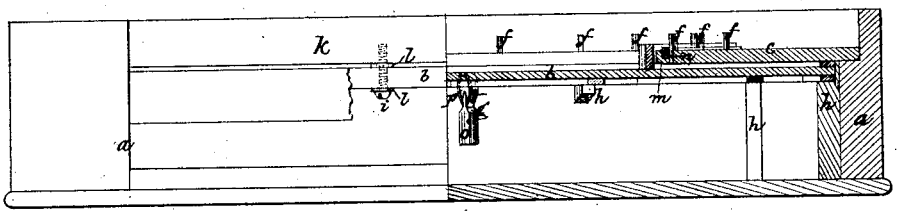
W. F. ULMAN.

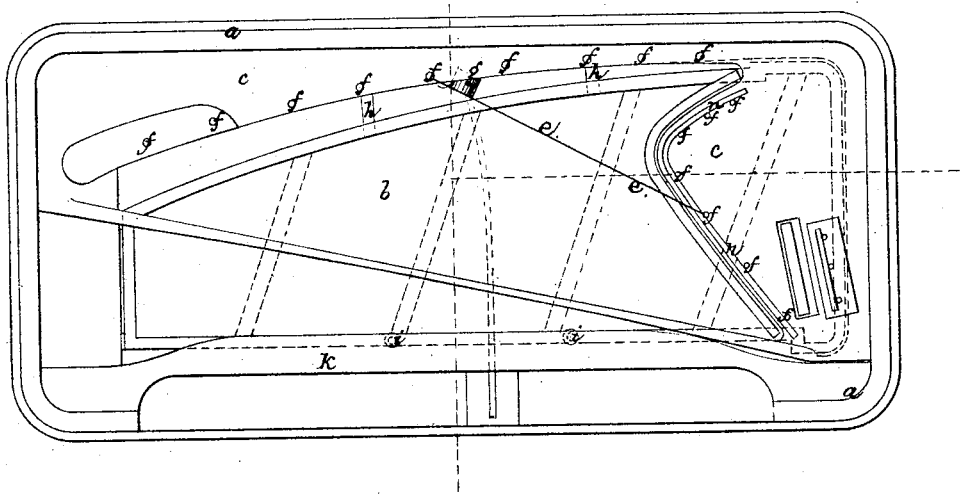
Piano.

No. 110,940. Patented Jan'y 10, 1871.

B



A



Wm. F. Ulman
by his Attys
Crosby, Halstead & Gould

Witnesses.
J. B. Kidder.
M. W. Frothingham.

UNITED STATES PATENT OFFICE.

WILLIAM F. ULMAN, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PIANOS.

Specification forming part of Letters Patent No. **110,940**, dated January 10, 1871.

To all whom it may concern:

Be it known that I, WILLIAM F. ULMAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented Improvements in Piano-Fortes; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention relates particularly to the arrangement or method of supporting the sounding-board of a piano-forte, and also to a method of insulating the strings from the metal of the string-plate to which the string pins or studs are attached.

The invention consists, first, in supporting the sounding-board only at intervals around its edge, upon small knees or projections extending from the frame, instead of fastening it all along its edge upon the frame; also, in combining, with the metal string-plate and the string pins or studs projecting therefrom, strips of wood set in grooves in front of the pins, and so that the strings, in starting from the pins, pass over and bear down upon the wood, thus destroying the metallic connection between the strings and the metal plate and its pins.

The drawing represents a piano-forte case, sounding-board, and string-plate, with the string-pins and one of the strings and its hammer.

A shows a plan of the case, sounding-board, and string-plate. B is a sectional elevation of the same.

a denotes the case; *b*, the sounding-board; *c*, the metal string-plate; *e*, one of the strings; *f*, the string-pins; *g*, one of the hammers.

The sounding-board may be made and arranged within the case in the usual manner, except as to its method of support.

From the inner surfaces of the case or frame projections or knees *h* extend, and upon these the sounding-board rests at its edges, having no direct contact with the frame, but resting upon these projections, which are so spaced as to afford the sound-board all necessary support, but, otherwise, to leave the board entirely disconnected from the frame, being thus more free to vibrate than is a sounding-board glued or fastened to the frame.

At the front side the sound-board is suspended upon screw-pins *i*, passing through the board up into the front board *k*, soft washers *l* being interposed between the heads of the screws and the sounding-board, and between the board and the front board *k*.

The string-pins *f* are arranged and project from the metal string-plate in the ordinary manner; but at the "hitch" or end pins I form a groove, *m*, in the plate, just within the line of the pins, and insert in this groove a strip of wood, *n*, said strip projecting up above the plate, as seen at B, and so that the pins, by the strain of the strings, bear against the wood, and thus cut off from the string the metallic vibrations of the string-plate, thus securing, with the strength of the string-plate, the sonorousness of the sounding-board unimpaired by the metallic sound given by the metal plate when the strings extend from the pins and the pins from the plate, with no intercepting medium between the pins and plate and the vibrating part of the strings.

I claim—

1. A sounding-board supported, with reference to the case or frame, upon projections *h*, extending from the frame at intervals, substantially as shown and described.

2. In combination with a metal frame, strips of wood *n*, or analogous material, upon which the strings bear, (adjacent to the hitch-pins,) substantially as described.

3. In combination with the metal string-plate and the hitch-pins, the groove or grooves *m*, for receiving the strip or strips *n*, substantially as shown and described.

W. F. ULMAN.

Witnesses:

FRANCIS GOULD,

S. B. KIDDER.