

F. Outer,

Music-Leaf Turner,

N^o 18,935.

Patented Dec. 22, 1857.

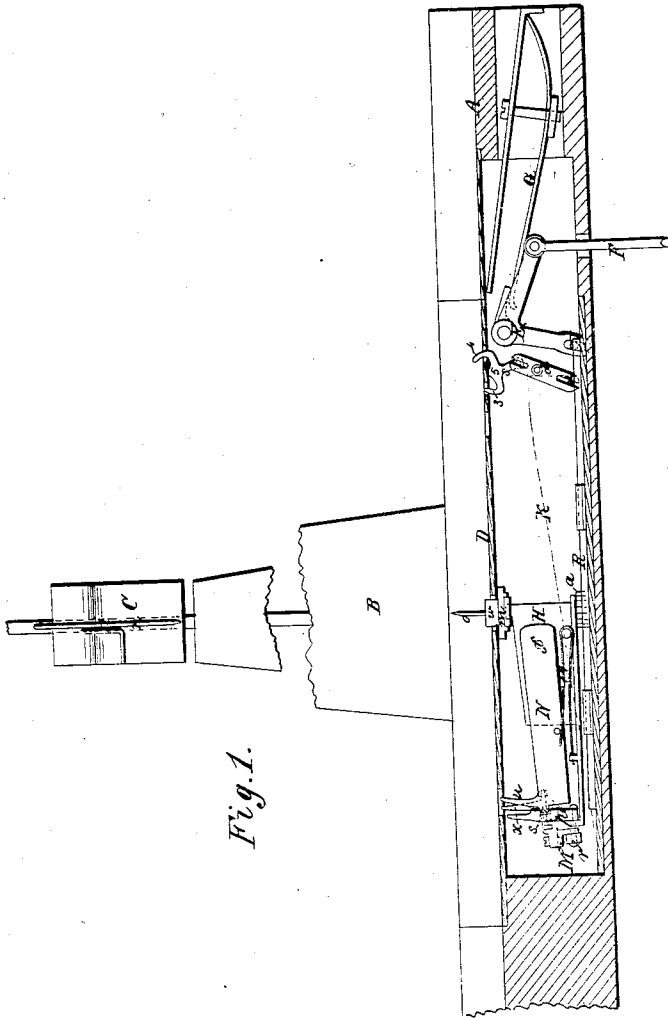


Fig. 1.

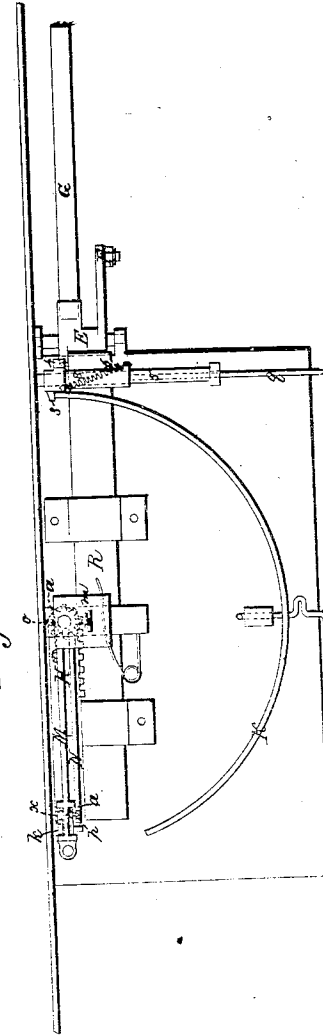


Fig. 2.

Fig. 3.

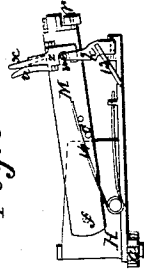
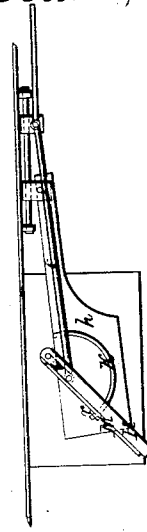


Fig. 4.



UNITED STATES PATENT OFFICE.

FREDERICK SUTER, OF BROOKLYN, NEW YORK.

MACHINE FOR TURNING THE LEAVES OF BOOKS.

Specification of Letters Patent No. 18,935, dated December 22, 1857.

To all whom it may concern:

Be it known that I, FREDERICK SUTER, of the city of Brooklyn, in the county of Kings, in the State of New York, have invented a new and Improved Machine for Turning the Leaves of Music-Books; and I hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure I is a vertical section and Fig. II a plan of the apparatus with the top plate removed, the other figures represent details, &c.

The apparatus consists of a box A containing the mechanisms, to which a standard B is attached to support the music book. On the top of this standard a sliding piece, C, is fixed, capable of being regulated to suit the height of the music, and provided with a spring catch, *n*, to hold the upper end of the music book. The lower end is held fast by the pin, *o*, fast to the slide, *m*, and acted upon by a spring. This slide, *m*, is pulled back, while the book is placed against the stand by means of the projection, *w*, passing through the top plate, D.

