

C. F. T. STEINWAY.

PIANO-FORTES.

No. 178,565.

Patented June 13, 1876.

Fig. 1.

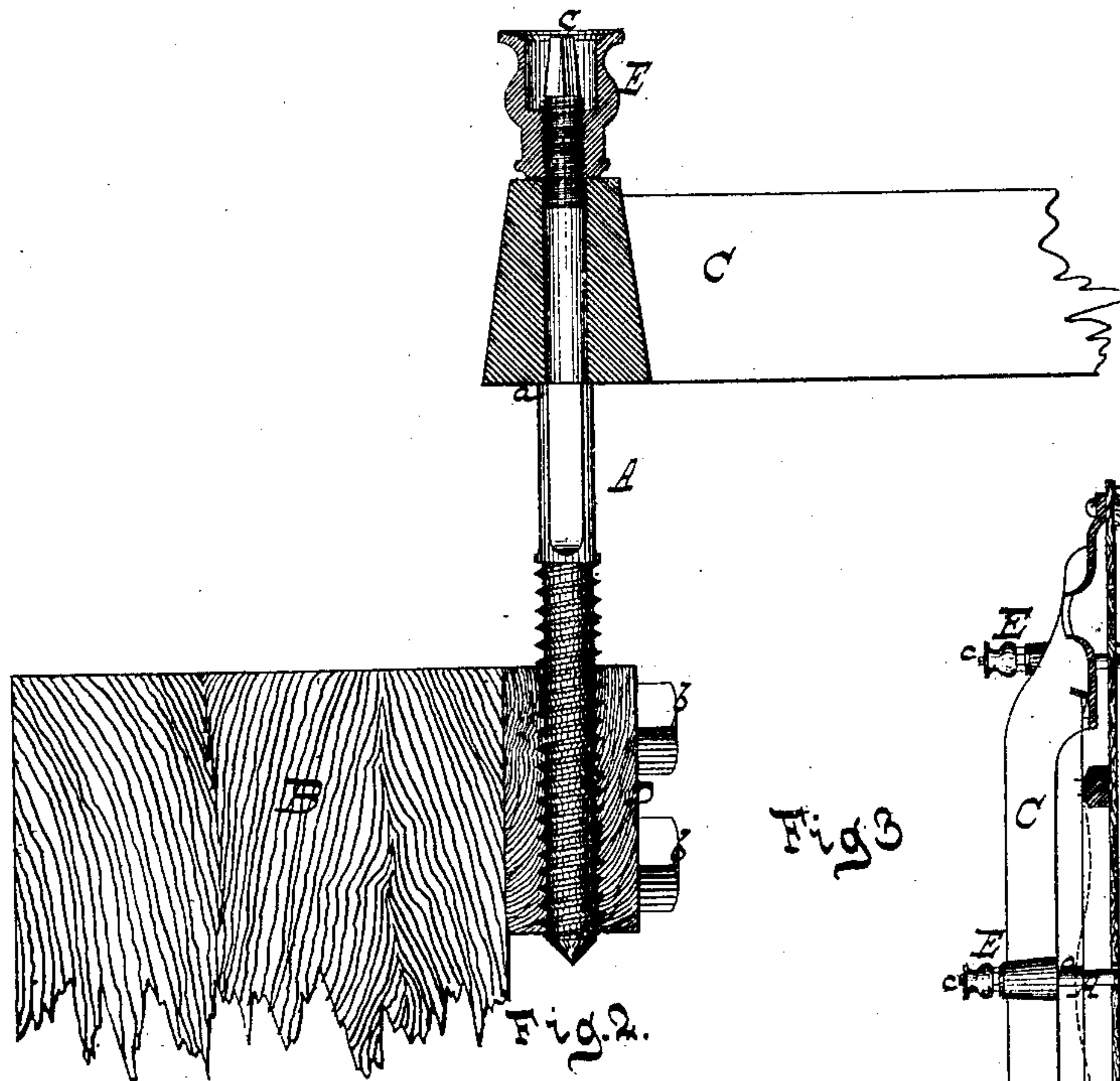


Fig. 2.

