Oct. 5, 1943. C. H. STRUPE 2,331,096

DRUM

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Fig. 1.

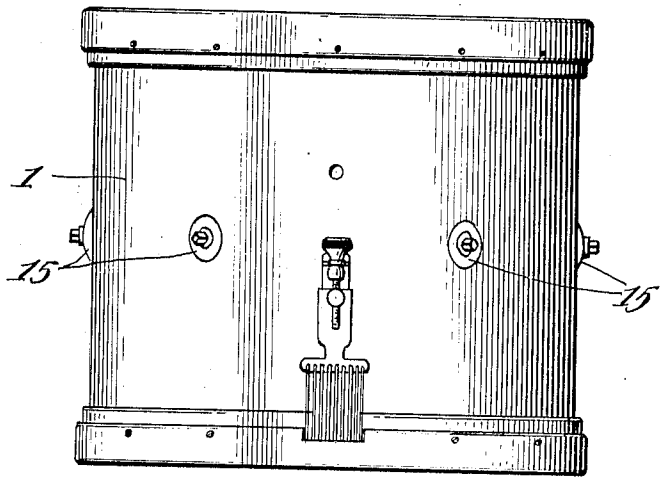
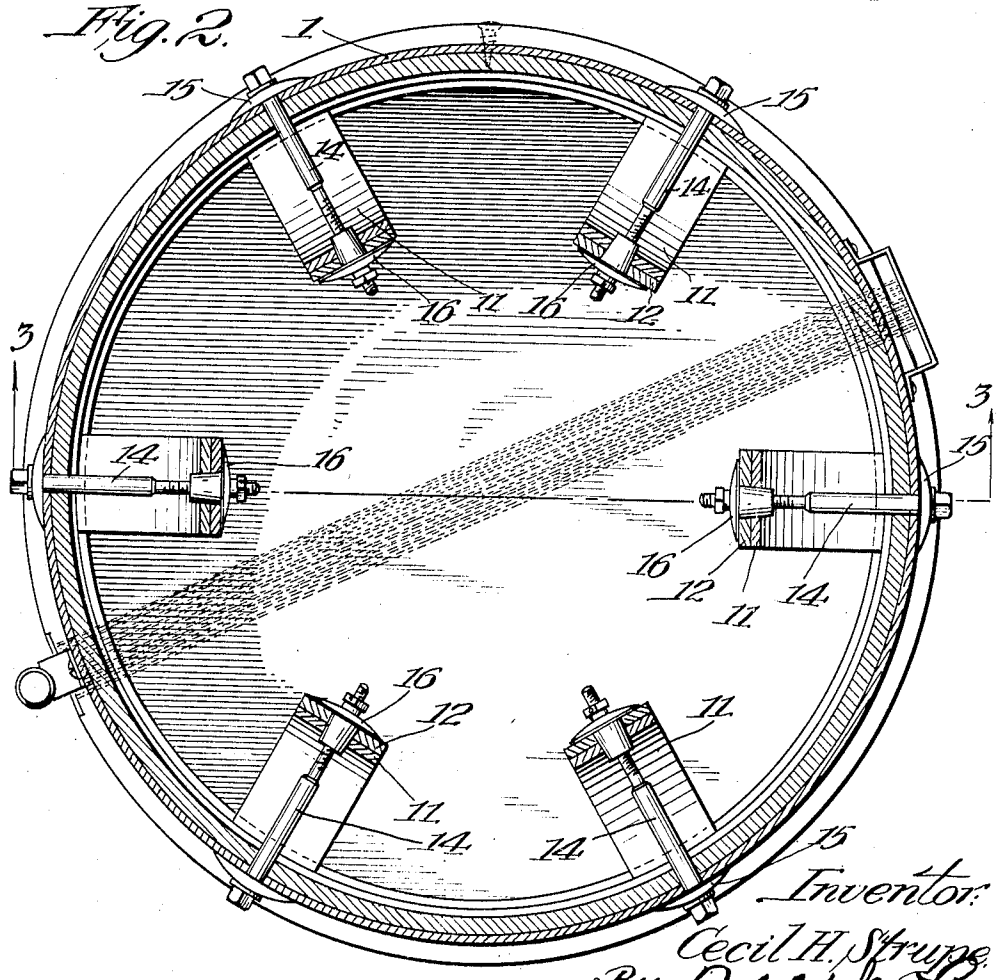


Fig. 2.



