(No Model.) 2 Sheets—Sheet 1.

S. H. REDMOND.

MUSIC LEAF TURNER.

No. 513,142. Patented Jan. 23, 1894.

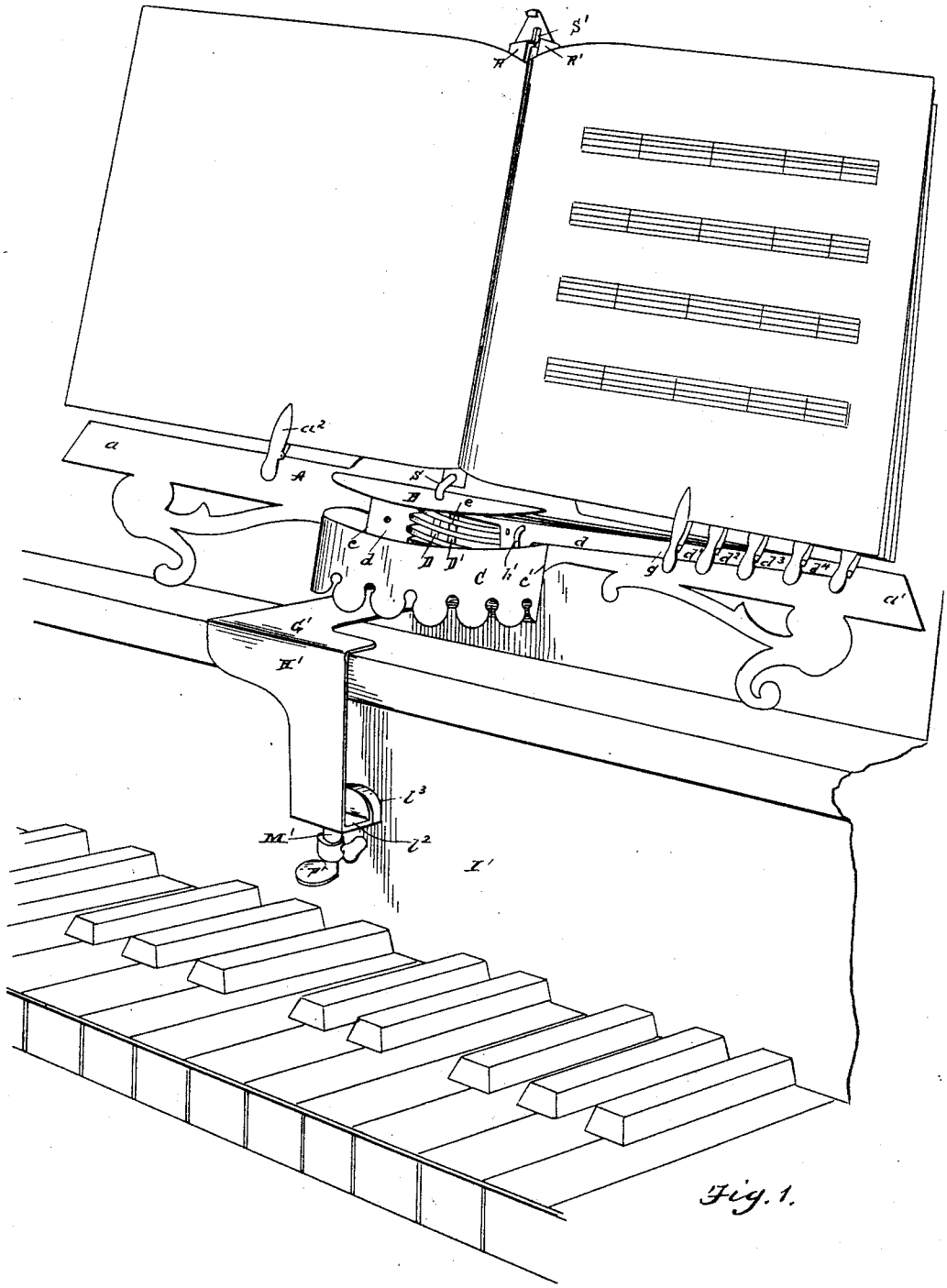

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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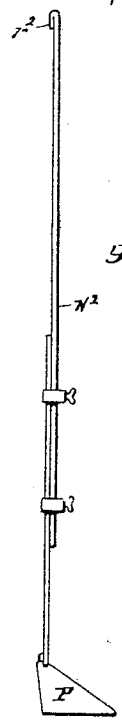

Fig. 5.

