(No Model.)

O. F. C. BANNIER.

DEVICE FOR TURNING MUSIC SHEETS.

No. 444,390. Patented Jan. 6, 1891.

Fig. 1.

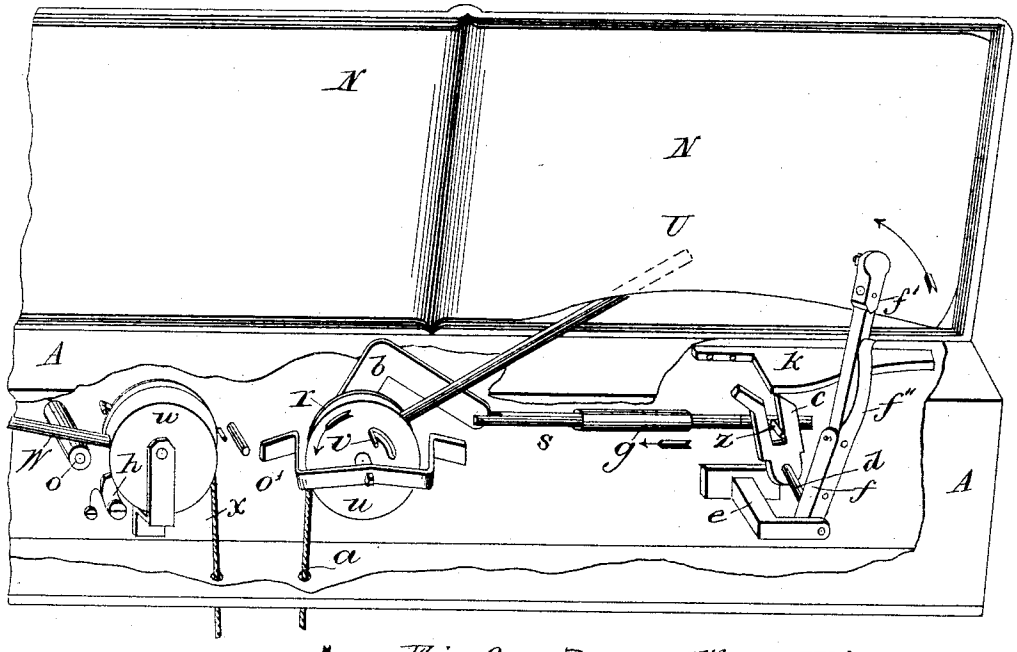
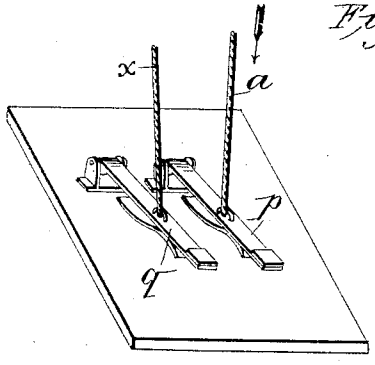


Fig. 3.



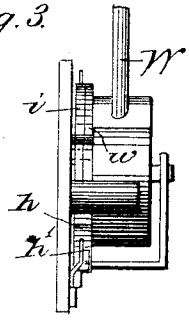


Fig. 4.

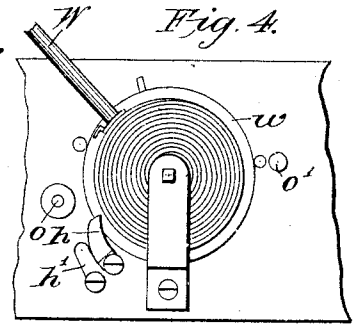
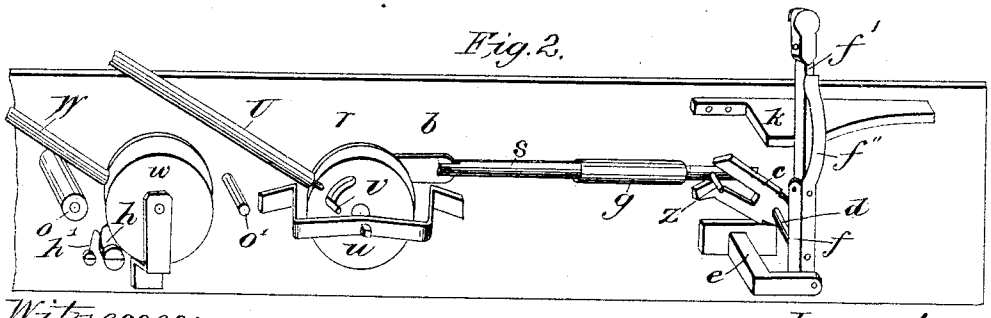


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

OTTO FRIEDRICH CHRISTOPH BANNIER, OF HAMBURG, GERMANY.

DEVICE FOR TURNING MUSIC-SHEETS.

SPECIFICATION forming part of Letters Patent No. 444,390, dated January 6, 1891.

Application filed April 8, 1890. Serial No. 347,146. (No model.)

To all whom it may concern:

Be it known that I, OTTO FRIEDRICH CHRISTOPH BANNIER, a subject of the Emperor of Germany, and a resident of Hamburg, Germany, have invented a new and useful Improvement in Devices for Turning Music-Sheets, of which the following is a specification.

This invention relates to a device for turning music-sheets, which is operated by pulling a cord or depressing a pedal connected with the latter.

Referring to the accompanying drawings, in the various figures of which like letters of reference denote like parts, Figures 1 and 2 are perspective views, and Figs. 3 and 4 details, of the improved contrivance.