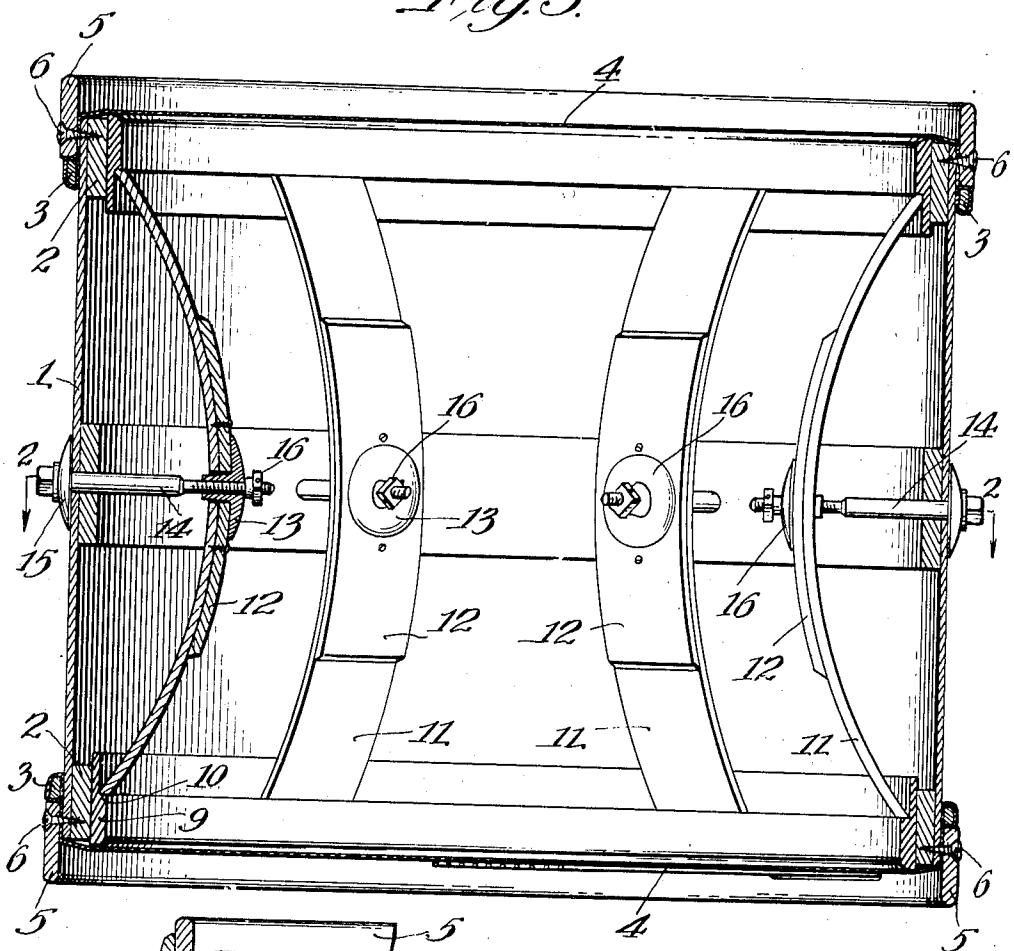
Inventor:
Cecil H. Strupe
By Rudolph Kuhn & Co
Attys.

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Fig. 3.



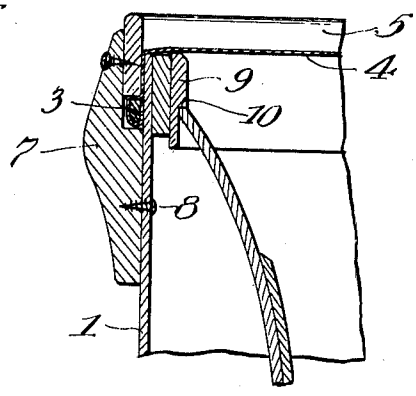


Fig. 4.

Inventor:
Cecil H. Strupe
By Rudolph Bau & Lob
Atty.

