

E. Forbes,

Stringing Pianos.

N^o 9724.

Patented May 17, 1853.

Fig. 4.

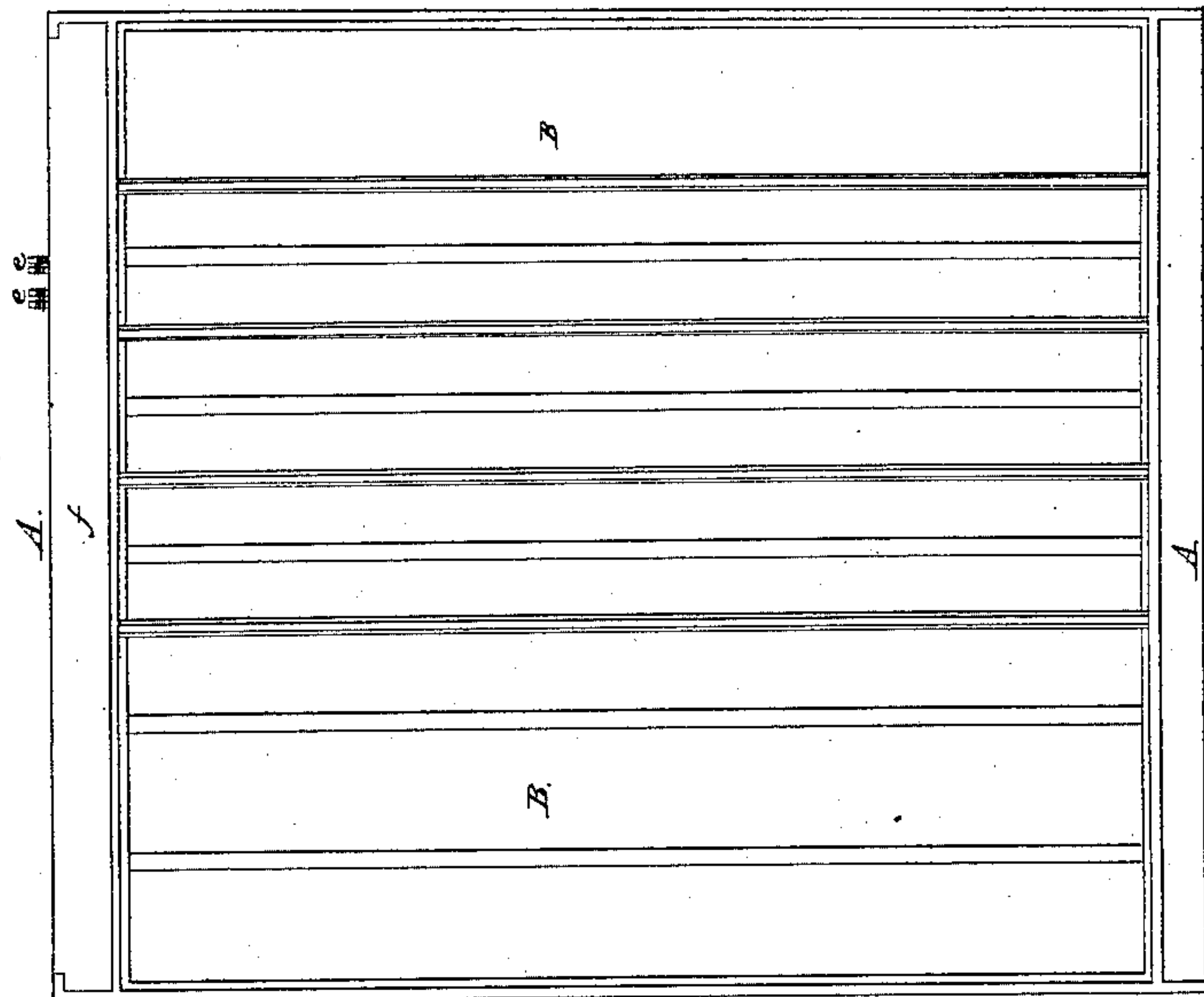


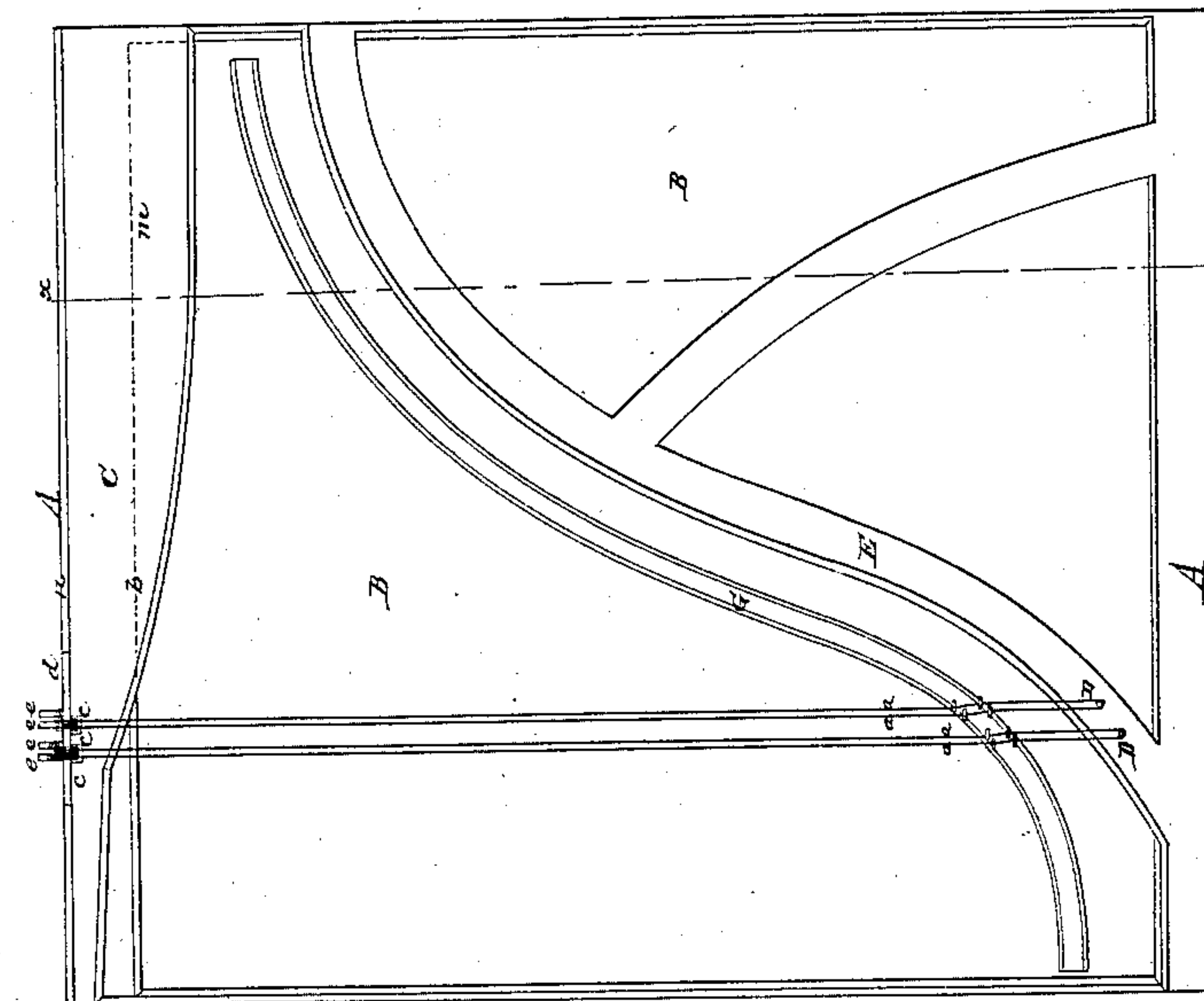
Fig. 3.



Fig. 2.



Fig. 1.



UNITED STATES PATENT OFFICE.

EDWIN FOBES, OF BOSTON, MASSACHUSETTS.

VERTICAL PIANO.

Specification of Letters Patent No. 9,724, dated May 17, 1853.

