(No Model.)

J. R. PERRY.

PIANO.

No. 356,050. Patented Jan. 11, 1887.

Fig. 1.

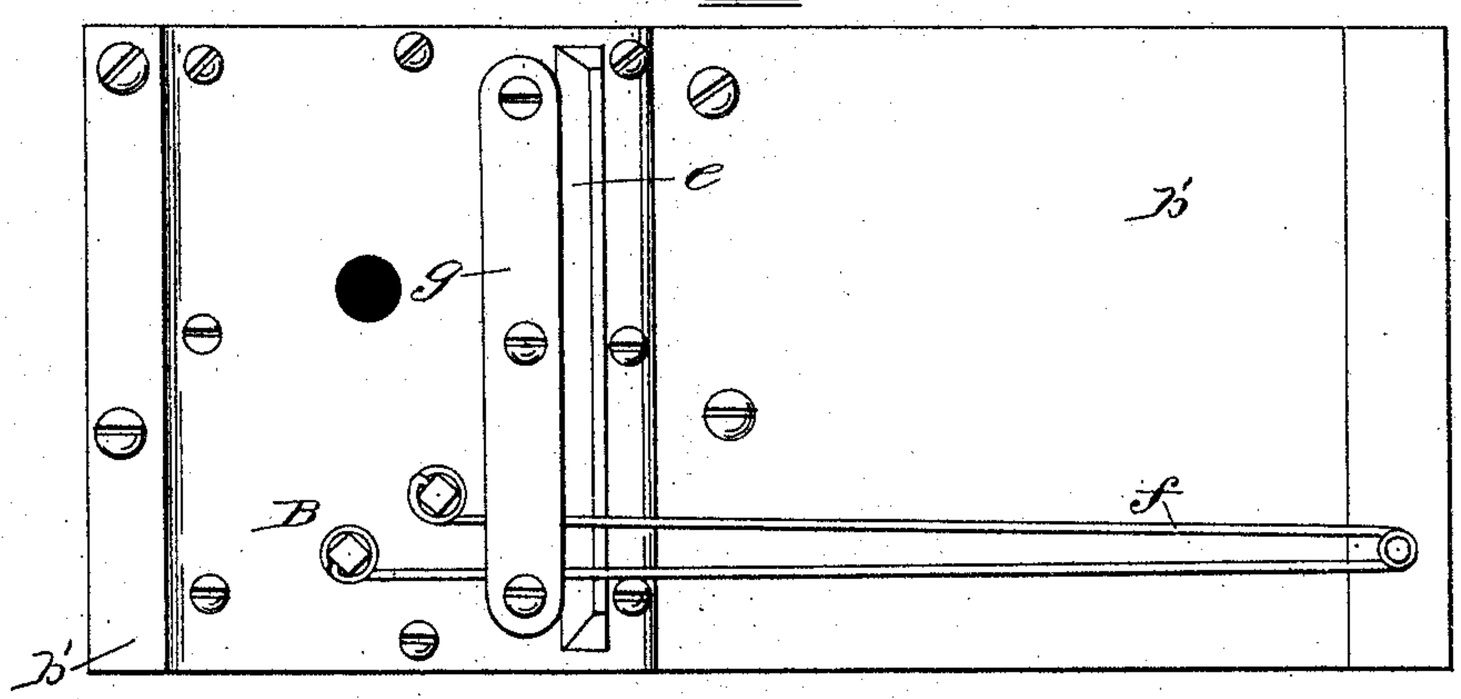


Fig. 2.

