



(11) **EP 2 804 172 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
19.11.2014 Bulletin 2014/47

(51) Int Cl.:
G10D 9/02 (2006.01)

(21) Application number: **12865510.7**

(86) International application number:
PCT/ES2012/000004

(22) Date of filing: **10.01.2012**

(87) International publication number:
WO 2013/104806 (18.07.2013 Gazette 2013/29)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

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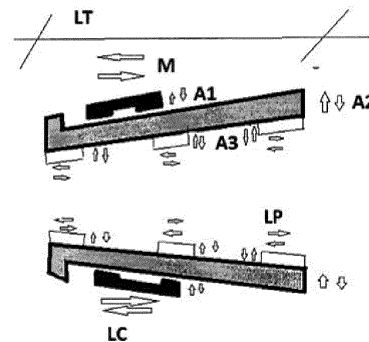
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(54) **CLAMP FOR USE IN SAXOPHONE AND CLARINET MOUTHPIECES**

(57) Clamp comprising two conical components, one being a flexible, interior component in contact with the barrel and the other a rigid, exterior component in contact with the interior component. The former has a longitudinal cut over the entire length thereof, and the interior component is closed. The interior component has, in that part which enters into contact with the barrel, two central recesses. The flexibility thereof allows the exertion of pressure just sufficient to secure the barrel without breaking the latter. Furthermore, the interior component has a ring on the exterior thereof, and the end closest to the opening of the mouthpiece, with a view to preventing the exterior component from sliding out. This exterior component, which is rigid, acts on the interior component, and has the same conicity as the interior component. The exterior component has the function of preventing unwanted opening of the interior component, exerting a pressure on the interior component that is just sufficient. Given that both components of the clamp have a central recess within, it forms, as a whole, a mouthpiece resonating box, providing greater sound volume and different timbres, depending on the size, in terms of length and depth, of the recess and on the material from which it is produced. The flexibility of the interior component prevents breaking of the barrel even though the three interior rings thereof are placed in different planes.

Figure 4

SECTION OF THE FLEXIBLE AND ADJUSTABLE CLAMP



LT Total length depending on the mouthpiece model
M Exterior ring adjustment movement
A1 Different heights or thickness of the ring
A2 Different thickness according to desired sound effect
A3 Different height of flange according to desired sound effect
A4 Flange length according to desired effect
LT Total clamp length depending on mouthpiece and instrument of use
LC Exterior ring length according to desired effect and instrument of use

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Description

Object of the invention

[0001] The present invention refers to a clamp for its use in connecting and holding the barrel to the mouthpiece in saxophones and clarinets.

[0002] The present invention discloses a clamp having two conical components: the inner component, which contacts the barrel and the mouthpiece, and the exterior rigid component, which embraces the interior flexible component, both components being manufactured from any type of material, or combination of materials, for use in those instruments which require the barrel and the mouthpiece to be connected. The interior component has, in its interior wall, closest to the mouthpiece and the barrel, two recesses in its central part, therefore having three interior rings: two at the ends and another one in the central part. The exterior component has a single recess in its interior central part, and it therefore has two conical rings in the ends in a single structure, one at the mouth of each cone.

[0003] Those recesses in the central part, in the case of the interior component, may have different dimensions depending on the desired tone.

Background of the invention

[0004] The mouthpiece and the barrel, which are fundamental components of the musical instruments disclosed herein, saxophone and clarinet, must be used together forming a single body, a part of the barrel being permanently contacting the mouthpiece and the other part being free, allowing a certain degree of flexibility and, therefore, the entrance of air in the mouthpiece and the body of the respective instruments. Nowadays, metallic clamps are being used in these types of instruments, the necessary clamping pressure being obtained by means of a screw connecting the two halves of the clamp together, there being more than two contact points with the barrel.

[0005] The drawback with this clamp is that, in addition to the loss of sound, since there is no acoustic chamber, since there are more than two contact points with the barrel, which may not be in the same plane, breaks can occur, and they occur, and also circular displacements.

