

June 5, 1923.

J. ALTMEIER

1,457,415

VIOLIN

Filed June 29, 1921

2 Sheets-Sheet 1

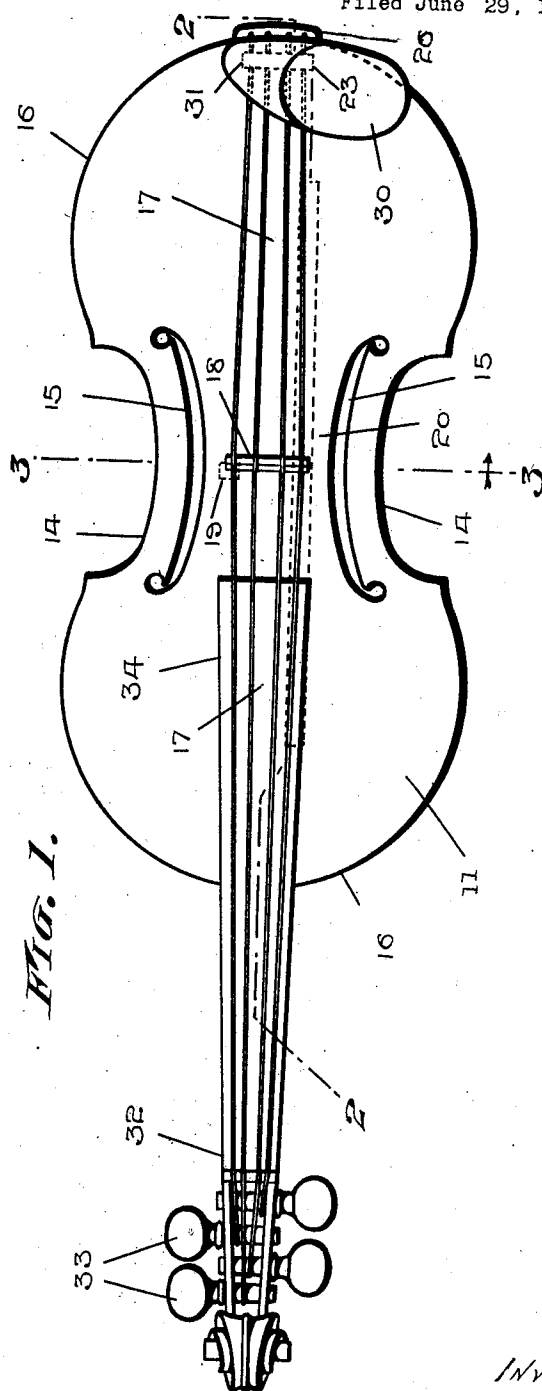
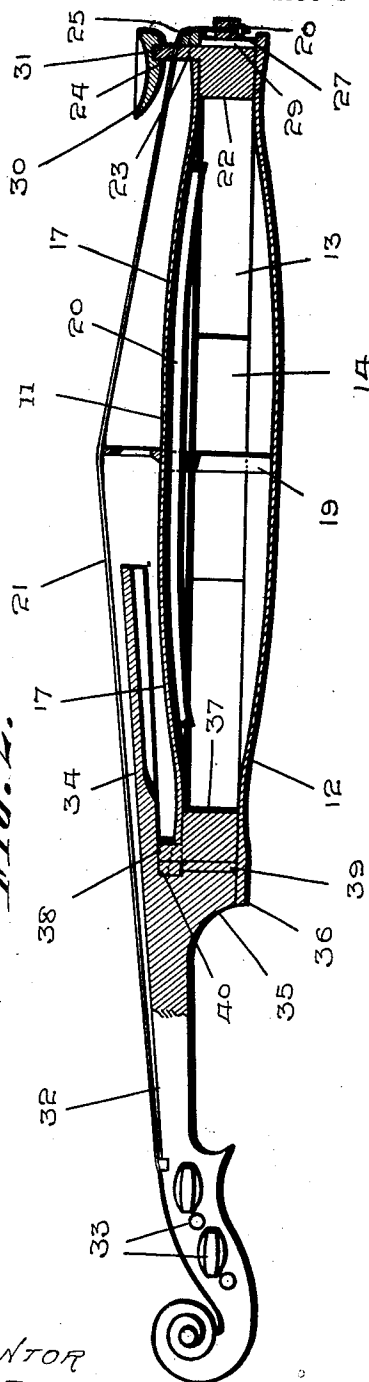


Fig. 2.



