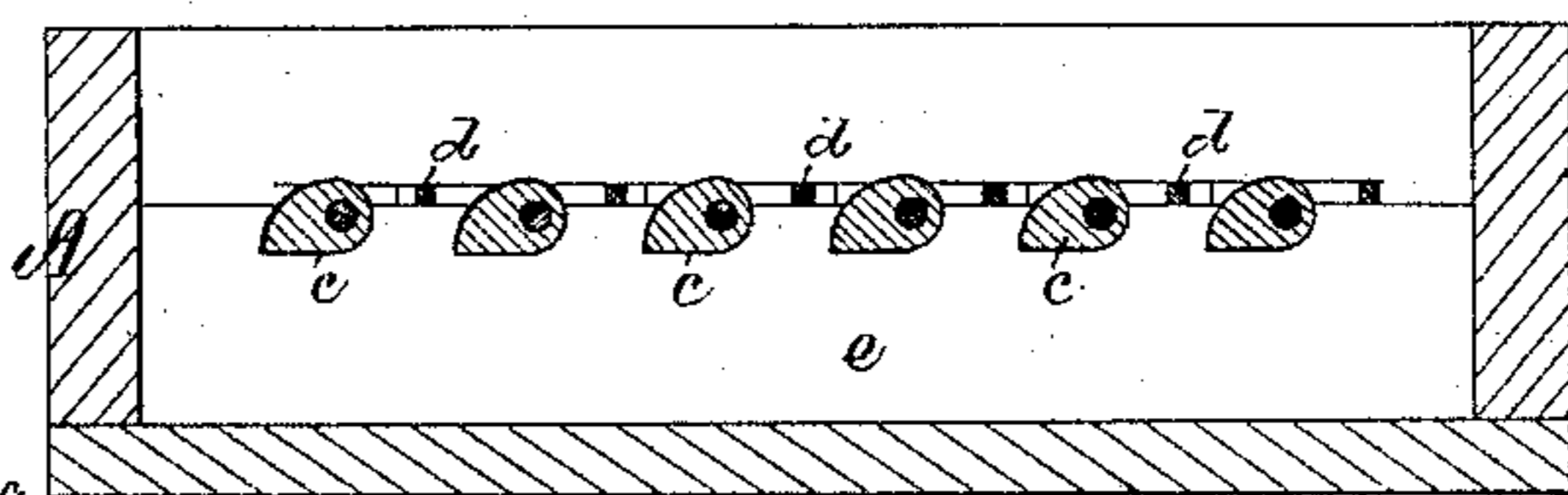
