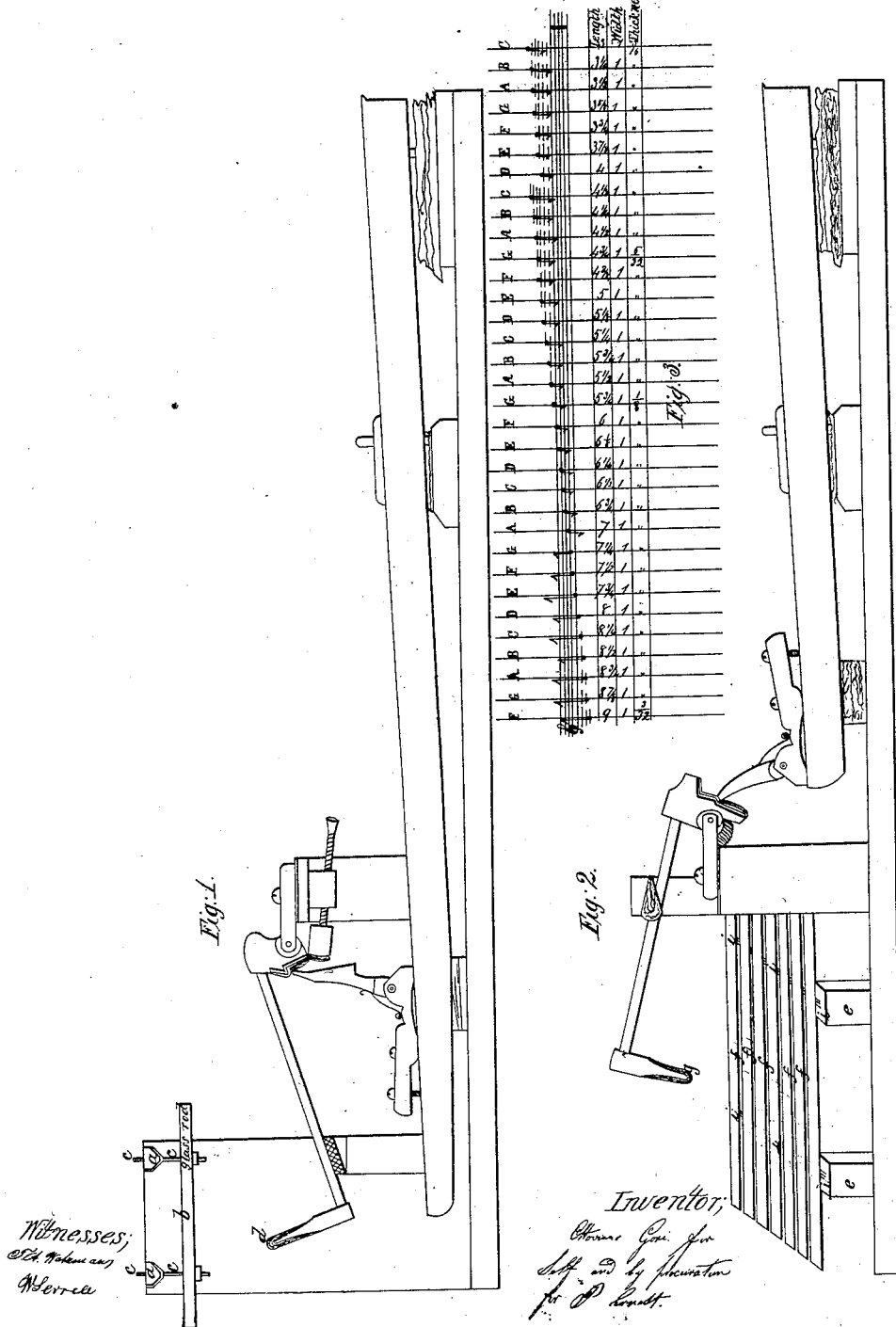


*Gori & Ernst,*  
*Musical Parts of Pianos,*

*Nº 3,504,*

*Patented Mar. 26, 1844.*



# UNITED STATES PATENT OFFICE.

OTTAVIANO GORI AND PHILIP ERNST, OF NEW YORK, N. Y.

## PIANOFORTE.

Specification of Letters Patent No. 3,504, dated March 26, 1844.

*To all whom it may concern:*

Be it known that we, OTTAVIANO GORI, artist, and PHILIP ERNST, professor of music, both of the city, county, and State  
5 of New York, and both aliens, resident more than one year preceding the date hereof in the United States, and who have each respectively and duly made oath of our intention to become citizens of the  
10 United States, have invented and made and applied to use certain new and useful improvements in the construction and means of giving sound to pianofortes, the main feature of the said improvements being the  
15 substitution of glass musical notes in place of wire notes and placing the same either above or beneath the hammers, or both above and beneath the hammers and using glass only to give the sound or combining both  
20 glass and wire as notes, for which we seek Letters Patent of the United States, and that the said improvements are fully and substantially set forth and shown in the following description and in the drawings annexed to and making part of this specifica-  
25 tion, wherein—

Figure 1, represents a mode of placing oblong squares of glass, above the action parts of a pianoforte, so that they are  
30 struck by an upward action of the hammers, and Fig. 2, represents a mode of placing the oblong square, of glass, below the action parts, so that they shall be struck by a downward action of the hammer.

