(No Model.)

J. MILLER.

MUSIC LEAF TURNER.

No. 538,619. Patented Apr. 30, 1895.

Fig. 1.

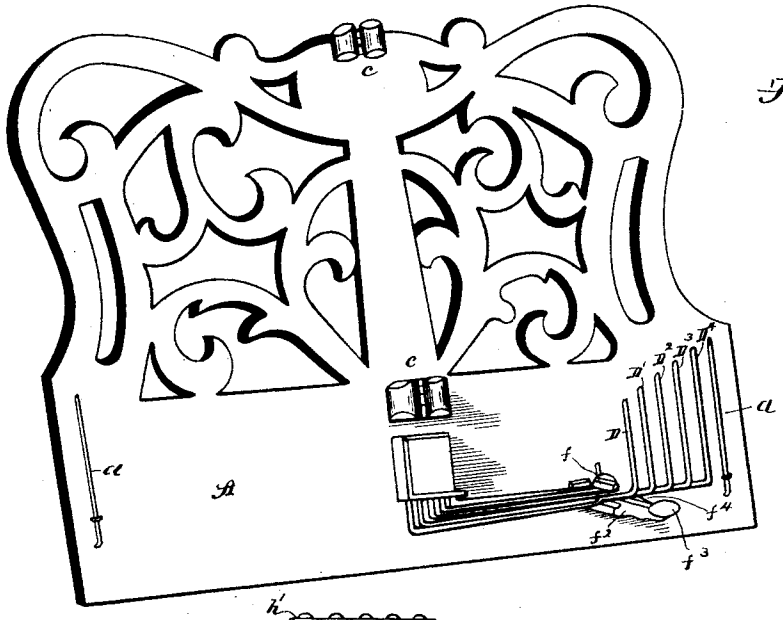


Fig. 2.

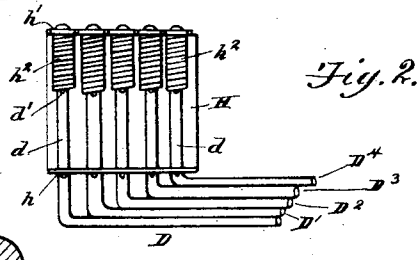


Fig. 3.

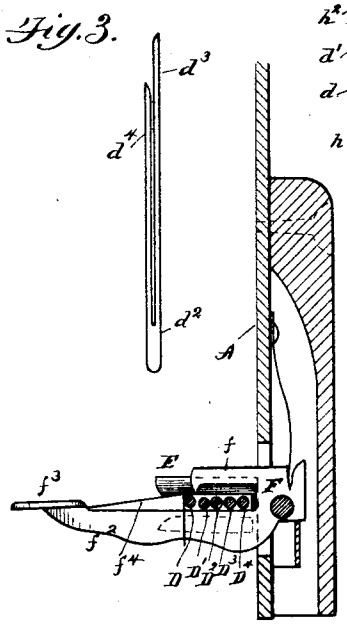
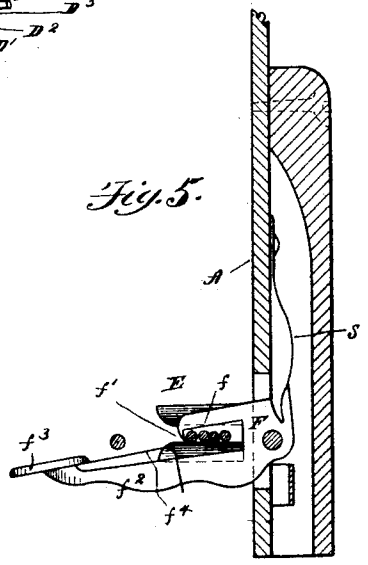


Fig. 4.

Fig. 5.



WITNESSES

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MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 538,619, dated April 30, 1895.

Application filed April 16, 1894. Serial No. 507,726. (No model.)

To all whom it may concern:

Be it known that I, JAMES MILLER, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Music-Leaf Turners; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to an improvement in music leaf turners and it consists in the construction and arrangement of parts hereinafter described and definitely pointed out in the claims.

In the drawings, Figure 1 shows the device in perspective. Fig. 2 shows the spring-hinges of the turning-arms. Fig. 3 shows in detail the end of the turning-arm. Figs. 4 and 5 show in section the holding and releasing hook, which holds the arms or enables the operator to release them one at a time.

A indicates the frame or support upon which the various parts of the turner are secured. It consists of a piece of thin wood or other material, which may be either plain or ornamental, and may be provided with the holding rods *a a*, under which the marginal leaves of a musical pamphlet, or the cover of a music book, are securely held to the frame A.