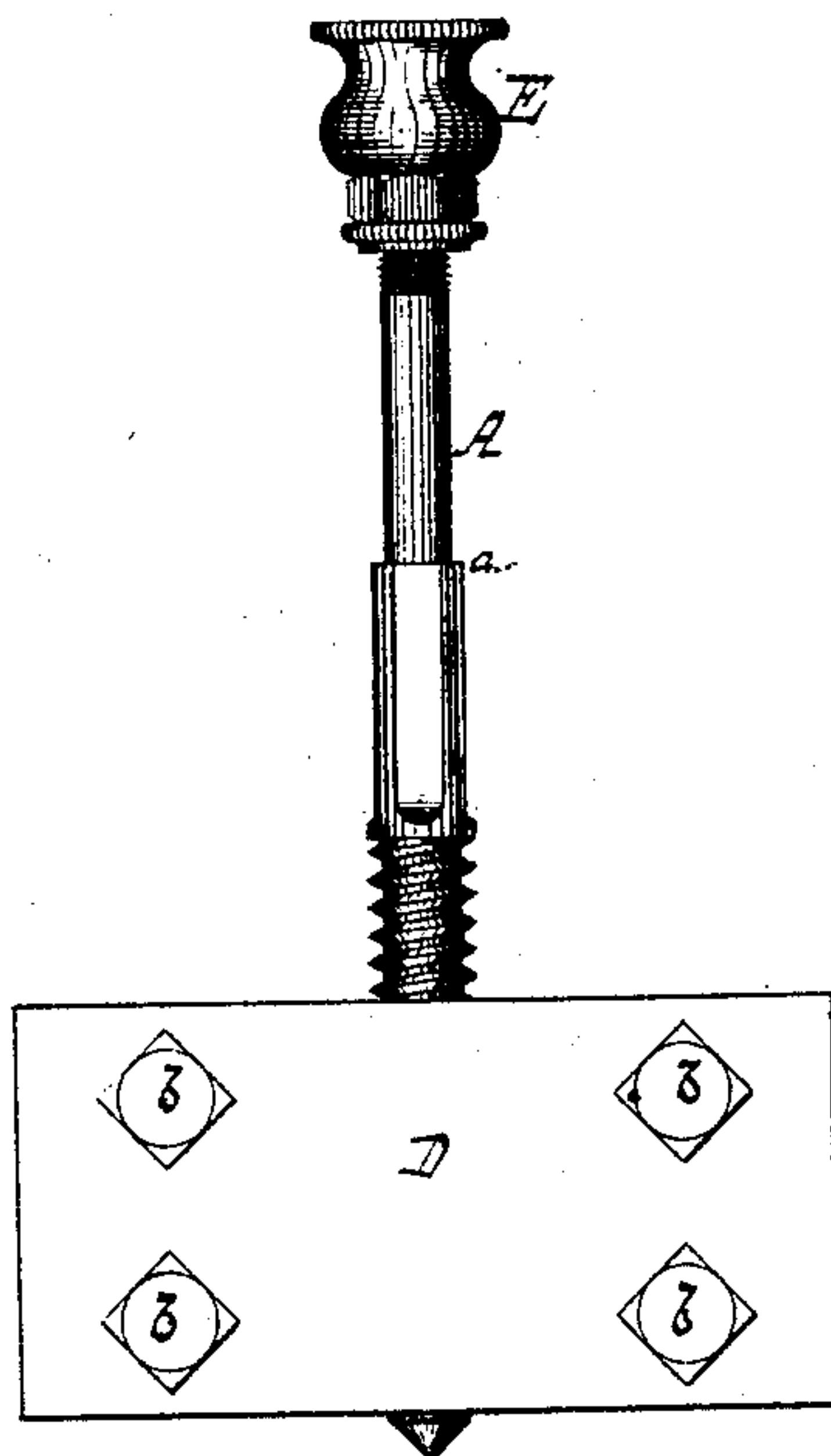
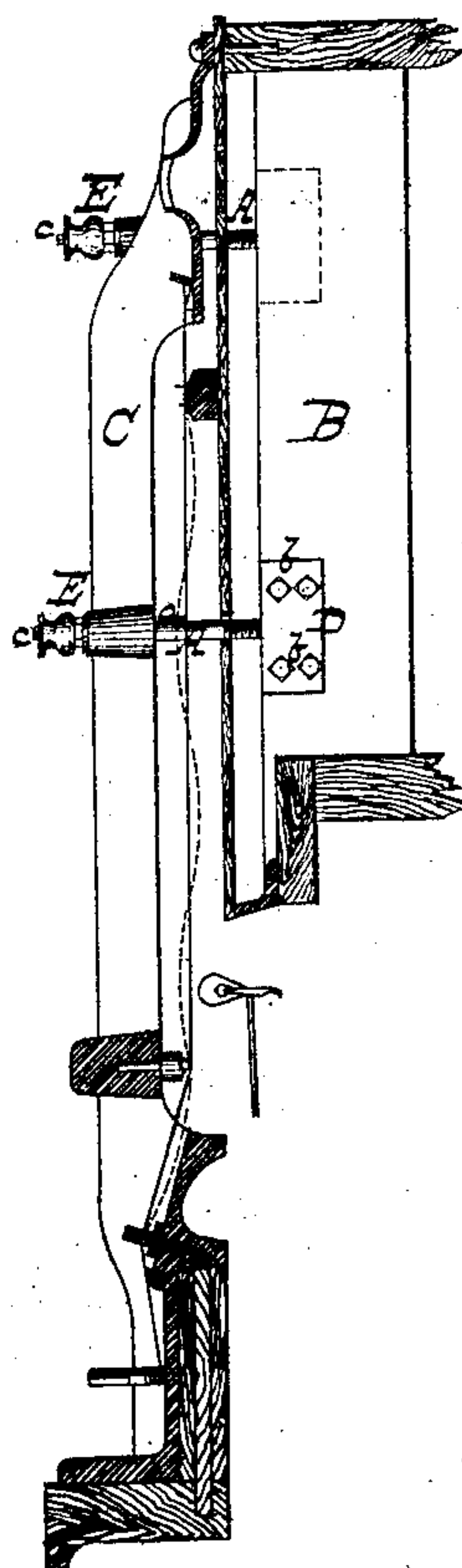


Fig. 3.



