

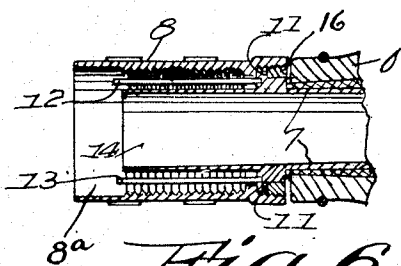
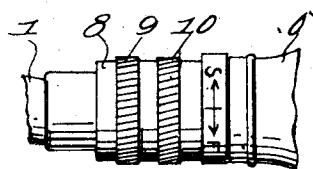
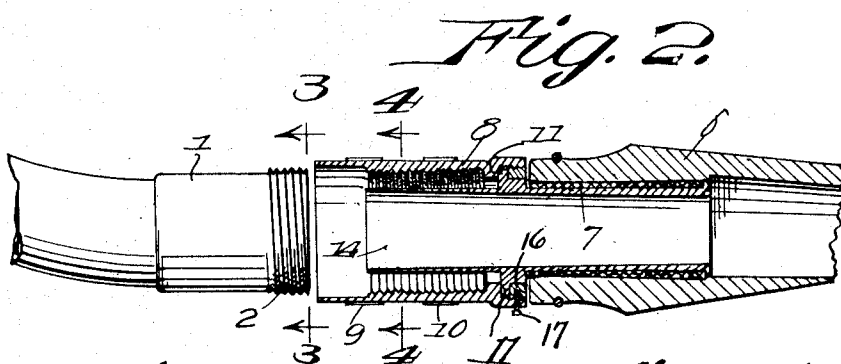
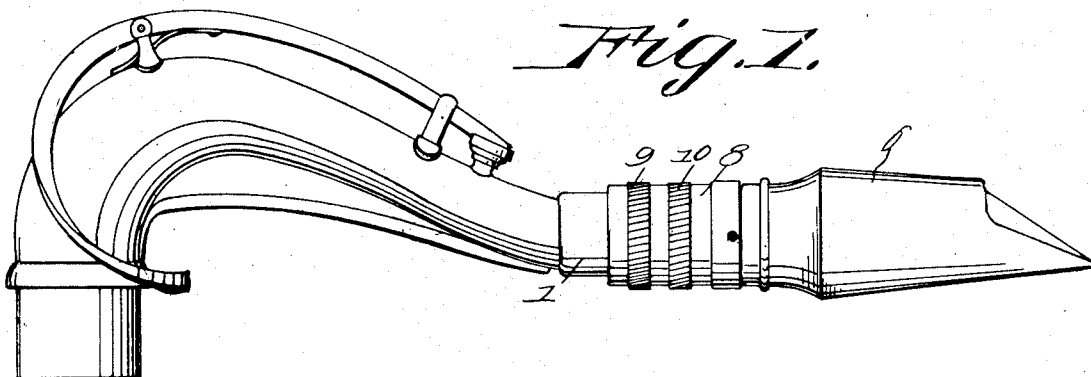
E. J. GULICK.

TUNING ATTACHMENT FOR WIND MUSICAL INSTRUMENTS.

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1,308,903.

Patented July 8, 1919.



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UNITED STATES PATENT OFFICE.

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TUNING ATTACHMENT FOR WIND MUSICAL INSTRUMENTS.

1,308,903.

Specification of Letters Patent.

Patented July 8, 1919.

Application filed February 20, 1918. Serial No. 218,343.

To all whom it may concern:

Be it known that I, EDWARD J. GULICK, a citizen of the United States, and resident of Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Tuning Attachments for Wind Musical Instruments, of which the following is a specification.

This invention relates to wind musical instruments particularly of the reed type and the object of the invention is to provide an improved means whereby the air column may be lengthened or shortened for the purpose of tuning.

While the invention is applicable to different forms of reed instruments, it is particularly adapted as a mouthpiece adjustment for saxophones.

I provide means whereby the instrument may be rendered flat or sharp by simply manipulating a threaded collar or sleeve.

I have provided means whereby the mouthpiece may have longitudinal movement imparted to it without any rotative movement with respect to the main portion of the instrument. I have also provided means whereby the attachment may be readily applied to existing instruments without unduly altering them.

In the drawings—

Figure 1 is a fragmentary side elevational view of a saxophone to which my invention is applied;

Fig. 2 is a longitudinal sectional view through the tuning attachment, the parts being separated;

Fig. 3 is an end view of the instrument part, separated on the line 3—3 of Fig. 2;

Fig. 4 is a sectional view on the line 4—4 of Fig. 2;

Fig. 5 is a fragmentary side elevational view of the tuning attachment; and

Fig. 6 is a longitudinal sectional view at right angles to the section shown in Fig. 2.