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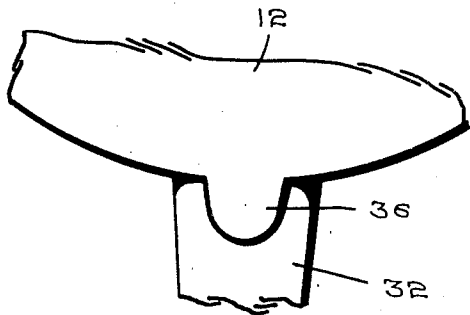
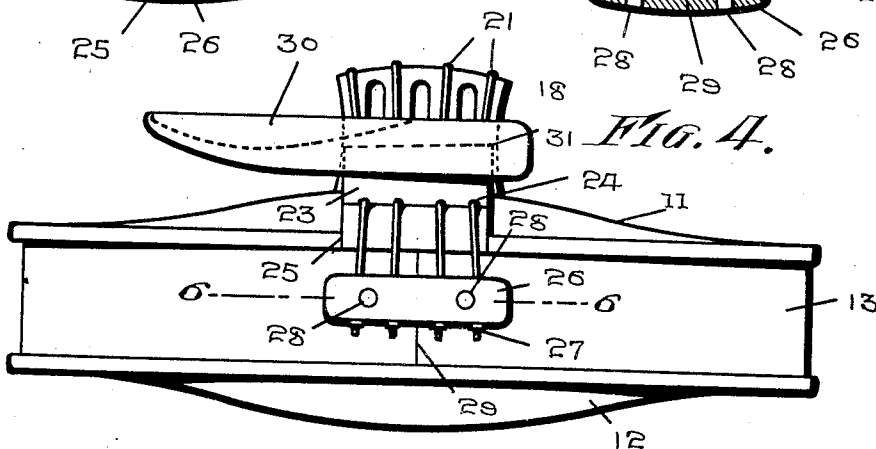
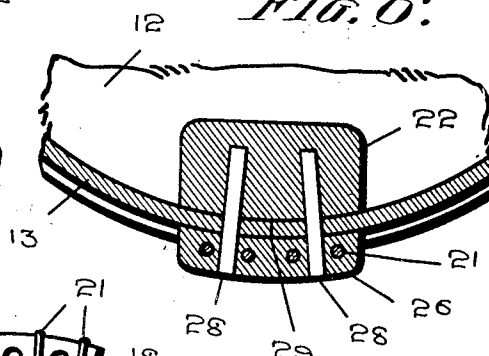
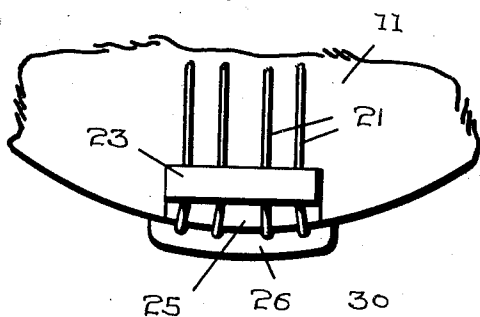
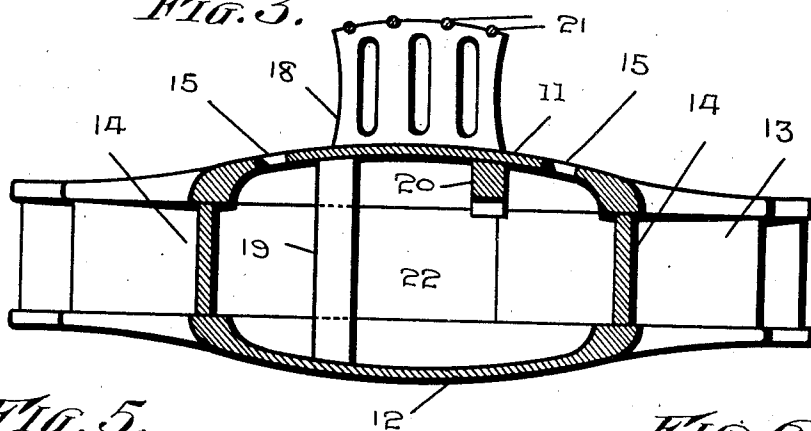
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2 Sheets-Sheet 2



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Patented June 5, 1923.

1,457,415

UNITED STATES PATENT OFFICE.

JOSEPH ALTMEIER, OF EVANSVILLE, INDIANA.

VIOLIN.

Application filed June 29, 1921. Serial No. 481,343.

To all whom it may concern:

Be it known that I, JOSEPH ALTMEIER, a citizen of the United States, residing at Evansville, in the county of Vanderburg and State of Indiana, have invented certain new and useful Improvements in Violins; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to violins, and aims to provide an even balanced violin, the construction and arrangement of parts being such as to equalize the strains, vibrations and sound in front and in rear of the bridge, so as to produce an even, smooth and clear quality of tone, which is powerful and highly resonant.

