

L. Farnsworth,

Tuning Pianos.

No. 106,145.

Patented Aug. 9. 1870.

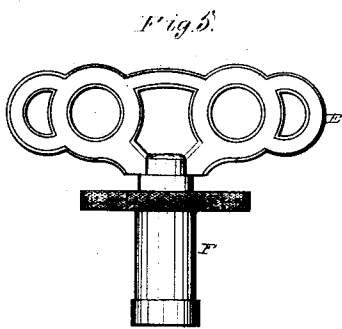
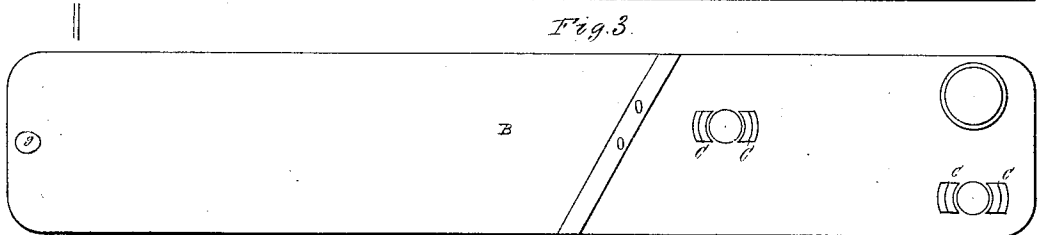
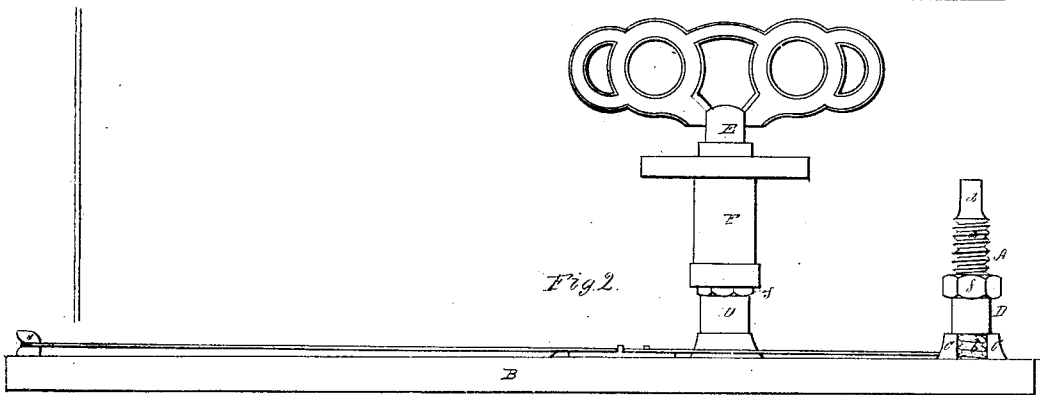
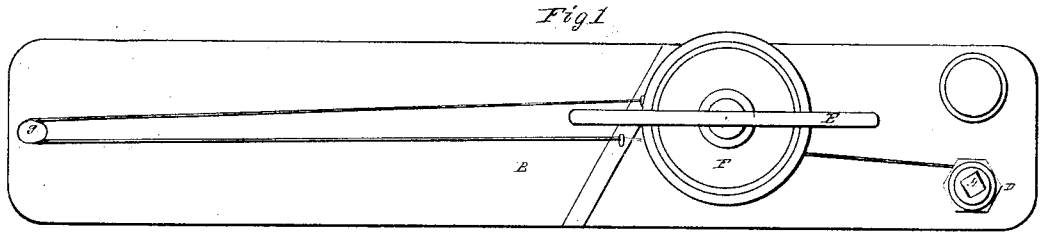


Fig. 6.

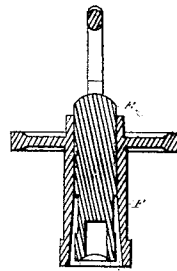


Fig. 4.



Witnesses.

S. N. Piper.
J. Brown.

Loring Farnsworth

by his attorney.

W. W. Wadsworth

UNITED STATES PATENT OFFICE.