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2,331,096

UNITED STATES PATENT OFFICE

2,331,096

DRUM

Cecil H. Strupe, Chicago, Ill., assignor to W. F. L. Drum Co., Chicago, Ill., a copartnership comprising William F Ludwig, William F. Ludwig, Jr., Elsa M. Ludwig, and himself

Application July 10, 1942, Serial No. 450,374

5 Claims. (Cl. 84—411)

This invention relates to improvements in drums and more particularly to means for tensioning the heads of drums simply, cheaply, and efficiently.

A main object of the invention is to provide a drum wherein the amount of metal used is minimized to the utmost possible degree without sacrifice of any essentially desirable or necessary means required for the proper tuning of the drum or impairing the appearance of the same.

A suitable embodiment of the invention is illustrated in the accompanying drawings, wherein:

Fig. 1 is a side elevation of a drum constructed in accordance with the invention.

Fig. 2 is a plan sectional view of the same on an enlarged scale, taken on the line 2—2 of Fig. 1.

Fig. 3 is a central vertical sectional view of the same taken on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary detail vertical sectional view, similar to Fig. 3, showing another form of embodiment of the invention.

In the instance illustrated, the cylindrical drum casing 1 is composed of wood of a suitable type. Secured rigidly to the inner face of said casing, at its respective end portions, is a pair of hoops 2, also of wood, having their outer edges disposed substantially flush with the ends of the casing 1.

A pair of outer hoops 3 is supplied to which the marginal edge portions of the drum heads 4 are suitably secured and which are movable longitudinally of the casing 1 and are normally spaced appreciably from the ends of said casing.

A second outer pair of hoops 5 is disposed telescopically of the marginal portions of the heads 4 upon opposite end portions of the casing with a portion of each thereof projecting beyond the ends of the casing 1, the inner edges of said hoops bearing upon the hoops 3 to prevent the latter from moving toward the ends of the casing responsively to tension of the heads 4. The hoops 5 are rigidly secured to the casing 1 in any suitable manner as by means of screws 6 which pass through the marginal portions of the heads 4 and engage in the casing and the hoops 2, or by means of the links 7 shown in Fig. 4 which are secured to the casing 1 inwardly of the hoops 3 by means of screws 8 and at their outer end portions to the hoops 5 in any suitable manner. An advantage of the links 7 is that the puncture of the skins 4 is avoided.

Another pair of hoops 9 is disposed telescopically within the hoops 2 with their outer edge portions in engagement with the heads 4. Each of said hoops 9 is equipped with an inwardly projecting, preferably annular, shoulder formation 10, disposed angularly to the plane of its outer edge to define an undercut or groove formation in which the outer ends of bowed springs 11 engage an arc held against becoming disengaged when said springs are slack.

In the instance illustrated, the springs 11 are composed of resilient strips of wood and are equally spaced apart, the number thereof being such that the portions of the hoops 9 bridging the spaces between the springs 11 will support the pressure of heads 4 when said hoops are forced outwardly to tension said heads.

Each of the springs 11 is backed by a reinforcing strip or spring element 12 upon which there is mounted rigidly a nut 13 of suitable shape in which the threaded end portion of a set-screw 14 engages, said threaded portion passing freely through openings in the springs 11 and 12. The latter are held suitably against rotation relative to the springs 11.

The smooth shank portion of each set-screw 14 passes freely through an opening in the casing 1 and a metal washer 15 mounted upon the latter, the head of said screw being equipped with a key engaging formation for rotation by such key to effect flexing of the springs 11 and 12 to increase its normal radius and thus force the hoops 9 outwardly to tension the heads 4 and to permit the springs to restore themselves to a curvature which tension on heads is relieved, it being obvious that such return of the springs to smaller radius will be aided by the pressure of heads 4 transmitted to the ends of the springs 11 through the hoops.

It will be observed that the set-screws 14 are purely tension elements which are held at the inner limit of movement by the tension of the springs. Said screws are so loosely engaged at their head end portions in the washers 15 and openings in the casing 1 aligned therewith that they may swing slightly laterally of their normal positions to accommodate themselves to any slight changes in the positions of the nuts 13 incident to variations in degree of movement of the respective hoops 9 due to greater degree of yield of one of the heads 4 to pressure of a hoop 9 than the other of said heads 4.