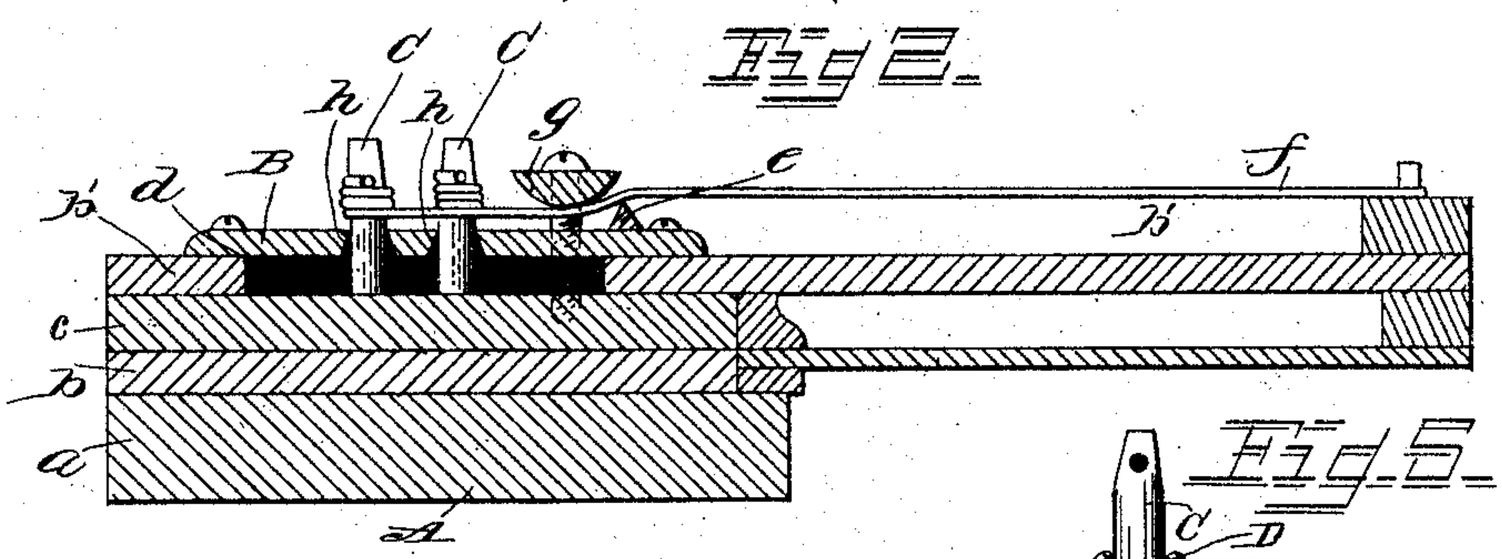


Fig. 5.

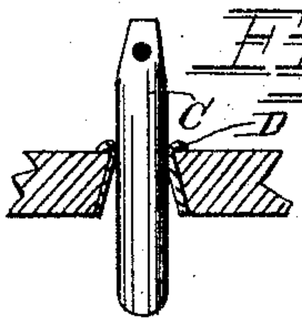


Fig. 3.

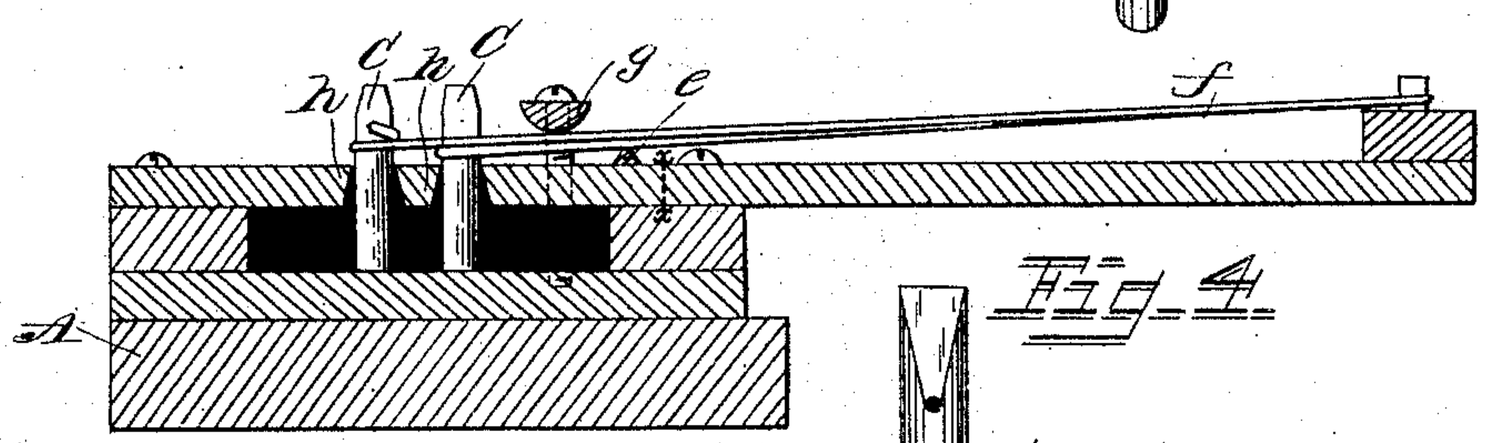
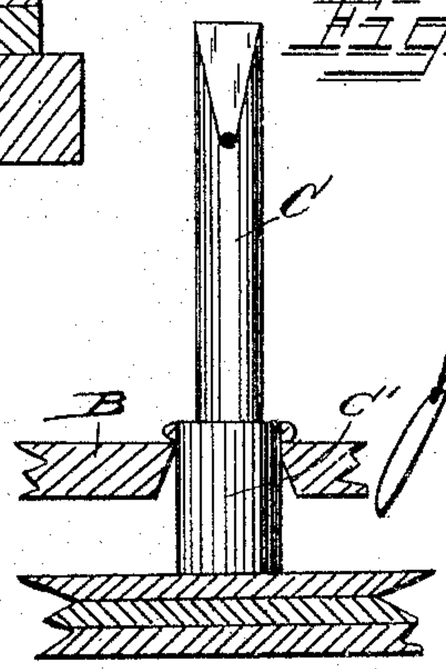


