

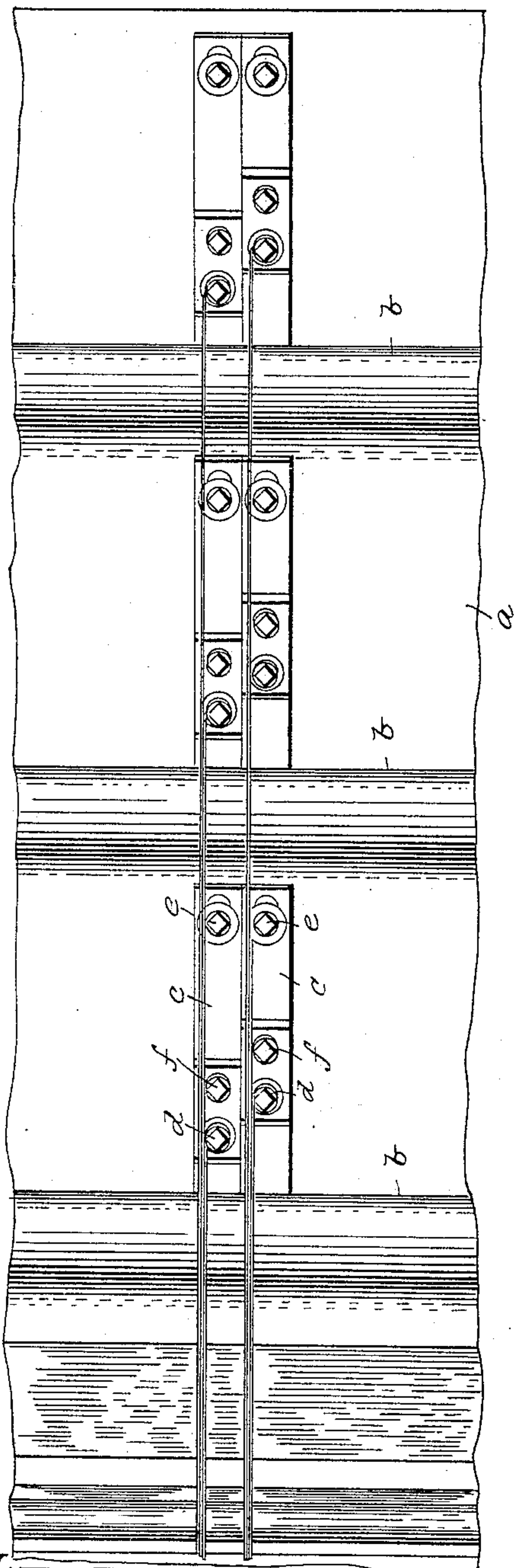
(No Model.)

W. H. FARGO.
PIANO.

No. 488,731.

Patented Dec. 27, 1892.

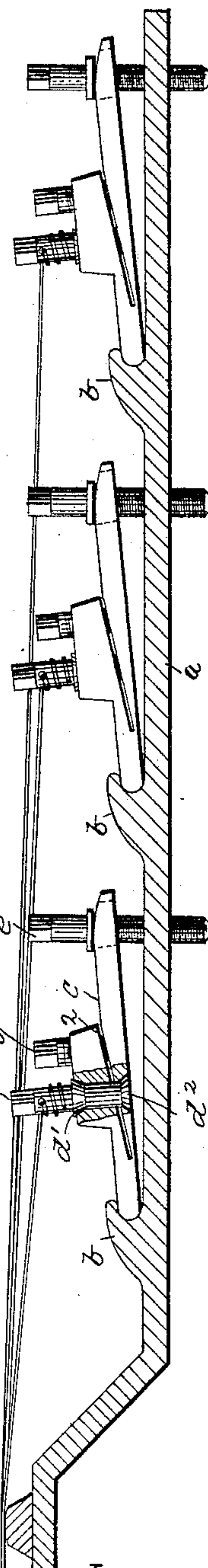
Fig. 1.



WITNESSES.

Chas. D. Crocker.
Lucy F. Graves.

Fig. 2.



INVENTOR.

William H. Fargo
by B. J. Hayes.
att'y.

UNITED STATES PATENT OFFICE.

WILLIAM HARRISON FARGO, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO GILBERT B. BALCH AND EDWARD P. BALCH, OF SAME PLACE.

PIANO.

SPECIFICATION forming part of Letters Patent No. 488,731, dated December 27, 1892.

Application filed July 28, 1892. Serial No. 441,547. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HARRISON FARGO, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Pianos, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to pianos, and has for its object to improve the construction of the wrest pins, and means for supporting and adjusting them.

In accordance with this invention the shanks of the wrest pins are made to present two oppositely tapering or conical portions, which are seated in split or two part holders or blocks, one of the tapering portions engaging or being engaged by each part, and adjusting screws are provided by means of which the parts of the split or two part holders are moved one with relation to the other, so that pressure may be brought to bear upon the tapering portions of the shanks to thereby hold the pins frictionally with sufficient pressure to resist the tendency of the strings to turn them. The holders for the wrest pins are pivoted, or adapted to bear against suitable fulcrums, and an adjusting screw passes down through a slot or hole in the outer end of each fulcrum holder or block, and into the wrest plank or frame, and by turning said screw in one or the other direction the said outer end of the holder or block will be raised or lowered. The string is wound around the wrest pin while the latter is allowed to turn freely in its socket in its holder, and when the string has been drawn as taut as required, the adjusting screw by which the said wrest pin is tightened in its socket is turned, after which the adjusting screw, by means of which the fulcrum holder or block is moved, is turned to tune the string. All the parts are preferably made of aluminum to provide for equal expansion.

