



# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN PIANO-FORTES.

Specification forming part of Letters Patent No. **204,108**, dated May 21, 1878; application filed March 1, 1878.

*To all whom it may concern:*

Be it known that I, CHRISTIAN FRIEDRICH THEODOR STEINWAY, of the city, county, and State of New York, have invented a new and useful Improvement in 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 plan or top view. Fig. 2 is a longitudinal section in the plane  $x$ , Fig. 1. Fig. 3 is a transverse section in the plane  $y$ , Fig. 1. Fig. 4 is a similar section of the supporting-plate in the plane  $z$ , Fig. 1.

Similar letters indicate corresponding parts.

This invention consists in the combination, with the wrest-plank of a piano-forte and with its iron frame, of a metallic bridge-plate which covers the wrest-plank, and is provided with a lug adapted to abut against the braces of said frame, the wrest-plank bridges being by preference cast solid with said plate, so that by securing the plate on the wrest-plank the bridges are adjusted in the proper position, and much time and labor are saved. The metallic bridge-plate is provided with conical projections, which engage with corresponding depressions in the capodastro-bar, so as to form guides for the correct position of said bar. The bridge for the bass strings is sufficiently high to raise the bass strings over the middle-scale strings, and the bridge for the middle-scale strings is sloping down toward the bridge of the bass strings, so as to preserve the level of the hammer-line. This arrangement of bridges is well known. The upper portions of the screw-holes in the wrest-plank are enlarged, so that the wrest-plank, as it swells and shrinks, can move beneath the metallic bridge-plate without affecting the dimensions of the scales.

In the drawing, the letter A designates the wrest-plank of an upright piano-forte, and B is the iron frame, which is provided with braces C. On the wrest-plank is secured a metallic bridge-plate, D, which is provided with a lip,  $a$ , extending over the edge of the iron frame, and with lugs  $b$ , which abut against the braces C, so as to produce a firm and unchangeable connection. On the metallic bridge-plate are situated the bridge E for the bass strings and the bridge F for the middle-scale strings, and

from the face of said plate rise conical projections  $f$ , which engage with corresponding cavities (see Fig. 3) in the under surface of the capodastro-bar G, so that by said projections the correct position of the capodastro-bar is determined.

The metallic bridge-plate is fastened on the wrest-plank by screws  $c$ , and the capodastro-bar by screws  $d$ . The holes  $e$  in the wrest-plank which receive these screws are enlarged toward their upper ends, so that the wrest-plank, as it shrinks and swells, can move under the metallic bridge-plate without disturbing the dimensions of the scale.

The bridges E and F are cast solid with the metal plate D, the bass-string bridge being sufficiently high to raise the bass strings above the middle-scale strings. By this arrangement the wrest-plank can be made perfectly level, and the bridges require no separate adjustment.

The bridge F for the middle-scale strings slopes downward toward the bass-string bridge, (see Fig. 4,) so that the level of the hammer-line can be preserved.

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

1. The combination, with the wrest-plank of a piano-forte and with its iron frame, of a metallic bridge-plate which covers the wrest-plank, and is provided with lugs adapted to abut against the braces of the metal frame, substantially as and for the purpose set forth.

2. The combination, with the metal plate D, of the projections  $f$ , adapted to engage with corresponding cavities in the capodastro-bar G, substantially as and for the purpose described.

3. The combination, with the metallic bridge-plate D, wrest-plank A, and capodastro-bar G, of holes  $e$  in the wrest-plank, which are enlarged toward their upper ends, and which receive the screws  $c$ , substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 26th day of February, 1878.

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

Witnesses:

W. HAUFF,  
E. F. KASTENHUBER.