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Lillywhite

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(54) **TENSION MECHANISM FOR JOINTS OF WIND INSTRUMENTS**

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G10D 9/00 (2020.01)

(52) **U.S. Cl.**
CPC ***G10D 9/00*** (2013.01)

(58) **Field of Classification Search**
CPC G10D 9/00; G10D 7/08; G10D 3/00
See application file for complete search history.

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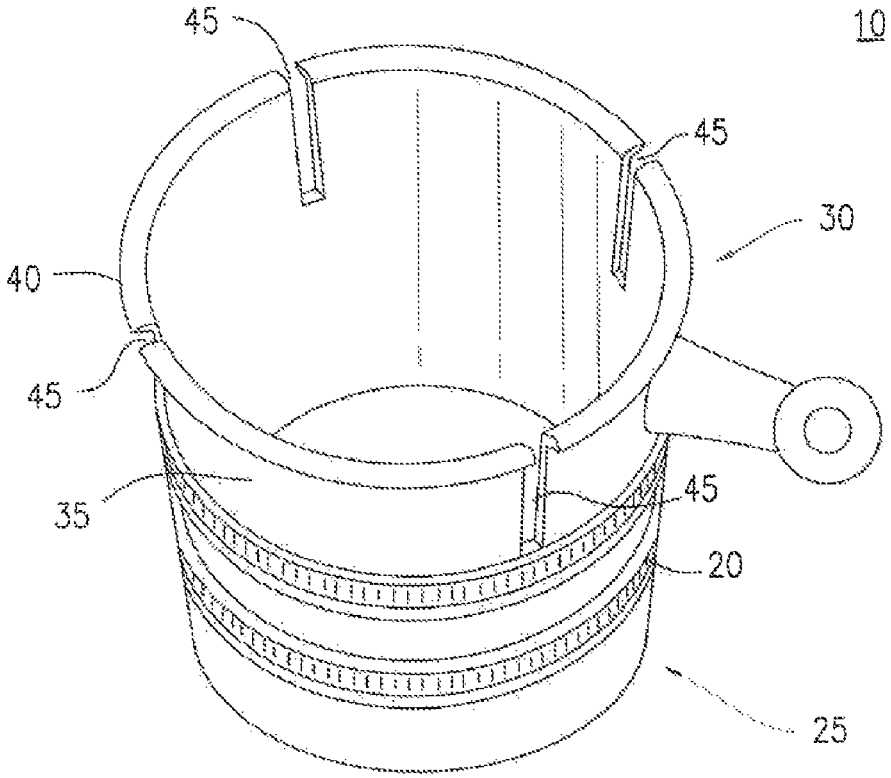
(57) **ABSTRACT**

A wind instrument neck receiver tension mechanism is provided having a body, a retaining ridge, and a tension band. The body has a lower body end and a upper body end. The upper body end defines a thin collar seating wall, which has at least one notch. In some embodiments there are four equally sized notches. A retaining ridge extends from the thin collar seating wall and a tension band having an adjustable compression ring, the adjustable compression ring disposed between said thin collar seating wall and the retaining ridge. When adjusted to a first position, the compression ring compresses the thin collar seating wall in a uniform compression around a circumference of a neck receiver of a wind instrument.