Witnesses.  
Otto Aufeland.  
Rott & Miller.

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# UNITED STATES PATENT OFFICE.

CHRISTIAN F. T. STEINWAY, OF NEW YORK, N. Y.

## IMPROVEMENT IN PIANO-FORTES.

Specification forming part of Letters Patent No. **178,565**, dated June 13, 1876; application filed May 13, 1876.

*To all whom it may concern:*

Be it known that I, CHRISTIAN FR. THEODOR STEINWAY, of the city, county, and State of New York, have invented a new and useful Improvement in the Construction of Piano-Fortes, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a sectional side view. Fig. 2 is a front view. Fig. 3 is a section of a grand piano constructed according to my invention on a smaller scale than the previous figures.

Similar letters indicate corresponding parts.

This invention consists in the combination of a removable nut with the nose-bolt, which connects the metal frame of a piano-forte with the wooden case, so that if the nose-bolt becomes broken or injured it can be readily removed and replaced by another without removing the metal frame; also, in a nose-bolt which extends through the brace of the metal frame of a piano-forte, and is provided with a head for the reception of a wrench or key, so that the metal frame can be readily adjusted in the required position; further, in the combination, with the nose-bolt and with its head, of a cup-shaped nut, which embraces said head and leaves room for the application of the wrench or key.

In the drawing, the letter A designates the nose-bolt, which serves to unite the metal frame of a piano-forte with the wooden case.

Heretofore these nose-bolts were made to screw into the wooden beams B of the case, their shanks being square or polygonal for the application of a suitable wrench. The brace C of the metal frame rests on a shoulder, *a*, of the shank, and the upper end of said shank is provided with a screw-thread for the reception of a nut, which, when screwed down, depresses the brace upon the shoulder *a*, and retains the metal frame firmly in position.

With this arrangement it is impossible to adjust the position of the metal frame, since the nose-bolt cannot be turned in or out after the sounding-board, the strings, and the metal frame have been put in, and if the nose-bolt breaks it cannot be replaced without much loss of time and labor.

In order to obviate these disadvantages, I have combined with the nose-bolt A a nut, D, which is secured to the wooden beam B of the case by a series of screws, *b b*.

This nut has several advantages. In the first place it can be made of hard wood, and provided with a perfect screw-thread, so that it gives a good hold to the nose-bolt, whereas the beams B are usually made of pine wood, and the screw-threads formed thereon are liable to break off, and to get worn out in a short time; furthermore, if the nose-bolt snaps, which happens sometimes, the nut D can be readily unfastened, and the broken nose-bolt can be taken out from below and replaced by another without difficulty. If the nose-bolt has been screwed into the wooden beam itself, it can only be taken out from above—an operation which cannot be accomplished without removing the metal frame and portions of the strings.

The metal braces are situated in the direction of the strings, which expand in the shape of a fan, so that their strain diverges from the direction of the metal braces, and a lateral strain is thus exerted on these braces. The wooden beams are so situated that they support this lateral strain, and by means of my removable nut I am enabled to apply two nose-bolts to each metal brace and the corresponding wooden beam, notwithstanding the fact that the beam runs in a different direction from the brace.

My nose-bolt is provided at its upper end with a head, *c*, of suitable form for the reception of a key or wrench, said head being, by preference, made of such a form that the ordinary tuning-wrench can be applied to it.

By these means I am enabled to turn the nose-bolt in or out after the metal frame has been put on, and the position of said metal frame can be easily regulated, so as to adjust the pressure of the strings on the sounding-board.

The nut E, which serves to fasten the metal frame on the nose-bolt, is made cup shaped, so that its upper end embraces the head *c* of the nose-bolt, leaving room for the application of the wrench or key; at the same time said nut gives a finish to the whole.



In practice, two nose-bolts are secured in each brace of the metal frame, as indicated in Fig. 3 of the drawing.

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

1. The combination of a removable nut, D, with the nose-bolt A, which serves to unite the metal frame of a piano-forte with the wooden case, substantially as shown and described.

2. The combination and arrangement of a head, c, for the reception of a wrench or key,

on the upper end of the nose-bolt A, substantially as and for the purpose set forth.

3. The combination of a cup-shaped nut, E, with the nose-bolt A and its head c, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 10th day of May, 1876.

C. F. THEODOR STEINWAY. [L. S.]

Witnesses:.

W. HAUFF,

ROBT. E. MILLER.