Aug. 24, 1954 J. THOMPSON 2,687,057

STRINGED MUSICAL INSTRUMENT

Filed Oct. 11, 1950

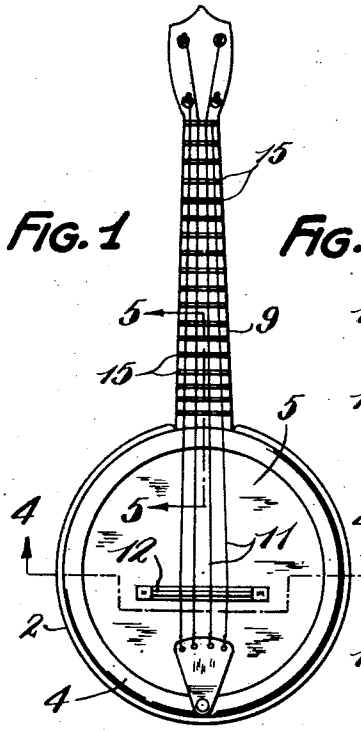

FIG. 1

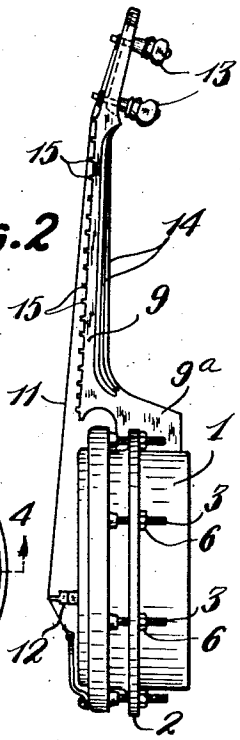

FIG. 2

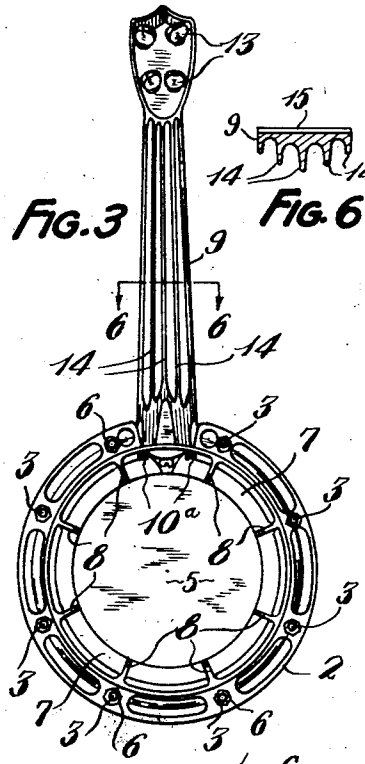

FIG. 3

FIG. 6

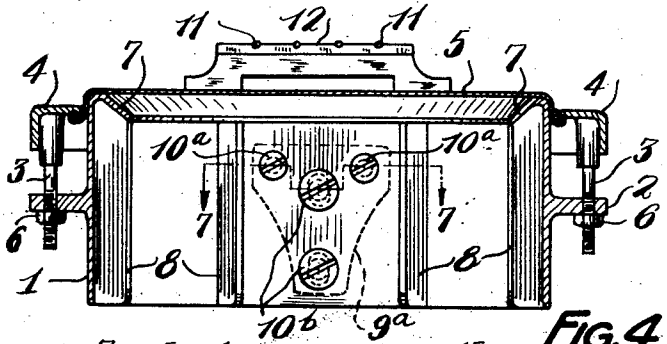

FIG. 4

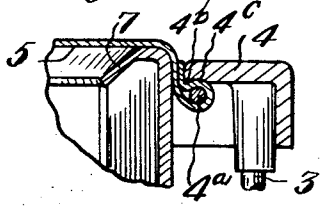

FIG. 8

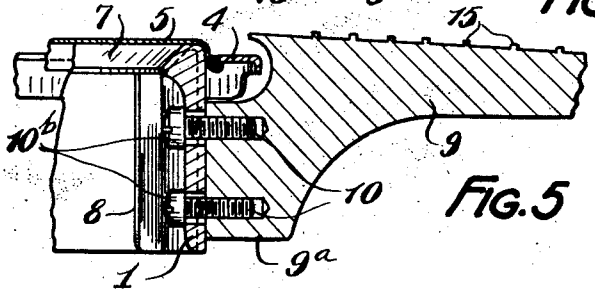

FIG. 5

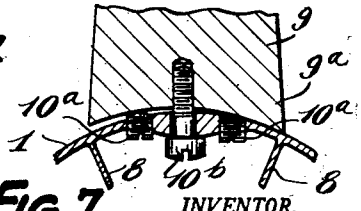

FIG. 7

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STRINGED MUSICAL INSTRUMENT

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2 Claims. (Cl. 84—270)

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This invention relates to the art of stringed musical instruments and, more specifically, consists of the improvements herein disclosed as being embodied in a banjo-ukulele; it being understood that these improvements might be employed in any of the various instruments that belong to the banjo family.

