Oct. 4, 1932. A. P. YOUNG 1,881,229

MUSICAL INSTRUMENT AND METHOD OF MANUFACTURING THE SAME

Filed Aug. 15, 1928

Fig. 1.

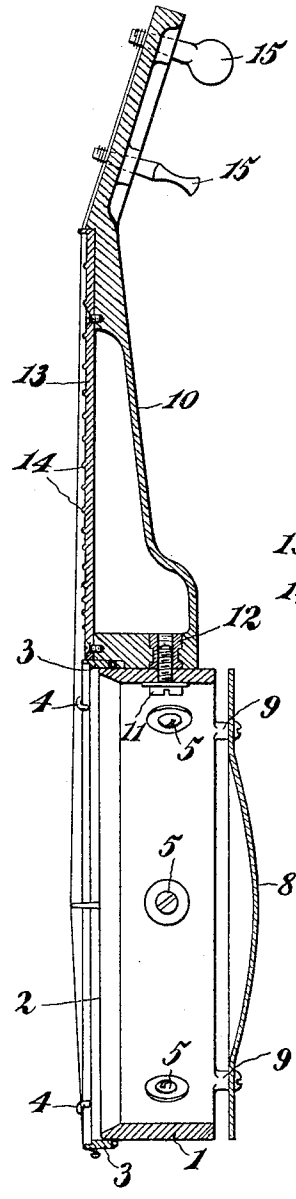


Fig. 2.

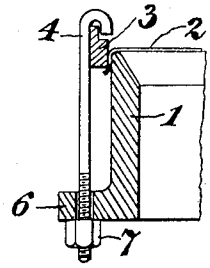
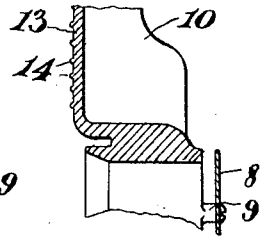


Fig. 3.



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UNITED STATES PATENT OFFICE

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MUSICAL INSTRUMENT AND METHOD OF MANUFACTURING THE SAME

Application filed August 15, 1928, Serial No. 299,768, and in Great Britain August 18, 1927.

This invention relates to musical instruments and to methods of manufacturing the same. More particularly this invention relates to instruments of the banjo and ukulele type, in which a thin sheet of parchment or other material is stretched over a circular or other suitably shaped frame, the strings being carried over a bridge member supported on the stretched sheet.

Hitherto such instruments, have usually been made of wood, and either carved out of a solid piece of wood or built up of sections. This is an expensive method of manufacture and entails considerable waste of material and the instrument, when finished is heavier than is necessary.

The object of this invention is to provide an instrument of the above type which will be easily manufactured in large quantities, will be inexpensive to produce, and can be made of very light weight.

Broadly, this invention consists in moulding the frame or body of the instrument, either complete or in parts from a material such as a synthetic resin, for example, a resin of the phenol aldehyde condensation type, a glycerol polybasic acid resin, or any other resinous substance well known in the plastic art, and which can be moulded in a press, and will retain its shape after removal from the press.

In carrying this invention into effect, according to one modification, as applied for example to an instrument having a circular frame, I may provide a mould for making the circular frame, which may if desired have inserts moulded into the wall for the reception of the screws for the tightening mechanism for stretching the parchment over one edge, or the tightening mechanism may be secured to an outwardly projecting ring formed integral with the frame. The other side of the frame may have inserts for the reception of screws to hold on a sounding board, where such is desired, which may be of metal or may be of the same material as the frame. This sounding board may in some cases be formed integral with the frame, apertures being provided in the frame for improving the sound emitting qualities of the instrument. Inserts may also be provided in the frame for receiving screws for securing the neck or handle of the instrument to the frame, or the mould may be so shaped that the neck is moulded integrally with the frame in one operation.

In such instruments the key or finger board is usually marked on the neck by means of separate studs secured in the neck or strips of material placed transverse across the neck at varying distances. In place of this method I propose to mould ridges or projections across the neck at the required points. These projecting ridges or frets may be of different coloured material from the remainder of the frame of the instrument, or the portions of material between the frets may be differently coloured, so as to make the keys more conspicuous. The neck, whether made separately or integrally with the frame, may be hollowed out at the under side, in order to lighten the instrument, and at its outer end may have inserts for the reception of the pegs round which the strings of the instrument are wound, or these pegs may be inserted in apertures either moulded or bored in the neck itself.