To all whom it may concern:

Be it known that I, EDWIN FOBES, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Piccolo-Piano-forte; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1 represents a front elevation of the string frame and sounding board of a piccolo piano forte constructed on my improved plan or having my improvements applied to it. Fig. 2 is a vertical, central, and transverse section of the same, such section being taken through one of the strings of a note. Fig. 3 is another vertical and transverse section taken on the line x, x , of Fig. 1. Fig. 4 is a back view of the said frame and sounding board.

It is well known that there are different kinds of piano fortes which come under the general appellations of "horizontal" and "upright" pianos, the distinction between them being well understood by piano forte makers. Of the upright piano fortes there are two kinds, the "piccolo" and the "long or secretary upright." In the piccolo the longer strings extend below the general plane of the keys and nearly down to the floor upon which the instrument rests, whereas in the long upright the greater portion of the strings are elevated entirely above the plane of the keys and extend in a direction upward.

My improvement is practically and usefully applicable to the piccolo alone, as were it applied to the long upright it would cause the position of the straining pins of the strings to be such as to render it impossible for a tuner to obtain access to them while tuning the piano. Having thus premised I shall now proceed to point out the nature of my invention.

In the drawings above mentioned it represents the metallic frame on which the two halves a, a , of each string or note are extended.

B is the sounding board, C, the bridge plate which carries the bridge b .

D, D, denote hitch pins, there being two of these represented in the drawings, they being inserted in the hitch pin bar E of the metallic frame.

The strings proceed from the hitch pins

in the usual way, pass over the sounding board bridge G and to the bridge b and thence are carried into the grooved periphery of two small rollers c, c , arranged at the upper part of the cast iron frame as seen in the drawings which rollers rotate freely on a rod or wire d that reposes in a rabbet n . Thence the two ends of each string are respectively carried backward at right angles to their formed direction and are connected to straining pins e, e , inserted vertically in the upper edge of a wooden bar f applied to the rear of the upper part of the cast iron or metallic frame. The axis of each straining pin is thus made to stand vertically, whereas in the common piccolo piano fortes as heretofore made it has been made to stand horizontally. Every tuner knows that when the axis of a straining pin is arranged horizontally the pin is placed in a very awkward position for him to handle his tuning key and produce the necessary strain upon the key to set up the string. Now if the strings are carried over a firm or immovable bridge or corner and bent at an angle over the same, the strain required to bring them to the right tension and the friction produced by their passage or movement over such bridge or corner will almost invariably cause the string to break while being set up or shortly afterward when played on by the hammer of the action. In order to prevent the breakage of the string I employ a small movable guide roller as heretofore described, there being to each hitch pin or the string secured to it, two of these guide rollers and two straining pins as shown in the drawings.

In the treble the sounding board B is extended upward in rear of the bridge and bridge plate C and there is a space m made between said sounding board and bridge plate, and thus for the higher notes a great increase of sounding board is obtained.

In the common piccolo piano forte the wooden bar in which the straining pins are inserted is carried entirely underneath the bridge plate C and close down to the lower edge of the bridge b so that the sounding board has no vibration in rear of the bridge plate and above the bridge of it. By making a space m between the bridge plate and the sounding board (the straining pin bar forming the upper boundary of such space) a much greater amount of sounding board can be applied to the higher notes when such sounding board is carried upward be-

hind and above the bridge *b* as seen in the drawings.

What I claim as my improvement in the piccolo piano forte is—

- 5 1. The arrangement of the straining pins with their axes vertical or nearly so and parallel or nearly so to the general plane of the strings and to stand above the iron frame as set forth, the string of each hitch
- 10 pin having guide rollers applied to it substantially as above set forth, my improvement enabling me to obtain sundry important advantages in the construction and tuning of the piccolo piano forte.

2. And I also claim the improvement of 15 extending the sounding board upward above the bridge and in rear of the bridge plate in the treble and so as to be capable of vibrating in rear of and above said bridge plate all substantially as above set forth. 20

In testimony whereof I have hereto set my signature this nineteenth day of October, A. D. 1852.

EDWIN FOBES.

Witnesses:

R. H. EDDY,
GEORGE M. CUTTER.