J. OEHRLEIN.

Violins, Guitars, &c.

No. 168,665.

Patented Oct. 11, 1875.

Fig: 1

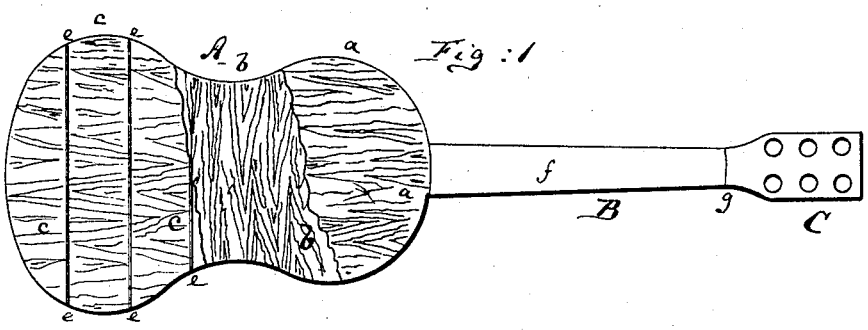

Fig: 2

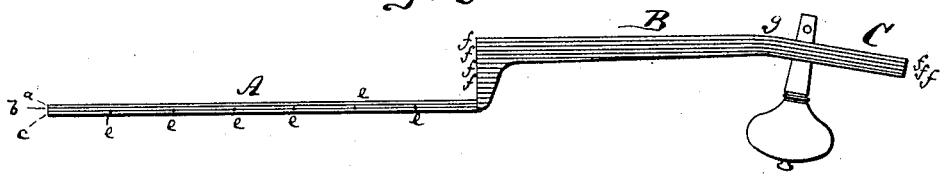

Fig: 3

Witnesses:

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by his attorney

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UNITED STATES PATENT OFFICE.

JOHN OEHRLEIN, OF NEW YORK, N. Y.

IMPROVEMENT IN VIOLINS, GUITARS, &c.

Specification forming part of Letters Patent No. **168,665**, dated October 11, 1875; application filed September 7, 1875.

To all whom it may concern:

Be it known that I, JOHN OEHRLEIN, of New York city, in the county and State of New York, have invented a new and useful Improvement in String Instruments, of which the following is a specification:

Figure 1 is a plan view, partly in section, of a guitar bottom and neck made of my improved construction. Fig. 2 is a longitudinal section of the same. Fig. 3 is a cross-section of the bottom.

Similar letters of reference indicate corresponding parts in all the figures.

This invention has for its object to improve the construction of the bottom of a string instrument, such as the guitar, mandolin, violin, violoncello, bass, and other similar instruments, and also to improve the construction of the neck and head or scroll pieces thereof.

The invention consists in the peculiar construction of the bottom, the same being made with veneers, laid with the grains crossing each other, and with wires interspersed, and also in the improved construction of neck and head or scroll, the same being made of continuous layers of veneers, whose grains run in the same direction, all as hereinafter more fully described.

The principal objection to the usual construction of the bottoms of such string instruments is that each bottom had to be strengthened on the inner side with ribs that were fastened upon it. These ribs prevent the bottom from giving or warping. If not made with such ribs the bottom had to be made of thick wood, from which it was cut to produce the required oval form; but the ribs are costly, make the instrument heavy, and injure the sound. The principal objection to the present construction of neck and head or scroll of string instruments is that the same, in order to obtain the necessary bend or angle at the junction of neck and head or scroll, were usually made of two pieces of wood joined at such angle, which two pieces were very apt to become loose or disconnected from each other after short use.

My improved bottom A for string instruments is made of at least three thicknesses of veneer, *a b c*. Each of these thicknesses is cut with the same contour or outline of the bottom. The upper layer *a* is cut with the grain running lengthwise, the middle layer *b* with the grain of the wood running crosswise, and the lower layer *c* with the grain again lengthwise, as indicated in Fig. 1. Now, if necessary for great strength, a larger number of thicknesses of veneer may be employed; but I prefer to use an uneven number—that is to say, three, five, seven, nine, &c.—in order to have the outermost layers with the grain running lengthwise, as it would not be practicable or desirable to expose a surface with the grain running crosswise.

This bottom is constructed as follows: The upper layer is glued to the middle layer *b*, and the middle layer *b* to the bottom layer *c*, and thereupon the bottom is put in a press or form, wherein it is bent into the concave shape shown in Fig. 3. In this form it is retained until it has acquired the requisite concavity, and set in the same, and it is then removed, polished, and ready for application to the instrument. For still greater protection and security I introduce a series of transverse wires, *e e*, between two or more of the layers of veneers that are used in the bottom A, such wires serving to strengthen the bottom materially, and to prevent it from cracking, and protect it against injury from contact with other substances. These wires are introduced between the layers of veneer before the same are glued together. The neck B of the instrument is also composed of layers *f f* of veneers, said layers being, at *g*, slightly bent and continued, to form the handle part C of the instrument, the grain of all the veneers *f f* running lengthwise. The head or scroll part C of string instruments is placed at an obtuse angle to the neck B, and usually made in a separate piece, that is attached to such neck; but by constructing the neck of veneers it is easy to bend each veneer at the point *g*, and thus to make the head or scroll C of the same wood, virtually, from which the neck B is constructed.

The several layers of veneer from which the neck and handle are composed are also properly glued together, and then shaped into the requisite form. The neck thus constructed will produce a beautiful variegated grained surface,

especially if the veneers of which it is composed, and of which the edges are exposed to view, are alternately selected from different woods.

I do not here claim to have invented any improvement on sounding-boards of string instruments, as my invention refers only to the bottoms of such instruments, and to their neck and head parts.

I claim as my invention—

1. In combination with the wooden bottom A of a string instrument, which is composed of a series of veneers, the strands *e e* of wire placed between said veneers, substantially as specified.

2. The neck B and head or scroll C of a string instrument, composed of continuous layers *f f* of veneer, with parallel grain, the whole being bent at the junction *g* of the neck, and neck or scroll, substantially as specified.

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Witnesses:

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