

No. 608,476.

Patented Aug. 2, 1898.

J. NOBLE & F. R. BENNETT.
PIANOFORTE.

(Application filed Oct. 23, 1897.)

(No Model.)

Fig. 1.

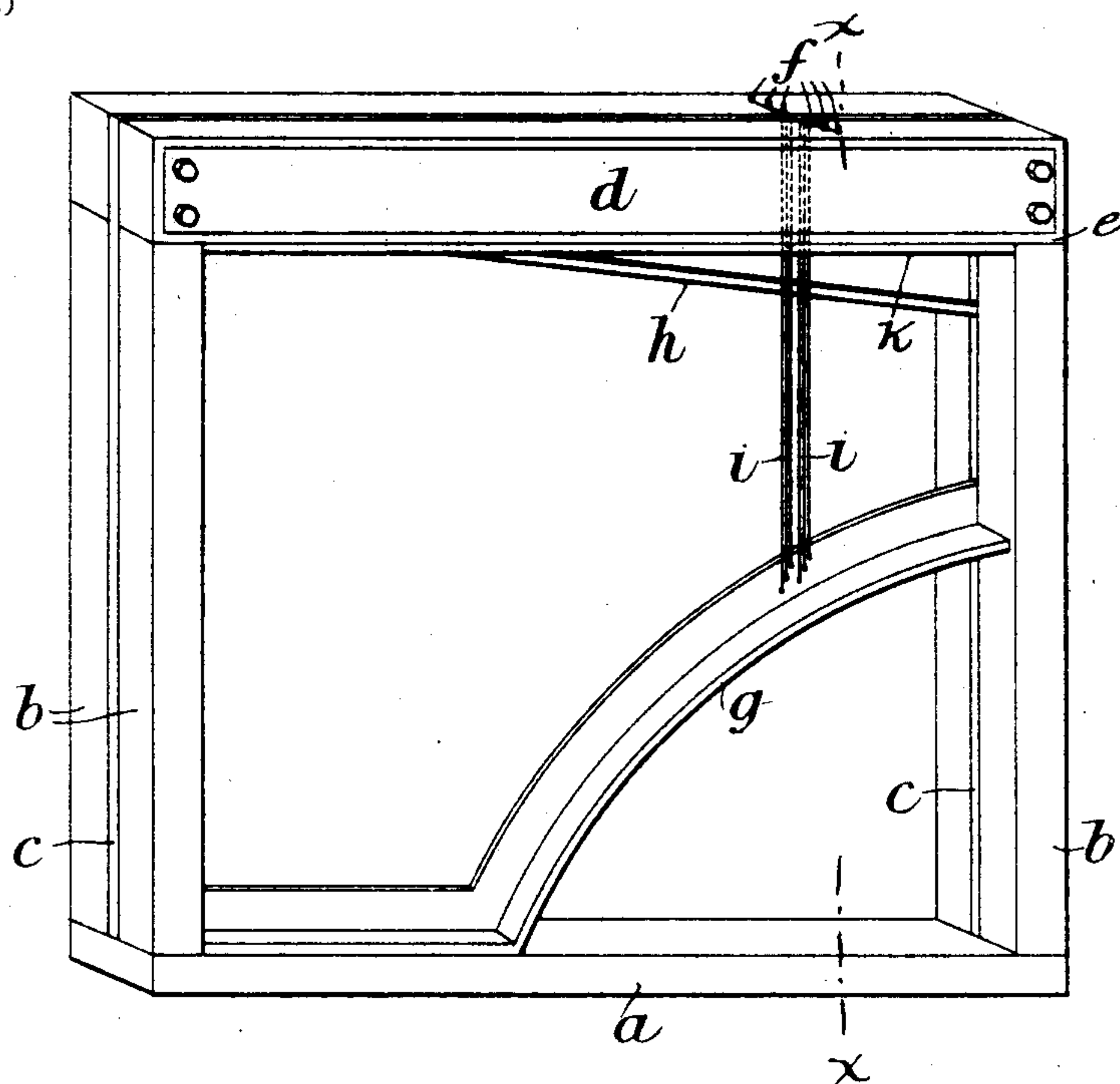


Fig. 2.

