

F. Mathushek,
Stringing Pianos,
N^o 8470. *Patented Oct. 28, 1851.*

Fig. 1.

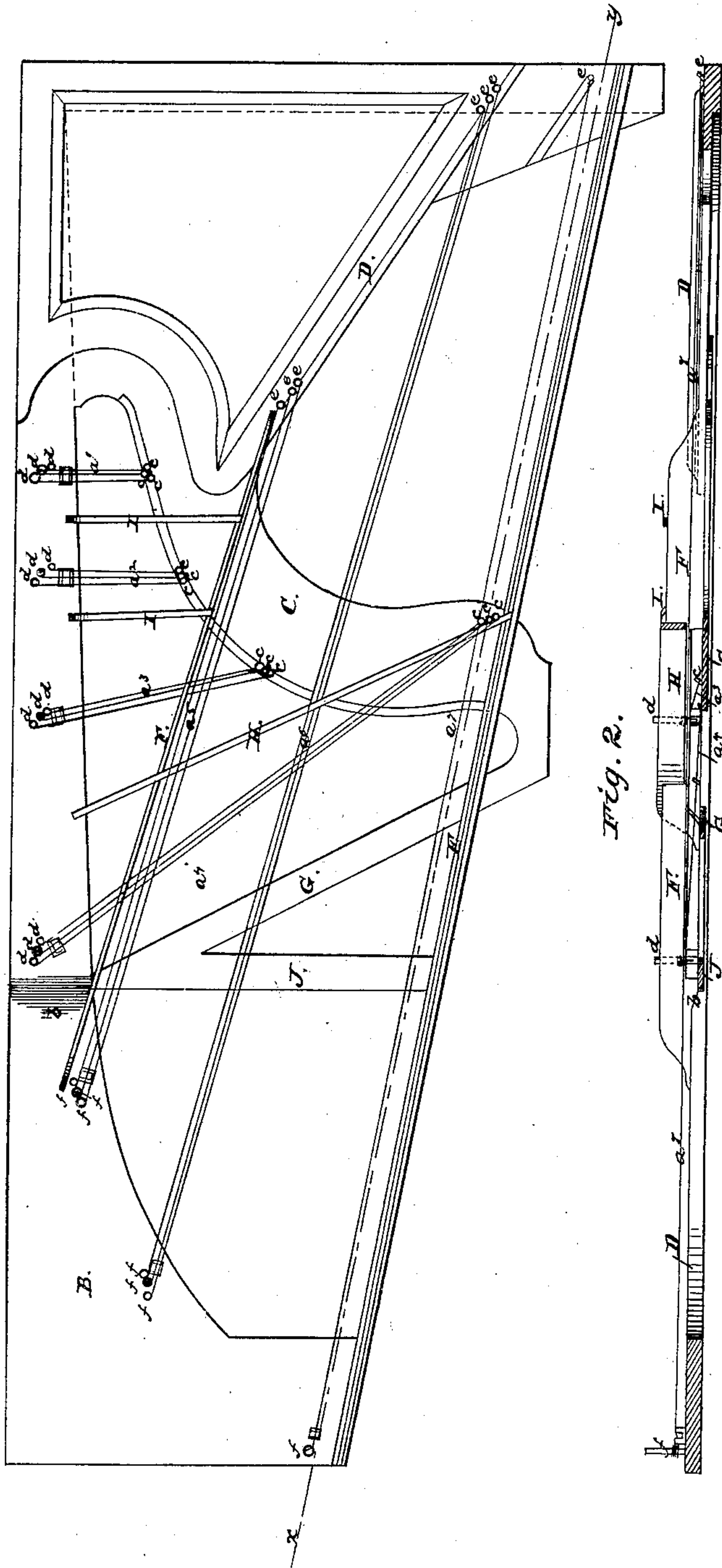
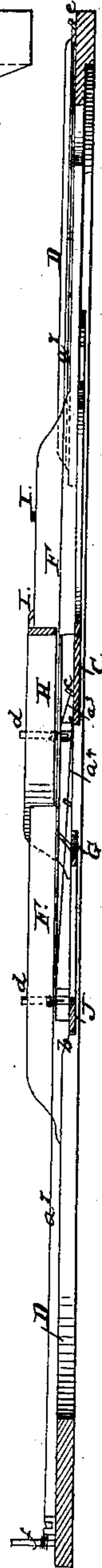


Fig. 2.



