Aug. 11, 1942. H. O. TAFARELLA 2,292,584

LIGATURE

Filed Dec. 4, 1940

Fig. 1.

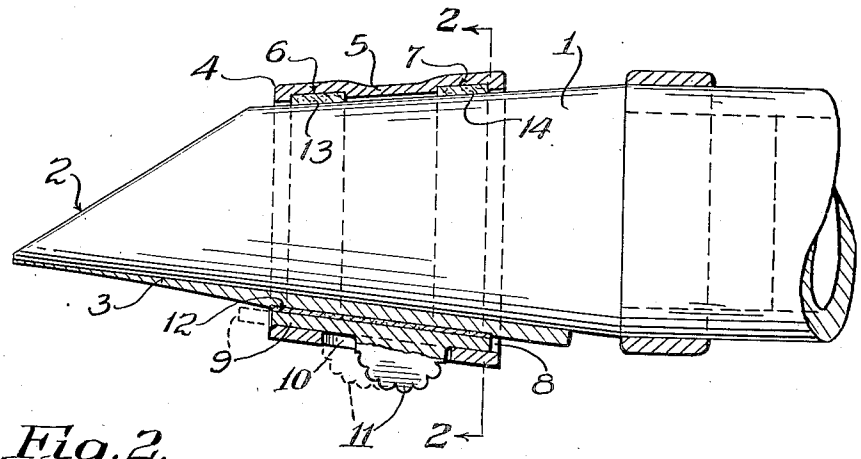


Fig. 2.

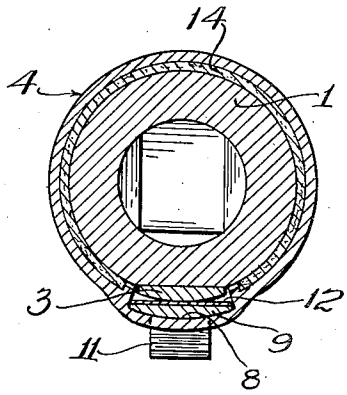
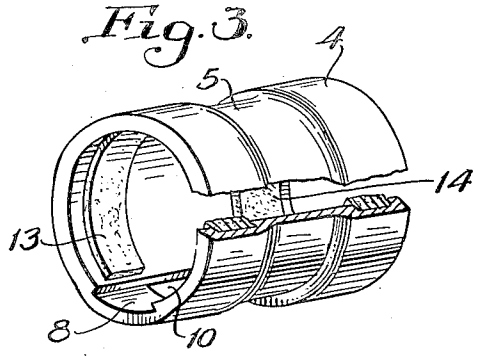


Fig. 3.



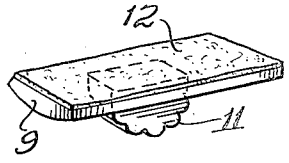
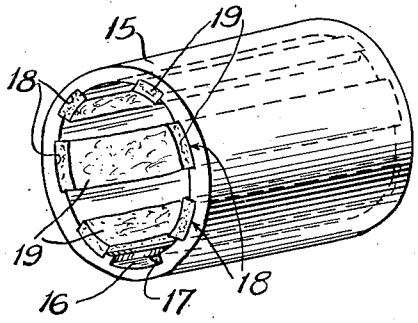


Fig. 4.

Fig. 5.



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Patented Aug. 11, 1942 2,292,584

UNITED STATES PATENT OFFICE

2,292,584

LIGATURE

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Application December 4, 1940, Serial No. 368,480

9 Claims. (Cl. 84—383)

This invention concerns means for holding reeds and the like upon the mouth pieces of musical instruments and especially for all those instruments in the clarinet and saxophone classes. Such means are generally known as ligatures because of the fact that musicians formerly used cord to hold the reed to the mouth piece. Today, metal clamps are commonly used to fasten the reed to the mouth piece which results in loss of tone quality when compared to the mellow tone of the cord wrapped reed and mouth piece.

The device of this invention is constructed and configurated from non-metallic materials which in no way depreciates the tone quality of the musical instrument. The ripe and mellow tone of the instrument is preserved without the burdensome task of wrapping and unwrapping cord and the like in order to clean or replace the reed. Applicant's device is modern, easy and quick to remove and replace, and yet simple in construction and artistic in appearance.

Applicant's device can be made of metal, but it is preferred to use non-metallic materials which will not corrode; and which is wedged onto the mouth piece in a manner that it will not squeeze the pores of the reed, but at the same time be more air-tight than known metal ligatures.

One of the principal objects of this invention is to present a pleasing reed ligature that is conveniently useful and which is not detrimental to tone quality, and which is economical to manufacture.

Another object is to provide a reed ligature that is quick and easy to remove and replace upon the mouth piece of a musical instrument because of the fastening means employed to hold it and the reed in place, and also because the ligature is configurated in a manner that it is convenient to handle.

Other objects, advantages and features of my invention will appear from the accompanying drawing, the subjoined detailed description, the preamble of these specifications and the appended claims.

Applicant is about to illustrate and describe one of the forms of his invention in order to teach one how to make, use and vend the same, but it is to be understood that the drawing and description thereof are not to limit the invention in any sense whatsoever, except as limited by the appended claims.

In the drawing:

Fig. 1 shows the invention in side elevation of the mouth piece of a clarinet with the invention applied thereto and shown partly in cross section.