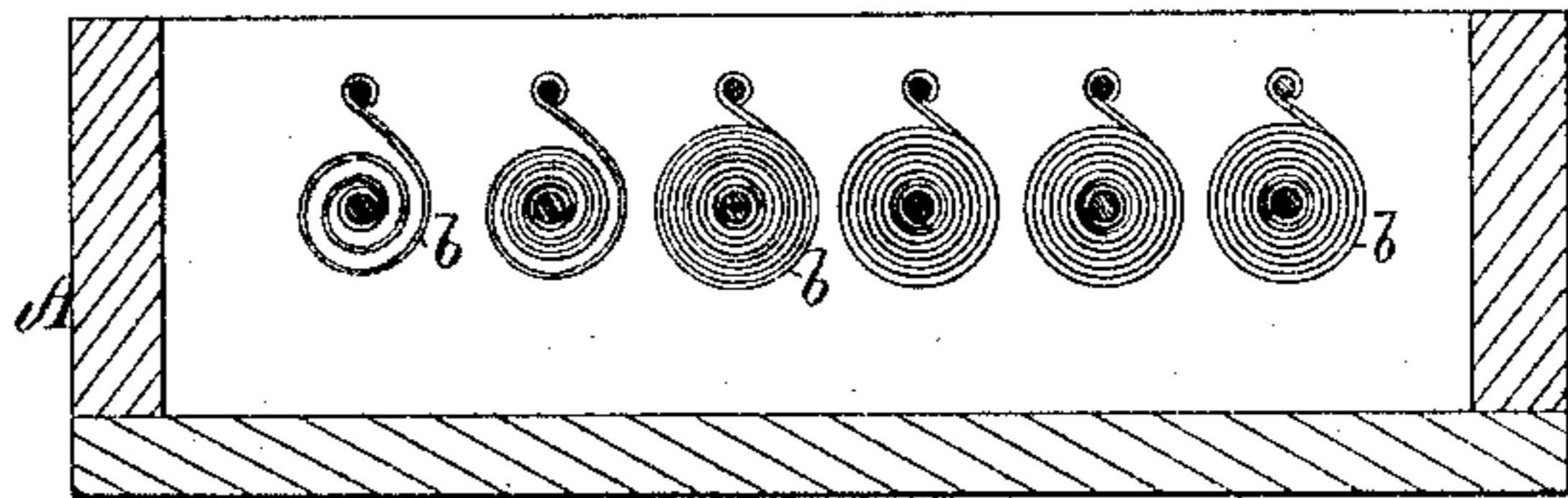
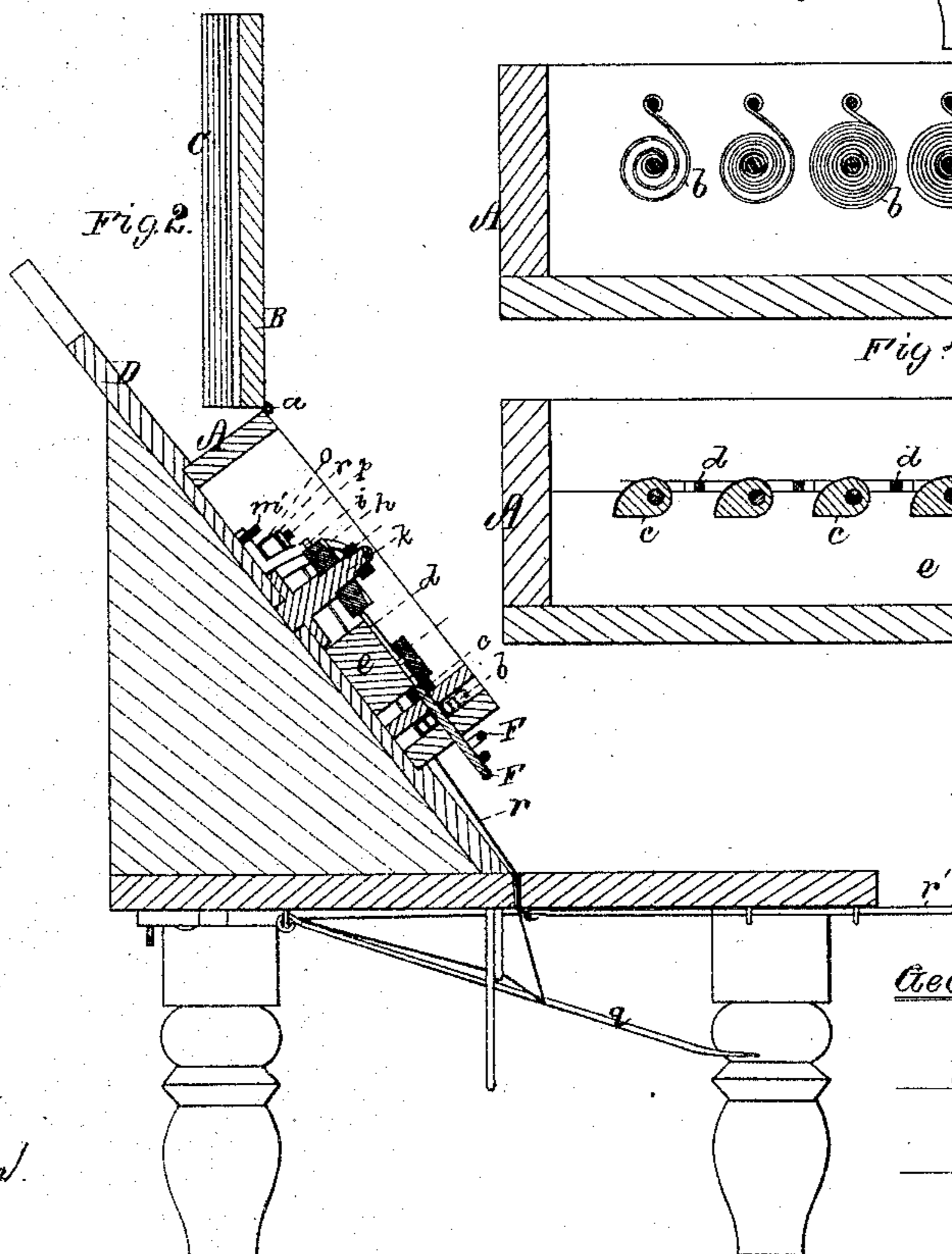