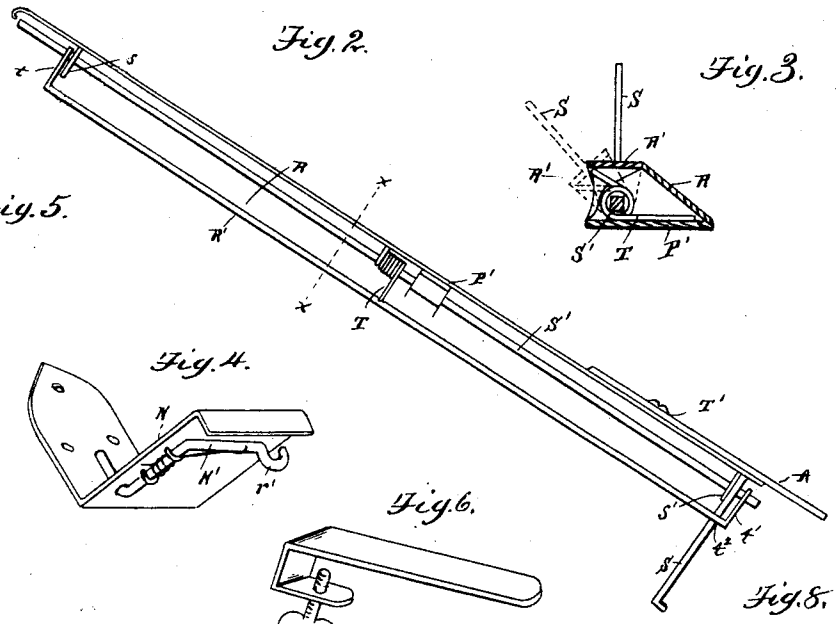

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 6.

Fig. 8.

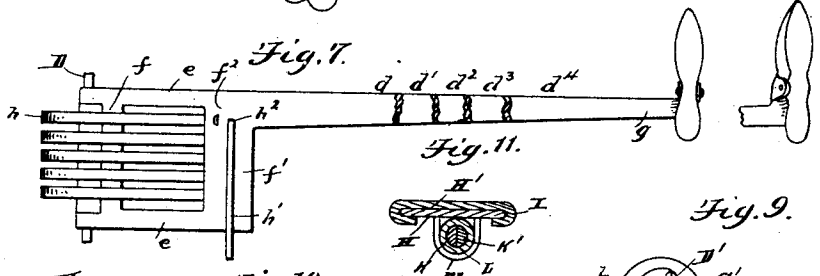

Fig. 7.

Fig. 11.

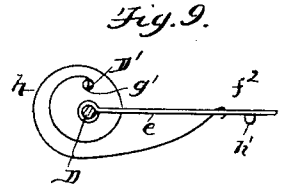

Fig. 9.

Fig. 10.

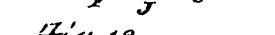

Fig. 13.

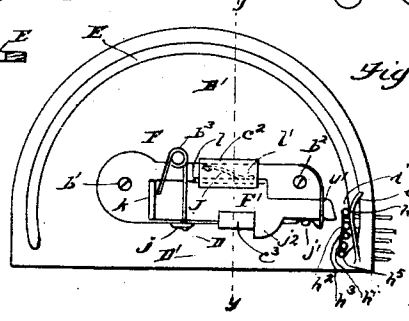

Fig. 12.

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MUSIC-LEAF TURNER.

SPECIFICATION forming part of Letters Patent No. 513,142, dated January 23, 1894.

Application filed August 7, 1893. Serial No. 482,632. (No model.)

To all whom it may concern:

Be it known that I, SIBLEY H. REDMOND, 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 Turner; 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.

My invention relates to music leaf turning devices, and it consists in the improved combination and construction hereinafter described, whereby a simple and effective arrangement is provided that will enable the performer to rapidly and readily turn the leaves with little more exertion or movement than is required to depress one of the keys of the piano.

It has for its object the improvement in the construction and mode of operation of this class of devices.

In the drawings, Figure 1 is a perspective view of my improved device as applied to a piano. Fig. 2 is a side elevation of the music holding device. Fig. 3 is a section on the line x—x of Fig. 2. Figs. 4 and 5 are perspectives of the attachments used when operating my device with the foot. Fig. 6 is a perspective view of the clamp used for holding my leaf turner on a music rack. Fig. 7 shows in elevation the swinging arms and their actuating springs. Fig. 8 is a perspective view of the leaf holder. Fig. 9 is a plan view of one of the springs under tension, showing the method of holding same. Fig. 10 is a perspective view showing the releasing bolt, its operating lever, and the method of adjusting the same. Fig. 11 is a section on the line x'—x' in Fig. 10. Fig. 12 is an inverted plan of the bottom, showing the releasing bolt and the method of holding the arm. Fig. 13 is a section on the line y—y of Fig. 12.