35 In Fig. 1 *a, a*, are the sectional ends of a pair of wood or metal bearing rods, lying longitudinally of the instrument, above the action parts, *b*, is a note, formed of an oblong plane of glass, drilled through, to receive two small wire rods *c, c*, the upper  
40 ends of which are secured in the bearing rods *a, a*. The lower ends have nuts, by which the glass note is sustained, and at the same time, regulated in the proper vertical position, above the hammer *d*.

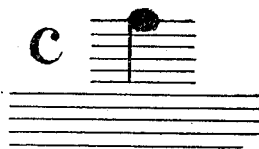
45 In Fig. 2, *e, e*, are bearers, or standards, of wood, or metal, covered with leather or any other fit substance that will not deaden the sound; *f, f*, are planes of glass, lying on the bearers in a situation for the downward  
50 action of the hammer *g*, to act on one of them. The glass notes are also shown as suspended on strings *i*, which may be wire, of any fit kind, or threads of linen, silk,  
55 cotton, or woolen, or any combination of these substances, on any of which the notes

are to be retained, by a small portion of elastic glue, made in the proportion of one ounce of good common liquid glue, two  
60 ounces of molasses, half an ounce of pure flour, and half an ounce of water, mixed and forming a viscid paste, which will only dry so far, as to become an adhesive, tenacious, and elastic substance. Sugar may be  
65 used instead of molasses, but we have found the latter preferable.

The Fig. 3, is a tabular statement of the sizes, in which we have found, that glass, of the average quality, will give out the  
70 notes indicated against the given length, width, and thickness, of the piece employed; and although we have found variations from an absolute certainty in the production of the required notes, yet these have been  
75 caused by variations in the quality of the glass, in the same way, as variations are frequently found, in the quality of wire employed for musical purposes; the table  
shows the range we have obtained is from  
80 F, below the staff



to C, two octaves and four notes above the staff



a total of four octaves and five notes, in glass. The semitones are not represented, as these vary so little, that while they can  
100 be easily found by the ear of the musician, they cannot readily be defined by the measure. Where the pianoforte is to be fitted with more than this number of octaves and notes, with the semitones, we  
105 intend to employ strings, for the lower notes, and we do not intend to limit ourselves to any given number of glass notes, when used in combination with strings, as we intend to add one, or more, octaves of  
110 glass notes, to any common pianoforte, according to the quality of the tone, and the capacity possessed by the particular instru-

ment, for receiving glass notes, in addition to the strings; nor do we intend to restrict ourselves to using the glass notes, in one range, or tier, but to vary the positions, by  
 5 placing the several octaves of notes in tiers, or layers, one above the other, so that we change the position of the glass; and we intend to place the glass notes, either above, or below the wire notes, and to strike the  
 10 glass notes from either above, or below, as the conveniences of fitting the instrument may dictate, and we intend, in addition, to make the actions operate, by one or more common pedals, so that the glass notes may  
 15 be played alone, or the wire notes alone, or the glass and wire notes conjointly; and in cases, where either the sizes of the instrument, or the character of the sound required, may vary from those in common  
 20 use, we intend to vary the scantlings of the glass notes, so as by making them larger, or smaller, to obtain the objects required, retaining the method of mounting and acting on them as described. Glass notes formed by  
 25 double disks, of different sizes and scantlings, may hereafter be found available, either separately, or conjointly with notes formed by glass planes, but this mode of forming the musical parts cannot be included in this specification, although it may  
 30 become the subject of a future patent.

We do not intend to claim the use of glass for musical purposes, nor do we in-

tend to claim the mode of fitting the action parts, shown in the drawings; but 35.

We do claim as new, and of our own invention:

1. The mode of mounting and adjusting the glass notes *b*, as shown in Fig. 1, by the bearing or suspending bars *a*, and the 40 small wire rods and nuts *c, c*, when applied to use, in pianofortes, having either an under or over action, either separately, or in conjunction with wire or string notes.

2. The mode of mounting or suspending 45 the glass notes shown in Fig. 2 by the bearers *e*, or by the strings or wires *i*, in combination with the mode of retaining such notes in place by elastic glue, made as described, when applied to pianofortes, hav- 50 ing a downward action, such glass notes, and mode of suspending and retaining, to be either used separately, or in conjunction with wire or string notes.

In witness whereof we have hereunto set 55 our hands and seals in the city of New York, this twentieth day of November in the year one thousand eight hundred and forty-three in the presence of the witnesses subscribing hereto.

OTTAVIANO GORI. [L. s.]  
 PH. ERNST. [L. s.]

Witnesses: .

T. A. WAKEMAN,  
 WM. SERRELL.