

T. ATKINS & H. DREWER.
Musical Instruments.

No. 147,739.

Patented Feb. 24, 1874.

Fig. 1

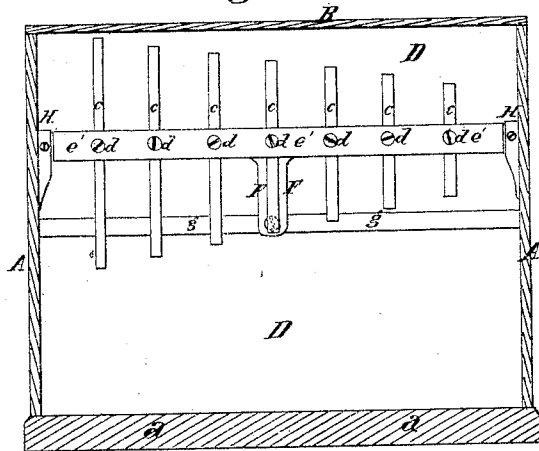


Fig. 2

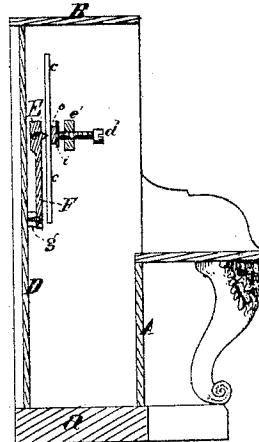


Fig. 3.

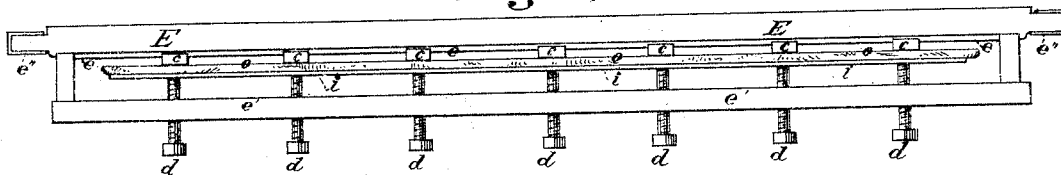


Fig. 4

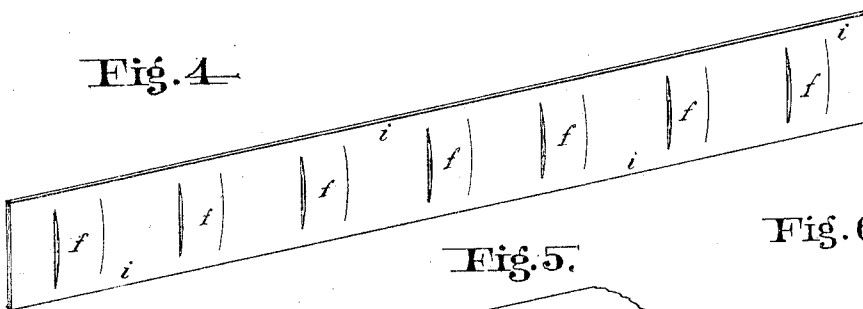


Fig. 5.

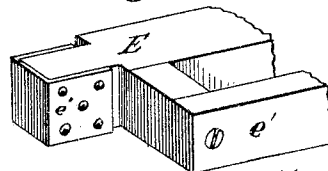
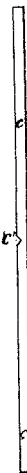


Fig. 6



Attest

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UNITED STATES PATENT OFFICE.

THOMAS ATKINS AND HENRY DREWER, DECEASED, (HENRY OURSLER,
EXECUTOR OF HENRY DREWER,) OF CINCINNATI, OHIO.

IMPROVEMENT IN MUSICAL INSTRUMENTS.

Specification forming part of Letters Patent No. **147,739**, dated February 24, 1874; application filed
April 7, 1873.

To all whom it may concern:

Be it known that we, THOMAS ATKINS and HENRY DREWER, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Musical Instruments, of which the following is a specification:

Our invention relates to the means employed for connecting the metallic bridge upon which the sounding-mediums are mounted to the sounding-board of the instrument; and consists in providing a metallic post or conductor which, preferably, has a transverse area nearly equal to the transverse area of the bar upon which the vibrating mediums are mounted, which post or conductor is rigidly attached to the metallic bridge, and connects it to the sounding-board at one or more points near the center thereof.

