

# A. H. HASTINGS. Improvement in Piano-forte.

No. 119,760.

Patented Oct. 10, 1871.

Fig. 1.

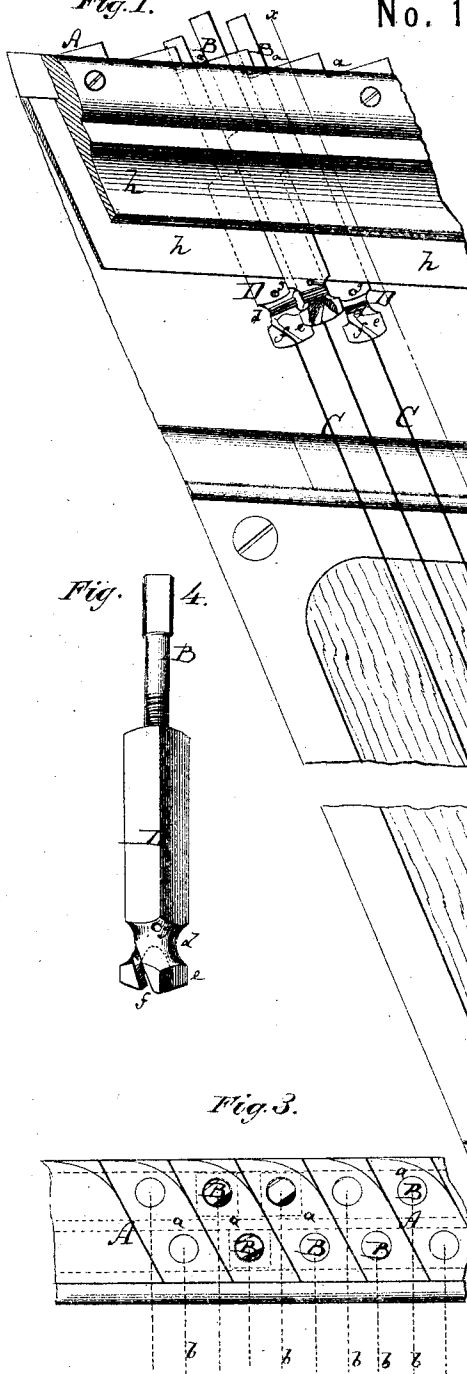


Fig. 2.

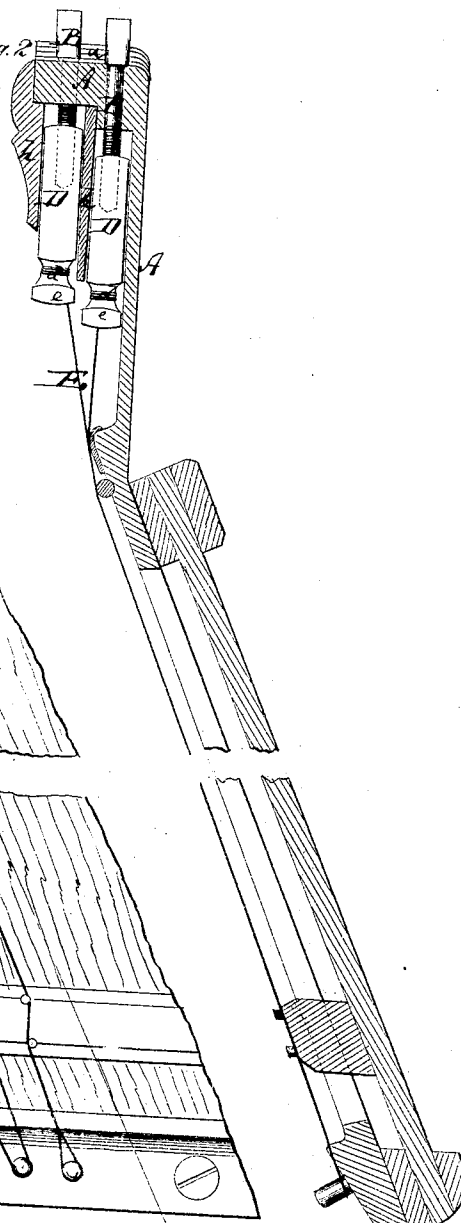
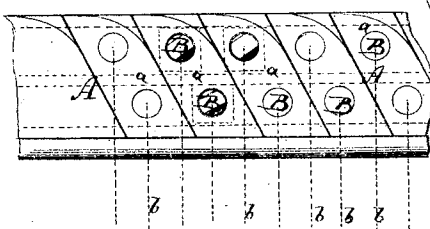


Fig. 3.



Fig. 3.



Witnesses:

*Christave Dietrich*  
*Francis Mc Clellan*

Inventor:

*A. H. Hastings*

PER

*Munn & Co.*  
Attorneys.

# UNITED STATES PATENT OFFICE.

AZARIAH HORACE HASTINGS, OF NEW YORK, N. Y.

## IMPROVEMENT IN PIANO-FORTES.

Specification forming part of Letters Patent No. 119,760, dated October 10, 1871.

### *To all whom it may concern:*

Be it known that I, AZARIAH HORACE HASTINGS, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Piano-Fortes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1 represents a face view of my improvement. Fig. 2 is a longitudinal section of the same on the line *x x* of Fig. 1. Fig. 3 is an end view of the same. Fig. 4 is a detail side view of one of the travelers.

Similar letters of reference indicate corresponding parts.

This invention relates to improvements in the construction of the plates and tuning mechanism of upright and other piano-fortes; and consists in a new manner of forming the upper or back edge of the metal plate, and in a new construction of and fastening for the travelers that hold the upper or back ends of the strings.

A in the drawing represents the metal plate of an upright piano-forte. Its upper edge has oblique grooves *a a*, which are clearly shown in Figs. 1 and 3. Through these grooves are fitted the screws B B for holding the upper ends of the piano-strings C. The screws for the strings of each key are arranged in one groove, so that there are two or three screws in every groove. By the oblique direction of the grooves, the screws, though collected for the several notes, are, nevertheless, alternated transversely, as is indicated by the dotted lines *b b* in Fig. 3, to provide more room for the keys to work in and permit the use of larger screws. Each screw B fits with its lower end into a nut or traveler, D,

which is a prismatic rod, with a neck, *d*, near, and a head, *e*, at the lower end. A funnel-shaped cavity is formed in the lower end of the traveler, and an oblique slot, *f*, cut through one side of the rod to meet such cavity. This slot forms a hook-bearing for the string. The upper end of the string is fitted through an aperture, *g*, of the traveler, then wound around the neck *d*, and finally put through the slot *f* into the aforesaid cavity of the traveler. In this manner it is securely held, and will be in line with the adjusting or tuning-screw B, so as to be pulled straight and not twisted. The two or more layers of travelers are placed under flat guide-straps *h h*, which prevent them from turning and hold them steady on the plate. These guide-straps are preferably made of wood.

The invention is, in every respect, as well applicable to horizontal as to upright pianos. The longitudinal bore of each traveler extends so far downward as to strike the aperture *g*, through which air is freely admitted to said bore to make the screw work easier.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The plate A, provided with the oblique grooves *a* at the top or back for holding the screws B, substantially in the manner herein shown and described.

2. The travelers D D, made prismatic, with necks *d*, heads *e*, and slots *f*, substantially as herein shown and described.

3. The guide-strips *h h*, applied to the prismatic travelers, substantially as herein shown and described.

AZARIAH HORACE HASTINGS.

Witnesses:

E. P. MARTIN,  
T. B. MOSHER.

(112)