Similar letters refer to similar parts.

In the drawings, A represents the main frame or support, preferably made of sheet metal. This frame is extended to the right and left at a, a', to provide means for holding the first and last sheets of music, as well as forming supports to hold the device in an upright position. A little ways from the ends of these extensions, a and a', and firmly fastened thereto, are two spring clamps, one only being seen at a^2 in Fig. 1, adapted to receive the first and last leaves, as hereinbefore stated.

Firmly secured to and at the center of the frame A, are the two disks, B and B′, with a semicircular front, which may be formed of one piece, or may be made separately; the former is preferred, however, as it affords better means for fastening them to the frame A, by means of the portion b, which joins the two disks B, and B′. These disks are bent at right angles to the portion b, extending out toward the operator and lying parallel to each other.

Secured to the frame A, at c c' is the cylindrical apron, C, which fits outside the periphery of the lower disk B′, and having its upper edge extending almost to the upper disk B, while the lower edge is ornamented in any suitable way, and extends below the lower disk B′ to conceal the releasing mechanism attached to the under side of the disk B′. It will be readily seen that the portion b, the disks B B′, and the apron C form an inclosure for the operating parts of my device.

Joining the disks B B′ at the center of the semicircle is the shaft D, on which are hinged the several arms d, d', d^2, d^3, d^4; the arm d having its bearings on the shaft at the two extreme ends; next, the arm d' has its bearings on the shaft just inside of the bearing on the arm d; and so on in their order, until the whole space between the two outer bearings is filled.

To the rear of the shaft D is another shaft, D′, which is slotted longitudinally at intervals to receive one end of several springs, it being necessary to use one spring for each leaf turning arm, and, as the operation of each arm and spring is the same, it will be deemed sufficient to describe the first one.

The arm d, as above stated, is hinged at the two extreme ends of the shaft D; the extensions, e, e', of the two hinges lie parallel to each other, and are joined together by means of the two vertical pieces, f and f'; the piece f joins the two extensions very near the shaft D, while the piece f' joins them out from the center and just inside of the apron C. From this point the upper extension is

continued out through the slot formed by the upper edge of the apron C and outer edge of the disk B, and terminating at a distance governed by the size of the leaf required to be turned. At the extreme outer end, *g*, of the arm *d* is secured one of the spring clamps hereinbefore mentioned.

The spring *h* is secured to the slotted shaft D′ at *g*′. Shown in Fig. 9. It is then coiled around the two shafts D and D′ as often as may be thought necessary to secure sufficient tension on the arm through its entire movement, and then secured to the vertical piece *f*′ at f^2. In the vertical piece *f*′, and at or near the point where it joins the extension *e*, is a depending pin *h*′; this pin may either be made of spring metal, and securely fastened to the piece *f*′ at its upper end, or, as shown, it may be a rigid pin, and loosely hung from the point h^2.

Just inside of the periphery, in the lower disk B′, is cut a semi-annular slot, E, adapted to receive the lower end of the pins, *h*′, h^2, h^3, h^4, and h^5, in the right hand end of which is formed a shoulder, *i*; behind this shoulder the pins are held by the aid of a flat spring, *i*′; the pins being loosely hinged at their upper ends are allowed to swing freely in or out from behind the shoulder, *i*, against the tension of the spring, *i*′, and also as the pins are in front of each arm when the arms are turned to the extreme right, they firmly hold against the tension of the coil springs *h*, until released by the mechanism attached to the under side of the disk B′.

A plate F is secured by means of the screws *b*′ and b^2 to the under side of the disk B′, and is so constructed as to form suitable guides for the sliding bolt F′, adapted to press the pins out from behind the shoulder *i*. This bolt F′ is held in place by means of the guides c^2 and c^3, which are formed by overlapping portions of the edges of the plate F. Two lugs are formed in a similar manner at *j*, *j*′. To the lug *j* is secured one end of a spring b^3; the other end of which bears against the down-turned end *k* of the bolt F′. The bolt F′ has formed on it a projection j^2, that limits its movement, by engaging with the lug *j*′ in one way and the guide c^3 in the other.

Interposed between the down-turned portion *l* of the bolt F′ and a similar overlapping portion *l*′ of the plate F, is a flat spring J, adapted to hold the bolt against the opposite guide c^3, and allow it a free and easy movement.