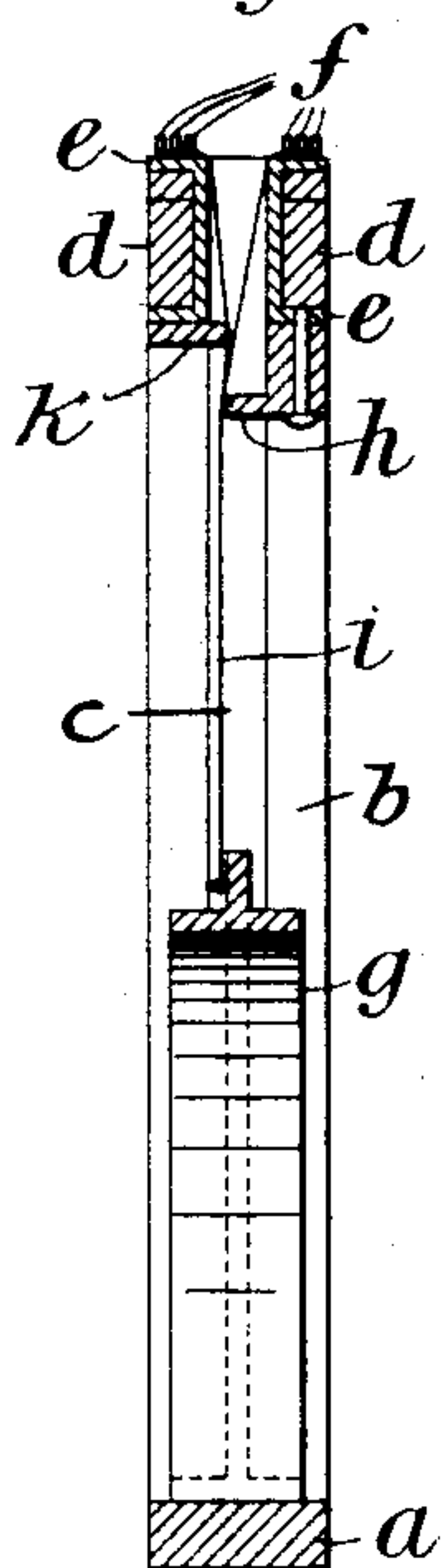


Fig. 3.

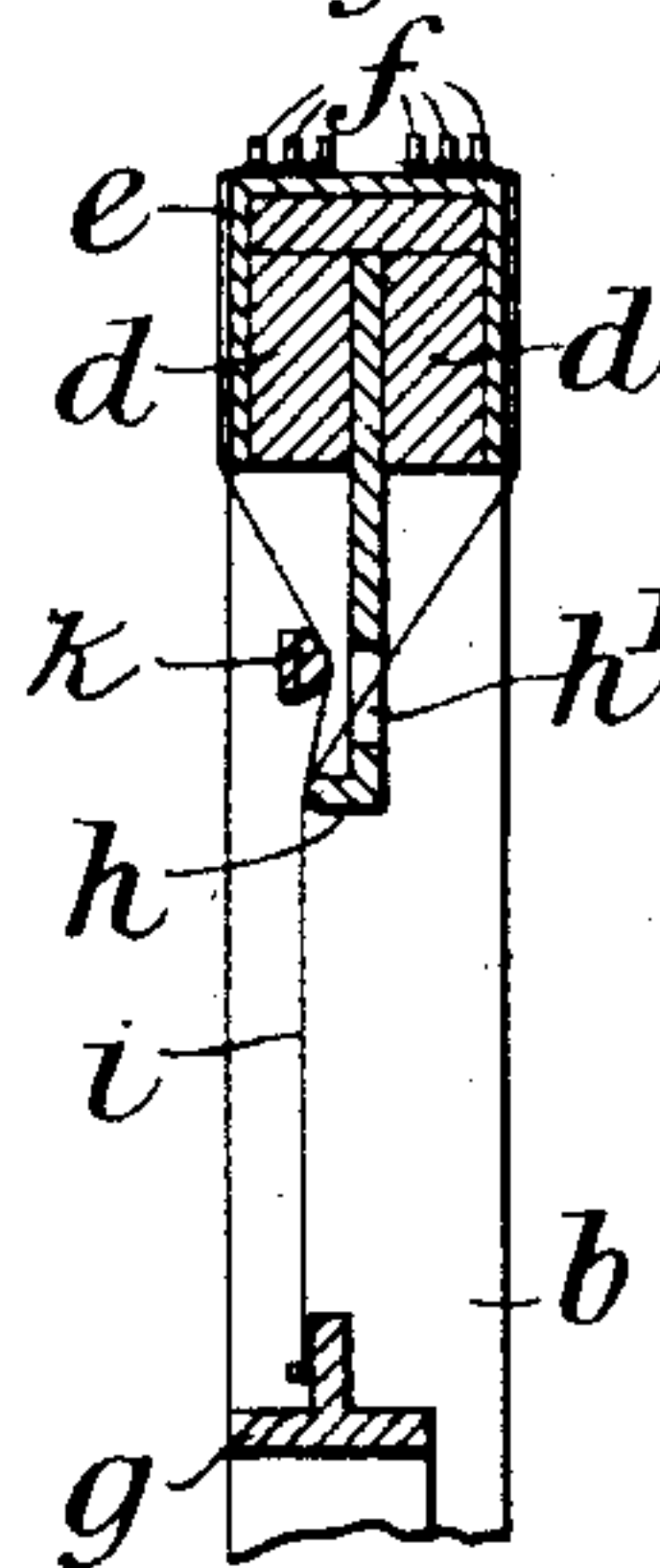
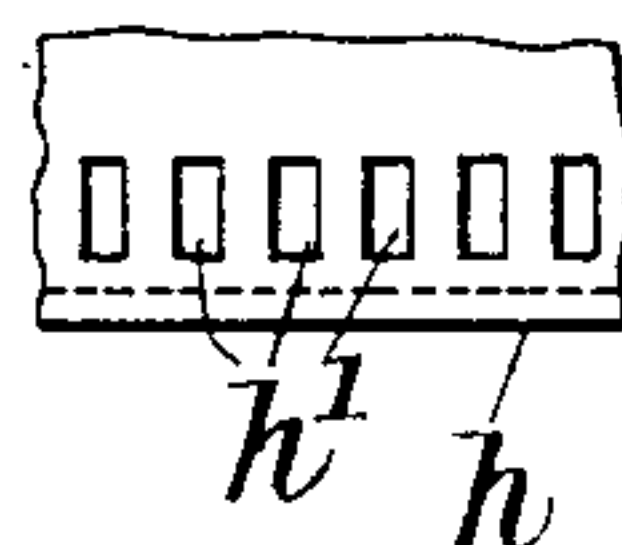


