

(No Model.)

F. J. HAFNER.
STRINGED MUSICAL INSTRUMENT.

No. 474,242.

Patented May 3, 1892.

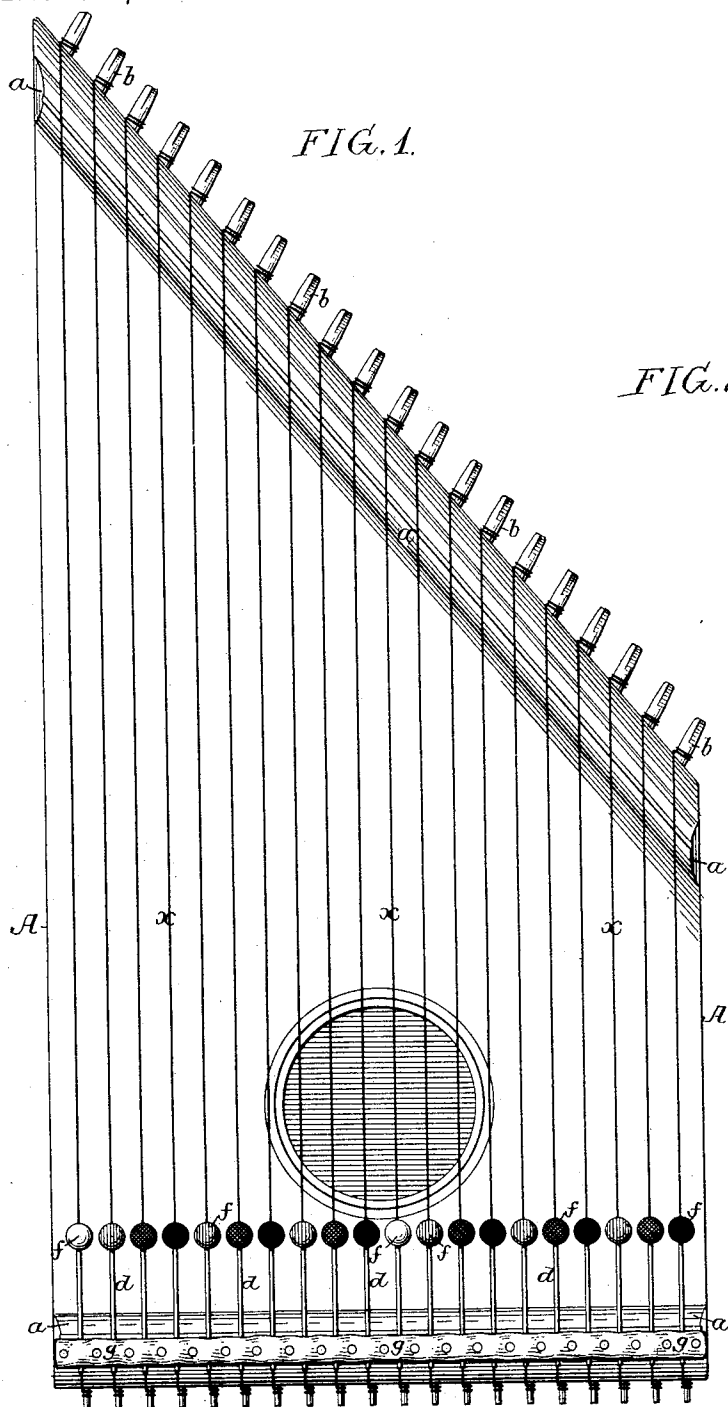
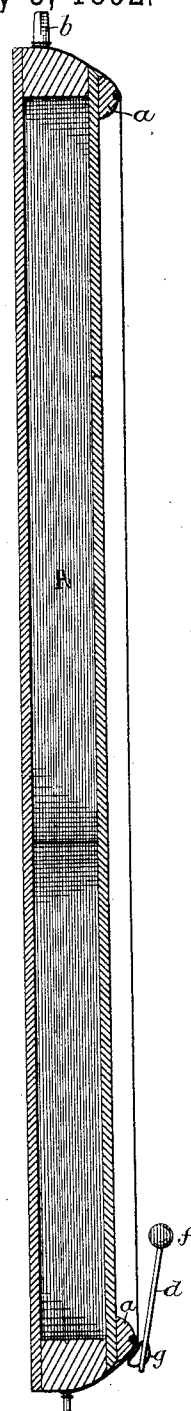


FIG. 2.



