Oct. 25, 1949. B. A. PERRY 2,485,985

DRUM STRUCTURE

Filed July 31, 1945 2 Sheets-Sheet 1

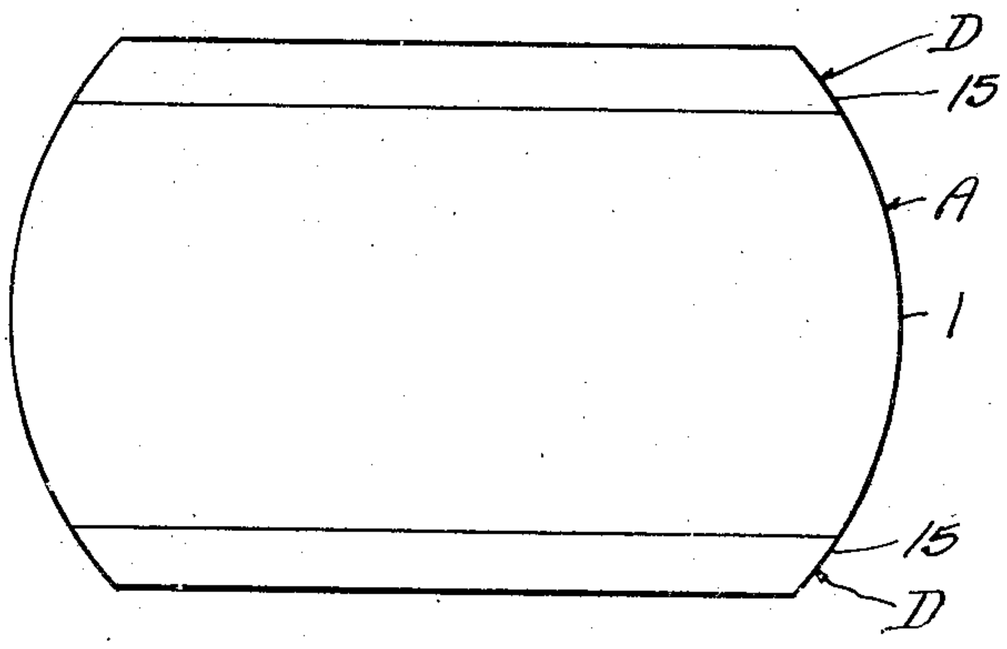

Fig. 1.