A further object is the provision of a violin which is symmetrical at opposite sides of its transverse median line, with the bridge located at the geometrical center, and there being other features of construction and form whereby the sounds produced will be of good quality and also harmonious with the string vibrations.

Another object is the provision of novel means for mounting and supporting the strings at the rear end of the body.

A still further object is the provision of novel means for mounting a chin rest on the body.

The invention also has for an object the construction of a violin in such a manner that the more abundant wood can be used for the body, instead of requiring a select grade of wood, and also making the construction cheaper and more suited for manufacture, as well as enabling the violins to be made with practical uniformity in construction and tone. In this connection, it may be stated that it is well known and recognized that violins as at present constructed are unsymmetrical, requiring differences in the thicknesses in the various portions of the top and bottom, as well as other provisions for obtaining more uniform vibrations at the front and rear, and owing to such conditions, the ordinary violins when made are found to vary considerably in tone, without apparent differences in construction, and it is not infrequent for some of the violins having to be rebuilt or discarded. The present construction not only provides for uniformity

in construction and tone, but also better facility for manufacture, even from woods which have been considered inferior for use in violins.

With the foregoing and other objects in view, which will be apparent as the description proceeds, the invention resides in the construction and arrangement of parts, as hereinafter described and claimed, it being understood that changes can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a plan view of the improved violin.

Fig. 2 is a longitudinal section thereof on the line 2—2 of Fig. 1, portions being shown in elevation.

Fig. 3 is an enlarged cross section on the line 3—3 of Fig. 1.

Fig. 4 is a rear end view on the same scale as Fig. 3.

Fig. 5 is a fragmentary enlarged plan view of the rear end portion of the body, with the chin rest removed.

Fig. 6 is a sectional detail taken on the line 6—6 of Fig. 4.

Fig. 7 is a fragmentary bottom plan view of the forward end portion of the body.

The improvements can be used in a violin of any size, so as to be applicable to practically all kinds of violins. The body of the violin comprises a top or belly 11, bottom 12, and the marginal wall 13 providing the sides and ends. The body has the arches 14 at its opposite sides midway between its ends, and said arches are longer than usual, to permit of bow action.

The top 11 has sound holes or slots 15 arranged adjacent to and curved similarly to the arches 14, and having their ends out-turned similar to the ends of the arches 14. The ends 16 of the body are curved about the centers 17 substantially midway between the geometrical center of the body and the extremities of the body, and such curved portions extend to the ends of the arches. The radii of curvature are the same at both ends around the points or centers 17, making both ends of the body alike, and thereby facilitating the manufacture of the violin by the convenient striking off of the end portions with a compass or other implement. The bridge 18 is disposed transversely at the geometrical center of the violin, midway be-

tween the ends, and is located at a transverse line about which the body, including the top and bottom, arches 14 and sound holes 15 are symmetrical, thereby making the body of identically the same shape in front and in rear of the central transverse axis where the bridge 18 is located. With this arrangement, the top and bottom can be of uniform thickness throughout, excepting at the edges where they are attached to the side and end walls, thus eliminating the requirement, as necessary in ordinary violins, of having the top and bottom of different thicknesses at various portions thereof. The usual sound post 19 is disposed between and secured to the top and bottom in the transverse center line at one end of the bridge 18, and a longitudinal bass bar 20 is secured to the inner surface of the top longitudinally thereof at that side of the longitudinal center line opposite to the post 19, or adjacent to the opposite end of the bridge. The use of the sound post and bass bar, however, does not destroy the advantages gained, because they are used on account of the variation in the strains, and serve as a compensating medium. The top and bottom are of the same shape and are bellied in opposite directions, and the longitudinal portions between the points 17 are substantially parallel, and from the longitudinal lines between the points 17, the top and bottom extend on compound curves to the side edges and ends, although at the arches 14 the curvature is convex, as seen in Fig. 3.

By building the body of the symmetrical form described, the cost of manufacture is cheapened, by the saving in time and labor, and, furthermore, woods can be used, which have heretofore been considered inferior or incapable of use in the manufacture of violins. Instead of requiring select wood, violins have been made in accordance with the present invention having a good quality of tone, using spruce pine for the top, and hardwood maple for the back and walls or ribs. The top and bottom can also be of uniform thickness throughout the vibratory portions thereof, to lessen the work of manufacture, and also enable better uniformity of tone and quality to be obtained. The present construction therefore seeks uniformity and symmetry, for the production of uniform violins, both in construction and music, whereas the ordinary violin is unsymmetrical and requires the highest skill in manufacture, and even then there are many flaws which cannot be accounted for, excepting that their regularity and unsymmetrical construction do not tend toward uniformity.