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FREDERICK J. HAFNER, OF PHILADELPHIA, PENNSYLVANIA.

STRINGED MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 474,242, dated May 3, 1892.

Application filed February 2, 1892. Serial No. 420,033. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK J. HAFNER, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Stringed Musical Instruments, of which the following is a specification.

My invention consists in the combination of a stringed instrument of the zither type with hammers of such character that they will indicate to a player which notes may be sounded simultaneously in order to produce chords or harmonious sounds, the invention also comprising a plan of mounting the hammers, all as fully hereinafter set forth.

In the accompanying drawings, Figure 1 is a plan view of an instrument of the harp or zither type having hammers constructed and combined therewith in accordance with my invention, and Fig. 2 is a longitudinal section of the instrument.

So far as the instrument itself is concerned it may be any one of that class having a hollow body *A* with longitudinal strings *x* stretched between bridge-bars *a* at the ends of the instrument and provided with suitable keys *b* for imparting to each string the tension necessary to give it the proper tone. Suitably mounted upon one of the bridge-bars *a*, however, are the stems or shanks *d* of a number of hammers *f*, one for each string *x* of the instrument, the mounting being such that the hammers will normally occupy a position some little distance above the strings, but can be thrown down into contact with the strings when struck by the fingers and will rebound or resume their normal position as soon as released from pressure.

The preferable method of mounting the stems or shanks of the hammers is to pass the outer ends of said stems through a strip *g* (preferably a tube) of rubber or other elastic material, which is secured to the bridge-bar *a* at points between the hammers, although it will be evident that the stems of the hammers, if elastic, could be rigidly secured to the bridge-bar at the outer ends by means of suitable staples. The use of the elastic strip or tube, however, is a simpler plan of mounting the hammers, and it has the

further advantage of permitting the stems of the hammers to be moved outward, so as to bring the heads of the hammers close up to it, and thereby get them out of the way, if it is desired to play the instrument by picking the strings in the usual manner.

The heads of the hammers are colored or provided with other distinguishing marks, so that they form sets. For instance, counting from the bottom of Fig. 1, the first and eleventh hammers may be white; the second, fifth, eighth, twelfth, fifteenth, and eighteenth may be blue; the third, sixth, ninth, thirteenth, sixteenth, and nineteenth may be red, and the fourth, seventh, tenth, fourteenth, seventeenth, and twentieth may be black, the hammers from one to ten representing one octave and the hammers from eleven to twenty representing another octave, the colors in each octave corresponding with each other. By thus distinguishing the hammers the proper notes to be struck to produce chords or harmonious sounds are indicated to the performer, the corresponding colors serving as a guide.

The heads of the hammers may be either wood or metal, and I prefer to coat them with enamel of the desired color, as I find that such enamel coating has a tendency to soften the sound caused by the contact of the hammer with the string.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of a zither or like-stringed instrument with hammers mounted above the strings and arranged in sets distinguished from each other, so as to indicate chords or harmonious notes, substantially as specified.

2. The combination of a zither or like-stringed instrument with a series of hammers mounted above the strings and having elastic stems confined at their outer ends and having heads at their inner ends, substantially as specified.

3. The combination of a zither or like-stringed instrument with a series of hammers mounted above the strings and having enameled heads, substantially as specified.

4. The combination of a zither or like

stringed instrument with hammers mounted
above the strings and an elastic strip or tube
secured to the instrument and perforated for
the reception of the outer ends of the ham-
5 mer-stems, substantially as specified.

5. The combination of a zither or like
stringed instrument with an elastic strip or
tube secured to the instrument and hammers
mounted above the strings and having stems
10 adapted to openings in said elastic strip or

tube and movable longitudinally there-
through, substantially as specified.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

FREDERICK J. HAFNER.

Witnesses.

EUGENE ELTERICH,
HARRY SMITH.