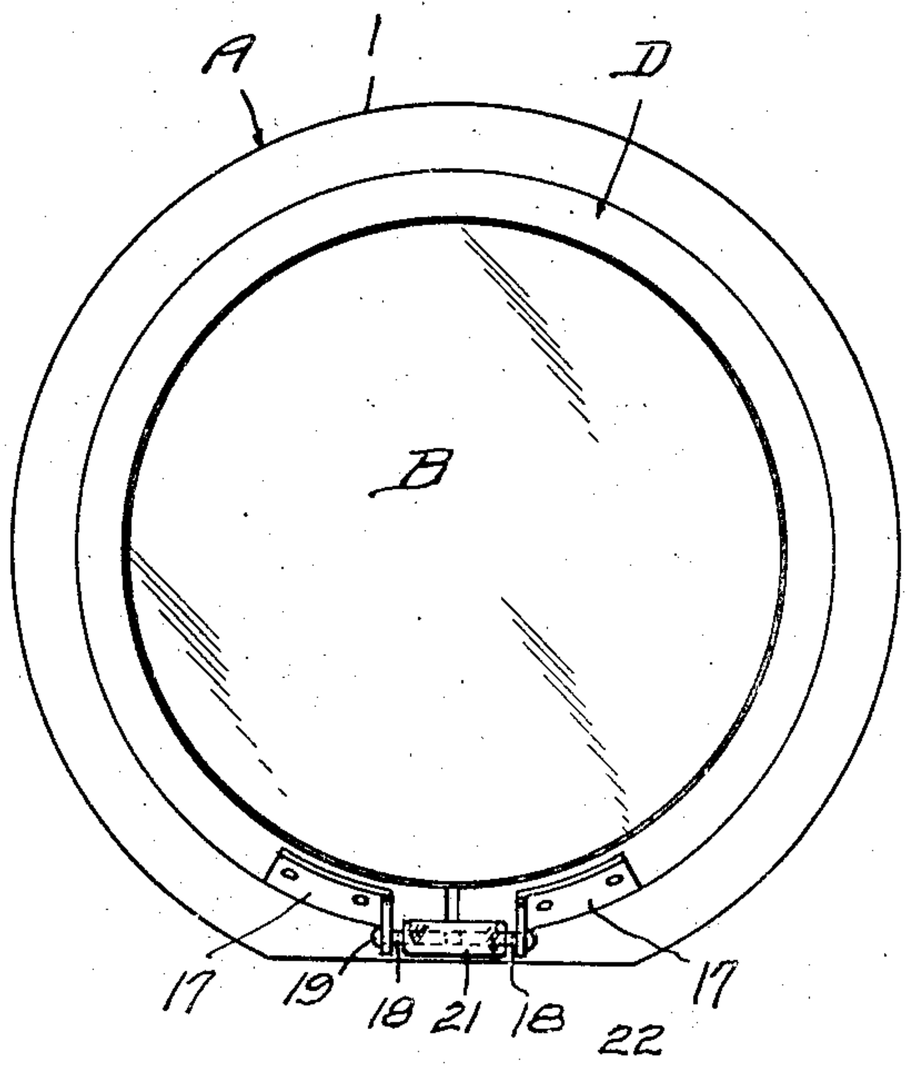

Fig. 2.

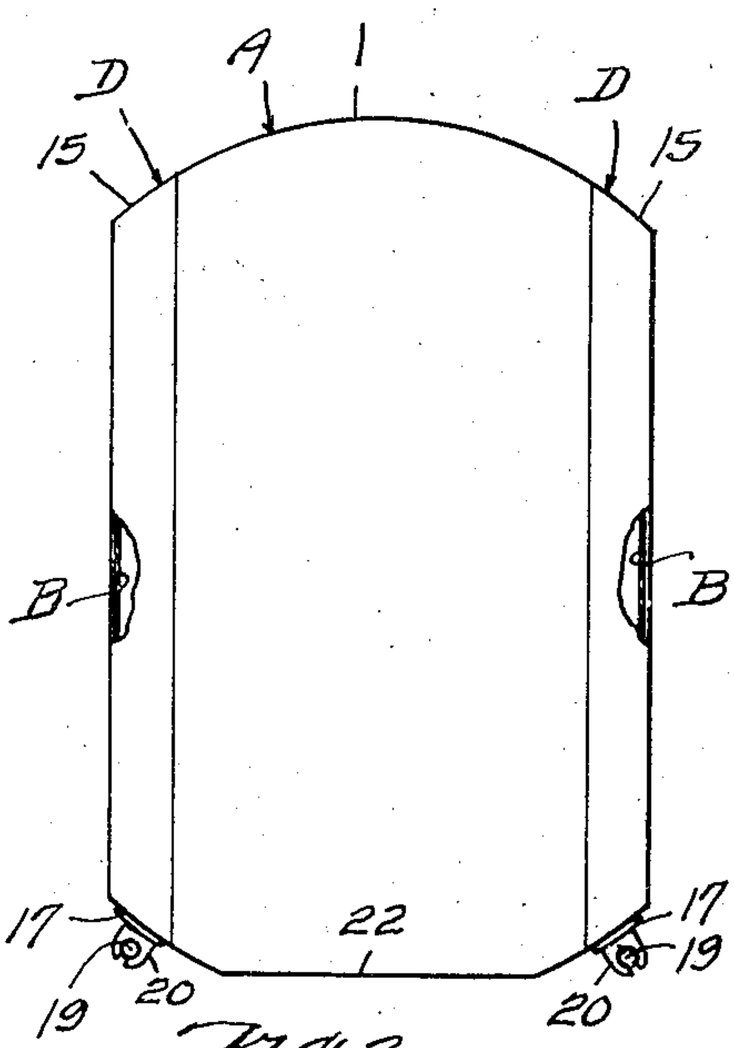

Fig. 3.