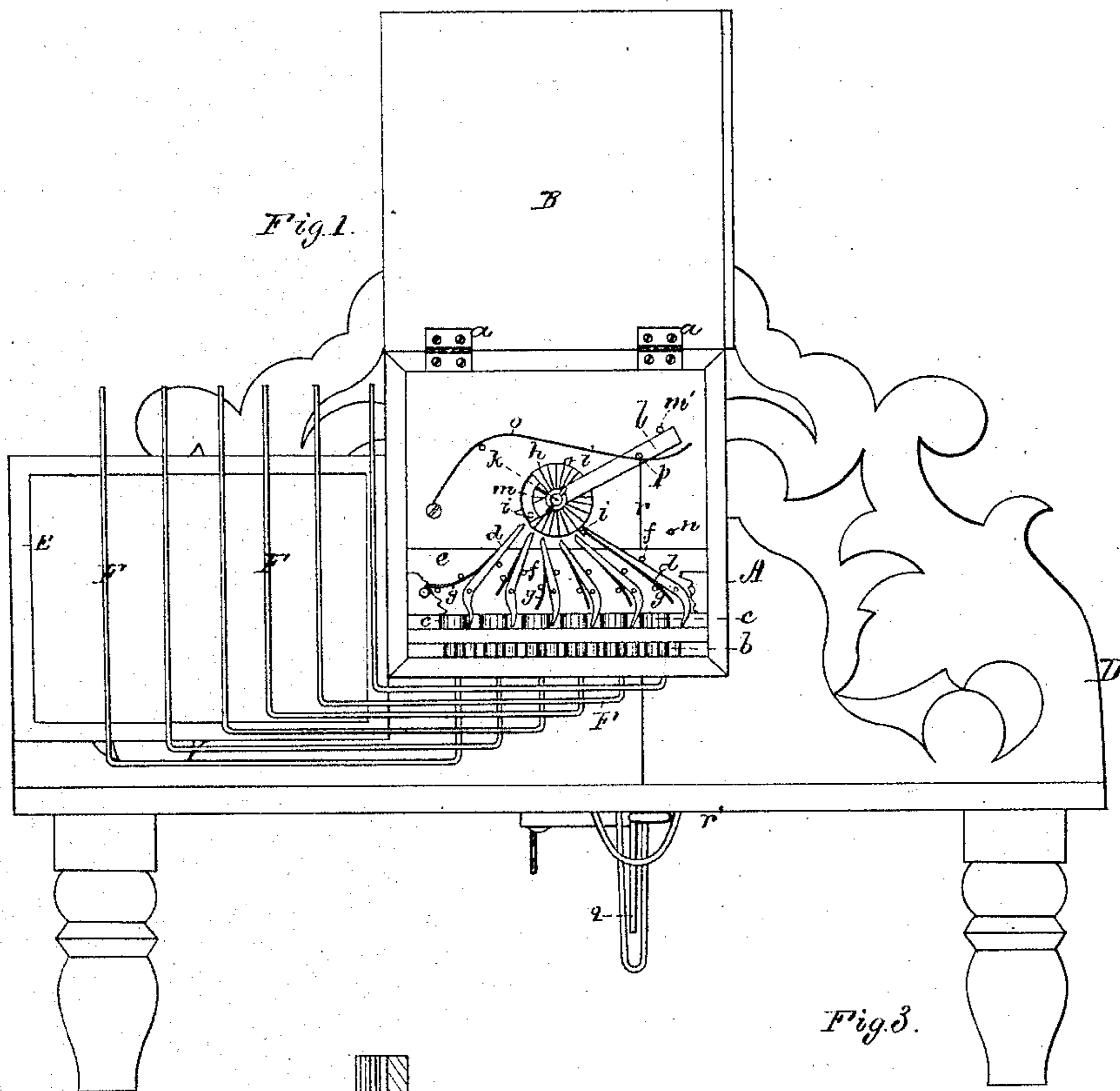