To the middle of the frame I secure a clamp, or pair of clamps, *c*, *c*. There may be one, two, or three of these clamps, as may be desired, or as the size of the turner may require. At the middle line of the support A, and below the lowermost of the holding clamps *c*, I secure a number of turning arms, each of which consists of a piece of stiff wire bent twice at nearly right angles, the angles in the different arms differing slightly, for reasons that will appear. The hinged part *d* of each arm passes through holes *h h'* in the upturned flanges of a holding plate H. Around the hinged part *d* of each arm is a coiled spring h^2, one end of which is held from turning with respect to the hinged plate *d*, and the other of which is held fixed with respect to the hinged part *d*, by engaging with a pin *d'* that is inserted in the body of the hinged part *d*. The coiled spring h^2 is under considerable tension, and is so coiled that it tends to throw the turning arms D from the right to the left. The hinges of the turning arms D, D', D^2, D^3, D^4, are all alike, and similar to the one described. The outer or free end of each arm D is provided with an upturned part d^2, which is split from its upper extremity nearly to the angle of the turn. One half, d^3, of the split end d^2, is longer than the other half, d^4, and both points are beveled from within or from the kerf outwardly, and the points are finished smoothly to prevent injury to the paper of the pamphlet.

The end of the arm whose hinge is located at the extreme right is longer than the next adjacent one at the left of it, and this, in turn, is longer than the one still farther to the left of it, so that, however many turning arms may be employed, the right of the upturned ends gradually diminishes from the extreme right to the left when they are swung to the position shown in Fig. 1. Thus formed, the inner ones do not interfere with the operator in placing the leaves of a pamphlet in the outer ones, and, as the outer ones are those in which the leaves of the pamphlet are to be first inserted, the arrangement makes it much easier to place the pamphlet in position than if the holding arms were all of the same height.

The hinged parts of the arms are located with their axes in a plane parallel with the plane of the support A; and the outer ends of the arms, when turned to the position shown in Fig. 1, are arranged so that the body part of the arms, at the angle where the upward turn is made, are all in a plane perpendicular to the plane of the support A. To produce this result, it is necessary that the angles of the several arms differ slightly the one from another, as is indicated in Fig. 1.

The turning arms are all held to the right side of the arm, and against the force of the springs h^2, by a peculiarly shaped escapement hook shown in Figs. 4 and 5. In these figures, E indicates a guide projecting from the face of the frame board A, and provided with two branches between which there is a space of about the thickness of the wire of the turning arm *d'*, and a depth sufficient to to hold all of the turning arms that may be used. An escapement detent F is hinged to the frame board A, and, on the upper side of

this detent F is a hook *f*, which extends forward beyond the outermost of the turning arms *d'*, and terminates with a downturned sharp point *f'*. On the lower side of the detent is an arm f^2, which extends outward and terminates in a finger rest or key f^3. A spring detent f^4 rises from the lower arm at a point outside of the hook *f'*, and extends inward, turning downward while still outside of the point *f'*, and leaving a space, between its downturned inner end and the point *f'*, just sufficient for the passage of the body part of one of the turning arms D. Between the upper arm *f* and the lower arm f^2 of the escapement F, is a space somewhat wider than the space between the lower and upper parts of the guide E, and sufficiently wide to permit an escapement movement of the detent. The detent is held up in horizontal position by a spring, *s*, and, when in this position, retains, within the opening of the guide E, the turning arms D, D', &c.; but the turning arms are held pressed by the spring tension of the springs h^2 against the downturned inner end of the spring detent f^4; and one of the leaf turners D lies outside of the point of the arm *f*, held by the upper branch of the guide E from escaping upward, and by the spring detent f^4 from escaping outward. The remaining arms press against the one thus held, but lie behind the downturned point of the arm *f*. Whenever the key f^3 is depressed, the point of the arm *f* is pushed downward in front of all of the turning arms that lie behind the first or outermost one. The spring detent f^4 is pushed down from in front of the outermost one, and the outermost arm is allowed to escape. When the finger of the operator is removed, the key f^3 rises, and with it the arm *f* rises, releasing another turning arm from behind the point of *f*, but behind the spring detent f^4, and thus the consecutive depressions of the key will release one by one all of the turning arms, and the spring tension at the hinge will cause each of the turning arms, as it is released, to swing from the right to the left, carrying with it the leaf of a music pamphlet, if the leaf has been placed in the kerf in the way described.

When it is desired to replace the turning arms and the leaves of the pamphlet at the right side of the board, it is only necessary to take them and swing them from the left to the right. As they reach the key, they pass onto the spring f^4 and depress that spring, passing easily over its upper surface and behind it without engaging with the downturned point of the arm *f*.

The operation of the turner will be very evident from the description which has been given, and the readiness with which the leaves of the pamphlet can be placed in position will be readily understood.

What I claim is—

1. In a music leaf turner, the combination of a holding frame, spring actuated turning arms, a slotted guide, an escapement having two parallel arms of which one is rigid and bears a fixed inturned point and the other bears a spring actuated stop, the spring that actuates said stop being extended outward and furnishing the engaging means for depressing the stop when the leaf turning arms are swung into the escapement, substantially as described.

2. In a music leaf turner, the combination of a plurality of leaf turning arms, a holding and releasing mechanism comprising the parallel arms E, the escapement detent F, having the upper hook *f*, the lower arm f^2 and the detent f^4 formed with a yielding section with which the arms engage, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

JAMES MILLER.

Witnesses:
D. W. BRADFORD,
FRANCES CLOUGH.