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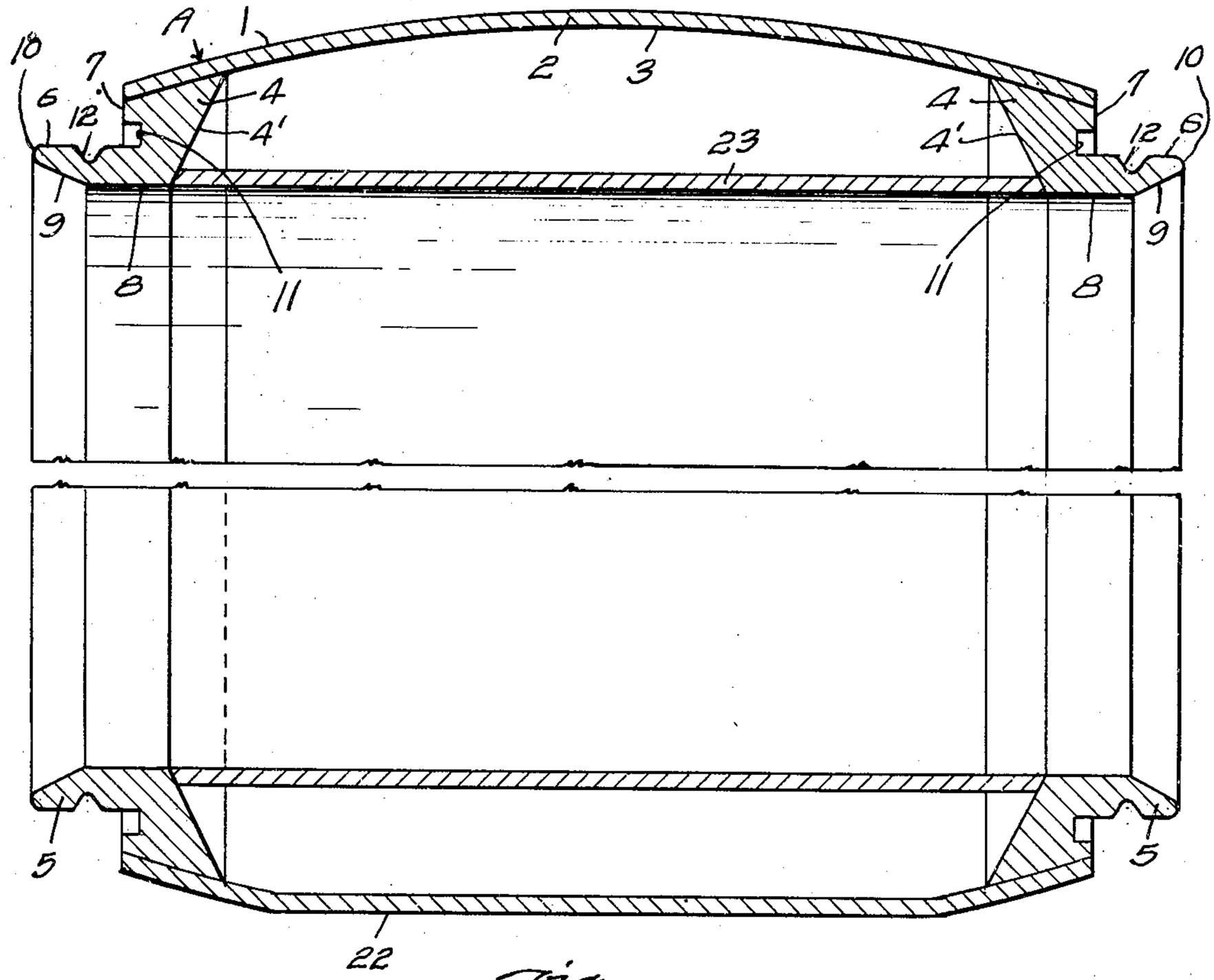

Fig. 4.