Figure 1 is a front elevation of our invention attached to the sounding-board of an instrument of limited compass, and with the "action" removed. Fig. 2 is a transverse vertical section of Fig. 1. Fig. 3 is a top-plan view on the line H H, Fig. 1. Fig. 4 is a perspective view of the part *i*, Fig. 3. Fig. 5 is a perspective of one end of the frame shown in Fig. 3. Fig. 6 is a side view of the parts *c*, Fig. 1.

A *a a B* represent the frame of an upright instrument, which is used for convenience to show one way in which our improvements may be applied. An upright piano-forte action is intended to be employed in operating the same.

It is obvious that our invention can be used in any form of instrument, and can be combined with reed-organs in the same manner common to piano attachments with organs.

E, Fig. 3, represents a metallic bridge made of an open parallelogram form, as shown. *e* represents a sharp metallic edge formed upon the rear inner side of the frame. H H represent brackets attached to the frame A of the instrument. *e'' e''* represent tenons with cushions made of soft fibrous material, like cloth, leather, or anything which is a non-conductor of sound. The tenons *e'' e''* rest in the brackets H H, which are employed solely to sustain the weight of the frame E, which would other-

wise be upon the sounding-board. *c* represents metallic bars made of sonorous metal, steel being preferred. *c'* represents a small notch made in one side, at or near the center of the bar. This notch serves to keep the bars from slipping on the bridge. A small sharp notch is preferred. *o* represents a strip of soft elastic material, such as flannel, rubber, or any substance which will act as a "deadener" or non-conductor of sound. *i* represents a thin strip of metal with slots *f* cut in the same, as shown in Fig. 4. *d* represents set-screws working in the front part *c'* of the frame E, as shown in Fig. 3.

The bars *c* are secured in position in frame E as follows: The notch *c'* is placed upon the sharp edge *e*; the deadener-strip *o* is placed against the front side of *c*; the slotted strip *i* is placed upon the front side of *o*; the set-screws *d* are then turned against the slotted part *f* of the plate *i*, by being slotted, as shown. The metal between the two slots is easily pressed against the deadener *o*, opposite the bars *c*, and hence each bar can be adjusted or removed by the loosening of only one of the set-screws, while the deadener *o* and strip *i* are still held in position by the remaining screws.

F represents a metallic piece, firmly attached to, or made a part of, the frame E. Its location is central, both to the sides of the instrument and to the bridge E, and it is connected to the sounding-board at or near its central point, measuring from each of its four sides or corners. *g* represents a secondary bridge, made of wood, firmly attached to the sounding-board D, midway between the top and bottom thereof, and the lower end of E is firmly secured to *g* midway between its two ends.

It is important to have the bridge E and attaching-post F rigidly connected to the frame of the instrument, and at the same time to the sounding-board D, so that the parts E and F will neither of them shake or vibrate. The frame E must also be isolated from the frame of the instrument by suitable deadeners, *e''*, so that the metallic parts are prevented from contact with the frame A or the brackets H, while the best form of conducting sound to the sounding-board is employed. The metallic

part of the bridge E may be cast in one piece, or made of several pieces, and bolted together. The sounding-post F is extended downward, for the sole purpose of attaching it to the sounding-board at or near the center thereof, and is a material feature of our invention.

The vibratory mediums *c* are different in principle from the hooks secured to us in Letters Patent No. 116,793, dated July 11, 1871. The parts *c* here shown must have two free vibratory ends tuned in unison, whereas the hooks shown in our former patent may be made with only one vibrating hook, and when two or more hooks are employed, each hook must be tuned in a different octave from the others. The parts *c* here shown produce a tone superior in quality to our former device, with less expenditure of material. At the same time they are much cheaper and more easily made, tuned, and adjusted.

Having described our invention, what we claim as new is—

1. The sounding-post F, in combination with the bridge E and the sounding-board of a musical instrument, substantially as herein set forth.

2. The combination of the parts *c*, E, and F with the sounding-board of a musical instrument, substantially as herein set forth.

3. The wooden bridge or support *g*, in combination with the parts D, E, and F, substantially as herein set forth.

4. The bridge B, composed of the parts *e*, *e'*, and *e''*, in combination with the parts *i*, *o*, and *d*, substantially as herein set forth.

In testimony whereof we have hereunto set our hands this 27th day of March, 1873.

THOS. ATKINS.
HENRY DREWIER.

Witnesses:

EDWARD BOYD,
JOHN O'GARA.