[0006] On the other hand, clamps formed by a single, conical, rigid piece holding the barrel to the mouthpiece by means of pressure with a certain risk of breakage are recently being used. Those having a recess in their central interior part do not pose that risk, but they can only be used with a specific barrel, so that every time a different barrel is used, the clamp must be replaced by a new one whose dimensions correspond to those of the former both in thickness and in width.

[0007] The clamp disclosed herein solves the two drawbacks: the breakage risk, since the flexibility of the interior component contacting the barrel applies the pre-

cise clamping pressure due to its own physical characteristics, and the loss of sound, since both the interior and the exterior components, in view of their morphology, act as an acoustic chamber.

Description of the invention

[0008] The two component clamp disclosed herein is made of any type of material, even each component may be made of a different material, depending on the desired tone or sound feature.

[0009] The interior conical component has a longitudinal opening all along its length that makes it flexible, allowing it to be adjusted to different barrels depending on their thickness and width. Its interior, where it contacts the barrel, has two central recesses forming three rings, one at each end and another one at the center, all three in the same plane, which result in two acoustic chambers, through which the sound cannot escape or be lost.

[0010] In addition, it has a ring in its exterior part, at the end located closest to the mouthpiece connector, for preventing the exterior component to exit or slide out.

[0011] The exterior component, also conical, is manufactured closed, having a central recess in the part which fits with the interior component, thus forming two rings, one at each end. The conical shape having the same axis inclination as the interior component, has as sole function preventing unwanted opening of the interior component and thus any unwanted movement of the same. Since there is also a central recess in its interior part, it also has an acoustic chamber.

Brief description of the drawings

[0012]

Figure 1. (page 1). The figure shows a view of the clamp assembly where a longitudinal cross section of the interior component is disclosed, and where the adjustment closure movements of the assembly are described.

Figure 2. (page 2). The figure shows a view of the exterior adjustment and closure ring with the different movements.

Figure 3. (page 3). The figure shows the interior component, where the exterior ring can be seen at the end closest to the mouthpiece connector, thus preventing the exterior component to be pushed out and allowing for installing the clamp with a single movement.

Figure 4. (page 4). The figure shows the interior of the two components forming the assembly where the central recesses can be seen; this gives an idea of the different movements and the different ways of exerting pressure, either on the barrel or the interior

component, or, although minimal, of the exterior component on the interior component.

Claims

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- 1. Conical clamp having two component, a flexible, interior one having a longitudinal cut along its whole length and three interior rings and acoustic chamber, and additionally an external ring in the part closest to the mouthpiece connector, connecting the barrel to the mouthpiece by means of pressure, by sliding the exterior component, which is rigid and does not have any cut and two rings in its interior, one at each end, and acoustic chamber; for its use in connecting and holding the barrel to the mouthpiece in all types of saxophones, made in any type of material.

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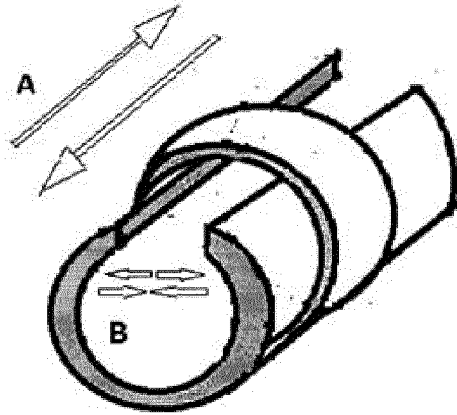
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Figure 1

General view of the two components forming the adjustable flexible clamp for wind-wood instruments

