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2,495,484

MOUTHPIECE FOR REED MUSICAL INSTRUMENTS

Filed Aug. 3, 1945

2 Sheets-Sheet 1

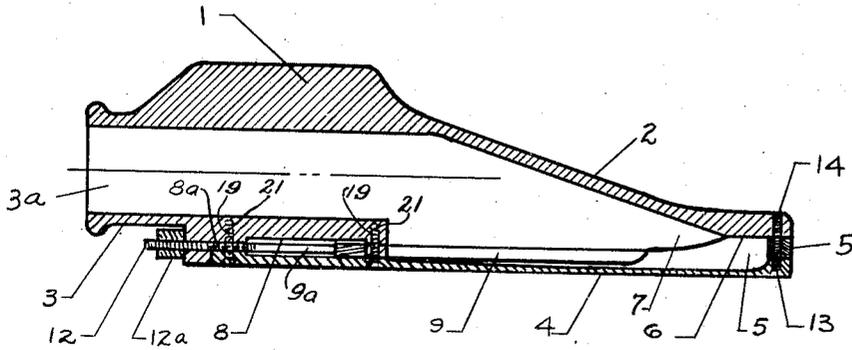


FIG. 1

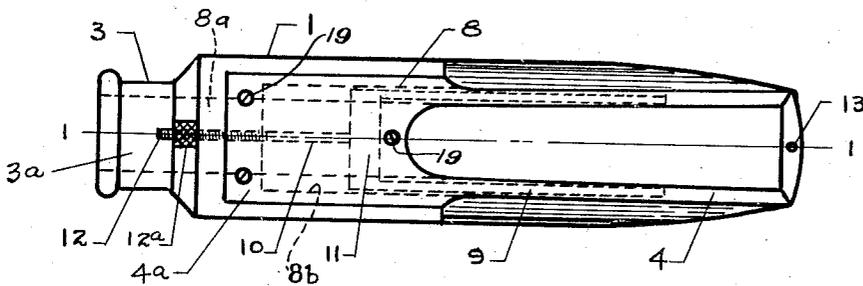


FIG. 2

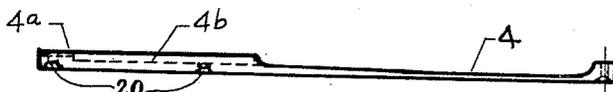


FIG. 6

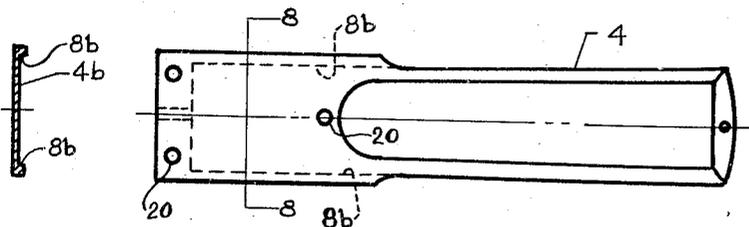
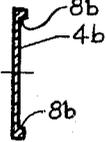


FIG. 7

FIG. 8



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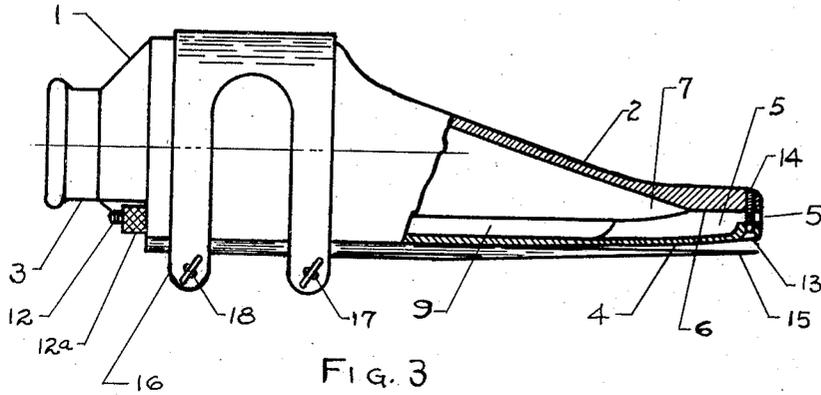