LORING FARNSWORTH, OF NASHUA, NEW HAMPSHIRE, ASSIGNOR TO HIMSELF AND WILLIAM H. FLINN, OF SAME PLACE.

IMPROVEMENT IN PIANO-FORTES.

Specification forming part of Letters Patent No. **106,145**, dated August 9, 1870.

To all whom it may concern:

Be it known that I, LORING FARNSWORTH, of Nashua, in the county of Hillsborough and State of New Hampshire, have invented a new and useful Improvement in Piano-Fortes; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings.

The invention has reference to mechanism for straining the string of a piano-forte.

Of such drawings, Figure 1 is a top view of my straining mechanism as applied to a string and string-plate of a piano. Fig. 2 is a side elevation of the same. Fig. 3 is a top view of the string-plate with the check-nut supports or bearings thereof. Fig. 4 is a side view of the duplex or double-threaded screw. Fig. 5 is a side view, and Fig. 6 a vertical section, of the duplex key used with my said straining mechanism.

The straining-pin as usually employed depends on its friction within its socket to prevent it from being revolved back by the strain of the string.

In carrying out my invention I employ with the pin a screw or screws thereon, a check-nut, and an abutment or piers for the check-nut to bring up against, the main purpose of my invention being to prevent the straining-pin from being revolved backward under the strain or draft of its string, so as to become out of tune.

In the drawings, A denotes the straining-pin, which in this instance is shown as constructed with two screw-threads, *a b*, running or pitched in opposite directions, one occupying the upper and the other the lower half or portion of the pin. The said pin is screwed into the string-plate B, and between two standards or piers, C C, erected thereon, and close to and on opposite sides of the screw-hole in the plate. A hole, *c*, to receive the string is made transversely through the pin at or near its middle. A check-nut, D, screwed on the upper part of the pin, rests on the said standards C C. The pin has a prismatic head, *d*, to receive the tuning-key E, which is to fit thereon. This key has another key, F, applied to its shank, so as to be capable of being revolved freely on it. The lower part of

the key F is provided with a prismatic socket, *e*, to fit upon the prismatic part *f* of the check-nut. The straining-pin may have a single screw extended throughout it; but I prefer to form it with the two screws having threads pitched in opposite directions, as in this latter case it will operate to better advantage with the check-nut and its standards or abutments. The standards or abutments may also not be fastened directly to the string-plate, but may be a short tube separate from the plate and provided with one or more openings leading laterally through it for the reception of the string. It is preferable, however, to use the two projections or bearings C C, as in this case they afford the string ready access to the straining-pin, and admit of it easily passing by such in its passage to its fellow pin, (shown in the drawings, wherein the string is exhibited as hooked upon a hitch-pin, *g*, and extended to a pair of the straining-pins.) The object of the two or right and left screws applied to the pin is to enable it, while being revolved for setting up the string, to rise upward out of the plate, so that the string may wind in the helix-groove between the threads without being forced down against the plate; also, to enable the check-nut, for the purpose of arresting the back revolution of the pin, to be revolved in the same direction in which the pin is turned to set up or strain the string.

The check-nut supporter or supports raised on the plate, so as to extend above the string, in order to keep the nut clear thereof, I term the "abutment," such being made in either of the ways as above explained, or in any other proper manner.

To use the straining mechanism after the string may have been carried through the pin thereof, we have only to apply the double key to the pin and check-nut, and first turn the inner key, so as to revolve the pin in the proper direction and to the required extent, after which, and while still holding the said inner key stationary, the other or outside key, by means of the fingers, should be revolved, so as to cause the screw to force such nut down upon the abutment.

I claim—

1. The combination of the abutment and the

check-nut with the string-plate and the pin, provided with either one or two screws, as explained, the whole being arranged and to operate substantially as and for the purpose as hereinbefore explained.

2. The arrangement of the standards CC on opposite sides of the straining-pin, and with

respect to the string-plate, in manner as specified.

3. The double key, as described.

LORING FARNSWORTH.

Witnesses:

WM. D. MOOR,

H. M. SPALDING.