a lever extending from said body

portion, and automatic means associated with said lever for actuating said escapement device, substantially as described.

6. In a device of the class described, the combination of a supporting-frame 1, a clamp adapted for adjustable attachment to a support, a supporting-post adjustably engaged with said clamp and by said frame, an upright rod mounted upon said frame, a plurality of horizontally-disposed wings in hinged association with said rod and adapted to be swung about said rod from one side of said frame to the other, spring mechanism associated with and tending to retain said wings in a normal position at the left of said rod, an escapement device at the right of said rod, a body portion 19 for said device rotatably mounted upon said frame, an escapement-tooth 20 normally extending downward from said body portion, another escapement-tooth 21 normally extending sidewardly from said body portion, said teeth being adapted upon rotation of said body portion to engage and to successively release said wings, a hinge 23 for said downwardly-extending tooth, a lever extending from said body portion, and automatic means associated with said lever for actuating said escapement device, substantially as described.

7. In a device of the class described, the combination of a supporting-frame, a clamp adapted for adjustable attachment to a support, a supporting-post adjustably engaged with said clamp and by said frame, an upright rod on said frame, a plurality of horizontally-disposed wings adapted to be swung about said rod from one side of said frame to the other, spring mechanism associated with said rod and said wings, tending to retain said wings in a normal mal position at one side of said frame, escapement mechanism for successively releasing said wings from the other side of said frame to allow them to be returned to their normal position by said spring mechanism, and means for actuating said escapement mechanism, substantially as described.

8. In a device of the class described, the combination of a supporting-frame, a clamp adapted for adjustable attachment to a support, a supporting-post adjustably engaged with said clamp and by said frame, an upright rod on said frame, a plurality of horizontally-disposed wings adapted to be swung about from one side of frame to the other, spring mechanism associated with said rod and said wings, tending to retain said wings in a normal position at one side of said frame, escapement mechanism for successively releasing said wings from the other side of said frame to allow them to be returned to their normal position by said spring mechanism, and pneumatic means for actuating said escapement mechanism, substantially as described.

In witness whereof I hereunto subscribe my name this 4th day of February, A. D. 1903.

WALDEMAR BAUER.

Witnesses:
HARVEY L. HANSON,
LYNN A. WILLIAMS.