

United States Patent Office.

CHARLES F. OLIVER, OF LYNN, ASSIGNOR TO NATHANIEL CUMMINGS,
OF BOSTON, MASSACHUSETTS.

Letters Patent No. 104,341, dated June 14, 1870.

IMPROVEMENT IN PIANOS.

The Schedule referred to in these Letters Patent and making part of the same.

I, CHARLES F. OLIVER, of Lynn, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Piano-Fortes, of which the following, taken in connection with the accompanying drawing, is a specification.

Nature and Objects of the Invention.

My invention relates to the construction of the flange or hammer-rail, and has for its object the production of a hammer-rail which shall be less liable to spring or get out of place when the piano is subjected to changes of temperature than those now in use, and also less liable to vibrate when the key is struck, and thereby preventing, in a great measure, that disagreeable mingling of foreign sounds with the pure tone produced by the vibrations of the strings. Another object had in view is the firmer securing of the flange to the rail.

My invention consists in constructing the rail of two or more pieces or bars of metal with a packing of leather, cloth, rubber, or other suitable material interposed between the parts, and the whole firmly secured together with screws, so as to form one rigid bar.

It also consists in perforating the lower or second plate with a series of smooth holes corresponding with the threaded holes in the upper plate, into which the screws for holding the flanges are inserted, said smooth holes in the second plate being made slightly larger than the diameter of the screws, so that the ends of the screws may enter said holes without touching the same.

Description of the Drawing.

Figure 1 is a plan of a flange-rail embodying my improvements, and

Figure 2 is a transverse section on line *xx* on fig. 1.

General Description.

A is the upper plate or bar of metal;
C, the lower bar of metal; and
D, the packing, of leather, rubber, or other suitable elastic material.

The two bars of metal are firmly secured together by the screws *a a*, said screws passing freely through the upper bar and the packing, and screwed into the

lower bar of metal, thus compressing the packing between the bars of metal.

The packing D serves to prevent the transmission of sound by the vibration of the rail, and also serves as a check-nut to prevent the flange-screws *b b* from becoming loose, as will be more fully explained.

The flanges B are secured to the rail by the screws *b*, said screws being screwed into threaded holes provided for the purpose in the upper bar of metal, A, and they also extend through the packing of leather, a hole having been made through the leather by some pointed instrument, so that the said hole in the leather shall be conical and smaller than the screw, and, when the screw is forced into it, the tendency of the packing to resist separation will cause the packing to hug the screw, and serve as a check-nut to prevent the screw from becoming loose, though it be very loosely fitted to the nut in the iron bar.

E E are the rest-blocks, upon which the rail is supported at either end, and to which it is secured by the screws *c c*.

This rail may be readily adjusted to the proper form, if it is thrown out of place by the setting of the piano, (which very often occurs in pianos as now constructed,) by removing the screws *a a* and springing the separate bars to the proper form, and then securing them together again as before.

This construction may be applied to other rails in the action, as well as flange-rail.

Claim.

Having thus fully described my improvement,

What I claim as new, and desire to secure by Letters Patent of the United States, is—

A piano-action rail, constructed of two or more plates or bars of metal, A and C, firmly secured together, with a packing of leather, rubber, or other elastic material, D, interposed between them, substantially as described.

Executed at Boston, this 30th day of April, 1870.

CHARLES F. OLIVER.

Witnesses:

WALTER F. BRACKETT,
N. C. LOMBARD.