

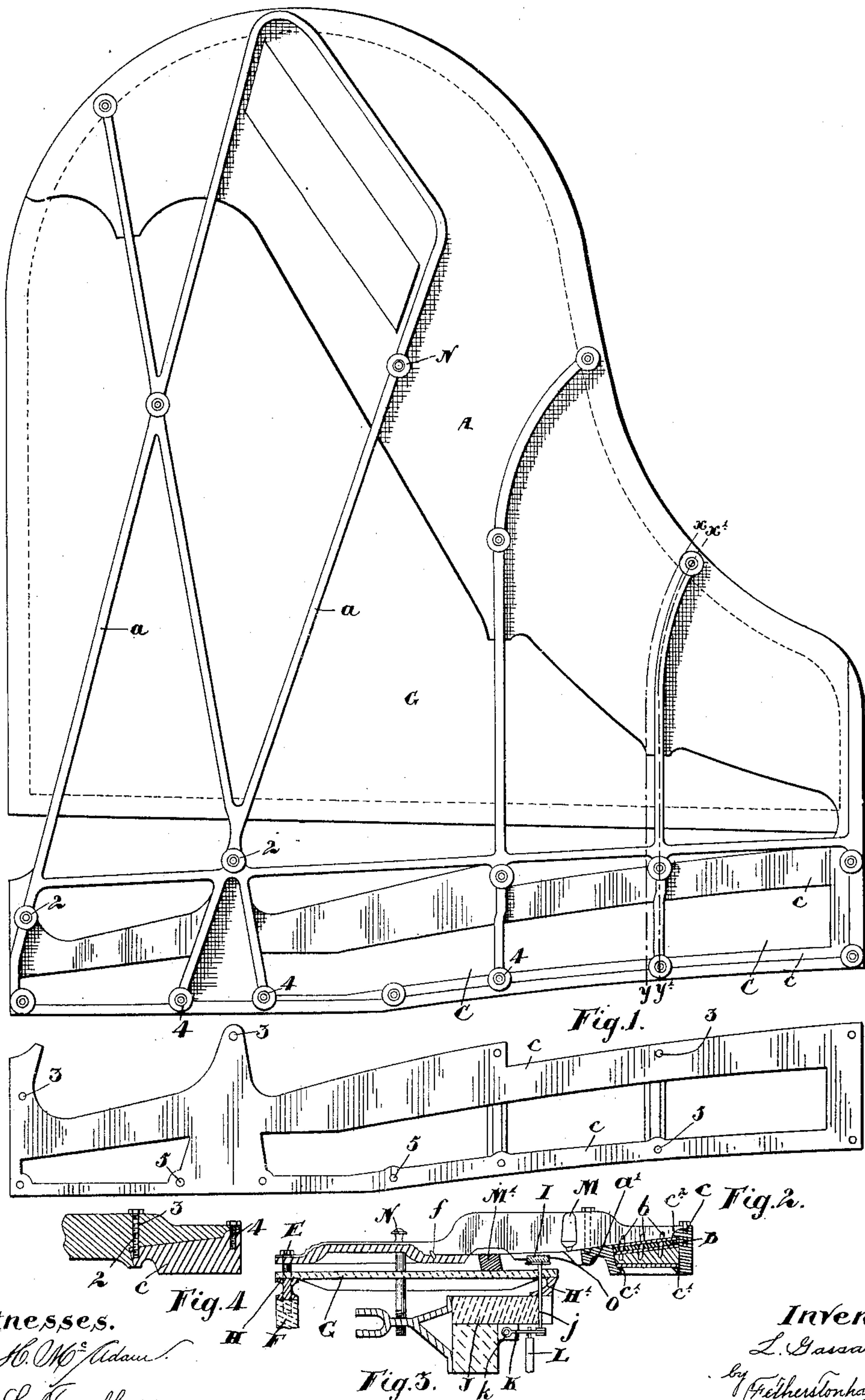
**No. 662,783.**

**Patented Nov. 27, 1900.**

**L. GASSARD.  
PIANOFORTE.**

(Application filed Apr. 21, 1900.)