While I prefer the form shown for a releasing bolt, I do not wish to limit myself to this particular construction, as there are a variety of ways by which this result may be accomplished; and I would have it understood that any suitable method may be adopted.

When it is desired to use this device in connection with a piano, I attach to the frame A, with any suitable means, the adjustable frame G′, adapted to support a bell crank lever K^2, adapted to operate the releasing bolt. This frame is composed of two pieces, H, H′; the portion H is fastened to the back of the frame A, then carried down to a plane level with the lower edge of the apron C; thence forward where it unites with the portion H′ to form the sliding joint I, shown in Fig. 10; from here H′ is continued out on the same plane for a distance equal to the distance from the music rack to the edge of the front board on a piano; then it is carried to the right and downward to about half the depth of the front board I′, as shown in Fig. 1. The lower end, l^2, of the frame G′ is turned inward and upward, forming a projection to which a cushion, l^3, is attached against the front board. On the under side of this frame G′, and out of sight of the performer, is supported a bell crank lever, composed of two parts K and K′. The ends of these portions overlap each other, and are flattened on their inner sides, thus forming, when brought together, a round rod, as shown in Fig. 11. At this point they are held by means of the tube L, which forms a journal for said rod, the two parts K and K′ filling the tube, so that the rotation of one, compels a similar movement of the other. The tube L″ is secured to the portion H of the frame G′ by means of the staples *m m*′. It is evident with this form of joint, both in the bell crank lever and its supporting frame, that the distance between the back A and the end of the frame which overhangs the key-board can be easily adjusted. The portion K of the bell crank lever extends rearwardly and upwardly through the opening m^2 in the portion H of the frame G′, directly against the downward extending end *k* of the releasing bolt F′. The portion K extends forward to the angle L′ in the frame G′, where it is supported by a staple, *u*, then is bent to the right and extended to the angle M of the frame G′; here it is pivotally secured to the vertically adjustable extension rod M′, which is carried down through the opening P in the end l^2, and terminating in a finger piece P′.

If the performer desires to use what is commonly known as a music rack, and is playing an instrument that requires the entire attention of both hands, he may readily convert this leaf-turner into a foot-operating device, by removing the frame G′, and in its place attaching the angle piece N. Shown in Fig. 4.

The bell crank lever N′ is practically the same as the one described in connection with the frame G′, the adjustable feature being omitted, and at the point, *r*, where the lever K^2 is pivotally secured to the extension rod M′, it is bent in the form of a hook, *r*′, to engage with a similar hook or eye, r^2, on the upper end of the extension rod N^2. Shown in Fig. 5. The lower end of the adjustable rod N^2 engages a foot lever P.

A simple and effective method for holding the music is shown in Figs. 2 and 3. P′ indicates the back or main support of the holder. Attached to this back along one edge

by any suitable means is the strip R, which forms an acute angle with the back P′, and having its ends, s, s', bent at right angles with the main body R. Parallel with the back, and having its edge meet the raised edge of the strip R, is another strip R′, its ends, t, t', also being bent at right angles to the body R′, and forming with the ends s and s' a hinge, the center pin of which is a square rod which passes snugly through similarly formed openings in the ends t and t', and loosely through round openings in the stationary ends s, s'. The square rod S′ extends the full length of the holder, and has secured to it near the end t', and passing up through the hole, t^2, in the strip R′, a lever S, adapted to open the jaws R, R′, against the tension of the spring T, which is coiled around the rod S′, and adapted to hold the swinging jaw R′ against the stationary jaw R. The whole thing may then be fastened in any desired way to the back A, although I prefer to pivot it there, the pivot thus adapting it to be folded when carried. The pivot is placed a little above the lower end at T′. Just to one side and below the pivotal point K, I place a stop u; directly opposite this stop, on the other side of the holder, and a little way from it, I secure a lever U adapted to be brought down against the holder, thus clamping it against the stop u.

Having thus described my apparatus, its mode of operation is as follows:

After the device has been secured to the piano or music rack by means of the clamp shown in Fig. 6, and the music holder secured in its upright position, the operator opens the jaws R R′ to engage the back of the music by means of the lever S; the cover is then secured back by means of the spring clamps a^2, and the leaves engaged in their order by corresponding clamps on the arms d, d', d^2, d^3, d^4; the arms and leaves are then swung to the right, in the position shown in Fig. 1, where they are held by means of the pins h', h^2, h^3, h^4, h^5. When it is desired to turn one of the leaves, the performer presses the finger-piece P′, thereby operating the bell crank lever, which in turn moves the bolt F′ against the tension of the spring b^3. By this movement, the end of the bolt, u', is brought against the first pin, h', behind the shoulder i, thus releasing it. It is obvious that, the moment the pin h' is released from the shoulder i, the first leaf will be quickly carried to the extreme left by means of the spring h. It will be readily seen that the instant the finger is removed from the key, P′, the bell crank lever and releasing bolt will be returned to their first position, by means of the spring b^3; and the arms are carried forward by their actuating springs h, thus bringing the pins h^2, h^3, h^4, h^5 up to the shoulder where the second one is in a position to be released by the bolt F′.