In order to mount and anchor the strings 21 at the rear end of the body, such strings extending over the upper edge of the bridge 18 as usual, and to also support a chin rest,

a rear end block 22 is cemented or otherwise secured between the top and bottom at the rear end of the body, and has a tongue 23 rising therefrom. The tongue or post 23 extends through a notch in the top 11 and is disposed transversely. Said tongue or post 23 has a transverse series of apertures 24, and the strings 21 pass through said apertures and rearwardly over a saddle piece 25 fitted in the rear end portion of the top 11 behind the post 23. From the saddle piece 25, the rear terminals of the strings extend downwardly through a transverse anchor piece or bar 26 bearing against the rear end of the body, and extending across the split 29 at such rear end. The piece 26 is secured to the body by means of pegs 28 extending through said piece 26 and rear end of the body into the block 22 as seen in Fig. 6, and the parts are all firmly cemented together. The rear terminals of the strings are knotted, as at 27, under the anchor piece 26, to anchor them to the rear end of the body. This construction does away with the usual tail piece, and the strings extend from the bridge to the rear end of the body, whereby the tension on the strings will create a more perpendicular pressure on the top 11 from the bridge 18, and otherwise equalize the strains on the body at the opposite sides of such bridge.

The chin rest 30 has a lower recess or mortise 31 to fit on the upper end of the post 23 above the strings 21, whereby such chin rest is conveniently supported from the rear end of the body, without using a clamp or other objectionable device on the rear end of the body. The chin rest can extend toward the left in a convenient position for holding the violin in place while playing.

The neck 32 is of substantially the usual form, and extends from the forward end of the body, and has the pins 33 in the head thereof to which the strings 21 extend to be wound thereon for properly tensioning the strings. The rear end of the neck 32 has a finger board 34 extending over the top 11 toward the bridge, and the neck 32 has a heel portion 35 abutting the forward end of the body. The forward end of the bottom 12 has an extension 36 overlapping and cemented to the heel or abutment 35 for making the construction more rigid. A block 37, similar to the block 22, is also secured within the forward end portion of the body against the forward end wall 39, and said block has a tongue or post 38 rising therefrom through the top. The finger board 34 extends across and bears on the post 38, and a filler piece 40 is preferably secured between the post 38 and abutment 35 to fill in the space between the parts. The parts at the forward end of the body are all firmly cemented or otherwise secured together.

In tightening the strings 21, they are preferably lifted off the bridge 18, whereby the

strings are brought under the same tension in front and in rear of the bridge.

The violin is easy to play, the arches 14 permitting of free bow action. The strings 5 being continuous from the bridge to the rear end of the body also provide for better vibration than when a tail piece is used.

Having thus described the invention, what is claimed as new is:—

10 1. A violin comprising a body, a bridge on the body, strings extending across the bridge, a post projecting upwardly from within the rear end portion of the body through the top of the body, said strings 15 extending through said post to be anchored to said end of the body, and a separate chin rest secured on said post above the strings.

2. A violin comprising a body, a bridge 20 on the body, strings extending across the bridge, a post projecting upwardly from within the rear end portion of the body through the top, said strings extending through the post and being anchored to the rear end of the body, and a chin rest having 25 a recess engaging the upper end of said post above said strings.

3. A violin comprising a body having a block in the rear end thereof, said block having a post rising through the top of 30 the body at the rear end thereof, a bridge on the top of the body, strings extending across the bridge and through said post, an anchor piece for the rear terminals of the strings secured to the rear end of the body 35 and said block, and a chin rest mounted on said post above the strings.

4. A violin comprising a body, a block secured within the body at the rear end thereof and having a post rising through the top of the body, a bridge on the top of 40 the body, strings extending across said bridge and through said post to be anchored at the rear end of the body, and a chin rest mounted on said post above the strings.

5. A violin comprising a body, a neck 45 having an abutment bearing against the forward end of the body, the bottom of the body having an extension at its forward end overlapping and secured to said abutment, a block secured within the forward end of 50 the body and having a post rising from the top of the body, and the neck having a finger board extending across and secured on said post.

6. A violin comprising a body, a post 55 projecting upwardly from within the body at the rear end thereof through the top of the body for the engagement of the strings to support them above said top, and a separate chin rest fitted on said post to be dis- 60 posed above the strings.

7. A violin comprising a body, a block secured in the body at the rear end there- 65 of and having a post rising through the top of the body for the engagement of the strings to support the strings above said top, and an anchor piece for the strings at the rear end of the body anchored through the rear end of the body into said block.

In testimony whereof I have signed my 70 name to this specification.

JOSEPH ALTMEIER.