Fig. 4.



WITNESSES.

Howard L. Schmidt

Thos. A. McGill.

INVENTOR.

Joseph R. Perry

By Myers & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOSEPH R. PERRY, OF WILKES-BARRÉ, PENNSYLVANIA.

PIANO.

SPECIFICATION forming part of Letters Patent No. 356,050, dated January 11, 1887.

Application filed October 23, 1885. Serial No. 180,743. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH R. PERRY, a citizen of the United States of America, residing at Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Pianos, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has for its object to facilitate the tuning of musical instruments, more especially pianos, whereby the pitch or tone of the strings may be readily varied to a minute degree to produce a limited contact between the string frame or plate and the tuning-pins, so as to hold the strings more firmly and to permit of a nicety of adjustment or regulation of the pitch; and the invention consists of the combinations of parts, including their construction, substantially as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of my improvement as applied to a piano. Fig. 2 is a vertical section of the same, and Figs. 3, 4, and 5 are modifications thereof.

In the embodiment of my invention I employ, as usual, the "wrest-board" A, comprising a series of hard-wood layers or sections, *a b c*, which in practice are firmly bound and glued together, while upon this board or plank is bolted or fastened by screws the iron string frame or plate *b'*. Upon the frame or plate *b'*, over the opening thereof, is secured or fastened a metal plate, B, preferably of brass, whereby a space, *d*, is left or formed between the board or plank A and said plate B, as clearly seen in Fig. 2, the purpose of which will appear farther on. Upon this plate is cast or erected the bridge *e*, over which the strings *f* are passed, said strings being also passed under a pressure-bar, *g*, secured or screwed to the plate B just in rear of the bridge *e*, the strings being next passed from the pressure-bar to, and wound several times around, the tuning-pins, next described.

C C are the tuning-pins, which are driven through the holes or openings *h* of the plate B, and through the space *d* and into the board or plank A, penetrating the latter its whole depth. The upper portions of the pins C are adapted, being angular, to permit of the application thereto of a winch or other suitable tool for turning or twisting the pins in varying the pitch or sound of the strings, as will be more fully treated presently.

Around the openings or holes *h*, upon the under side, the plate B is preferably reamed out in a tapering form, as seen in Fig. 2, while said openings are normally made of less diameter than the pins passing through them. The reaming or tapering of the plate provides a limited contact between the plate B and the tuning-pins C near the outer ends holds the strings more firmly, and by thus reaming the plate B, I thereby provide against the accidental loosening of the pins, which occurs when the holes in string-frames are drilled much larger than the tuning-pins, so as to have no contact whatever, as is the usual custom; and, further, by simply reaming the said plate B, and providing but a limited contact between the pin and the plate, I lessen the tendency to rigidity from corrosion, as is liable to occur when constructed with the entire thickness of the plate, especially if of iron, in contact with the pins, from that cause, and which would render the pins immovable; also, the pins being unencumbered in the space *d*, and having said reduced points of contact with the plate B, they are permitted to turn or spring or twist thereat, while their lower embedded portions are practically rigid, whereby, as pressure is applied to their upper ends, as aforesaid, to effect the twisting of the same, the slightest change or effect in the pitch or tone of the strings (the tension or tightening of which has thus been effected) can be secured, as is obvious, and thus facilitate the tuning of the instrument. With the holes or openings *h*, which receive the tuning-pins, made normally of less diameter than the latter, it will be seen that upon driving the pins thereinto the metal (the plate B having said holes being preferably of brass, as before stated, or a malleable metal) will roll or turn inward, and thus, while permitting the passage of the pins, will wedge in place or firmly secure the pins as against displacement or turning under the drawing action or strain of the strings.

