I. F. MUNSON.

MUSICAL INSTRUMENT.

No. 47,851. Patented May 23, 1865.

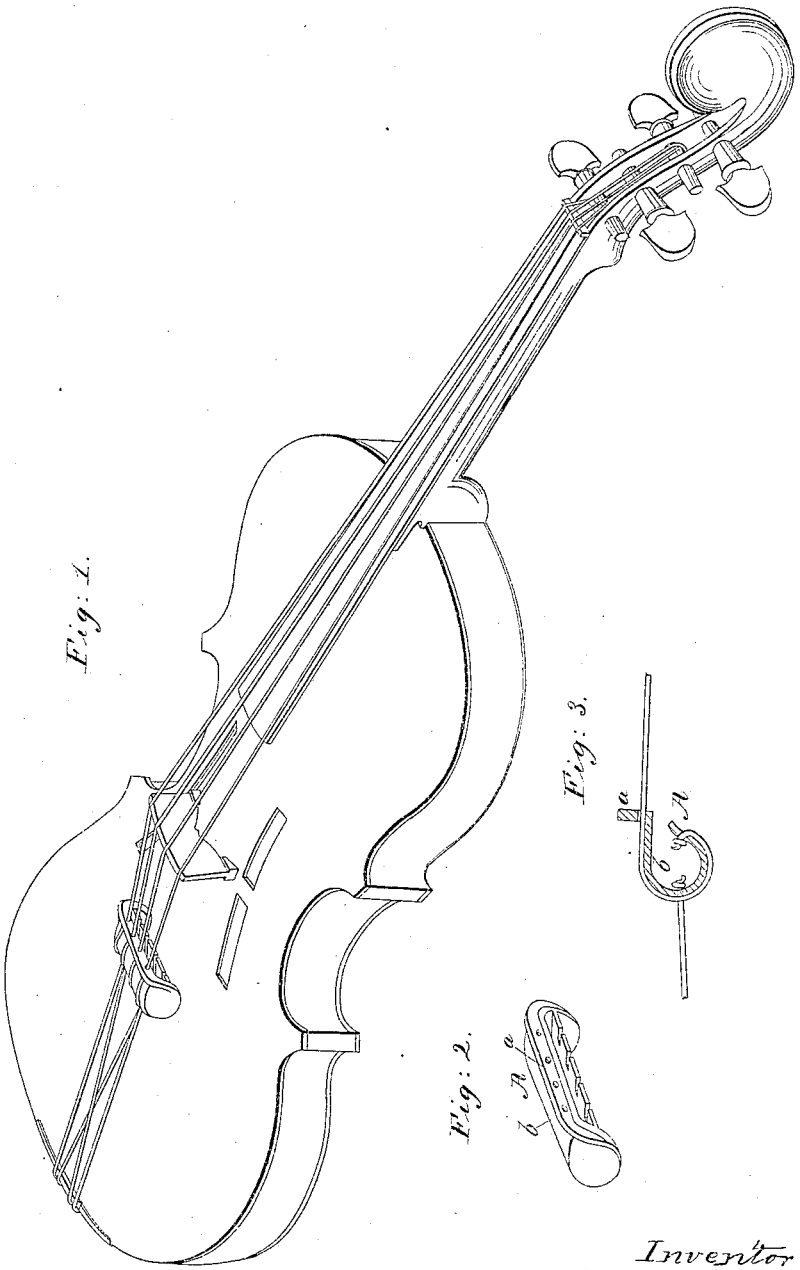

Fig: 1.

Fig: 3.

Fig: 2.

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IRA F. MUNSON, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN MUSICAL INSTRUMENTS.

Specification forming part of Letters Patent No. **47,851**, dated May 23, 1865.

To all whom it may concern:

Be it known that I, IRA F. MUNSON, of Washington city, District of Columbia, have invented a new and useful Improvement in Musical Instruments; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of a violin, it being one form of musical instrument to which my invention is applicable. Fig. 2 is a perspective view of the tail-piece or apron of the violin of Fig. 1. Fig. 3 is a cross-section through the tail-piece.

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

The object of my invention is to produce musical instruments, or some portions of such instruments, of a substance which I have discovered possesses great sonorousness and greater volume of tone than either wood, metal, or horn, and which is also susceptible of being softened and molded into any required shape, and then rendered very hard and tenacious.