In the bottom of the box a rack, R, is situated, acted upon by the bell crank, E, which latter is operated in one direction by the rod, F, and brought back again by the action of the spring, G.

H, is a lever, turning on its axis and provided with a pinion, *a*, working in the rack, R, and by which said lever is turned around, taking with it one of the leaves of music as will be hereafter described.

2, is a small pin fast to the rack, R, and connected with a lever, *d*, which latter acts upon the arm, *g*, so as to communicate a motion to the fingers, 3, and, 4, around their axis, 5. The fingers, 3, and, 4, are attached to a tube, 8, capable of sliding on the axis, 5, and acted upon by the small spring, 6. A small rod, *q*, is connected with this tube, 8, projecting through the outside of the box A, so as to pull this tube together with its fingers back when required.

Through the finger 4 the front leaf of music, on the right hand side, is held fast until the same is taken away by the lever H, during which operation the finger 3 passes between the second and third leaf, to prepare this second leaf to be in a position to be taken hold of by the mechanisms on the lever H when required to be turned,

or after the first leaf has been turned around, to be ready to be turned around by said lever H as soon as desired.

K, is a segment attached to the bottom of the box A.

The lever H, of which one side is shown in Fig. I, and the opposite side in Fig. III has two arms M and N attached turning independently of each other on a pin, *f*. On the end of the arm N a small nose or projection, *s*, is made, fitting into a lever, *p*, turning on pins fast to the lever H. A spring, 12, acts against this arm N so as to push the same upward, as soon as relieved by the lever, *p*. On the end of the arm M a small roller, *r*, is provided through which said arm is raised up, while passing from the left to the right, over the inclined surface of the segment K. A hook, *k*, acted upon by a spring, 13, and attached to the lever H catches on the underside of a projection, *v*, provided on this arm M (Fig. III) and keeps this arm in this raised up position while returning from the right to the left.

x, is a small lever attached to the arm, M, capable of a slight motion, the upper end of this lever, *x*, is pointed, while the lower end is situated behind the lever, *p*, and acts upon the same, when moved, so as to throw said lever, *p*, clear of the nose, *s*, to allow the arm N to be moved upward.

e, is a projection attached to the arm, N, and fitting into a recess on the arm, M, to prevent the arm N from being pushed up too high.

A spring, 14, acts upon the arm M to pull the same, as well as the arm N down again as soon as the hook, *k*, is pushed free from the projection, *v*, of the arm M. Behind the hook, *k*, a small lever *z* is situated attached likewise to the arm M, and capable of a slide motion around its centers, for the purpose of pushing the hook, *k*, away from the projection, *v*, when required.

When the lever, H, is by the action of the spring, G, moved from the left to the right, and passes over the inclined surface of the segment, K, the arm, M, is lifted up, as before described, and held in this upward position by the hook, *k*. As soon as the lever, *x*, touches the music the lower end of the same is thereby thrown a little out, so as to push the lever, *p*, clear of the nose or projection, *s*, on the end of the arm, N, when the spring, 12, forces said arm N up-

ward, thereby bringing the point, *u*, on the top of said arm behind the music leaf and thereby locking this leaf between the end of the lever, *x*, on the arm *M* and this point, *u*, on the lever, *N*. By pulling on the rod, *F*, the lever *H* with its mechanisms, which as above described holds the music leaf fast is moved round to the left taking with it the leaf, and consequently turning the same over. The fingers 3 and, 4, are at the same time operated on as above mentioned. As soon as the lever *H* arrives on the left side the hook, *z*, comes in contact with the back of the box or with the music turned over before, and thereby pushes the hook, *k*, clear of the projection, *v*, when the spring, 14, acts upon the arm, and pushes the same together with the arm *N* down again so as to bring the top of the lever, *x*, and the point, *u*, below the bottom of the leaf, leaving thereby the same free and at the same time allowing the lever *H* to pass back again, ready for the next time, without disturbing the leaves already turned.

25 To prevent the leaves being torn it is advisable to attach to that part of the leaves, which are taken hold of by the mechanisms of the lever, *H*, metal plates.

Instead of the above described construc-

tion the same may be made as represented in Fig. IV, where the lever *H* is moved by means of a lever, *C*, which is operated by the rod, *c*, attached to the bell crank *E*. And this lever, *C*, works at the same time a plate, *p*, to which the segment, *K*, is attached. By this arrangement the whole movement is easier regulated. The mechanisms of the lever *H* and other parts not shown here, being the same as above described. The rod *F* by which the bell crank *E* is moved may be carried to any point most convenient to be operated.

What I claim as my invention and desire to secure by Letters Patent is—

1. The arrangement of the lever *H* with the described mechanisms, operating in the manner specified for the purpose of taking hold of the music leaf, turning the same over, and afterward letting said leaf loose again, and dropping down, so as to pass under the same, in the manner substantially as described.

2. I claim the fingers 3 and 4 operating in the manner and for the purpose specified.

FREDERICK SUTER.

Witnesses:

HENRY E. ROEDER,
N. M. PETERSON.