Fig. 2 is a cross section of Fig. 1 taken substantially along the line 2—2 thereof.

Fig. 3 is a perspective view with parts broken away.

Fig. 4 is a perspective view of a part of the invention.

Fig. 5 is a perspective view of a modified form of the invention.

The reference character 1 indicates the mouth piece of a clarinet having the usual lip end 2 and reed 3 which covers a slot, not shown.

The invention comprises a ligature having a frusto-conical shell or sleeve 4 with a centrally disposed annular recess portion 5 on the outer surface of the shell and a pair of annular recess portions 6 and 7 in the inner surface of the shell. These latter recess portions are severed at right angles by a dove tailed recess 8 designed to receive a similarly dove tailed slide plate 9. An open slot 10 is provided in recess 8 to receive the finger knob 11 which is securely fixed to the slide plate. This plate is forced or snapped into the recess 8 when the knob 11 is alined with the slot 10.

The inner surface of the plate 9 is provided with a felt lining 12 which is cemented or otherwise suitably held thereto. It is the lining 12 which contacts the reed 3 and it is because of this cushion contact that the reed has a freer movement and hence better tone quality. In order to further improve the tone quality, felt strips 13 and 14 are cemented or otherwise suitably held in the recesses 6 and 7 respectively. These felt strips protrude beyond the inner surface of the shell so as to prevent contact of the mouth piece with the shell.

Because of the frusto-conical shape of the shell 4, and the slide plate 9, the shell can be wedged into place upon the mouth piece 1 and the reed snugly held into place by friction alone without the need of bothersome screws, etc.

The shell 4 and slide plate 9 can be made of most any kind of material suitable for the purpose, but, however, sound-deadening plastics are preferred such as "Lucite" and the like. "Lucite" is chemically known as methyl-methacrylate and some of its properties are: specific gravity 1.18 to 1.20; shrinkage 0.0025 in. to 0.005 in.; water absorption 0.5% by weight; tensile strength 9,000 to 12,000 lbs. per sq. in.; flexural strength 12,000 to 14,000 lbs. per sq. in.; Brinell hardness 500 kg. on 10 mm. ball, 17–20 resistant

to hydrochloric acid and 50% sulphuric acid at room temperature; insoluble in straight-chain hydrocarbons and in most fats, oils and waxes, will not resist alcohol in excess of 25% and ethyl ether. "Lucite" is readily dissolved by lower ketone and ester solvents and mixtures of aromatic hydrocarbons with small amounts of alcohols. It is difficult to ignite, but when ignited by direct flame, it will support combustion. When the ligatures are made of sound absorbing materials, raspy sounds are avoided and the musical instrument is much better appreciated.

Fig. 5 shows a modified form of the invention having a ligature shell or sleeve **15** which is also frusto-conically shaped. This shell also has a dove tailed recess axially thereof and an open slot therein **17**. This recess and slot is designed to receive the plate **9** and its associated parts for wedging the reed to the mouth piece of the musical instrument. Spaced around the inner surface of the shell **15** are a plurality of recesses **18** which are parallel with the recess **16**. These recesses **18** are provided with strips of felt **19** which are cemented or otherwise held in place. These strips also protrude beyond the inner surface of the shell so as to contact the mouth piece and hence space the shell from the mouth piece.

Having thus described my invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A ligature device for musical instruments comprising a cylindrical shell having a non-metallic lining, the inner surface of the shell having an annular recess to hold the lining.

2. In a ligature device for holding a reed to the mouth piece of a musical instrument, a clamp having a wall with an annular recess on its inner surface provided with an insulating strip to engage the mouthpiece.

3. A ligature device comprising a clamp with a cylindrical wall, an annular recess on the inner side of the wall, and insulating material in the recess and wedging means attached to the wall and adapted to slide along the inner side thereon.

4. In a reed holding device for a musical mouth piece, a sleeve, insulating means on the inner side of the sleeve, and slide means attached to the inner side of the sleeve for wedging it onto the mouth piece, a slot in the sleeve, and an extension from the slide means protruding through the slot.

5. In a reed holding device for a mouth piece, a sleeve, an annular recess on the inner side of the sleeve, insulating means on the inner side of the sleeve fixed in the recess, and slide means attached to the sleeve for wedging it onto the mouth piece, said insulating means consisting of an annular piece of felt.

6. In a reed holding device for a mouth piece, a sleeve, insulating means on the inner side of the sleeve, and slide means attached to the sleeve for wedging it onto the mouth piece, said insulating means consisting of an annular piece of felt, said slide means attached to the sleeve consisting of a finger controllable plate dovetailed in the under side of the sleeve.

7. In a reed holding device for the mouth piece of a musical instrument, a sleeve, slidable plate means for wedging the sleeve to the mouth piece, annular recesses in the inner surface of the sleeve having sound absorbing means therein which protrude beyond the inner surface of the sleeve.

8. In a reed holding device for the mouth piece of musical instruments, a slidable plate means for holding the sleeve snugly onto the mouth piece, axially alined and spaced apart strips of sound absorbing material on the inner surface of the sleeve to space the sleeve from the mouth piece.

9. In a reed holding device for the mouth piece of a musical instrument, a sleeve having a groove on its inner side, slidable plate means cooperating with the groove for clamping the device onto the mouth piece, said groove and plate means having dove tailed sides which snugly engage one another.

HERMAN O. TAFARELLA.