United States Patent [19]

Stelling

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[54] **BANJO BODY ASSEMBLY**

[76] Inventor: **Geoffrey H. Stelling,** 9142 Shirley Drive, La Mesa, Calif. 92041

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[52] **U.S. Cl.** **84/269**

[51] **Int. Cl.²** **G10D 1/10**

[58] **Field of Search** 84/269–272

[56] **References Cited**

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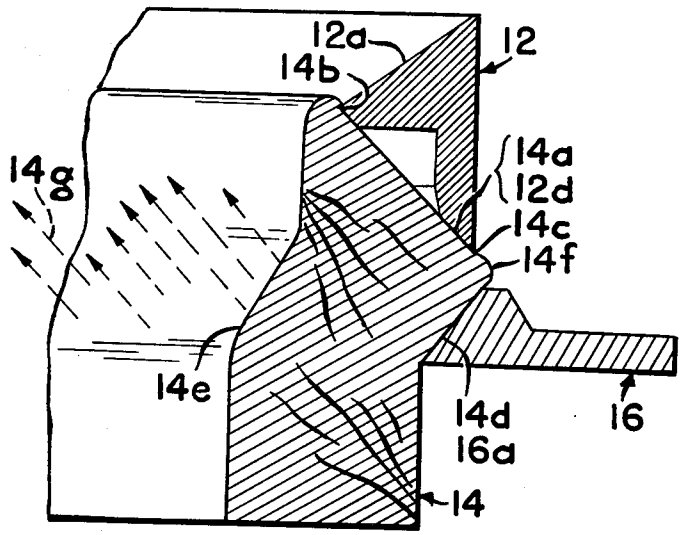
Primary Examiner—Lawrence R. Franklin
Attorney, Agent, or Firm—William F. Frank

[57] **ABSTRACT**

A banjo body assembly comprising a cylindrical body shell having upper, mid- and lower wall portions, said shell having a downwardly sloping outer surface on the upper portion of said shell, a tone ring having at least one lower internal surface beveled to wedgingly mate with said outwardly sloping surface when said ring is placed on said shell, and a ring-shaped shell flange having an inner surface at least a portion of which wedgingly mates with a sloping outer surface of the mid-portion of said shell.

