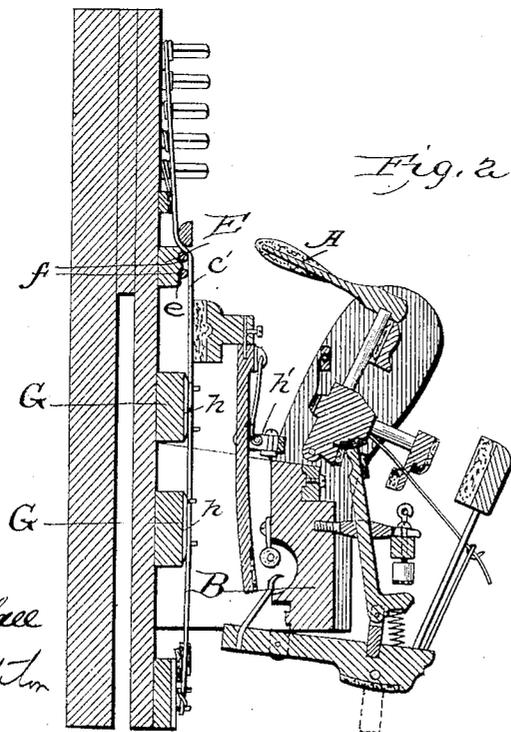
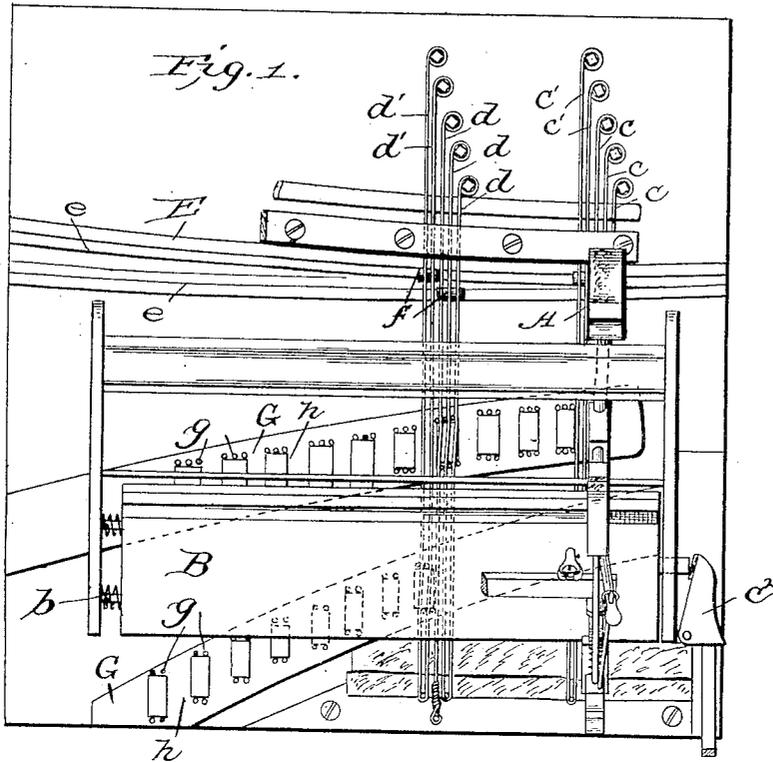


(No Model.)

F. HOERR.
PIANOFORTE.

No. 577,752.

Patented Feb. 23, 1897.



Attest
Wm. F. Stone
J. L. Middleton

Inventor
F. Hoerr

UNITED STATES PATENT OFFICE.

FRANZ HOERR, OF TORONTO, CANADA.

PIANOFORTE.

SPECIFICATION forming part of Letters Patent No. 577,752, dated February 23, 1897.

Application filed June 1, 1896. Serial No. 593,891. (No model.)

To all whom it may concern:

Be it known that I, FRANZ HOERR, a citizen of the Dominion of Canada, residing at Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Pianofortes, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to pianofortes of that class in which two sets of strings are arranged upon one sounding-board, the strings of one set of an octave higher being by the side of those of an octave lower.

15 It includes particularly the tuning-bridge and the details of construction, as will be hereinafter described, and particularly pointed out in the claim.

20 My invention is illustrated in the accompanying drawings, in which—

Figure 1 shows the mechanism, including my improvements, in front elevation. Fig. 2 shows a vertical section of the same, taken from front to rear.

25 In the drawings the hammers are shown at A, supported on a laterally-moving action-bar B, all of which, with the other parts constituting the action, are of a construction and arrangement heretofore known. The action-bar is normally held on one side (to the right, as shown in Fig. 1) by means of springs *b* and may be moved to the left by means of a lever, as *c*², operated by any suitable pedal.

30 I have shown but two pairs of the sets of strings, these being sufficient to illustrate the invention without complicating the drawings. The example shows three upper-note strings *c c c*, and by the side of these are two other strings *c' c'*, an octave lower than the strings *c*. The same example includes *d d d*, which are tuned to a lower note, and by the side of these are two other strings *d' d'* an octave lower than the strings *d*.

45 The rest or tuning plate *E* is formed with two diverging grooves *e*, one above the other, the divergence being adjusted to the longer strings of the lower notes and to the points of stroke of the hammer on the strings. The strings are supported on the plate by means of blocks consisting of bits of wire *f* placed in the grooves, that for the strings of higher note of the pair in the lower and that of those of lower note in the upper groove. The tension devices above this plate are of ordinary construction.

The sounding-board bridges *G G* are provided with sets of pins for the higher and lower strings, set alternately. The sets of pins *g* have intermediate cut-away spaces *h*, and the pins in one are opposite the cut-away spaces in the other, so that the lower strings pass over the upper bridge *G* without obstruction, although by the side of the shorter strings.

I have shown of the lower octave two strings, but in the base I use only one of the lower octave by the side of the higher.

It will be seen that the hammer *A* on the right of Fig. 1 covers only the higher strings of the pair of higher and lower, or the strings *c c c*. At the same time the hammer is made wide enough to cover all of the pair when shifted. When the action is shifted by depressing the pedal, the hammer is carried over the other strings and thus is in position to strike all of the pair. I use the word "pair" to designate the strings of the higher and lower octave whether there be one or more of the higher or one or more of the lower.

By the lateral movement of the action-bar, which brings into action the set of lower octaves, (or by reversion of the parts it may be higher,) a fuller and richer tone is produced.

The dampers are set upon a damper-bar *h'* and remain stationary when the action is shifted. In order to support the dampers in the limited space, I use a damper-bar of metal and arrange it just above and over the rear edge of the action-bar, and on this the dampers are pivoted. The lower ends of the damper-levers, like the hammers, are made wider and correspond to the lateral movement of the action.

In the higher notes I arrange the dampers so as to bear only upon the lower octave's strings and do not damp the higher strings.

I claim—

In a pianoforte, having a duplicate set of strings arranged in pairs differing by one octave, and shifting hammers and action, arranged to strike part or the whole of the sets of strings, a tuning-bridge having diverging grooves, and blocks in said grooves supporting the strings, substantially as described.

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

FRANZ HOERR.

Witnesses:

HENRY E. COOPER,
WM. F. HALL.