(No Model.)



*Witnesses.*

A. H. M<sup>rs</sup> Adams.

H. L. Trumble.

*Inventor:*

L. Gassard

by Featherstonhaugh & Co  
Attys.



# UNITED STATES PATENT OFFICE.

LOUIS GASSARD, OF TORONTO, CANADA, ASSIGNOR TO THOMAS GABRIEL MASON, OF SAME PLACE.

## PIANOFORTE.

SPECIFICATION forming part of Letters Patent No. 662,783, dated November 27, 1900.

Application filed April 21, 1900. Serial No. 13,759. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS GASSARD, pianomaker, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Pianofortes, of which the following is a specification.

My invention relates to improvements in pianofortes; and one object of the invention is to devise a construction of plate and composite pin-block to be connected to the same whereby the construction of this portion of the piano may be improved, made of greater strength and rigidity, and hold the tuning-pins better than pianos at present in use and as a result produce a piano, either of upright or grand form, having a greater volume and superior quality of tone than has been produced heretofore.

Subsidiary objects are, first, to produce an echo-pedal to advantageously modify the tone of the instrument, and, secondly, to provide a sounding-board that will act more in sympathy with the strings.

To accomplish these ends my invention is constructed and arranged as hereinafter more particularly explained.

Figure 1 is a plan view of a plate of a piano having connected thereto my composite sectional pin-block. Fig. 2 is a plan view of the frame of the pin-block alone. Fig. 3 is a cross-section on the partly-straight and partly-curvulate line  $xy$ , Fig. 1. Fig. 4 is a cross-section on the line  $x'y'$ , Fig. 1.

In the drawings like characters of reference indicate corresponding parts in each figure.

Heretofore in the plates of pianofortes the portion of the plate under which the pin-block extends was cast with the main portion of the plate, and on account of the different thicknesses of the two portions the metal at the portion of the plate where the pin-block was situated would in cooling warp or buckle up and necessitate various devices to bring it into shape in order to accurately secure the strings of the piano in position. It was with the object partially of overcoming this defect and securing the pin-block, in which the pins may be securely fastened and prevented from yielding, as well as give this portion increased

rigidity, that my invention is particularly designed.

A is the main portion of the plate, and  $a$  the plate tension-bars, suitably connected to the plate A by bolts, as shown. These bars run parallel with the strings and hold apart the iron frame  $cc$  of the composite sectional pin-block C from that of the main portion of the iron plate A in which the hitch-pin  $f$  is situated.

It will be noticed that the composite pin-block C contains the tuning-pins  $b$ , which are inserted in the layers B, comprising the wooden portion of the pin-block. These layers are inserted in the frame between the sides of the frame  $cc$  upon the flanges  $c'c'$  and are glued together and built up until they reach the top of the inner portion of the frame  $c$  and extend underneath the flange  $c^2$  of the outer portion of the frame. It will thus be seen that the wooden portion of the different layers B is securely incased and is necessarily of great strength and durability. It may be remembered that the aggregate strain exerted by the strings of a piano when in tune is from twenty to thirty tons, so that this feature of construction is of great importance. The composite pin-block C is secured to the tension-bars by bolts 2, extending through holes 3 in the projecting portion of the composite pin-block to the plate, and by bolts 4, extending through holes in the ends of the tension-bars and holes 5 at the outside. (See Figs. 1 and 4.)

It will be noticed that the tension-bar  $a$  is so constructed as to overhang the pin-block frame  $cc$ , and such frame fits into the point or angular recess  $a'$  in the tension-bar, and it will consequently be seen that as the tension increases on the strings the firmer will the frame of the composite pin-block be held in position at this point.

E is a nose-bolt which extends through the plate A into the inside of the case F.