The inner end of each of the screws 14 is equipped with a fixed collar 16 or equivalent stop formation to prevent the same from being disengaged from the nut through which it passes or from being moved outwardly far enough to al-

low the ends of the spring 11 which it controls from becoming disengaged from the hoops 9.

The drum illustrated is shown as equipped with a set of snares and a snare tensioning means which may be of any desired type constituting no part of this invention.

I claim as my invention:

1. A drum comprising a cylindrical casing, a pair of hoops slidably mounted upon the the outer surface of said casing in spaced relation to the ends thereof, a pair of drum-heads having their marginal edge portions secured to said hoops, a pair of hoops secured to the end portions of the casing outwardly of and constituting stops for said first-named hoops, a pair of drum head tensioning hoops mounted within the end portions of the casing and equipped with opposed shoulder formations, a series of equally spaced apart flexible members disposed within the casing and engaged at their ends with said shoulder formations, set-screws rotatably engaged with the casing midway of the ends of the latter against movement inwardly of the same, and nuts rigidly engaged with said members and having threaded engagement with the shanks of said set-screws, said members being adapted to become elongated as said screws are rotated to move the said nuts towards the casing and thereby force the last-named hoops outwardly to tension said heads.

2. A drum comprising a cylindrical casing, a pair of hoops slidably mounted upon the outer surface of said casing in spaced relation to the ends thereof, a pair of drum-heads having their marginal edge portions secured to said hoops, a pair of hoops secured to the end portions of the casing outwardly of and constituting stops for said first-named hoops, a pair of drum head tensioning hoops mounted within the end portions of the casing and equipped with opposed shoulder formations, a series of equally spaced apart bowed spring members disposed within the casing and engaged at their ends with said shoulder formations, set-screws rotatably engaged with the casing midway of the ends of the latter against movement inwardly of the same, and nuts rigidly engaged with said members between the ends thereof and having threaded engagement with the shanks of said set-screws, said members being adapted to be increased in radius as said set-screws are rotated in a direction to draw said nuts toward the inner face of the casing and thereby cause the ends of said members to move the last-named outwardly to tension the said heads.

3. A drum comprising a cylindrical casing equipped with a pair of reinforcing hoops mounted upon its inner end portions, external hoops slidably mounted thereupon, drum heads secured to said last-named hoops, a pair of external hoops mounted upon the ends of said casing and constituting stops for said last-named hoops, another pair of hoops disposed telescopically of the first-named pair and equipped with opposed shoulder formation, a series of equally spaced apart bowed springs engaged at opposite ends with said shoulder formations and maintaining the fourth pair of hoops normally engaged with the drum heads, and a series of radially disposed set-screws mounted rotatably in the casing between its ends and operatively engaged with said springs between their ends for flexing the same to longer than normal radius and thereby causing the hoops engaged with said springs to tension said drum heads.

4. A drum comprising a cylindrical casing, a pair of hoops slidably mounted upon the outer surface of said casing in spaced relation to the ends thereof, a pair of drum-heads having their marginal edge portions secured to said hoops, a pair of hoops secured to the end portions of the casing outwardly of and constituting stops for said first-named hoops, a pair of drum head tensioning hoops mounted within the end portions of the casing, and a series of adjustable springs engaged at their ends with the last-named hoops for projecting the same outwardly against the drum heads for tensioning the latter.

5. A drum comprising a cylindrical casing, a pair of hoops slidably mounted upon the outer surface of said casing in spaced relation to the ends thereof, a pair of drum-heads having their marginal edge portions secured to said hoops, a pair of hoops secured to the end portions of the casing outwardly of and constituting stops for said first-named hoops, a pair of drum head tensioning hoops mounted within the end portions of the casing, a series of equally spaced-apart devices within the casing and engaged at their ends with said tensioning hoops, and a series of tensioning screws engaged at their inner ends with said devices and at their outer ends with the casing and projecting through the latter for actuation from the exterior thereof, the rotation of said screws in one direction acting to force the ends of said devices outwardly to effect outward movement of the tensioning hoops to effect tensioning of said drum heads.

CECIL H. STRUPE.