UNITED STATES PATENT OFFICE.

FREDERICK MATHUSHEK, OF NEW YORK, N. Y.

PIANOFORTE.

Specification of Letters Patent No. 8,470, dated October 28, 1851.

To all whom it may concern:

Be it known that I, FREDERICK MATHUSHEK, of the city, county, and State of New York, have invented certain new and useful
5 Improvements in the Pianoforte; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification,
10 in which—

Figure 1 is a plan or top view of part of the interior of a seven-octave pianoforte showing the strings of one note of each octave attached to exhibit their arrangement.
15 Fig. 2 is a section taken through the line $x-y$, in Fig. 1.

Similar letters of reference indicate corresponding parts in each of the several figures.

20 My improvements consist, first in a new mode of arranging the strings within the instrument for the purpose of obtaining a greater amount of power in an instrument of given size than can be obtained by the
25 ordinary arrangement or in other words to obtain all the power of a grand pianoforte within the ordinary dimensions and form of a square one, and second in extending the plate commonly called the "metallic plate,"
30 all over the tuning block and providing it with stays running in about the same directions as the strings for the purpose of resisting the strain of the strings and stiffening the tuning block and plate, and strengthening the whole instrument.
35

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and effect.

40 B, C, D, is a plate of cast iron or other metal, the back part B, being intended to fit closely and to be secured by any convenient means to the surface of the tuning block, which it entirely covers, the part C, nearly representing in form the ordinary
45 "metallic plate" of a square pianoforte; and the part D, representing, as it were, an additional "metallic plate." The part B, as far as b , and the part D, of the plate are of the same height, but the part C, and that
50 part of B, extending from it to b , are slightly recessed or lower than the first named parts. A deep ribbed stay E, extends from the front of the part B, across the front of C, to D, uniting all the said parts in front, and
55 another stay F, crosses nearly parallel to E,

also uniting the said parts; another G, extends from B, uniting it with the end of the part C, and with the stay E, near the middle of its length; and another J, from the back end of G, to E; one H, unites B, C, E, and
60 F, and two others I, I, until B, C, and F. All the above braces are cast with the plate.

a^1, a^2, a^3 and a^4 in Fig. 1, represent each respectively a set of three strings each set forming a note of one of the lower four of
65 the octaves, and a^5, a^6, a^7 , each a set of three strings forming a note of one of three higher octaves; they are represented in Fig. 2 by single strings to prevent confusion; those a^1, a^2, a^3 , and a^4 , being secured in the usual
70 manner to pins or studs c, c, c, c , in the part C, of the plate, and tuning pins d, d, d, d , screwed through the recessed part of the plate between b , and D into the tuning
75 block and those a^5, a^6 and a^7 , being secured to pins or studs e, e, e , in the part D, of the plate, and tuning pins f, f, f , screwed
80 through the higher part of the part B, of the plate into the tuning block, the three last named strings are thus higher than the
85 first four, and pass over across them the strings of the lower octave running nearly the whole length of the instrument and those of the other octaves decreasing in
length in suitable proportion.

By this arrangement of the strings it will be understood readily that the strings can all be made larger and there can be an increased number to each note as there is more
90 room for them and the power and tone of the instrument will thus be increased in every respect. Great stiffness is obtained for all the parts by the extension of the metallic plate and the mode of bracing, all
95 the braces running in the same direction as certain of the strings. The liability of the tension of the strings to be altered by change of temperature is also reduced.

No material alteration in the striking action or in any other part of the instrument
100 is rendered necessary by the above improvement, therefore the description is confined to those parts alone to which the improvements relate.

I do not confine myself to the arrangement of any given number of strings in
105 either direction.

What I claim as my invention and desire to secure by Letters Patent, is—

The manner substantially as herein de-
110

scribed of placing or arranging the strings
of a pianoforte, to wit, the shorter strings
or strings of the higher octaves across the
narrower portion of the instrument and the
5 longer strings or those of the lower octaves
crossing them in the direction of the greatest
length of the instrument so as to include the

greatest possible size of string within the
instrument, for the purposes specified.

FR. MATHUSHEK.

Witnesses:

O. D. MUNN,
S. H. WALES.