15 Claims, 4 Drawing Sheets



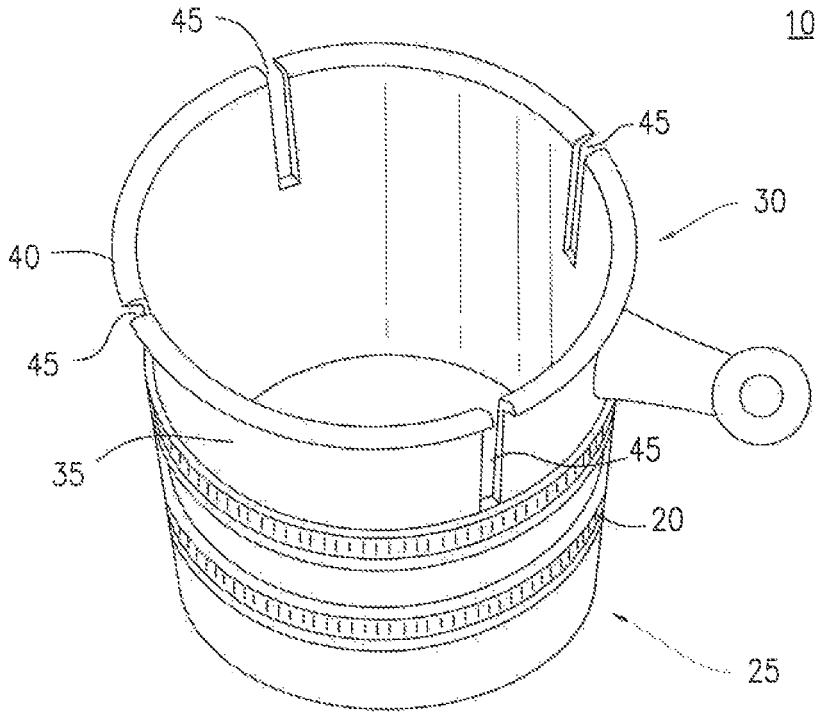


FIG. 1

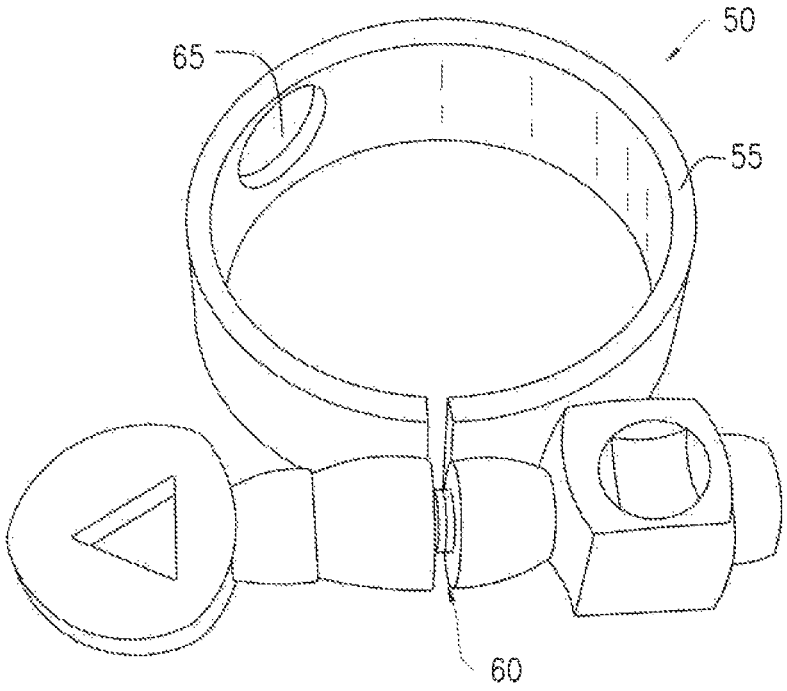


FIG. 2

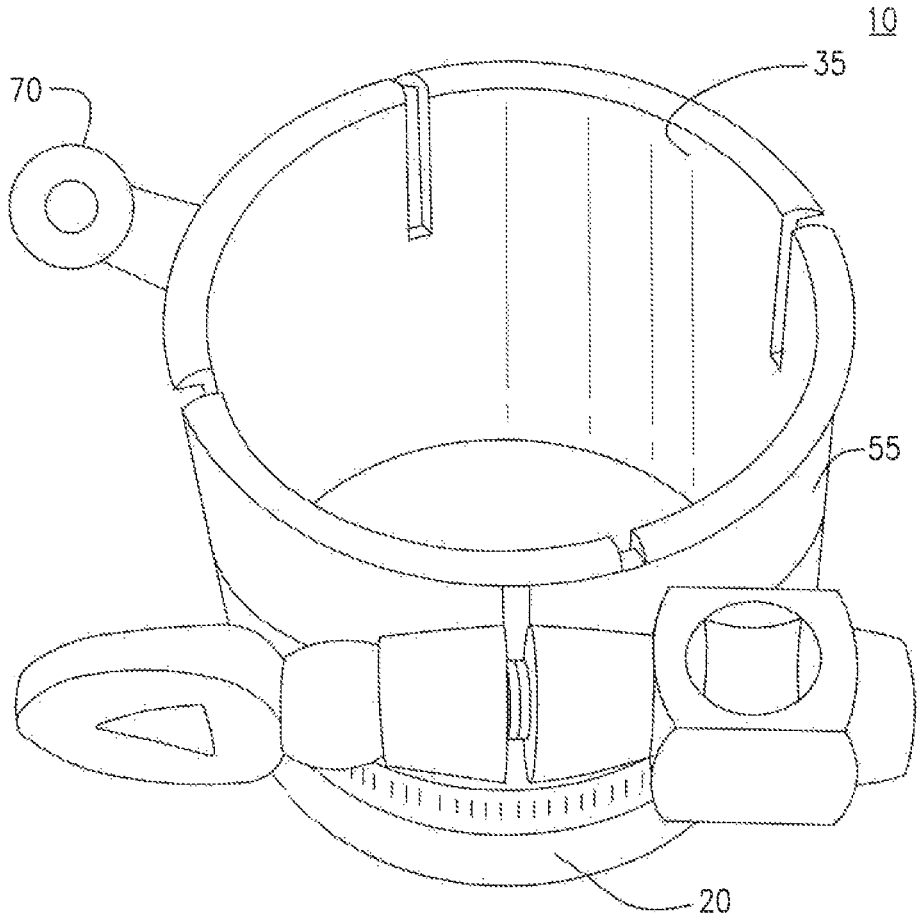


FIG. 3

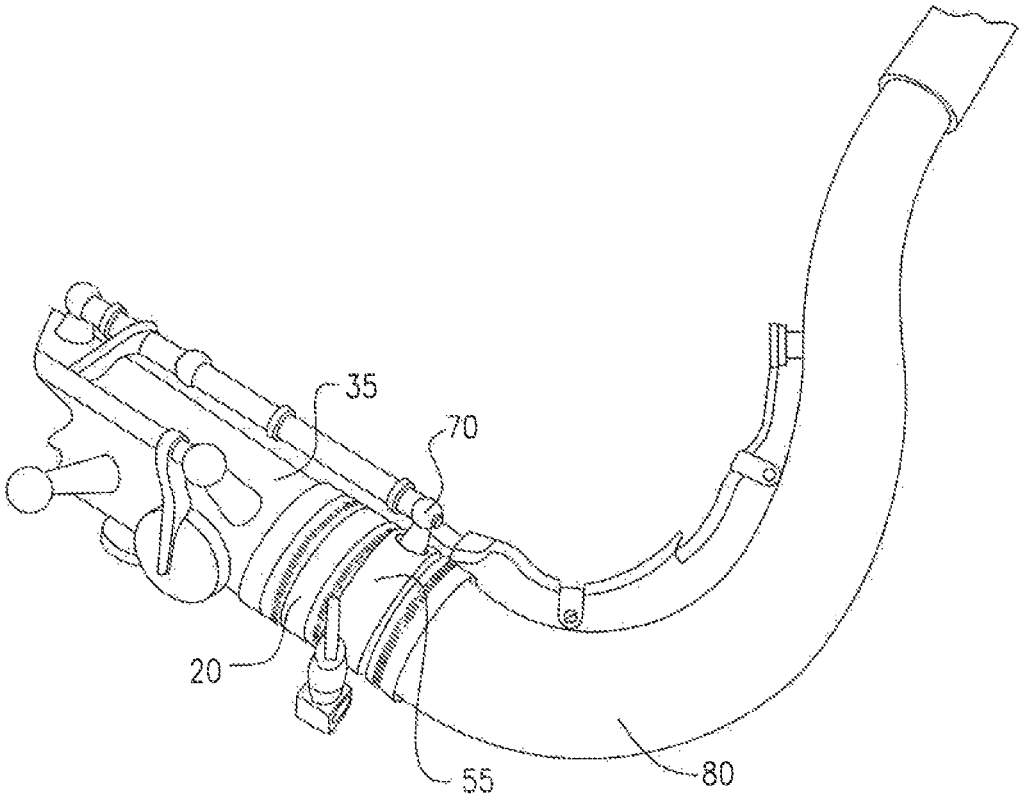


FIG. 4

TENSION MECHANISM FOR JOINTS OF WIND INSTRUMENTS

FOREIGN PRIORITY CLAIM

This application is based upon and claims the benefit of priority to U.S. provisional patent application No. 62/797,773, filed on Jan. 28, 2019, the entire contents of which are incorporated herein by reference.

FIELD OF THE INVENTION

The present application is related generally to a tension mechanism for a joint of a wind instrument and more particularly to a neck receiver for a wind instrument which provides a uniform concentric compression around the circumference of the receiver.

BACKGROUND OF THE INVENTION

A typical saxophone neck receiver tension mechanism is generally accomplished with a tenon-in-socket joint, with a single slit in the neck socket that is compressed by tightening of a neck tension screw to hold the neck of the instrument in place.

Having a single slit in the neck socket of a wind instrument creates a non-uniform compression around the circumference of the neck receiver, which can detrimentally impact the tone and performance of the wind instrument. What is desired is to have a neck receiver for a wind instrument which provides a uniform concentric compression around the circumference of the receiver.

SUMMARY OF THE INVENTION

A wind instrument neck receiver tension mechanism is provided having a body, a retaining ridge, and a tension band. The body has a lower body end and a upper body end. The upper body end defines a thin collar seating wall, which has at least one notch. In some embodiments there are four equally sized notches. A retaining ridge extends from the thin collar seating wall and a tension band having an adjustable compression ring, the adjustable compression ring disposed between said thin collar seating wall and the retaining ridge. When adjusted to a first position, the compression ring compresses the thin collar seating wall in a uniform compression around a circumference of a neck receiver of a wind instrument.

DESCRIPTION OF THE DRAWINGS

FIG. **1** shows a perspective view of a neck receiver in accordance with an embodiment of the invention.

FIG. **2** shows a perspective view of a tension band for use with the neck receiver of FIG. **1**.

