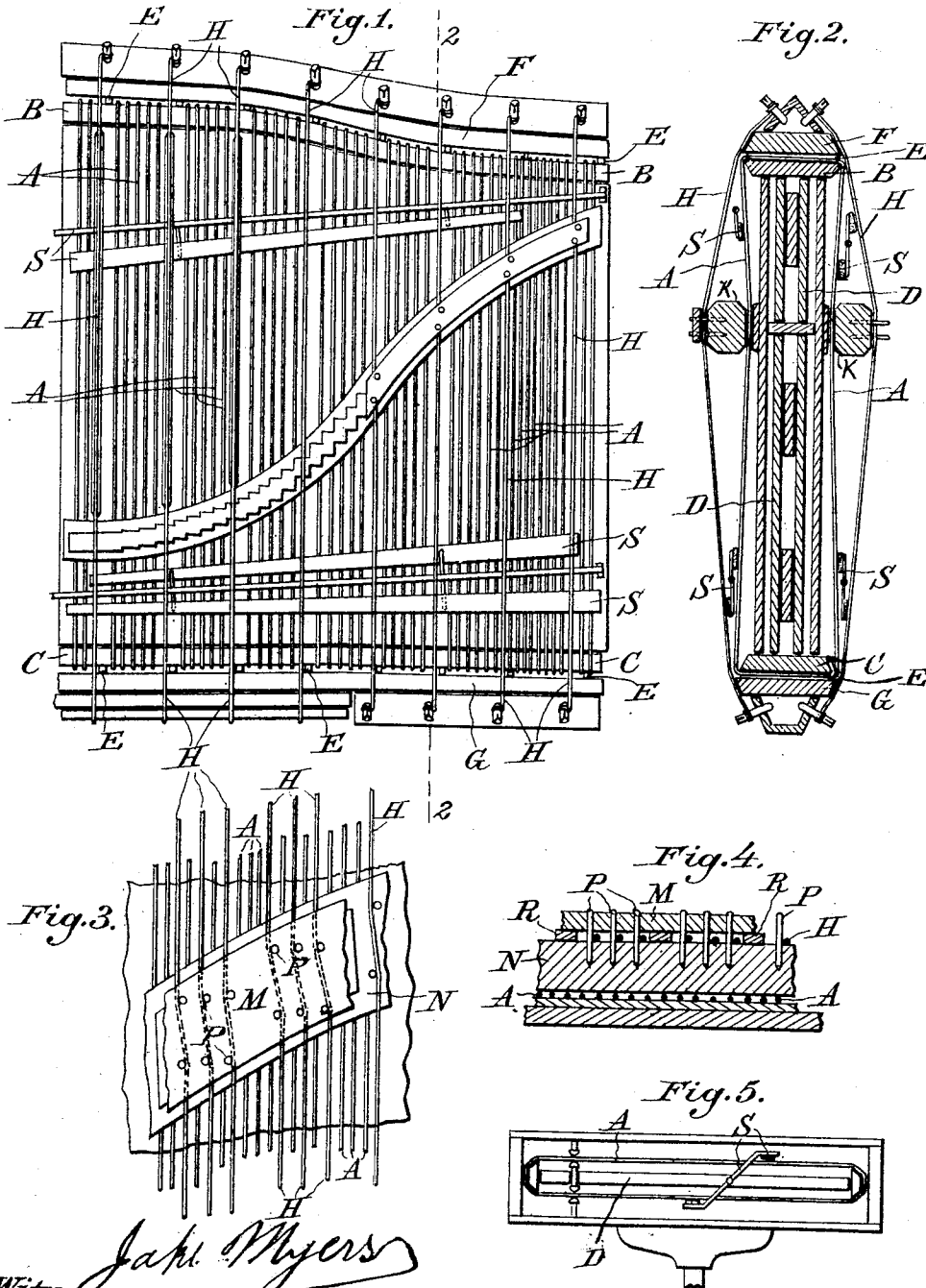


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 STRINGED MUSICAL INSTRUMENT.
 APPLICATION FILED JUNE 15, 1906.