G is the sounding-board, which is placed in the position shown in Figs. 1 and 3 and is supported or joined upon the preferably-fluted rims H and H'. The nose-bolt E extends freely through enlarged holes in the sounding-board and fluted rims, so that the board is left entirely free from anything for-



eign to itself. It is a well-known fact that if anything be placed on the sounding-board of a stringed instrument it produces a most detrimental effect on the tone quality of the instrument, and consequently where the sounding-board is suspended or placed as shown in my invention a greater volume and superior quality of tone will be produced and the piano will hold its tone better than an ordinary piano.

N is the pilot-pin, which extends through the plate A, as indicated, and an enlarged hole in the sounding-board G to and through the resonator. This is accomplished from the fact that the plate being connected through the sounding-board to the resonator by means of the pilot-pin, the pulsation of such plate, caused by the vibration of the strings, is conveyed to the resonator (which, it will be noticed, is practically in the shape of a tuning-fork) through the frame and rim of the board back to the sounding-board, thereby gathering up the volume of the tone and acting as an auxiliary to the resonance of the sounding-board. The purpose of the pilot-pin is to communicate vibration to the resonator.

I is the damper of the echo-pedal, which is designed to damp two strings in each note or group of strings.

J is the lifting-wire, connected to the damper and passing through the wooden brace J, and K is the damper-rod, which is suitably pivoted at k and is also suitably connected to the bottom of the lifting-wire.

L is the pedal-rod, designed to operate the damper.

M is the capo tasto, and M' is the bridge.

In Fig. 3 I show one string O for the sake of clearness.

By the construction I have hereinbefore described it will be seen that the pin-block proper or wooden portion of the composite pin-block is immovably fixed in position, thus insuring great strength and rigidity to the whole structure, and thus rendering the lateral vibration of the tuning-pins unappreciable. Hence it will be understood in the construction adopted that there will be an absence of a certain twang and roughness of tone commonly incident to instruments less firmly and less scientifically constructed.

Another important desideratum is that from the construction of the frame and the multiplicity of layers in the block proper the liability to warp of the block is reduced to a minimum, nor will the block split.

What I claim as my invention is—

1. The combination with the plate proper and tension-bars, of a composite pin-block comprising an independent encompassing

iron frame made up of the inner and outer sides independent of the plate proper and the wooden pin-block proper suitably held therein and detachable means for securing the inner and outer sides of the frame to the various bars of the plate as and for the purpose specified.

2. The combination with the plate proper and tension-bars, of a composite pin-block comprising an independent encompassing iron frame made up of the inner and outer sides independent of the plate proper and the wooden pin-block proper suitably held therein and bolts extending through the tension-bars and the inner and outer sides of the frame whereby it is secured to the plate as and for the purpose specified.

3. The combination with the plate proper and tension-bars, of a composite pin-block comprising an independent encompassing iron frame provided with the inwardly-extending retaining-flanges at the bottom of the side walls and the upper overhanging flange at the inner side of one side wall and having the point of the frame extending into corresponding recesses in the tension-bars, the pin-block proper comprised of a plurality of layers of wood fitting on top of the bottom flanges of the frame and within the upper flange and means for securing the composite pin-block to the tension-bars as and for the purpose specified.

4. The combination with the sounding-board, of a rim having grooved sides, such rim being fastened to the edges of the frame and of the sounding-board, said board being left free to vibrate all around as and for the purpose specified.

5. The combination with the plate and sounding-board and means for holding the sounding-board in position, of the resonator suitably secured to the frame and the pilot-pin extending through the plate, sounding-board and resonator as and for the purpose specified.

6. The combination with the plate proper and tension-bars, of a composite pin-block comprising an independent encompassing iron frame provided with the lower flanges at its sides and the upper overhanging flange on one side and having the frame extending into corresponding recesses in the tension-bar, and means for securing the composite pin-block to the tension-bars as and for the purpose specified.

LOUIS GASSARD.

Witnesses:

B. BOYD,  
H. L. TRIMBLE.