One object of my present invention is to devise such an instrument with means of adjustment between the shell or body and the neck whereby there may be obtained variation in the angular relation therebetween either vertically or laterally so that there may be made possible at all times the proper angle and clearance or spacing between the strings and the finger board regardless of the effect of the weather conditions upon the stretched membrane and also so that the user may be able to vary the angle of the strings laterally with respect to the length of the finger board according to his particular liking.

Another object is to devise such an instrument in which the body or shell, the tension ring and the neck are all made as separate castings of metal or other suitable material and in which the shell has integrally formed means of reinforcement upon the under-side thereof, which will also heighten the impression of substantial construction and will reduce the likelihood of any and all objectionable vibrations which would interfere with the natural and desirable vibrations of the membrane; and in which the neck has integrally formed longitudinally extending ribs along the under-side thereof to serve as a means of reinforcement but, more especially, to serve as a guide means for the thumb of the player so as to ensure proper position of the player's hand as he frets the strings in the regular use of the instrument, instead of the erroneous position that is so common among many players.

Another object is to devise such an instrument in which there is a one-piece neck provided with integrally formed frets so that they can not change their relationship to each other or to the neck itself.

Another object is to devise such an instrument in which the neck is of comparatively small dimension from front to rear so as to be of slender form for greater ease and efficiency in the positioning and movement of the fretting hand and fingers thereabout and therealong.

Another object is to devise such an instrument in which the shell and neck are each made in the form of an integrally reinforced casting so as to obtain the desired rigidity and a proper distribution of the weight and hence a proper balance

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throughout, with a substantial reduction in material, and in which the tension ring is also made as a separate one-piece casting.

Another object is to devise such an instrument that can be manufactured from materials affording sturdy construction and can be produced and assembled at comparatively low cost and with a full, clear and undistorted tone.

Another object is to devise such an instrument in which the shell is provided with a tone chamber for improving the general tone quality.

Another object is to devise such an instrument with a positive and dependable locking means for maintaining the membrane in the desired taut condition.

Other objects will appear from the following description and claims when considered together with the accompanying drawing.

Fig. 1 is a top plan view of my present invention;

Fig. 2 is a side elevation thereof;

Fig. 3 is a bottom plan view thereof;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 1;

Fig. 5 is a sectional view taken on line 5—5 of Fig. 1;

Fig. 6 is a sectional view taken on line 6—6 of Fig. 3; and

Fig. 7 is a sectional view taken on line 7—7 of Fig. 4;

Fig. 8 is an enlarged partial view illustrating more clearly the means for securing the membrane in its desired taut condition.

It is to be understood that the present form of disclosure is merely for the purpose of illustration and that there might be devised various modifications thereof without departing from the spirit of my invention as herein set forth and claimed.

Referring now to the accompanying drawing in detail, the shell 1 is formed as a metal casting with an annular plain edge about the top thereof and with a radially outwardly extending flange 2 approximately midway of the height thereof. The flange 2 has plain holes at spaced intervals thereabout, through which extend the screw-threaded studs 3 affixed at their upper ends to the separately cast metal ring member 4 which serves to hold the vibrant membrane of calf skin 5 or the like in stretched condition across the top of the shell 1 and about the top edge thereof. This assembly is maintained by the nuts 6 on the studs 3 as they have bearing engagement against the flange 2. Extending inwardly and downwardly at approximately thirty

degrees from the top edge of the shell 1, as herein illustrated, I have provided the integral annular flange 7 which affords a suitable space between itself and the under-side of the calf skin membrane 5 to serve as a tone chamber in connection therewith. The shell 1 is formed also with radially inwardly extending ribs 8 upon the lower part of the inner-side thereof for the purpose of reinforcement and also for the purpose of reducing to a minimum the likelihood of any and all undesirable vibrations.

The neck 9 also is made of metal as a one-piece casting and has its downwardly extending portion 9a at the lower end thereof adjustably connected to the side of the shell 1 by means of the two pairs of aligned screws 10a and 10b, the horizontal plane of the one pair of push screws 10a being at ninety degrees to the vertical plane of the other pair of hold-down screws 10b, as seen in Fig. 4 of the drawing. The neck 9 extends substantially radially from the shell 1 but slightly at a downwardly inclined angle thereto, as in other instruments of this same general character, and there is clearance between the end of the neck 9 and the ring member 4 so as not to interfere with each other in their adjustments. It is to be understood that the strings 11 are anchored at their one ends to the one side of the shell 1 and extend over the bridge 12 and along the neck 9 to its upper end where they are anchored in the regular manner for adjustment, as indicated in a general way by reference numeral 13. Each of the push screws 10a has screw-threaded engagement in the shell 1 and has its end adapted for engagement against the end of the neck 9; while the hold-down screws 10b extend through plain holes in the shell 1 and have screw-threaded engagement in the end of the neck 9.