As the operation of my device in connection with the foot-operating mechanism is practically the same as the operation by hand, it is not deemed necessary to describe it.

The joint in the frame G′ and the bell crank lever K^2 enables me to adjust my device to any style of instrument or rack.

What I claim is—

1. In a music leaf turner, the combination of a frame, a music holder adapted to grip the music its full length, semi-circular disks, a semi-annular slot in one of said disks adapted to receive pins or lugs secured to swinging arms, a shoulder formed at one end of said slot, means for holding said pins or lugs behind said shoulder against a tension, a releasing bolt adapted to move said pins or lugs from behind said shoulder, a bell crank lever adapted to operate said releasing bolt, and means whereby said bell crank lever may be operated from a point near the key-board, and the music leaves, substantially as described.

2. In a music leaf turner, the combination of a frame, a music holding device adapted to grip the music its full length attached thereto, semi circular disks attached to said frame and supporting a shaft to which arms are secured, suitable means to hold said arms against a tension, means whereby said arms can be released at the will of the operator, and the music leaves, substantially as described.

3. In a music leaf turner, the combination of a frame, a music holder adapted to grip the music its full length; disks having semi-circular fronts adapted to support shafts, said bars adapted to receive springs and swinging arms for turning the leaves, depending pins adapted to engage in a semi-circular slot in one of said disks, a shoulder to hold said pins against the tension of said springs, a sliding bolt to release said pins from said shoulder, and a lever to operate said sliding bolts, substantially as described.

4. In a music leaf turner, a frame, a music-holding device pivotally secured to said frame, said holding device adapted to grip the music its full length, disks having a semi-circular front, arms hinged at or near the center of said semi-circular front and springs adapted to carry said arms through an arc of a circle, spring clamps at the end of each arm adapted to receive and hold a leaf, a pin or lug attached to each arm adapted to engage with a shoulder, a bell crank lever to release said pins and arms, said bell crank lever adapted to be operated at or near the key-board, all combined to operate as and for the purpose described.

5. In a music leaf turner, the combination of a frame, a music holder secured thereto and adapted to receive the music its full length, disks secured to said frame, arms pivotally secured to said disks, said arms adapted to engage the leaves, and means whereby said arms and leaves are turned through the arc of a semi-circle, a shoulder formed in one of said disks for holding the said arms at one end of said arc, a bolt to release said arms from said shoulder, with a removable frame adapted to support a lever to operate said sliding bolt, an adjustable extension rod se-

cured to said lever, said adjustable rod provided with means for securing a pedal, substantially as described.

6. The combination of a frame adapted to receive means for holding the first and last leaves and to support the device in an upright position, a music holder pivotally secured to said frame whereby it may be folded down to be carried, said holder composed of two jaws, one stationary and the other adapted to swing away from said stationary jaw, whereby the music may be engaged at full length by said jaws, a spring engaging said jaws adapted to hold them together, and means whereby the said jaws may be opened against the tension of said spring, two disks having a semi-circular front attached to said frame, a semi-cylindrical apron adapted to fit outside the periphery of said disks to form an inclosure, a shaft inside of said inclosure and joining the said disks at the center of said semicircle, arms loosely pivoted on said shaft and adapted to swing on the arc of said semi-circle, spring clamps at the outer end of each arm adapted to hold a leaf, means for holding said arms at the right hand end of said arc, a sliding bolt for releasing said arms, whereby said arms are carried through the arc of said circle by means of the springs inside of said inclosure, a removable adjustable frame secured to said main frame and adapted to support an adjustable bell crank lever, said lever adapted to operate said sliding bolt, an adjustable extension rod pivotally secured to said bell crank lever, said rod adapted to be carried down near the key-board of the instrument and having formed on the lower end a finger-piece to operate said bell crank lever, all united to operate substantially as described.

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

SIBLEY H. REDMOND.

Witnesses:

BENJ. F. GEIGER,

Mrs. L. E. REDMOND.