Figure 1, shows in plan view a sufficient portion of the wrest plank or frame of a piano to show two series of wrest pins, their supports and adjusting devices, and Fig. 2, a sectional detail of the wrest plank, showing in side elevation the wrest pins, supports and adjusting devices for three strings, which are employed to produce a single tone.

The wrest plank *a*, made of any usual or suitable shape, and preferably made of aluminum has formed integral with or secured to its upper side three ribs *b*, arranged in parallelism or substantially so, and cut away or recessed at one side to serve as fulcrums. The shanks of the wrest pins *d*, are formed to present two oppositely tapering or conical portions *d'*, *d''*, and said shanks are seated in holes or sockets made in holders or blocks *c*, one end of each of which bears against a fulcrum *b*. The fulcrumed holders or blocks are split lengthwise in substantially a horizontal plane as at 2, so that the tapering portion *d'*, will rest in a tapering or conical recess in the upper part of the block, and the tapering portion *d''*, will rest in a tapering or conical recess in the lower part of the block. To place the wrest pin of this construction in its socket in the holder, I prefer to form the tapering or conical portion *d'*, on a cylindrical shank, and after placing it in its socket to form the tapering portion *d''*, by upsetting it. An adjusting screw *f*, passes down through the outer end of the upper part of each block, next the wrest pin, bearing against the top of the lower part of the block, so that the said parts may be slightly separated one from the other, or allowed to approach each other according to the direction in which the screw *f*, is turned. This movement of the parts toward and from each other is but slight, and hence there is sufficient spring to the metal to accommodate such movement. Another adjusting screw *e*, passes down through a slot or hole in the outer end of the lower part of each block, the screw threaded shank of said screw entering an internally screw threaded socket in the wrest plank or frame, so that by turning the said screw in one or the other direction the fulcrum block or wrest pin holder will be correspondingly moved. This adjusting screw *e*, has on it a flange which bears upon the top side of the block or holder, and the latter is drawn up against this flange by the tightly drawn string.

To provide for sufficient spring action of the parts of the fulcrum blocks, for the purpose of tightening the pins in their sockets, and also furnish good and sufficient supports for the wrest pins, I have formed a boss on

each block through which the wrest pins pass, and said bosses are formed nearer to or farther from the fulcrum to enable the wrest pins to be placed nearer to, or farther from the fulcrum, to provide for the usual differences between whole and half tones, the wrest pins of the half tone strings being placed nearer to the fulcrums. I have provided three ribs *b*, as fulcrums, and as usual three wrest pins for each tone or half tone, said pins being supported in blocks or holders arranged in line with each other, yet the pins and their holders are independently adjustable.

In operating my invention, a string is wound around one of the wrest pins, while the latter is free to turn in its socket, and when the string has been drawn sufficiently taut, and while the wrest pin is held stationary by a suitable wrest the adjusting screw *f*, is turned to separate the parts of the block or holder, and thereby tighten the hold upon the shank of the pin. The adjusting screw *e*, is then turned to raise or lower the outer end of the fulcrum block, and thereby vary the tension of the string to provide for any slight variation which may be required. Thus it will be seen that the wrest pins may be turned, and then tightened in their sockets for ordinary or rough tuning, after which an exceedingly fine adjustment may be made by means of the adjusting screw *e*, for finished work.

All the parts will preferably be made of aluminum to thereby permit of equal expansion of the parts, yet iron or steel or other metal may be employed.

By the wrest pins, their supports, and adjusting devices, constructed as herein shown, or in any equivalent way, it will be seen that the wrest pins cannot become loosened in their sockets as is now the case where the sockets are made in wooden wrest planks, thereby enabling the piano when once tuned to remain in tune for a much greater length of time, and they also enable the piano to be tuned with much greater precision owing to the fine yet accurate adjusting devices, and furthermore

by supporting the wrest pins in fulcrumed holders or blocks the vibrating power is materially enhanced.

I claim—

1. In a piano, the wrest plank having ribs *b*, as fulcrums, combined with wrest pins having their shanks formed with two tapering portions *d'*, *d''*, and fulcrumed holders for said wrest pins divided lengthwise horizontally, substantially as described.

2. In a piano, the wrest plank having ribs *b*, as fulcrums, combined with wrest pins having their shanks formed with two tapering portions *d'*, *d''*, and fulcrumed holders for said wrest pins divided in a horizontal line, and adjusting screws *f*, to loosen or tighten the wrest pins in their sockets, substantially as described.

3. In a piano, the wrest plank, and ribs *b*, thereon as fulcrums, combined with wrest pins, and fulcrumed holders, each having a socket for its wrest pin, and tightening devices for the wrest pins, and adjusting screws as *e*, for the fulcrumed holders, substantially as described.

4. In a piano, the wrest plank and ribs *b*, thereon as fulcrums, combined with wrest pins having their shanks formed with two oppositely tapering portions, and fulcrum blocks or holders for said wrest pins divided horizontally, and adjusting screws for loosening or tightening said wrest pins in their sockets, and adjusting screws for said fulcrumed holders, substantially as described.

5. In a piano, a wrest pin, combined with an adjustable fulcrumed block or holder having a socket in which said pin is placed, and a tightening device for tightening the pin in its socket, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM HARRISON FARGO.

Witnesses:

BERNICE J. NOYES,
LUCY F. GRAVES.