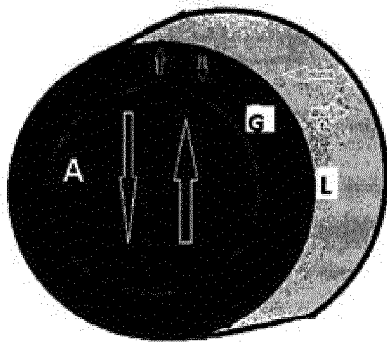


A.- Adjustment ring movement

B. Clamp closure movement when the exterior ring is displaced

FIGURE 2

Adjustment and closure exterior ring



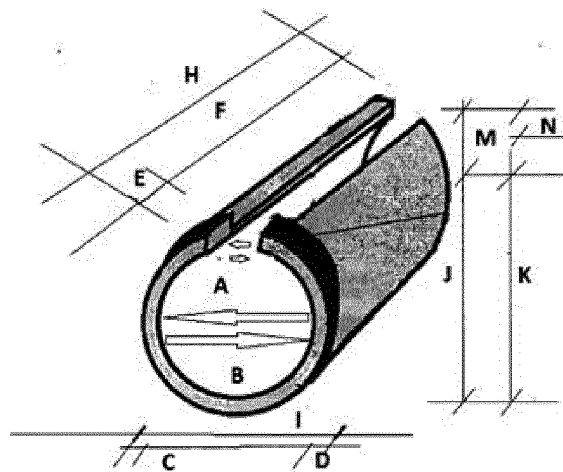
A- Height depending on the mouth piece model

G- Thickness depending on the desired sound effect

L- Length depending on the desired tone and adjustment of the barrel

Figure 3

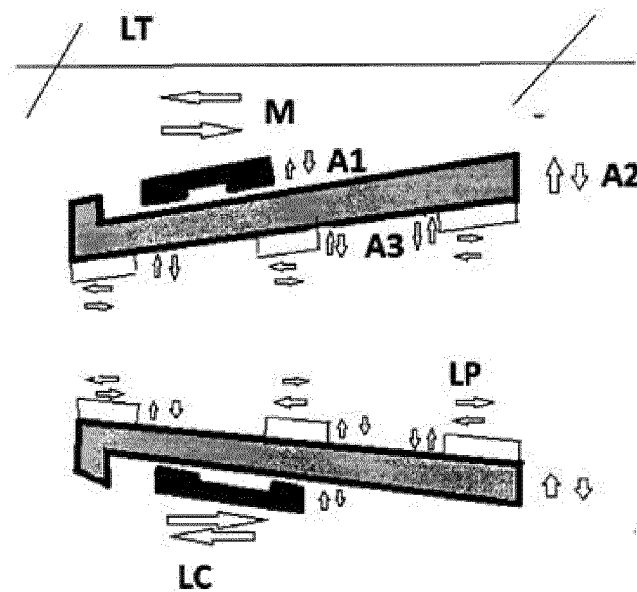
ADJUSTABLE AND FLEXIBLE INTERIOR RING



- A.- Cut allowing for the adjustment in the direction of the arrows
- B.- Inner body adjustment movement
- C.- Interior dimension according to instrument
- D.- Total thickness with stopper
- E.- Width of the stopper
- F.- Length of rest of clamp according to instrument
- H.- Total length according to instrument
- I.- Total diameter of the piece
- J.- Total exterior diameter according to instrument
- K.- Exterior diameter without stopper
- M.- Thickness with stopper
- N.- Stopper thickness
- M-N.- Clamp thickness according to desired effect

Figure 4

SECTION OF THE FLEXIBLE AND ADJUSTABLE CLAMP



- LT Total length depending on the mouth piece model
- M Exterior ring adjustment movement
- A1 Different heights or thickness of the ring
- A2 Different thickness according to desired sound effect
- A3 Different height of flange according to desired sound effect
- A4 Flange length according to desired effect
- LT Total clamp length depending on mouth piece and instrument of use
- LC Exterior ring length according to desired effect and instrument of use

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2012/000004

A. CLASSIFICATION OF SUBJECT MATTER		
G10D9/02 (2006.01)		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) G10D		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPODOC, INVENES		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2011020929 A1 (INVESTIGACIONES MANCHEGAS S.L.) 24-02-2011, page 2, line 7 - page 3, line 10; figure 1,	1
A	US 2292584 A (TAFARELLA HERMAN O.) 11-08-1942, the whole document.	1
A	DataBase Epodoc in Epoque. European Patent Office (Munich , Of). JP2003337583 A (NOJIMA K) 28-11-2003 Abstract, Figures 2-4	1
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A	GB 2453960 A (SMITH ALFRED POOLE, SMITH NIGEL, EVANS TOM) 29-04-2009, the whole document.	1
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
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Date of the actual completion of the international search 19/09/2012	Date of mailing of the international search report (01/10/2012)	
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Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2012/000004

Information on patent family members

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