7 Claims, 4 Drawing Figures



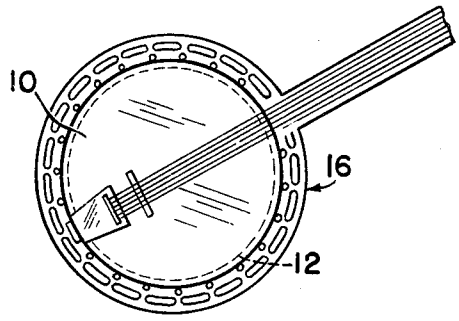


FIG. 1

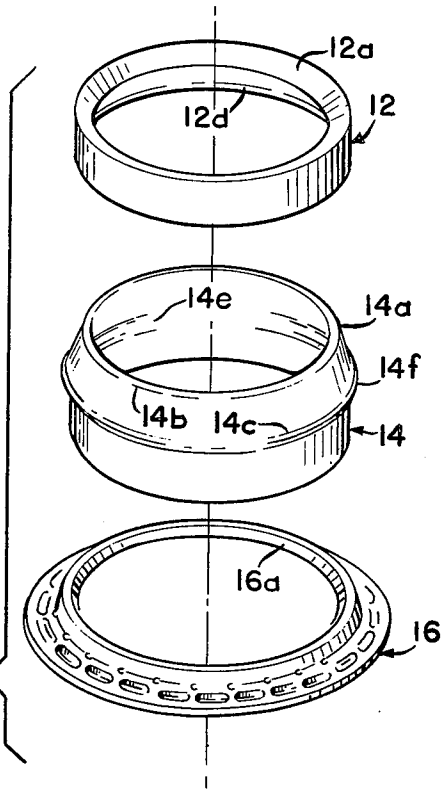


FIG. 2

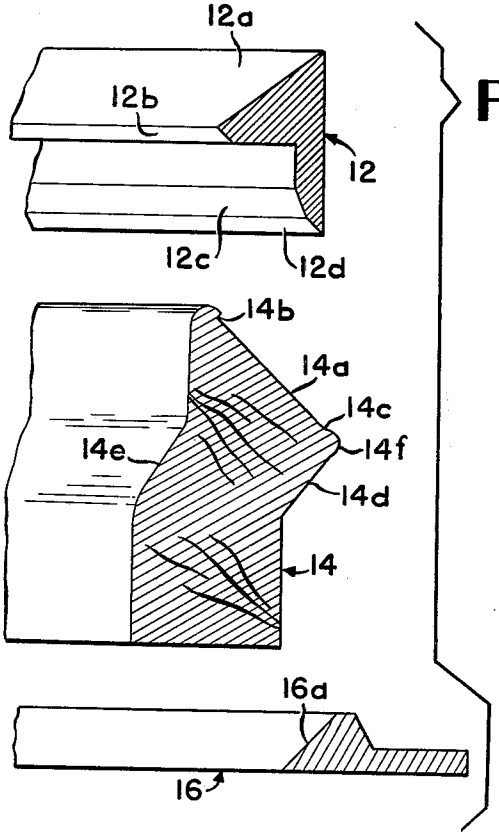


FIG. 3

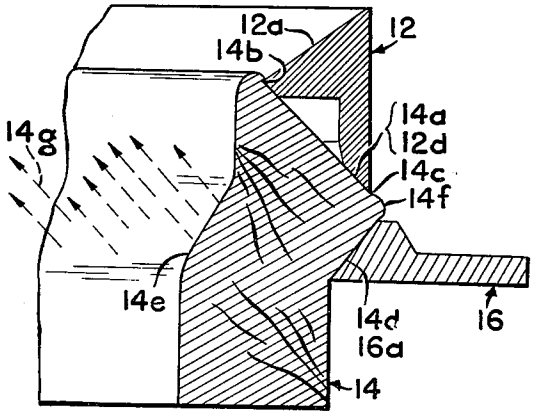


FIG. 4

BANJO BODY ASSEMBLY

BACKGROUND OF INVENTION

Bodies or drums of banjos consist, usually, of three major concentric ringed portions which fit together under tension, as tightly as possible. Threaded hooks or brackets hold the components together and hold the drum head in a stretched position. The three ringed portions are the tone ring, shell and flange, the latter is called "lower bracket ring" if there is no resonator on the particular banjo.

Since the quality and volume of the sounds from the instrument are directly related to the way these components fit against each other, it is critical that these components fit snugly together, with even pressure in all directions between all contacting surfaces. If there is not such contact between the parts, vibrations are dampened and distorted. Lower volume and a poorer tone result. Since the quality and volume of the sound created is all important, and since the construction of the instrument directly relates thereto, significant improvements in construction are very desirable.

Except for the most expensive instruments, there is a lack of optimum quality and volume of sound. This is because said components cannot easily and economically be made to fit together, in perfect unison. Even if they did, shrinkage of the shell, due to dehydration of the wood over a period of years will cause an undesirable loose fitting.

Banjo manufacturers have tried to avoid the problem of imperfect fitting by substitution of a single piece part for the described components. However, this gives rise to a loss of desirable tone quality for another reason. As is well known in the trade, banjos are best made of different materials, specifically, shells of hard wood, while the contacting tone ring and flange are best made of metal. Before my invention, common problems of otherwise imperfect fitting were best solved by excellent workmanship, tedious machinework, use of high quality materials, and well seasoned wood. Obviously, all this is very expensive and results in a high cost of manufacture and a relatively high price to the consumer.

I have solved the above mentioned problems by a novel assembly which does not require seasoned wood for the shell, nor does it require close machining, to exact tolerances on two dimensions, as is presently required. The result is an instrument which has the tone and volume comparable to the most expensive instruments, but which can be sold for a much less price because of a lower cost of manufacture.

SUMMARY OF INVENTION

In place and instead of the usual vertical and lateral dimensions, at right angles to each other, on the inside of the tone ring and flange, and the mating outside dimensions of the shell, I have provided tapered surfaces on the components which, when assembled, abut each other, whereby usual force applied by tightening usual threaded hooks, automatically causes a snug fit due to a wedging action. Any two of the components may utilize may invention. If all three components have the tapered construction optimum results will be obtained.

DESCRIPTION OF DRAWINGS

In the accompanying drawings:

FIG. **1** is a top view of the body and portion of neck of a banjo improved with my invention.

FIG. **2** is an exploded perspective view of the improved components thereof.

FIG. **3** is a cross sectional exploded view of the components.