FIG. 3

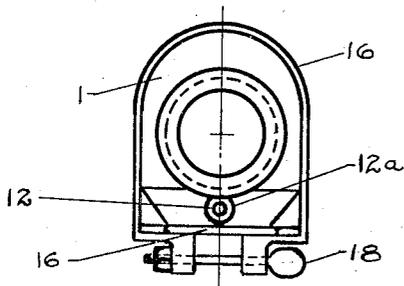


FIG. 4

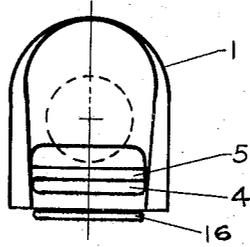


FIG. 5

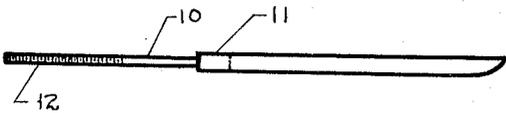


FIG. 9

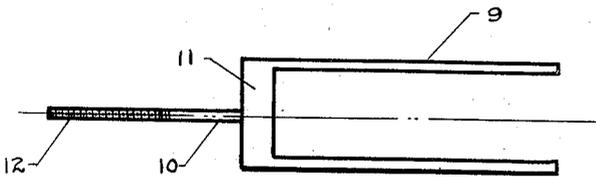


FIG. 10

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2,495,484

MOUTHPIECE FOR REED MUSICAL INSTRUMENTS

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7 Claims. (Cl. 84—383)

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My invention relates to an adjustable mouthpiece for musical instruments such as saxophones, clarinets, and other related reed musical instruments.

In playing a saxophone, clarinet, or other similar reed musical instrument, it is well known to musicians and those skilled in the art that the most pleasing tone quality, volume, pitch, et cetera, of the instrument is greatly dependent upon the mouthpiece and more specifically upon the contour of the face of the lay plate, since this controls the amount of reed in contact with the face of the lay portion and provides the desired interval between the mouth opening and the tip of the reed. At the present time, to the best of my knowledge, the contour and curvature of the lay is fixed and unchangeable in the mouthpieces on the market, since the lay is machined in, or otherwise made an integral part of the body of the mouthpiece.

Many musicians find it necessary to purchase several mouthpieces for the same instrument before they find one that meets their particular requirements, as to volume, depth of tone, pitch, richness and full round tones. Furthermore, not all mouthpieces perform the same on all instruments, and it is quite possible a musician may have a mouthpiece that suits his fancy and performs in a highly satisfactory manner on one instrument, but, if not adjustable, would not be as well suited to another instrument.

It is therefore the principal object of my invention to provide a mouthpiece for reed musical instruments wherein the contour of the face of the lay plate is adjustable to provide the desired interval between the mouth opening and the tip portion of the reed.

A further object of my invention is to provide a mouthpiece for a reed musical instrument wherein the lay plate is a separate element resiliently mounted within the body of the mouthpiece and adapted to be deflected at any point intermediate its ends to adjust or change its curvature and contour so as to control the amount of reed in contact with the face of the lay portion that will give the desired amount of reed free to vibrate.

A further object of my invention is to provide a mouthpiece for a reed musical instrument wherein a separate flexible lay plate is adjustable and resiliently secured within the body of the mouthpiece in such a manner as to regulate the interval between the mouth opening and the tip of the reed.

A further object of my invention is to provide

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a means of adjusting the contour of the face of the lay plate in a mouthpiece for reed musical instruments.

A further object of my invention is to provide a means to adjust the curvature of a flexible lay plate in relation to the reed to any desired length or depth within the constructional limits of the mouthpiece.

A further object of my invention is to provide a means to adjust or change the contour of the face of the lay plate in relation to the bottom face of the reed to produce any desired volume, tone, sound or pitch within the inherent limits of the mouthpiece.

A further and important object of my invention is the provision of an adjustable fork positioned for longitudinal movement with respect to the body of the mouthpiece and the lay plate to adjustably establish the start of the bending point of the lay plate to govern the amount of reed in contact with the face of said lay plate which controls the amount of reed allowed to vibrate.

Another object of my invention is to provide a lay plate for a mouthpiece for a reed musical instrument with plural adjustments whereby an infinitesimal number of combinations of adjustments may be made to the contour and curvature of the lay plate to vary the length and depth of the interval between the mouth opening and the tip portion of the reed.

Other objects and advantages of my invention will become apparent during the course of the following description and appended claims in connection with the accompanying drawings illustrating the preferred constructional embodiments of my invention, wherein like parts are designated by like numerals.

Figure 1 is a longitudinal sectional view taken on the line 1—1 of Figure 2, through the mouthpiece which forms the subject matter of the instant invention.

Figure 2 is a bottom plan view thereof with the reed and ligature or reed clamp removed.

Figure 3 is an assembly view, with parts broken away and in section, of my adjustable mouthpiece, with the ligature and reed in operating position and showing the lay plate in one of its many possible adjusted positions.