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN NOBLE AND FREDRICK RICKARDS BENNETT, OF LONDON, ENGLAND.

PIANOFORTE.

SPECIFICATION forming part of Letters Patent No. 608,476, dated August 2, 1898.

Application filed October 23, 1897. Serial No. 656,245. (No model.)

To all whom it may concern:

Be it known that we, JOHN NOBLE, pianoforte-agent, and FREDRICK RICKARDS BENNETT, pianoforte-tuner, subjects of Her Majesty the Queen of Great Britain and Ireland, residing at 110 High road, Willesden Green, London, in the county of Middlesex, England, have invented certain Improvements in Pianofortes, of which the following is a specification.

In many pianoforte-frames as at present constructed the tension of all the wires comes upon the front side of the frame, which has consequently to be strongly braced and supported to enable it to withstand the strain. These braces and supports obstruct the sound; and the object of the present invention is to construct an improved pianoforte-frame of that kind in which the strain is central, being equally distributed between both sides of the frame, thus rendering braces and supports for the latter unnecessary, and consequently improving the tone of the instrument. The absence of middle supports and braces also gives greater facility for the treatment of the soundboard and bridges.

A pianoforte-frame constructed in accordance with our invention may be made of wood or metal, or of both, and comprises a bottom plank or base, an upright post or support at each end thereof, and a wrest-plank carried by said upright posts. The wrest-plank is top-pinned—that is to say, the wrest-pins are arranged vertically in its top face in lieu of horizontally in the side face thereof, as is customary. Disposed centrally within the frame are the bridge and straining-bar. The central-strung wires after leaving the bridge diverge and take their bearing upon the top face of the wrest-plank on their way to the wrest-pins, some upon the right and others upon the left hand side of the longitudinal center line of the frame. The wires may either pass to the wrest-pins, some over one side face of the wrest-plank and a like number over the other side face thereof, or a central longitudinal vertical slot or opening may be made in the wrest-plank, the wires passing up through this slot and being carried, some over one edge of the slot and a like number over the opposite edge thereof, to vertical wrest-pins arranged on either side of the slot. In both arrangements the same result—

namely, an equal tension on both sides of the frame and a resulting central strain—is obtained.

As an equivalent of the slotted wrest-plank we may employ two wrest-planks arranged parallel to one another on either side of the longitudinal center line of the frame and separated by a narrow space, and this construction we are inclined to adopt in practice as being more convenient.