968,102.

Patented Aug. 23. 1910.



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STRINGED MUSICAL INSTRUMENT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES S. WEBER, a citizen of the United States, residing at San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Stringed Musical Instruments, of which the following is a specification.

This invention has for its object an improved construction of a stringed musical instrument with a set of primary strings and a set of auxiliary sympathetic strings, and the invention consists primarily in an instrument of this character in which the various strands of the auxiliary strings are formed by repeated windings of one string.

With this and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings in which:

Figure 1 is a front elevation of the stringed portion of a musical instrument constructed in accordance with my invention; Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1; Fig. 3 is a fragmentary view illustrating particularly a portion of the bridge; Fig. 4 is a sectional view, the section being taken through the parts illustrated in Fig. 3; and, Fig. 5 is a view illustrating an arrangement of damper that may be employed.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Referring to the drawing, the letter A indicates the strands of the auxiliary sympathetic strings, the said strings being formed of a plurality of windings or convolutions of one wire, said strands being wound around the inner plates B and C. Thin rods E separate the plates B and C from the bridge plates F and G, so as to permit the strands to pass.

For the primary set of strings H, only one string in each octave is shown in Fig. 1. As best seen in Fig. 2, the primary set of strings is provided with tuning pins, but

the lack of these is one of the characteristic features of the sympathetic set. The primary set is deflected outward, and the sympathetic or auxiliary set is deflected inward preferably to an extent equal to the deflection of the primary set, through the mentality of the intervening portion K of the bridge of the sound board. The upper section of the primary set on the front of the string frame is the main section. Its duplicate set on the rear of said frame, needs no especial name, it being one of the several sections sounded by sympathetic vibration only.

In Fig. 1 the strings of the lower notes are shown without any fastening devices to connect them with the bridge of the sound board. As to the higher notes, it will be seen by special reference to Figs. 3 and 4, that I provide a series of pins P driven straight or nearly so and held at both ends within the bridge, this latter being formed of two parallel strips M and N joined or glued together as by means of cross pieces R, leaving just room enough for the strings H to pass.

The aim of my invention is to have as many strands in the auxiliary or sympathetic endless set of strings as can properly be crowded into the available space in the instrument, provided the supporting frame can hold them under the proper tension. Fine wire will, therefore, be mostly used. It is also important to have the strands of the full length the space will allow.

As best seen in Fig. 2, the strings of the auxiliary set are separated from the strings of the primary set by the intervening portion K of the bridge of the sound-board. When the primary set of strings is sounded, sympathetic action will select certain of the strings of the auxiliary set and will leave untouched all those that are not in harmony with the note sounded. For the control of the resulting vibrations I may employ dampers S. Three of these dampers are double as best seen in Fig. 2, and cover the two opposite sections of the strings, while the fourth is single. This single damper covers a section of the auxiliary set which is opposite the main section of the primary set, such main section being already provided with dampers which are part of the regular piano action.

It is manifest that by deflecting the strings as they pass the pins P, liability of the strings becoming slack is rendered remote. However, if occasion should arise, the tension may readily be increased by drawing the strands successively.

In a modified form the invention is applicable to other stringed instruments besides pianos. For instance, as illustrated in Fig. 5, I may provide a flat box with a sound board for its top and mount within said box a string frame provided with a set of sympathetic or auxiliary strings A supported by a frame D and provided with dampers S.

I claim as my invention:

1. A stringed instrument, having a set of

musical strings formed of a plurality of windings of a continuous string.

2. A stringed musical instrument having a set of primary strings, and a set of auxiliary sympathetic strings, the latter being formed of a plurality of windings of a continuous string.

3. A stringed instrument, having a set of primary strings and a set of auxiliary strings, the auxiliary strings being formed of a plurality of windings of a string.

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