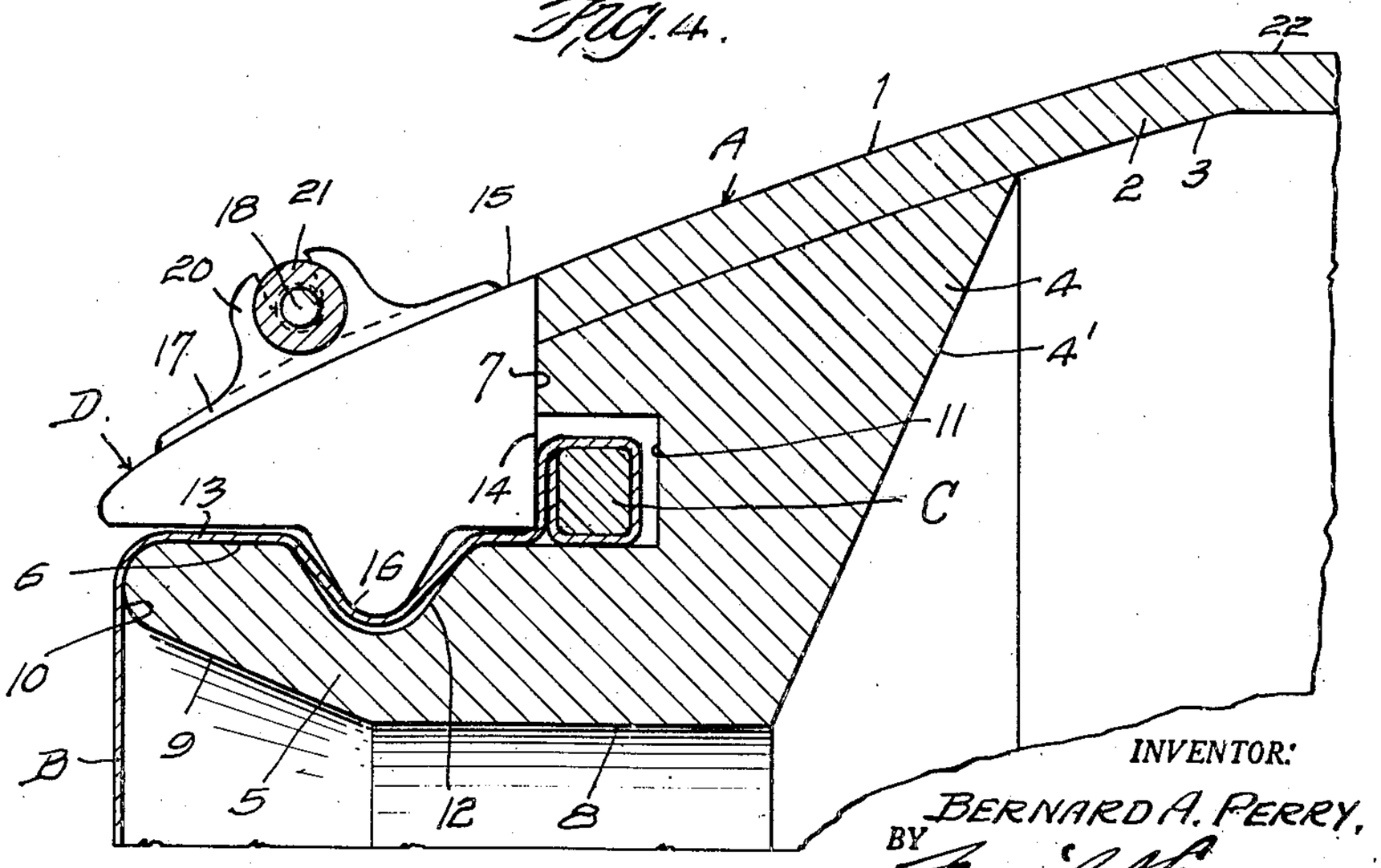

Fig. 5.

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Patented Oct. 25, 1949

2,485,985

UNITED STATES PATENT OFFICE

2,485,985

DRUM STRUCTURE

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Application July 31, 1945, Serial No. 608,032

9 Claims. (Cl. 84—411)

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My invention relates to drums, or similar vibratory musical instruments.

An object of the invention is to provide a drum, or similar vibratory musical instrument having improved tone qualities.

A further object of the invention is to provide a drum, or similar musical instrument, wherein the drum-head, or heads can be individually and quickly tensioned and loosened, and to overcome certain practical objections to, and defects in drum structures, such, for instance as bass drums, snare-drums, kettle drums, or similar musical instruments having a tubular, or hollow body with one or two ends thereof covered with vellum, or similar head material.

An object of the invention is to provide a shell having a concaved-convexed wall and having outwardly projecting portions of less diameter than the shell, and vellum tension members mounted thereon to regulate the tension of the vellum.

A further object of the invention is to provide the wall of the shell or body with a flat resting surface.

A still further object of the invention it to provide the drum body with drum-head anchoring rings, with split tension member, band, or hoops associated therewith, and with means for more or less contracting the same to exert pressure to bent over ends of the drum-heads to impart the desired tension to the drum-heads individually.

With the above and other objects in view, the invention consists in the novel features of construction, arrangement and combination of parts hereinafter more fully described and finally pointed out in the claims hereto appended:

Referring to the drawings:

Fig. 1 is a top plan view of a drum embodying the features of my invention.

Fig. 2 is an end elevation of the drum.

Fig. 3 is a side elevation of the drum.

Fig. 4 is a sectional view of the drum body, per se, with a mid portion thereof broken away.

Fig. 5 is a fragmentary view in sectional elevation of the drum, showing the same without an inner cylinder wall spanning the ribs thereof, as illustrated in Fig. 4.