In lieu of the employment of the additional plate B, the tuning-pins may be inserted directly in the tuning-pin plate B, as stated, or

in the iron frame or plate *b'*, the same being reamed out around the pin-holes as in the plate B, while the top layer of wood of the wrest plank or board may be chiseled or cut out to provide the space the equivalent of that beneath the plate B.

A modification of my invention is shown in Fig. 3, wherein I dispense with the use of the superposed pin-plates and produce the limited contact by reaming the pin-holes directly in the string-frame; or, without departing from the spirit of my invention, the said superposed pin-plate may be applied directly to the wrest-plank, and the said string-frame abut against the front edge of said superposed pin-plate in a manner similar to that indicated by the dotted line *x x* shown in Fig. 3, at which point the inner ends of the said pin-plate and iron string-frame meet.

In Fig. 4 will also be seen another modification of my invention, which consists, essentially, in providing the lower end of each tuning-pin with a metallic casing or jacket, C', which fits tightly on each pin, resting on the wrest-plank, and is provided on its upper end with an outwardly-curved flange or rim which rests against the upper surface of each hole or opening *h* of the plate B, producing a limited contact, as before mentioned.

When the plate B is of iron instead of brass or other malleable metal, I provide for insertion in each pin-hole a bushing, D, of brass or other suitable metal, as seen in Fig. 5, and of like construction or contour as the holes in the pin-plate, to permit the pin to be driven solidly thereinto, and thereby effect the same result as if the entire plate were made of malleable metal. This bushing may extend the whole thickness of the pin-plate and have a rim on its upper or outer edge to rest upon the plate, and thus reduce friction while holding the pin from binding, as it is liable to do when free from the iron frame or plate, or said bushing may be angular in cross-section and without a rim, and be set down solidly on the wrest-plank.

This improvement, in addition to its present application, is also applicable to all stringed musical instruments.

I am aware that it is not new to provide a fastening device or "tone-lock" for tuning pianos and other stringed instruments, consisting of an insulated tuning-pin, insulated fixed and sliding jaw-plates, and an adjustable locking pin or key with conical wedge part; but my invention is an improvement over such a device, as in the employment of my invention I dispense with the use of any adjustable plates serving as locks, but ream out from the superposed pin-plate the holes for passage of the tuning-pins, which have a limited contact with the said pin-plate. The object of my invention is accomplished by the application of the superposed pin-plate either to the iron string-frame or directly to the wrest-plank, as before stated, to which it is rigidly secured.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a stringed musical instrument, the pin-plate superposed upon the iron string-frame and having holes or apertures of normally less diameter than the tuning-pins, substantially as shown, and for the purpose described.

2. In a stringed musical instrument, the combination, with the wrest plank or board, of the frame or plate having the tuning-pin holes or openings, and reamed or tapered upon the under side around said holes or openings, substantially as and for the purpose specified.

3. In a stringed musical instrument, the combination, with the iron string-frame and wrest-plank, of the rigidly-secured superposed metallic tuning-pin plate, arranged substantially as shown, and for the purpose specified.

4. In a stringed musical instrument, the combinatiom, with the wrest plank or board and the string frame or plate, of the superposed pin-plate with a space beneath it and having the pin holes or apertures with reamed or tapered walls, and the tuning-pins, substantially as and for the purpose set forth.

5. In a stringed musical instrument, the combination, with the wrest plank or board and the string plate or frame, of the superposed pin-plate with a space beneath and having the reamed or tapering pin holes or openings, and the tuning-pins, said openings or holes each being normally of less diameter than the thickness or diameter of a pin, substantially as and for the purpose set forth.

6. In a stringed musical instrument, the combination, with the wrest-plank, of the iron string-frame having openings in the same immediately under the tuning-pins, and superposed pin-plates forming a space between the said wrest-plank and the pin-plates, as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH R. PERRY.

Witnesses:
J. F. CHOLLET,
WESLEY JOHNSON.