The neck 9 may be cocked slightly upwardly by first withdrawing both of the push screws 10a to the same desired extent and then tightening the upper one of the screws 10b so as to hold the neck 9 in such adjusted position; or the neck 9 may be cocked slightly downwardly by first loosening the bottom one of the screws 10b slightly and then loosening the top screw 10b and then extending the screws 10a into engagement with the end of the neck 9, after which both of the screws 10b will be tightened to hold this adjustment. Also, the neck 9 may be cocked slightly in either direction laterally with respect to the length of the neck. This may be done by first loosening both of the screws 10b and then screwing inwardly one or the other of the screws 10a. When such lateral adjustment has been obtained, screws 10b will be tightened so as to hold such adjustment. Thus there may be effected an adjustment of the neck 9 in either direction vertically so as to always ensure the proper angle and clearance of the strings 11 with respect to the finger board and thereby overcome the effect of any change in the position of the bridge 12 and hence the strings 11 as may be caused by a sagging of the membrane 5; or the lateral angular relation of the strings 11 with respect to the length of the neck 9 may be varied. With these adjustments there may be satisfied the particular desire of any given player.

As a means of securely holding the membrane 5 in its stretched condition over the shell 1, the annular edge portion of the membrane is extended about the wire ring 4a, known as the flesh hoop or ring, and the tension ring 4 has an annular depending edge 4b that engages the membrane between the ring 4a and the side of the shell 1 so as to hold the membrane 5 securely therebetween; and furthermore the tension ring 4 is provided with an annular groove 4c within which the membrane-enclosed ring 4a is adapted to be seated so as to thereby increase the effectiveness and dependability of the securing means. The membrane 5 will not slip but will be drawn tighter when tension is applied to the same.

The neck 9 is of comparatively small dimension from front to rear so as to be of slender form for more comfortable and efficient engagement of the same between the fingers and thumb of the player's fretting hand while in actual use. The neck 9 has the integral spaced ribs 14 extending substantially the full length of the under-side thereof for the purpose of reinforcement and also to serve as a means for accommodating the thumb of the player's hand as he moves the same along the frets upon the finger board. Also, this feature makes it possible to produce a properly balanced instrument with respect to weight. In my present improved instrument I form the finger board and the frets 15 integrally with the neck 9 and, as a result, they maintain a fixed and constant relationship to each other and to the neck itself as there is no danger of accidental dislodgement or even disturbance; and consequently there is always ensured dependable position of each and every fret, with a marked resulting advantage with respect to proper intonation.

The shell 1, the tension ring 4 and the neck 9 may each be cast separately from aluminum alloy or other metal or any other suitable material that will afford the desired light weight and attractive appearance as well as durability and dependability over a prolonged period of time.

Thus I have devised a stringed musical instrument that can be readily manufactured at comparatively low cost; that has efficient, convenient and dependable means of adjustment with respect to the tautness of the vibrant membrane; that has a slender form of neck for more comfortable and efficient engagement of the same between the fingers and thumb of the player's fretting hand; that has means for varying the vertical angular relation of the neck with respect to the shell so as to obtain proper clearance for the strings above the finger board, and that has means for varying the angular relation of the strings laterally with respect to the length of the neck so as to satisfy the desire of any particular player in both of these respects; that has means for improving the quality of the general tone effect; that has permanently fixed frets so as to maintain constant relationship with respect to each other and with respect to the neck; that has means for guiding the thumb of the player's hand as he moved it along the neck while fingering; that has simple and effective means for securing and holding the membrane in the desired condition of tautness; that is provided with effective means of reinforcement throughout; that is provided with means to preclude any and all undesirable vibrations; that is of balanced and impressive design; and that is of durable form and is not apt to get out of order.

Other advantages resulting from my present invention may suggest themselves to those who are familiar with the art to which it relates.

What I claim is:

1. In a musical instrument, a shell member

having an annular edge portion, a vibrant body extending over said shell member, an anchoring hoop enclosed within the marginal portion of said vibrant body, a tension ring having an annular depending edge portion engaged between the membrane-covered edge portion of said shell member and said membrane-covered hoop and having an adjoining annular groove for seating engagement of said membrane-covered hoop therewithin so as to securely anchor said vibrant body in taut condition upon said shell member, and means for adjustably and removably mounting said tension ring in position upon said shell member.

2. In a stringed musical instrument, a shell member in the form of a one-piece casting having annularly spaced integral axially disposed ribs extending radially inwardly from the lower part of the inside thereof and having an annular tone ring integral therewith extending between said shell and ribs angularly inwardly and downwardly from the upper edge of said shell so as to provide a tone chamber between said tone ring and said vibrant body, a vibrant body extending across the top of said shell member, a tension ring engaging said vibrant body about the edge of said shell member, and means for adjustably and removably securing said tension ring in position.

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