Very often the sounding-boards and the entire frame-work of musical instruments afford greater volume and sweetness of tone when such parts have been broken and glued together again. This fact is well known to musicians, and is singularly evidenced in violins or viols which have been broken into a great many pieces and repaired with glue. These circumstances led me to believe that the substance which was employed for cementing the wood together possessed a characteristic hither unaccorded to it, and upon experimenting with glue or gelatine I discovered that it possessed the power of giving musical sounds of remarkable volume and sweetness of tone, when struck or vibrated in any other manner. I contemplate using the common glue of commerce, or gelatine, in the construction of musical instruments, and to construct the boxes or frames, or some other part or parts of musical instruments of every description, of this substance—such, for instance, as violins, viols, harps, hurdy-gurdys, Æolian lyres, and the auxiliary parts of such instruments which will admit of its use; also, the sound-boards of stringed instruments, and the pipes of organs, the pipes of flutes, clarionets, flageolets, horns, trumpets, and instruments for measuring the harmonic relations of sounds.

To enable others skilled in the art to understand my invention, I will proceed to describe a mode of constructing a violin, it being one of the instruments to which my invention or discovery is especially applicable, for the reason that the clearness and volume of tone depends chiefly upon the perfection and sonorousness of the box or body of the instrument.

I take common glue and melt it in any suitable manner, and when reduced to a proper consistency I pour it upon a level surface of glass, metal, or other substance to which it will not adhere, thus forming sheets of any required size and thickness, and of a uniform thickness. The sheets of glue thus prepared are ready to be molded or shaped into the required form, which may be done by softening the sheets sufficiently to render them pliable, and spreading them over patterns of the required form, after which the sheets are cut to correspond with the patterns, or the sheets may be impressed into cup-shaped molds of the required form.

Instead of forming the instruments from sheets of glue, which necessitates the cementing of a number of parts together, I propose to cast the glue in molds somewhat after the manner of making metal castings. The top and bottom portions of the violin, which I have represented in the drawings, Fig. 1, may be made separately and then cemented to the edges of the band or side pieces; or, if desirable, the body of the violin may be cast in two horizontal central sections by pouring melted glue into suitable molds, after which the sections are cemented together by warming and moistening the edges and subjecting the parts to pressure until they are thoroughly dry and set. The handle of the violin may also be made in two longitudinal sections by casting the glue in molds, thus forming it hollow and light. Other parts of the violin—such as the string-piece, sounder, bridge, and apron, or tail-piece—may be molded in any of the well-known forms. The tail-piece A, which is used as a means for connecting the strings to the body of the violin, is constructed, as represented in Figs. 1, 2, and 3, with a perforated flange, *a*, formed on the upper forward edge of a semi-cylindrical portion, *b*, which has its ends closed and which is also

provided with perforations through it to receive the attaching strings, and slots or notches to receive and hold the violin-strings. The form of this tail-piece possesses great strength, and is compact and also hollow. The tension on the strings does not entirely come upon the notched lip which retains the strings, but it is divided by passing the latter over the back or cylindrical portion of the tail-piece, as shown in Fig. 3.

The form of a violin or any of its auxiliary parts need not be changed in any particular when constructed of glue or gelatine, and this is also the case in constructing the musical instruments or parts of instruments herein mentioned, or any other musical instrument which is susceptible of being made of glue.

As glue is more or less subject to hygrometric changes, I propose to coat or cover the surfaces of musical instruments made of this substance with a suitable water-proof composition, or the glue may be made much less hygrometric by mixing with it some suitable drying substance or substances, but in making such compound with a view to resist dampness, glue or gelatine will constitute the principal ingredient.

A very beautiful musical instrument may be made of glue by introducing into a solution of glue some suitable coloring-matter, which will give a beautiful effect to the material. Combinations of colors may be applied to the glue while in solution or when partially cold.

I do not confine my invention or discovery to the use of the common glue of commerce, as many kinds of glue, or gelatine, or other analogous substances which can be softened and rendered pliable, and which, when thoroughly dry, will be very tough and also possess the nature of glue in sonorousness, may be employed without departing from my invention or discovery.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The use of glue, gelatine, or other analogous substance, in the manufacture of musical instruments or parts of such instruments, for the purpose of obtaining increased volume of tone and sonorousness, substantially as described.

2. Uniting parts of musical instruments together by means of the material of which such parts are composed, for the purpose of obtaining homogeneousness, substantially as described.

3. The use of a water-proof composition in the manufacture of musical instruments or parts of instruments, substantially as herein described.

Witnesses: IRA F. MUNSON.
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