G. S. RICKARD.  
Music-Leaf Turners.

No. 155,462.

Patented Sept. 29, 1874.



*Witnesses.*

*S. N. Popper.*  
*L. N. Holken.*

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*by his attorney.*

*N. H. Ledy.*

# UNITED STATES PATENT OFFICE.

GEORGE S. RICKARD, OF WOONSOCKET, RHODE ISLAND.

## IMPROVEMENT IN MUSIC-LEAF TURNERS.

Specification forming part of Letters Patent No. **155,462**, dated September 29, 1874; application filed July 2, 1874.

*To all whom it may concern:*

Be it known that I, GEORGE S. RICKARD, of Woonsocket, of the county of Providence and State of Rhode Island, have invented a new and useful machine for turning over successively the leaves of a music or other book; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, and Fig. 2 is a transverse section, of the machine as open and applied to a music-stand.

The machine is to enable leaves of music to be successively turned over, as a performer may require, without the necessity of his doing such by hand while playing upon a piano-forte, organ, or other musical instrument, the machine doing the same automatically.

In the drawings, A denotes a box or case provided with a cover, B, connected to the body by hinges *a a*, and having applied to one edge, by any suitable means, a book or series of sheets of music, such being shown at C. This box, fastened to the music-stand D, has arranged alongside of it, as shown, and fixed to the stand, a cushion, E. A series of wires or arms, F, bent as represented, rest on the cushion and extend upward into the box, and are pivoted therein, so as to enable such to be turned through an arc of two right angles, or thereabout. Each wire or arm, where within the box A, is provided with a spiral spring, *b*, like the mainspring of a watch, such spring being flattened at its inner end to the wire and coiled around it, the outer end of the spring being secured to the case.

Fig. 3 is a horizontal section taken through the several springs.

Turning the wire or arm from left to right one hundred and eighty degrees coils or sets up the spring.

Above the spring of each wire there is fixed to the wire a catch-cam, *c*, (see Fig. 4,) which is a section taken through the series of catch-cams. With the several catch-cams a series of bent levers, *d*, is arranged, as shown, each lever being pivoted to the case or to a support-bar, *e*, arranged therein. The movements of the levers in one direction are limited by stops *f*, each lever being provided with a spring, *g*,

to force it toward its stop. Over the series of levers is a ratchet-wheel, *h*, which in this instance has its teeth formed upon one side of it. In this instance there are three times the number of teeth as levers, and there are also three teeth, *i i i*, projecting at equal distances apart from the periphery of the wheel, and in the place of the several levers. This ratchet-wheel turns freely on a stationary spindle, *k*, upon which there is pivoted a lever, *l*, provided with a click or impelling pawl, *m*, to actuate the wheel. Stops *m' n* projecting from the bottom of the box, as shown, determine the extent of movement of the lever. A spring, *o*, fixed to the box and arranged against a stud, *p*, projecting from the lever, serves to raise the longer arm of the lever to the upper stop *m'*. From the stud *p* a line, *r*, extends down to a pedal, *q*, or a slide, *r'*, arranged as represented.

In order to use the above-described machine, the cover being supposed to be closed down and the back or series of leaves of music turned over upon the cover, we first should turn back from off the cushion one hundred and eighty degrees, or thereabout, the first or outermost wire or arm, and next turn back over it the first or uppermost leaf. While so moving the arm its catch-cam will be moved against its lever *d* and will move it on its fulcrum until the lever may pass the end of the cam, when the spring of the lever will move the lever so as to cause it to move on the cam and hold the bent arm back in its rearmost position. We should continue to turn back the levers and leaves of music successively, after which, in order to turn the several leaves forward one after another, we have only to successively depress the pedal, the spring *o* serving to elevate it in the meanwhile, as may be required. The arms will pass free of the leaves and successively bring up against or upon the cushion.

When the pedal is forced downward the ratchet-wheel will be turned so as to carry one of its peripheral teeth against one of the catch-levers, and move it so as to set free the catch-cam and allow the arm or wire thereof to be turned forward by its spiral spring.

I claim—

1. The music-leaf turner, substantially as described, composed of the series of bent arms F and their operative mechanism, consisting

of the springs *b*, catch-cams *c*, levers *d*, springs *g*, toothed ratchet-wheel *h*, lever *l*, pawl *m*, and spring *p*, all constructed, arranged, and combined essentially in manner as and for the purposes set forth.

2. The combination of devices for operating the series of bent arms *F*, such consisting of the springs *b*, catch-cams *c*, levers *d*, springs

*g*, toothed ratchet-wheel *h*, lever *l*, pawl *m*, and spring *p*, combined, constructed, and arranged essentially as set forth and explained.

GEORGE S. RICKARD.

Witnesses:

R. H. EDDY,

J. R. SNOW.