Figure 4 is an end view of my mouthpiece from the sleeve end.

Figure 5 is an end view of my mouthpiece from the mouth opening end with the reed in place and the ligature removed.

Figure 6 is an elevational view of the adjust-

able flexible lay plate forming a part of my invention.

Figure 7 is a plan view of the lay plate shown in Figure 6.

Figure 8 is a section taken on the line 8—8 of Figure 7 showing the recessed construction of my lay plate to allow the adjusting fork to operate in.

Figure 9 is an elevational view of the adjustable fork forming a part of my mouthpiece.

Figure 10 is a plan view of the adjustable fork shown in Figure 9.

Referring to the drawings it will be noted that my mouthpiece is of the usual hollow tubular construction, typical of mouthpieces for reed musical instruments. It is provided with a body 1, beveled lip portion 2 and a sleeve end 3 for attachment to the instrument. The separate flexible lay plate 4 is resiliently mounted upon a spongy adhesive sealing surface 5 preferably composed of a self vulcanizing sealed sponge rubber, which in turn adheres to the bottom surface 6 of the mouthpiece adjacent the mouth opening 7 and extends longitudinally of the mouthpiece in a rearward direction towards the sleeve end 3.

A recess 8 is formed in the bottom surface 6 of the mouthpiece 1, the portion of the recess nearest the sleeve end 3 providing a seating surface 8a for the rearward end 4a of the lay plate 4. The lay plate is further secured to the bottom surface 6 by means of machine screws 19, or the like, extending through holes 20 in the lay plate 4 and threadably engaging the tapped holes 21 in the body 1. The lay plate 4 is recessed as at 4b to provide guide ways 8b for the adjusting fork 9. The enclosure formed by the recessed portion 8 in the mouthpiece body 1, and the recessed portion 4b in the lay plate 4 provides an operating space 9a for the adjustable fork 9 to slide in.

A stem 10 is formed with, or secured to, the rearward portion 11 of the fork 9 and is threaded as at 12 for a portion of its length. It is adapted to threadably engage the body 1 near the outer end of the sleeve 3 to provide longitudinal movement of said fork. By manipulating an adjusting screw nut 12a the adjusting fork 9 is moved longitudinally backward or forward to regulate the location of the start of the bending point of the lay plate intermediate its ends. This longitudinal movement of the fork 9 provides for a multitude of combinations of contours and curvatures of the lay plate when used in conjunction with the up and down adjusting screw 13 to be described in the next paragraph, and will give minutely fine and accurate adjustment to the lay plate 4 with respect to the reed. This movement controls the length of curvature or contour of the lay plate and regulates the amount of reed in contact with the face of the lay plate. It also has a direct bearing upon and controls the amount of reed allowed to vibrate and establishes the desired interval between the mouth opening and the contiguous portion of the reed. It definitely affects the volume, tone quality, pitch, et cetera.

For purpose of illustration, an adjusting screw 13 is threaded into the body 1 as at 14 to adjust the lay plate 4 up and down at approximately right angles to the longitudinal axis of the mouthpiece. This is a positive method of controlling and adjusting the interval between the end of the lay plate and the reed. The adjusting screw may be located at various places on the body 1 and connected indirectly to the end of the lay

plate by means of a wire or other methods (not shown).

A reed 15 of the usual construction lies upon the rearward portion of the lay plate 4 and is held thereon in the conventional manner by a ligature or clamp 16, provided with front and rear adjusting screws 17 and 18. The portion of the reed contiguous to the lower surface of the lay plate and not restricted by the ligature is generally referred to as the tip portion and is that part of the reed allowed to vibrate and produce sound.

By the use of a mouthpiece incorporating my plurally adjustable lay plate it is possible to reproduce any contour and curvature now on the market as well as to create any new combined contour and curvature desired.

From the foregoing disclosure and description it is believed that the method of adjusting my mouthpiece will be apparent to those skilled in the art. By merely adjusting the screws 12 and 13 the contour of the face of the lay plate may be changed in relation to the bottom face of the reed so as to produce a multitude of combinations of intervals giving the desired volume, tone, sound, or pitch within the inherent limits of the mouthpiece.

It will be readily understood that with my invention the position of the reed is not altered or adjusted. Instead the flexible lay plate is capable of being adjusted to give any conceivable interval between the mouth opening and the free end of the reed, allowing as much or as little of the reed to vibrate as is desirable.

It is to be understood that my mouthpiece may be made of metal, plastic, or other suitable material either cast or otherwise formed.