I prefer to use a material such as a synthetic resin, for the manufacture of the frame, as this material can readily be treated in the mould, so as to maintain a permanent shape. The resin is preferably mixed with a filler, such as wood dust or other suitable material, and can be made of any desired colour by the addition of suitable pigments. It is also very strong, and the frame can therefore be made very thin, and still have sufficient strength. This material also is practically unaffected by weather conditions. I do not, however, limit myself to the use of this or any particular material, as any material which can be treated, so as to retain its shape permanently either after, or while being moulded, may be utilized. Neither do I limit myself to the type of instruments above specified, as instruments of the violin, mandoline or guitar type may also be manufactured in this manner.

The accompanying drawing illustrates this invention.

Fig. 1 being a sectional view of a complete instrument of the banjo type constructed according to my invention. Fig. 2 shows an alternative method of securing the diaphragm, and Fig. 3 shows a modification, in which the neck is formed integral with the body of the instrument.

In Fig. 1, 1 represents the frame or body of the instrument, and consists of a moulded ring over which a diaphragm of vellum or skin 2 is stretched. The diaphragm is held tight by means of a metallic ring 3, which clamps it against the edge of the moulded ring 1. The ring 3 is held in place by means of hooks 4 passing over its outer edge and passing through metal stops secured to the ring 1 by means of screws 5. This method of securing the diaphragm is well known. In place of adopting this method, I may employ that illustrated in Fig. 2 in which the ring 1 is provided with an outwardly extending flange 6 formed integrally with the ring. The hooks pass through this flange and are pulled tight by means of nuts 7. In place of having a complete flange such as 6, a number of projections corresponding to the number of hooks used, may be provided at the desired points, the projections being integral with the ring. An alternative method of securing the diaphragm in place is to provide an annular sleeve or ring having an internally projecting flange adapted to engage the ring 3 at its upper edge and at its lower edge, being provided with an internal screw thread co-operating with an external screw thread formed on the frame 1. In Fig. 1, the instrument is shown as having a sounding board 8, which is secured to it by means of screws passing into projections 9 formed integrally with the ring 1. These projections may be provided with screwed metal inserts to receive the screws or the screws may be inserted in threaded apertures bored in the material. The neck 10 of the instrument is shown as being made separate from the ring and secured to it by means of a screw 11 passing through the ring and entering a screwed insert 12, moulded into the handle. In the example illustrated, the keyboard 13 is made separate from the neck and is secured thereto by means of screws but this board may be made integral with the neck as shown in Fig. 3. The neck is made hollow as shown, in order to lighten the instrument and where the keyboard is integral with the neck this can be open at the back as also shown in Fig. 3. The frets 14 of the keyboard may be integral with the board and may be uniform therewith as regards colouring, or may be made of a different colour in order to make them prominent. In place of the frets being integral, they may consist of inserts of a different material moulded in place. The pegs 15 to which the strings of the instrument are attached may consist of tapered pins of the same material as the body of the instrument, and pass through apertures either moulded in the neck or bored through after moulding, or the apertures may be bushed with metal sleeves to fit the pins.

By the use of the term "frame" I mean to include in this definition an integral or unitary molded body portion and handle or neck member, I also desire to include a separate molded body, and a separate molded handle or neck member that are joined together in any well known manner, that is, fabricated or assembled.

What I claim as new and desire to secure by Letters Patent of the United States is:—

1. A stringed instrument having a frame comprising a synthetic resin.

2. A molded stringed type musical instrument frame comprising a synthetic resin.

3. A molded stringed type musical instrument frame composed of a filler and a binder of synthetic resin.

4. A molded stringed type musical instrument body and neck composed of a fibrous filler and a binder of synthetic resin.

5. A stringed musical instrument of the fretted type having a body and neck portion comprising a synthetic resin.

6. A stringed musical instrument frame comprising a body and a neck composed of a fibrous filler and a binder of synthetic resin, said neck having integral frets thereon.

7. A stringed musical instrument frame comprising a body and a neck formed of a moldable composition including a synthetic resin, said neck having integral frets thereon.

8. A unitary stringed musical instrument of synthetic resin, comprising a body and a neck therefor.

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