In carrying out my present invention, there is provided a body designated, generally, as A; drum-heads designated, generally, as B; drum-head anchoring rings designated C; split tension member, bands or hoops designated, generally, as D; and means for contracting the split bands D to exert more or less pressure on the drum-head material to impart the desired tension to the drum-heads, as will be more clearly described hereinafter.

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The body A of the drum, or similar musical instrument is in the form of a tubular shell, or member, and the lateral or circumferential surface 1 thereof is suitably curved outwardly, or convexed relative to the axis of the body. A midsectional portion 2 of the body has its inner wall correspondingly curved outwardly, or concaved, as at 3, providing thereby the desired wall thickness to the midsection of the body A. Included in the body structure, are a pair of internal end members 4 having inclined inner side faces 4'. Each end member 4 is provided with a tubular outwardly projecting flange or portion 5 having a circumferential face 6 projecting a suitable distance beyond each end of the lateral outwardly curved surface 1 and providing thereby spaced parallel outer end faces 7 for the body A, for the reason that the outer diameter of the tubular flanges 5 is less than the minimum inner diameter of the shell A. The inner diametrical faces of each end member 4 including its flange 5 are, in cross-section of the body, flat for a distance, as at 8, then upwardly and outwardly inclined, as at 9, with the outer ends of the flanges 5 rounded, as at 10.

The inner end portion of the flat spaced parallel faces 7 of each end member 4 is provided with an annular recess 11, the inner side wall of which is flush with the lateral, or circumferential face 6 of the tubular flange 5. The lateral face 6 of each flange 5 is provided intermediate its ends adjacent the annular recess 11 with a suitably shaped circumferential groove 12.

The drum-heads B are stretched over the rounded outer ends 10 of the tubular flanges 5 to close the open ends of the drum body A, and, they are then bent inwardly, as at 13, to engage the lateral face 6 of each tubular flange 5 and span the groove 12, and the edge portion of each drum-head C is finally wrapped around an anchor ring C seated in each of the annular facial recesses 11 of the ribs 4.

The split tension member, bands, or hoops D

are mounted circumferentially of the tubular flanges 5 of the ribs 4, and have their inner faces 14 engaging the outer end faces 7 of the ribs 4. The circumferential face 15 of each split band or hoop D is curved to form a continuation of the outwardly curved lateral, or circumferential face 1 of the body A, and the outer edge portion of each band, or hoop D projects slightly beyond the outer face of each drum-head B, thus serving as a protection for the drum-head material adjacent each band, or hoop D.

Each split tension member, band, or hoop D is provided with a suitable internal rib 16 opposite the flange groove 12 which when each band D is contracted or expanded separately or individually by means hereinafter described, exerts more, or less pressure against the drum-head material spanning the flange grooves 12 to exert the desired tension to the drum-heads B, as is clearly apparent from the drawings.

The means for contracting or expanding the split bands, or hoops D with relation to the tubular drum body flanges 5, consists of a pair of suitable L-shaped brackets 17 suitably secured adjacent the free ends of each band, or hoop D. A suitable screw 18 having a head 19 passes through a hole in the arm 20 of each bracket 17 and the screws are connected by means of a turnbuckle nut 21, which nut, when turned in one direction contracts its respective split band, or hoop D to increase the tension to the drum head B associated therewith, and, when turned in the opposite direction expands the band or hoop D to relieve the tension to the drum-head.

A predetermined area of the lateral curved surface 1 of the body A may be flattened, as at 22 to provide a flat resting surface for the drum body, and particularly if it is a bass drum, although it need not necessarily be so flattened, as other well known means may be employed for the drum body to rest upon and to be fastened thereto.

The drum body may, if desired, be provided with an internal circular wall 23 of suitable material which extends from one rib 4 to the other rib 4, and when used, the inner face thereof is preferably, although not necessarily, flush with the inner faces 8 of the ribs 4.

The drum body A and the split tension member, bands, or hoops D may be fabricated from plastic material, wood or metal, or when made from plastic material, the body including the ribs and tubular flanges may be molded as a unit.

The many advantages of a drum, or similar musical instrument, whether having a single head or two heads, will readily suggest themselves to those skilled in the art to which it appertains.