While only the preferred form of my invention has been disclosed and described herein, I do not wish to be limited or restricted to the specific details set forth, and wish to reserve to myself any further embodiments, modifications, and variations that may appear to those skilled in the art or fall within the scope of the appended claims.

Having fully described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. In a mouthpiece for a reed musical instrument, the combination of a mouthpiece, a reed and an adjustable clamp for securing said reed to said mouthpiece, said mouthpiece comprising a hollow body with a mouth opening therein and a recess extending longitudinally of said opening to form guide ways, an adjusting fork slidably positioned within said guide ways, a resilient adhesive mounting secured in sealing relation to said mouth opening, a flexible lay plate secured at its rearward end in said mouthpiece and resiliently sealed to said adhesive mounting in the mouth opening, means to move said fork longitudinally of the axis of said mouthpiece to progressively bear against said lay plate to deflect the same intermediate its ends and a second means adjustably mounted within said mouth opening to provide vertical adjustment to the mouth opening end of said lay plate, both of said above named means cooperating to provide a multitude of infinitesimally small independent adjustments to said lay plate to vary the interval between the lay opening and the tip portion of said reed.

2. In a reed musical instrument, the combination of a mouthpiece having a mouth opening, a flexible lay plate secured in said mouthpiece, a reed having a tip portion, said reed resting on

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said lay plate, clamping means for holding said reed in position, means adjustably mounted within said mouthpiece to selectively contact said lay plate along its longitudinal axis and a second means adjustably mounted within said mouthpiece to progressively contact said lay plate vertically adjacent said mouth opening, both of said means cooperating to vary the length and depth of the interval between said lay plate and the tip portion of said reed.

3. In a reed musical instrument, the combination of a hollow mouthpiece provided with a mouth opening portion at one end thereof, a resilient adhesive mounting secured in said mouth opening and forming a seal therewith, a flexible lay plate resiliently sealed to said mounting, a reed having a tip portion, said reed supported on said lay plate, clamping means for securing said reed in position, plural means adjustably positioned within said mouthpiece, one of said means contacting said lay plate at selected intervals along its longitudinal axis intermediate its ends and another of said means contacting said lay plate vertically adjacent said mouth opening, both of said means cooperating to provide a series of combination adjustments to said lay plate to vary the length and depth of the interval between said lay plate and the tip portion of said reed.

4. In a reed instrument, the combination of a mouthpiece having a mouth opening, a flexible lay plate resiliently sealed in said mouthpiece, a reed supported on said lay plate, said reed provided with a tip portion, clamping means for securing said reed in position, means adjustably positioned within said mouthpiece to longitudinally vary the point of contact with said lay plate intermediate its ends to control the length of curvature of said lay plate to regulate the amount of said plate in contact with said reed and a separate means adjustably positioned within said mouthpiece to vertically adjust said lay plate adjacent said mouth opening, both of said means cooperating to provide selective combination adjustments to said lay plate to regulate the length and depth of the interval between said lay plate and tip portion of said reed.

5. In a reed instrument, the combination of a hollow mouthpiece provided with a mouth opening, a resilient seal mounted in said mouth opening, a flexible lay plate resiliently sealed to said mounting, a reed having a tip portion, said reed supported on said lay plate, clamping means for holding said reed in position, means adjustably mounted within said mouthpiece to selectively vary the longitudinal point of contact with said

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lay plate intermediate its ends and a separate means adjustably mounted within said mouth opening to provide vertical adjustment to the end of said lay plate adjacent said mouth opening, each of said above named means providing a plurality of independent adjustments combining to selectively vary the interval between said lay plate and said reed.

6. In a reed instrument, the combination of a hollow mouthpiece provided with a mouth opening portion at one end, a sleeve portion at the opposite end and a recess in the bottom surface thereof intermediate the end portions, a flexible lay plate secured within said recess and resiliently sealed in said mouth opening, a reed positioned upon said lay plate and having a tip portion contiguous with said mouth opening portion, an adjustable clamp for securing said reed in position on said mouthpiece and means adjustably mounted within said body near said sleeve portion to progressively contact said lay plate longitudinally intermediate its ends to control the location of the start of the bending point of said lay plate to regulate the amount of said plate in contact with said reed.

7. A mouthpiece for a reed musical instrument comprising a hollow body, a beveled lip portion formed at one end of the body and having a mouth opening therein, a resilient mounting secured in the mouth opening and forming a seal therewith, a flexible lay plate resiliently seated upon said mounting, a reed secured upon said lay plate and having its tip portion contiguous with said opening and means adjustably secured within said mouth opening to vertically adjust said lay plate adjacent said mouth opening to vary the interval between the lay opening and the tip portion of said reed.

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