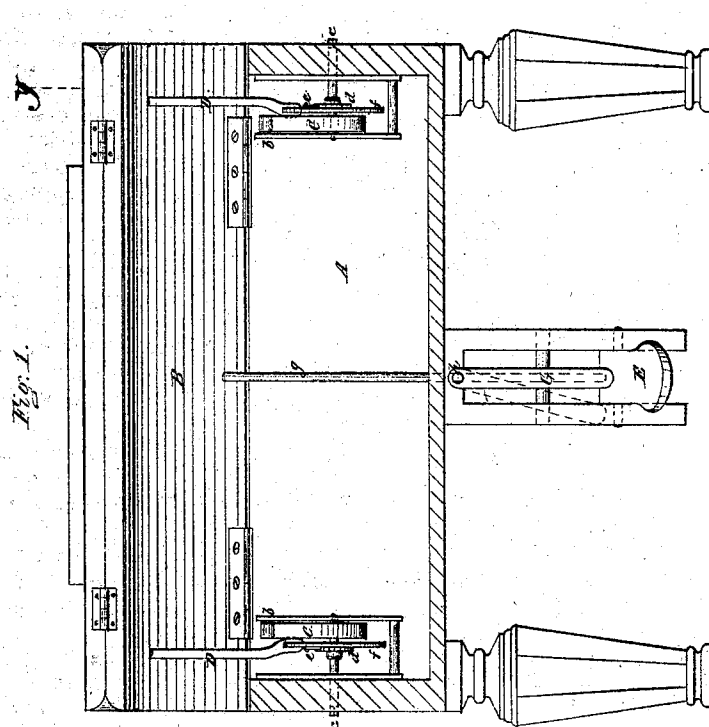
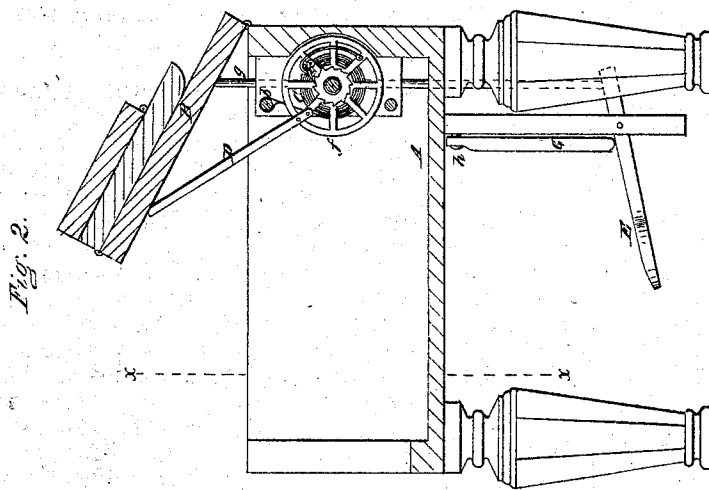


H. N. OLIVER.

Raising Pianoforte Lids.

No. 136,090.

Patented Feb. 18, 1873.



Witnesses:

James Effrich,
Chas. S. Whitman.

Henry N. Oliver
by Attorneys
Brown & Allen.

UNITED STATES PATENT OFFICE.

HERVEY N. OLIVER, OF RAHWAY, NEW JERSEY.

IMPROVEMENT IN RAISING PIANO-FORTE LIDS.

Specification forming part of Letters Patent No. 136,090, dated February 18, 1873.

To all whom it may concern:

Be it known that I, HERVEY N. OLIVER, of Rahway, in the county of Union and State of New Jersey, have invented a new and useful Means for Raising and Balancing the Lids of Piano-Fortes, or other musical instruments and other articles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a longitudinal vertical section of a piano-forte case with my invention applied, said section being taken at the line *xx* in Fig. 2, which is a transverse vertical section at the line *y* in Fig. 1.

Similar letters of reference indicate corresponding parts throughout the several figures of the drawing.

My invention generally consists in a means for raising and balancing the lids of piano-fortes and other cases whereby said operations may be performed with increased facility, and liability to injury by the falling of the lids is avoided. The invention more particularly consists in a novel application of a spring-balance or compensating appliance to the weight of the lid, and means for lifting the latter when thus balanced or partly balanced; also, for holding the lid in a raised position; said means as applied to a piano-forte giving the performer at the instrument control over the lid by his foot while playing, whereby a varied musical effect may be easily produced.

Referring to the accompanying drawing, A represents the main body of a piano-forte case, and B, its lid, hinged to the rear of the case and made up of hinged sections, as usual. Arranged at the rear portion of the case, at opposite ends of the latter, are compensating devices to the weight of the lid, the same consisting of helical springs C C, which may be made fast at *b b*, and connect at their opposite ends with arbors *c c*, carrying ratchets *d d* that transfer, through pawls *e e*, the force of the springs to levers D D, or wheels *f f*, forming part of said levers, and fitted to turn loosely upon the arbors *c c*. The arms or levers D D are extended to press on the under or inner side of the main portion of the lid,

and may be provided with leather rollers at their outer ends. In this way the lid is balanced or partly balanced, and in the movement of the lid up or down the levers D D have a running action, subject to the tension of the springs C C against the under side of the lid to sustain the latter, or when the lid is fully thrown back, to balance it. By turning the arbors *c c* the springs C C may be adjusted to any desired degree of tension.

A convenient means for raising or opening and closing the lid, supposing the weight of the lid to be somewhat in excess of the force of the springs, may be provided in the shape of a treadle, E, having a lifter-rod, *g*, extended to press on the under side of the lid. This treadle is arranged within reach of the foot of the performer while on his seat at the instrument, so that he may control the lid while playing, or at any other time, as desired. To hold the lid when raised at a given set or height a prop, G, pivoted at *h*, and capable of being adjusted over the treadle, serves to stop or lock the treadle in its position due to the raised condition of the lid through the lifter-rod *g* to hold up the lid. By tipping or swinging this prop G laterally, the treadle is released again.

I do not restrict myself to the precise construction and arrangement of parts herein shown and described, inasmuch as the same may be more or less varied without departing from the principle of the invention; but

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with the hinged lid of a piano or other case, of one or more balancing-springs, applied to operate substantially as specified.

2. The combination, with a spring-balance applied to the lid B, of a treadle, E, and lifter *g*, essentially as and for the purpose or purposes herein set forth.

3. The adjustable prop G, in combination with the treadle E, lifter *g*, and lid B, substantially as specified.

HERVEY N. OLIVER.

Witnesses:

MICHAEL RYAN,
FRED. HAYNES.