We will now more fully describe our invention with reference to the accompanying drawings, in which—

Figure 1 is a perspective view of a pianoforte-frame constructed in accordance with our invention and suitable for an upright pianoforte. Fig. 2 is a transverse section on line $x x$, Fig. 1. Fig. 3 is a transverse section of a modified form of wrest-plank, and Fig. 4 is a detail.

Similar letters refer to like parts in all figures.

Referring to Figs. 1 and 2, the frame consists of a bottom plank or base a , from each end of which rise uprights or supports b , preferably each made in two parts, as illustrated, and strengthened by the insertion between the parts of metal plates or strips c , the whole frame being fastened together by bolts.

On the top of the supports b are suitably secured and arranged parallel to one another on either side of the longitudinal center line of the frame, with a narrow space between them, two wrest-plank sections $d d$, each section being inserted within a metal casing e , which covers or protects its upper, lower, and inner faces. The wrest-pins $f f$ are arranged vertically in the top faces of the wrest-plank sections, holes being drilled in the casings e of sufficient size to enable the pins to pass easily into the wood.

g is the straining-bar, preferably a metal casting of T-section, which is secured at one end to the base a and at the other end to the side post b , thus giving great solidity and strength to the entire frame, and h is the bridge, here represented as bolted to the under side of one of the wrest-planks. Both the straining-bar and the bridge are arranged centrally of the frame, so that the wires i are central strung.

k is a tension-bar adjustable toward the bridge h in any convenient manner, its function being to press the wires against the ridge of the latter.

5 After leaving the bridge the wires i for one note diverge and are led up through the space between the wrest-plank sections to the wrest-pins of one plank-section, taking their bearing on the edge of the latter on one side of the
10 longitudinal center line of the frame, while the wires i for the next note, diverging in the opposite direction, are led up through the said space to the wrest-pins of the other plank-section, taking their bearing on the edge
15 thereof on the other side of the longitudinal center line of the frame, and so on alternately, an equal tension being thus placed upon both sides of the frame, resulting in a central strain.

20 In some cases we may, in lieu of two separate casings for the wrest-plank-section cases, employ a single casting having a longitudinal slot or opening formed therein for the passage of the wires. We prefer, however, to make
25 each casing a separate casting, as illustrated.

If desired, we may cast the frame in two parts, afterward bolted together, each part comprising a wrest-plank case, (or half a wrest-plank case when a slotted casting is
30 used for both planks,) half the uprights or supports, and half the base.

In Fig. 3 a single wrest-plank d , protected by a metal casing e , is represented as substituted for the double wrest-plank just de-
35 scribed. The wires for one note, after leaving the centrally-disposed bridge h , diverge, and passing around one side of the wrest-plank to the vertical wrest-pins take their bearing on the top edge thereof on one side
40 of the longitudinal center line of the frame, while the wires for the next note, diverging in the opposite direction, pass to their wrest-pins around the other side of the wrest-plank, taking their bearing on the top edge thereof
45 on the other side of the said longitudinal center line, and so on alternately, the same re-

sult as in the arrangement previously described—viz., an equal tension on both sides of the frame and resulting central strain—being obtained.

50 h' , Figs. 3 and 4, are a series of apertures in the body of the bridge h , through which the wires pass to one side of the wrest-plank.

It is obvious that our improved frame may be equally well applied to horizontal grand
55 pianos, slight modifications being made in the shape of the frame to suit the peculiar configuration of these instruments.

What we claim, and desire to secure by Letters Patent of the United States, is—

60 1. A pianoforte-frame having a top-pinned wrest-plank and centrally-strung wires which latter after leaving the bridge diverge and take their bearing upon the top surface of the
65 wrest-plank, on their way to the wrest-pins, some upon the right and others upon the left hand side of the longitudinal center line of the frame, whereby an equal tension on both sides of the frame and a resulting central strain are obtained, substantially as de-
70 scribed.

75 2. A pianoforte-frame having a top-pinned wrest-plank having side portions or sections arranged parallel to one another on either side of the longitudinal center line of the frame and having central-strung wires which
80 latter after leaving the bridge diverge and are carried up the space between the parts of the wrest-plank, some over the top surface of one part to the wrest-pins thereof and others
85 over the top surface of the other part to the wrest-pins thereof, substantially as described and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of
85 two subscribing witnesses.

JOHN NOBLE.

FREDRICK RICKARDS BENNETT.

Witnesses:

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