FIG. **4** is the same as in FIG. **3** except the components are in contact with each other as in use.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings wherein like numerals represent like parts throughout, the numeral **14** indicates my novel shell. It is formed on one of the usual hardwoods and has the familiar configuration of a cylindrical section. Unlike the conventional, however, I have caused the outer surface of its upper portion to slope uniformly inwardly around the entire periphery thereof, this is tapered surface **14***a*. The angle of inclination may vary. An angle of 45° is suitable. Preferably provided at both ends of such inclination are raised portions to form rims around the circumference. Between lower rim **14***f* and upper rim **14***b* I have placed tone ring **12.** It too has the conventional cylindrical section shape and is made of metal, as usual. Unlike the prior art however, this ring has a slanted circular surface **12***d* uniformly and inwardly from its base. For snug abutment with the shell, the angulation of **12***d* is the same as that of surface **14***a*. This permits the two beveled surfaces to interface as can best be seen in FIG. **4.** Upper rim or bead **14***b* serves as a guide and retainer for tone ring **12** on the shell **14** when the parts are being assembled. The tone ring fits between the rim **14***b* and point **14***c* of FIG. **4.** The tone ring **12** has usual inside beveled surface **12***a* at the top without change. Its function is unrelated to my invention. As usual, the skin head **10** is retained thereon by a tension hoop (not illustrated). The upper portion **12***b* may be a continuation of surface **12***d* if and when the surface is continuous and not a modified conventional ring, as shown.

An oppositely disposed tapered portion **14***d* is provided on the outer underside of the shell. For mating therewith, I have provided an otherwise conventional flange **16** with a flange beveled portion **16***a* of the same angle as shell portion **14***d*. As can be seen, all beveled portions align with and slideably abut mating surfaces on adjoining components. The head is held together with the usual threaded brackets (not shown). Imperfections in manufacture and/or seasoning of the shell do not result in misfits, because the brackets need only be tightened and through the obvious wedging action of my novel beveled parts, the desired close, tight fit will always result.

As a further novel contribution, I have provided a generally outwardly sloping surface **14***e* uniformly around the inner upper portion of the shell. This further improves the sound by reflecting sound waves in the direction of arrows **14***g*.

Those skilled in the art may readily see that some, but not all, tapered surfaces may be resorted to without departing from the scope of my invention. With only abuting beveled surfaces on the tone ring and upper portion of the shell, for example, an improvement over the prior art will be provided.

I claim:

1. A banjo body assembly comprising a cylindrical body shell having upper, mid- and lower wall portions, said shell having a downwardly sloping outer surface on the upper portion of said shell, a tone ring having at least one lower internal surface beveled to wedgingly

mate with said outwardly sloping surface when said ring is placed on said shell, and a ring-shaped shell flange having an inner surface at least a portion of which wedgingly mates with a sloping outer surface of the mid-portion of said shell.

2. The banjo body assembly according to claim **1** wherein the outer surface of said mid-portion slopes downwardly and inwardly from a juncture with the lower edge of said outwardly sloping surface of said upper portion to a juncture with the upper edge of said lower portion which has a vertical outer surface.

3. The banjo body assembly according to claim **1** wherein the inner wall of said shell comprises a first vertical surface on said upper portion and a second vertical surface on said lower portion which second surface is spaced interiorly of said shell from said first surface, said vertical surfaces being connected by the inner surface of said mid-portion which surface slopes upwardly and outwardly from the upper edge of said second vertical surface to the lower edge of said first vertical surface, said sloping surface providing an upward reflection of sound within said shell.

4. The banjo body assembly according to claim **1** wherein a continuous raised portion is formed along the lower edge of said sloping outer surface of said upper portion to form a circular seat for said tone ring on said shell.

5. The banjo body assembly according to claim **1** wherein said tone ring has a horizontal surface which is sloped downwardly and inwardly toward the interior of the shell and an outer vertically depending surface.

6. The banjo head assembly according to claim **5** wherein said tone ring has an interiorly positioned air space between said horizontal surface and said depending vertical surface.

7. A banjo body assembly comprising a body shell, a tone ring and a ring-shaped shell flange, said body shell being of a general cylindrical shape with lower, mid- and upper portions, the lower portion of said shell having a vertical outer surface, the mid-portion of said shell having an outwardly and upwardly sloping surface extending from said vertical surface, the upper portion of said shell having an outer surface which slopes upwardly and inwardly from a juncture with the outer surface of said mid-portion to form a juncture with the inner surface of said shell; the tone ring being seated on the sloping outer surface of said upper portion and of a general inverted L-shape with an inward and downward bevel on the outer surface of the horizontal leg of said ring, the surface of the inner end of the beveled horizontal leg having a sloping configuration which matches the slope of the outer surface of said upper portion, the end of the depending leg of said tone ring having a sloping surface which also matches the slope of the outer surface of said upper portion whereby the tone ring wedgingly mates with said outer surface of said upper portion when downward clamping pressure is applied; the shell flange having an inner circumferential portion with an integrally formed band of lesser thickness extending outwardly therefrom, at least a portion of the inner surface of said circumferential portion having a slope which matches the slope of the outer surface of said mid-portion whereby the shell flange wedgingly mates with said outer surface of said mid-portion when upward clamping pressure is applied.

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