A casing A, secured in any suitable manner to a music desk or table, contains the mechanism, consisting of three principal parts, viz: driving apparatus, folder, and reverser.

The driving apparatus is composed of a rail or rod *s*, sliding in a guiding-tube *g* and connected through an angular connecting-link *b* with a crank-pin provided on the back of a cord-pulley *r*. The latter incloses a powerful clock-spring adapted to be wound up by pulling the cord *a* and to thrust back the cord-pulley *r* and rod *s* into their normal position when the pulling is discontinued. The other extremity of rod *s* carries a pivot *z*, adapted to catch into the fork-shaped slot of a lever *c*, mounted on the shaft of the fold-forming device. The latter is lodged, by means of shaft *d*, in a block *e*, and consists of the lower portion *f*, rigidly connected with the shaft, and the top portion *f'*, connected hinge fashion with the lower portion, and having its head lined, in the manner of piano striking-hammers, with india-rubber, leather, or cloth. A leaf-spring *f''*, attached to the lower portion, tends to press the top portion elastically against the music-sheet N.

The reverser consists of a rod U, secured on a cap *u*, which is placed over the spring-box of cord-pulley *r*. The side of cap *u*, which is closed in front, has a segmental slot through which projects a corresponding catch-pin *v*, connected to the cord-pulley.

The improved mechanism works as follows: On pulling cord *a* by depressing the pedal *p*, thereby turning the cord-pulley *r* to the left, the rod *s* moves horizontally to the left and causes the fold-producer to turn from its inclined right-handed position into a vertical position, the head of the elastic top part *f'* describing a segmental line from right to left. This latter movement is followed by the right-hand lower corner of the music-sheet to be turned, which so far bulges as to allow its being seized by the now rising reverser from the rear side, which during its continued progress reverses and smooths the sheet. The segmental slot in the front side of cap *u* causes the reverser not to participate in this movement until the bulging of the music-sheet by the fold-producer is partly completed, thus allowing the reverser to place itself behind the sheet at the proper moment, while the folder is compelled to release the same as soon as the elastic top portion *f'* slides along the wedge-shaped front edge of the plate *k*, and is forced off the music-sheet owing to the shape of said plate.

Figs. 1 and 2 show, respectively, the position of the reverser when seizing the music-sheet and after the work is done. On releasing the pedal *p*—*i. e.*, the cord *a*—the spring inclosed in the cord-pulley *r* causes instantly the folder to resume its inclined inoperative position and the reverser its horizontal corresponding position.

The turning back of music-sheets, as required with repetitions of passages, is effected either by a device, as described, arranged inversely, or by means of a second reverser W, as shown on an enlarged scale by Figs. 3 and 4, consisting of a cord-pulley *w*, cord *x*, and pedal *q*. The cord-pulley *w* likewise forms a closed box containing a powerful spring, whereas the reversing-rod W is connected direct with the cord-pulley. When inoperative, the reverser W rests on the india-rubber-covered pin *o*, while the pin *o'* determines the turning of the reverser. When the latter is to be engaged, it is turned by depressing the pedal *q* for about forty-five degrees and fixed in this position prior to turning back the music-sheet for repetition. All sheets turned over from right to left during the further progress of the piece and resting on the reverser W are turned back together at the desired moment through a second pressure on the pedal *q*.

As shown in Fig. 4, the reverser W is secured in its median position by a click *h*, which catches, by the action of a spring *h'*, into a notch provided in the rim of the cord-pulley. Said click, however, cannot engage till a recess or notch in a loose disk coincides with the corresponding notch of the pulley, which only occurs during the incipient turning of the reverser W, while during the further progress of the latter said notches are displaced relatively to each other. Consequently, on the return of the reversing-rod the click is allowed to slide along over the notches, its width being equal to the joint thickness of the two disks *w* and *i*, and the reverser to be returned as far as pin *o*.

The described devices work in such a precise manner as to allow of a surer and more rapid reversing of music-sheets in any desired direction than can be done by hand.

What I claim is—

1. In a device for turning music-sheets, a driving apparatus consisting of a hollow cord-pulley *r*, a spring inclosed therein, cap *u*, placed over said pulley, angular link *b*, and rail *s*, guided in tube *g* and connected through said link to pulley *r*, said driving apparatus being adapted to be operated by any suitable force for turning the pulley and to return automatically into its inoperative state when released from such force, substantially as specified.

2. A fold-producer adapted to turn about a stationary pivot or pin from the inclined into the upright position through lever action, and consisting of a lower piece *f*, rigidly mounted on a shaft *d* and carrying leaf-spring *f''*, an upper piece *f'*, connected hinge fashion with *f*, a wedge-shaped plate *k*, a bifurcated lever *c*, and a base-block *e*, substantially as illustrated and described.

3. A music-sheet reverser secured to and movable with the cord-pulley *r*, and consisting of the reversing-rod U and the cap *u*, substantially as specified.

4. An apparatus for turning back music-sheets for repetition, consisting of a reverser W, cord-pulley *w*, loose disk *i*, each of the latter two parts having a notch, click *h*, adapted to enter into said notches when coinciding, spring *h'*, and pins *o'* and *o*, the described combination of said parts allowing the apparatus to be secured in its elevated position and also to automatically resume its inoperative position, substantially as illustrated and described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

OTTO FRIEDRICH CHRISTOPH BANNIER.

Witnesses:
FRITZ HAMMER,
CARL WEISS.