Referring now to the drawings, 1 designates the tubular end of an instrument, for example saxophone to which my invention is applied, said end being provided with external screw threads 2 and having in its end wall a plurality of guide receiving openings 4 and 5. 7 represents a thin tube that serves as a liner for the tubular end 1, and preferably also as a liner for the mouth-piece 6. The tube 7 carries an internally threaded sleeve or col-

lar 8 having knurled portions 9 and 10 and adapted for rotative movement on the tube 7 but held against longitudinal movement with respect thereto by the shoulder 11. A collar 16 having threaded engagement with sleeve 8 serves to hold the tube 7 in abutting relation with the sleeve 8. Collar 16 is retained in place by set screw 17. The internally threaded portion of the sleeve 8 is spaced away from the tube 7, to provide an annular guide in which the instrument end 1 may travel, and by which said end may be confined and guided while the tube 7 is acting as a liner for said end. Within this space are the longitudinally extending guide pins 12 and 13 rigid with the shoulder 11 fixed on the tube 7 so that when said pins enter the openings 4 and 5 the tube 7 will be held against rotative movement with respect to the end 1, and inasmuch as the mouthpiece 6 is carried by the tube 7 rotative movement of the mouthpiece will be prevented. An internally smooth flange 8^a on the sleeve 8 receives the end 1 of the instrument and guides said end to receive the liner tube 7 within its bore and the pins 12, 13 seat themselves, which will arrest the mouthpiece in proper position, whereupon continued turning will be limited to the sleeve alone and the mouth-piece and tubular end, while retaining proper relation to each other, may be given relative longitudinal adjustment at will.

The sleeve 8 is turned in the direction of the initial "S" (Fig. 5) to shorten the air column and sharpen the tone of the instrument, and in the direction of the initial "F" (Fig. 5) to lengthen the air column and flatten the tone of the instrument.

It will be observed that the attachment may be readily applied to instruments of the character described, and that the tuning or change of pitch may be accomplished with one hand of the player by simply turning the sleeve 8 in the proper direction. Being relatively thin, the liner tube 7 makes no dis-

advantageous abrupt change in the bore of the instrument at any tuning adjustment.

I claim:—

1. A tuning attachment for wind musical instruments comprising a tubular instrument end, a liner tube having an axially sliding bearing within said instrument end, and a sleeve surrounding said liner tube but separated therefrom and providing therewith an annular space extending substantially the length of tuning adjustment and fitting the instrument end, said liner tube and sleeve being united beyond said annular space by a bearing that permits turning but resists axial movement of the sleeve upon the liner tube, means being introduced between the sleeve and instrument end that translates a rotary movement of the one, into an axial movement in the other, and connection being provided between the liner tube and the instrument end which permits axial movement but resists rotation between them.

2. A tuning connection for two parts of a wind musical instrument comprising a liner tube adapted to carry the one and to slide axially within the bore of the other of two instrument parts to be connected, and having a pin and opening engagement that prevents relative rotation on the instrument part in which it slides, and a sleeve surrounding the liner tube but separated therefrom and forming therewith an annular space adapted to fit the end of the instrument part in which the liner tube slides, said sleeve having a feeding screw thread engagement with said last-named instrument part through which it develops relative sliding movement between the latter and the liner tube.

3. A tuning connection for two parts of a wind musical instrument comprising a

liner tube adapted to carry the one and to slide axially within the bore of the other of two instrument parts to be connected, and having a pin and opening engagement that prevents relative rotation on the instrument part in which it slides, and a sleeve surrounding the liner tube but separated therefrom and forming therewith an annular space adapted to fit the end of the instrument part in which the liner tube slides; said sleeve having a feeding screw thread engagement with said last-named instrument part through which it develops relative sliding movement between the latter and the liner tube; said sleeve also having a longitudinal extension that receives the end of said instrument part guides it to the feeding screw threads and positions the parts to insure the pin and opening engagement in the assembly of the parts.

4. In a tuning connection for the tubular parts of wind musical instruments, a liner tube having portions inserted within the bores of two parts to be connected, and having an axial sliding movement in one of said parts, a sleeve having a shouldered bearing upon said liner tube at a point intermediate its inserted portions and extending from said bearing axially over the sliding inserted part of said liner tube but separated therefrom and forming therewith an annular space that receives the instrument part in which the liner tube slides, means carried by the sleeve to develop said sliding movement of the liner tube in which it slides, and means carried by the liner tube to resist rotation of the instrument part that receives it.

The foregoing specification signed at Elkhart, Indiana, this 9th day of November, 1917.

EDWARD J. GULICK.