What I claim is:

1. In a drum or similar musical instrument structure, a body comprising a tubular member having a circumferential surface which is curved outwardly relative to the axis thereof, a midsectional portion of the body having its inner wall surface curved to correspond to the circumferential surface of the body, internal ribs having outer end faces in opposite ends of the body, tubular flanges projecting from the ribs beyond the ends of the lateral surface of the tubular member and having an outside diameter less than the minimum inside diameter of the midsectional portion of the body, the tubular flanges each having a circumferential groove intermediate their ends thereof, the outer faces of the ribs adjacent the inner ends of circumferential grooved surfaces of the tubular flanges each having an annular recess one wall of which is flush with the circumferential surface of its respective tubular flange, an anchor ring mounted in each rib recess, drum-heads stretched over the outer ends of the tubular flanges with end portions thereof bent to contact the circumferential surfaces of the tubular flanges, the end portions of the bent over portions of the drum-heads being wrapped around the anchor rings, split bands encircling the tubular flanges and the bent over end portions of the drum-head material, internal ribs on the split bands opposite the grooves in the circumferential surfaces of the tubular flanges, and means carried by the bands to more or less contract the bands to cause the band ribs to exert uniform pressure to the bent over end portions of the drum-head material adjacent the circumferential flange grooves to impart the desired tension to the drum-heads.

2. A drum as defined in claim 1, wherein the outer surfaces of split bands are in continuation of the curvature of the circumferential surface of the body, and wherein the outer edges of the bands project slightly beyond the outer faces of the drum-heads.

3. A drum or similar musical instrument body comprising a tubular body member having a circumferential surface which is curved outwardly relative to the axis thereof, a midsectional portion of the body member having its inner wall surface curved to correspond to the circumferential surface of the body, internal ribs at opposite ends of the internal curved surface of the body having outer end faces flush with the ends of the body, said ribs including tubular flanges projecting beyond the ends of the body and said flanges having an outside diameter less than the minimum internal diameter of the midsectional portion of the body, the circumferential surface of the tubular flanges having grooves intermediate the ends thereof, the outer end faces of the ribs adjacent the inner ends of the circumferential faces of the tubular flanges each having an annular recess one wall of which is flush with the circumferential surface of its respective tubular flange, and an inner tubular wall member spanning the gap between the ribs and flush with the internal diameter of the ribs.

4. A drum or similar musical instrument body comprising a tubular body member having an outwardly curved circumferential surface, a midsectional portion of the body member having its inner wall surface curved to correspond to the circumferential surface of the body, internal ribs having outer end faces carried within the ends of the body and flush therewith, said ribs including tubular flanges projecting beyond the ends of the body and said flanges having a circumference less in diameter than the minimum internal diameter of the midsectional portion of the body, the circumferential surface of the tubular flanges having endless grooves intermediate the ends thereof, and the outer faces of the ribs adjacent the inner ends of the circumferential faces of the tubular flanges each having an annular recess one wall of which is flush with the circumferential surface of its respective tubular flange.

5. In a musical instrument of the class described, in combination, a body of tubular material having a circumferential surface curved outwardly relative to the axis of the body and a relatively shorter inner surface correspondingly curved, said body including an internal reinforcing rib at one end thereof, a tubular flange pro-

jecting from the rib having an outer diameter less than the minimum outer diameter of the remaining part of the body and providing a flat outer face for the rib, said rib having a facial groove therein and the circumferential face of the flange having a groove therein adjacent the facial recess in the rib, a drum-head stretched across the outer end of the tubular flange with an edge portion thereof bent to engage the circumferential face of the flange, an anchor ring seated in the facial groove of the rib around which the edge portions of the drum-head are wrapped, a split band encircling the tubular flange, an internal tongue on the band disposed opposite the groove of the tubular flange, and means for contracting and expanding the band to cause the tongue to exert pressure against the drumhead material to impart the desired tension to the drum-head.

6. A vibratory instrument comprising a barrel like shell having a concaved-convexed wall, internally positioned annular end members for the shell having annular portions projecting beyond the end edges of the shell and of less diameter than the minor diameter of the shell, the annular end members having annular grooves in the outer side walls thereof, the annular portions having circumferential grooves, a vellum head for each annular end member, rings connected with the free edges of the vellum heads adapted to lie in the annular grooves in the outer side walls of

the end members, tension members encircling the circumferentially grooved annular portions serving to prevent outward displacement of the rings, and internal ribs on the tension members to force the vellum into the circumferential grooves to regulate the tension of the vellum heads.

7. An instrument as defined in claim 6, wherein a limited section of the shell is flat to provide a rest surface.

8. An instrument as defined in claim 6, wherein an internal shell connects the end members adjacent the annular portion of reduced diameter..

9. An instrument as defined in claim 6, wherein the peripheral face of each of the tension members is a continuation of the convexed outer face of the shell.

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