FIG. **3** shows a perspective view of the neck receiver of FIG. **1**, showing the tension band in an installed position on the neck receiver of FIG. **1**.

FIG. **4** illustrates a side view of the neck receiver of FIG. **1**, showing the neck receiver installed on the upper portion of a saxophone and engaged with a saxophone neck.

DETAILED DESCRIPTION OF THE INVENTION

As discussed above, a preferred embodiment of the improved neck receiver provides a more uniform compression around the circumference of a saxophone neck. In FIG. **1**, a perspective view of a neck receiver **10** in accordance with an embodiment of the invention is shown. The neck receiver **10** is comprised of a body **20**, with a lower end **25** for permanent attachment to a saxophone body, shown below. Upper end **30** of body **20** exhibits a cylindrical thin collar seating wall **35**. A retaining ridge **40** extends circumferentially outward from the entire circumference of the cylindrical thin collar seating wall **35**. Notches **45** divide the cylindrical thin collar seating wall **35**, in an exemplary embodiment, into four approximately equal sized portions.

In FIG. **2**, a tension band **50** is shown for use with the neck receiver **10** of FIG. **1**. Tension band **50** is comprised of a compression ring **55** integrated with a tightening nut and bolt **60**, As the tightening nut is turned in a first direction, the diameter of compression ring **55** is reduced, thus imparting an inwardly directed compression force. Hole **65** is provided in an exemplary embodiment to allow post **70** to fit within the area of thin collar seating wall **35** as described below.

In FIG. **3**, the tension band **50** is shown in an installed position on the neck receiver **10**. In this view, the compression ring **55** fits within the channel formed by thin collar seating wall **35** and retaining ridge **40** of body **20**. Post **70** protrudes through hole **65** to allow for normal operation of the saxophone neck. as described below.

In FIG. **4**, the neck receiver **10** is shown installed on the upper portion of saxophone **75** and engaged with saxophone neck **80**. Once saxophone neck **80** is inserted into the upper portion of neck receiver **10**, rotation of the tightening nut into bolt **60** imparts an inwardly directed compression of the thin collar seating wall in a uniform compression around the circumference of neck receiver **10**. It can be appreciated that while the description is directed generally toward a saxophone neck receiver, the subject invention can be utilized on many types of woodwind instruments; such as a flute, oboe, piccolo, bassoon, bagpipe, or the like.

While specific embodiments of the invention have been described and illustrated, such embodiments should be considered illustrative of the invention only and not as limiting the invention as construed in accordance with the accompanying claims. One of ordinary skill in the art could alter the above embodiments or provide insubstantial changes that may be made without departing from the scope of the invention.

I claim:

1. A wind instrument comprising a neck receiver tension mechanism comprising:

a body having a post, a lower body end and an upper body end defining a thin collar seating wall, said thin collar seating wall having at least one notch;

a retaining ridge extending from the thin collar seating wall; and

a tension band comprising an adjustable compression ring, said adjustable compression ring disposed between said thin collar seating wall and the retaining ridge, said adjustable compression ring having a compression ring hole, wherein said compression ring hole is dimensioned and configured to receive said post;

wherein adjusting said compression ring in a first position compresses the thin collar seating wall in a uniform compression around a circumference of a neck receiver of said wind instrument.

2. The wind instrument in claim **1**, wherein the lower body end is attachable to a body of the wind instrument.

3. The wind instrument in claim **1**, wherein the lower body end is permanently attachable to a body of the wind instrument.

4. The wind instrument in claim 1, wherein there are at least two notches.

5. The wind instrument in claim 1, wherein the notches are equal in size.

6. The wind instrument in claim 1, wherein the adjustable compression ring employs a nut and bolt.

7. The wind instrument in claim 1, wherein there are four notches.

8. The wind instrument in claim 1, wherein the wind instrument is a flute.

9. The wind instrument in claim 1, wherein the wind instrument is an oboe.

10. The wind instrument in claim 1, wherein the wind instrument is a piccolo.

11. The wind instrument in claim 1, wherein the wind instrument is a bassoon.

12. The wind instrument in claim 1, wherein the wind instrument is a bagpipe.

13. The wind instrument in claim 1, wherein the wind instrument is a saxophone.

14. A neck receiver tension mechanism comprising:

a neck receiver body having a post, a lower neck receiver body end and an upper neck receiver body end, said neck receiver body having at least one notch; and

a tension band comprising an adjustable compression ring, said adjustable compression ring having a compression ring hole,

wherein said compression ring hole is dimensioned and configured to receive said post;

wherein said compression ring is dimensioned and configured to cover said notch on said neck receiver body;

wherein adjusting said compression ring in a first position compresses the neck receiver body in a uniform compression around a circumference of a neck receiver of a wind instrument.

15. The neck receiver tension mechanism in claim 14, wherein there are at least two notches.

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