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MOUTHPIECE FOR SAXOPHONES AND CLARINETS

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Fig. 1

Fig. 2

Fig. 3

Fig. 4
The invention relates to improvements in a mouthpiece for musical wind instruments, particularly for saxophones and clarinets.

It is an object of the invention to provide a mouthpiece with means for changing the tone-color of the musical instrument.

Another object of the invention is to provide a mouthpiece with means for changing the tone-color of the musical instrument during the playing of the same.

In accordance with the invention, the mouthpiece is provided within its air channel with an adjustable member preferably wedge-shaped, which is slidably adjustably mounted on the inner face of the inclined wall of the beak-shaped tubular body of the mouthpiece, so that upon a slidable adjustment of said member lengthwise of the air channel in the tubular body the cross-sectional area of the same is progressively changed and thereby the tone color.

Still another object of the invention is to operatively connect said member with a slide which is slidable mounted in a groove within said mouthpiece body and is provided with an outwardly extending knob for convenient manual adjustment of the slide and the member for changing the effective cross-sectional area of the air channel in said mouthpiece body.

It is also an object of the invention to connect said slide with a Bowden cable which leads to the manually operable keys of the instrument so that the slide may be adjusted by the fingers which manipulate the keys.

With these and other objects in view, the invention will now be described in the following description with reference to the accompanying drawings which illustrate a preferred embodiment of the invention.

FIG. 1 is a side elevation view of the mouthpiece; FIG. 2 is a bottom view of the mouthpiece shown in FIG. 1, but with the reed holding device omitted; FIG. 3 is a longitudinal sectional view of the mouthpiece with the reed holding device omitted; and FIG. 4 is a cross-sectional view of the mouthpiece along the line 4—4 of FIG. 1 and looking in the direction of the arrows.

FIG. 5 illustrates in side elevation, with parts broken away, a mouthpiece employing a Bowden cable.

Referring to the drawing, the tubular body 1 of the mouthpiece is of conventional beak-shape and as shown in FIG. 4 has a substantially rectangular bore 2. The front end of the body 1 has an inclined top wall 3 while the opposed flat bottom wall 4 extends parallel to the longitudinal axis of the body 1 and has removably attached thereto the customary reed 6. The large slanted end of the beak-shaped body receives—as shown in the FIGS. 1 and 2—the tubular neck 7 of the instrument which may be a saxophone or a clarinet. The holding device for the reed 6 comprises a U-shaped clip whose spaced parallel legs 8 are curved inwardly at their outer ends 9 to engage grooves 10 in the upper wall 3 of the body 1 while the base 11 of the clip carries a clamping screw 12 engaging a pressure plate 13 which urges the reed 6 against the flat lower face of the bottom wall 4 of the body of the mouthpiece as shown in the FIGS. 1 and 4.

In accordance with the invention, a separate wedge-shaped member 14 is arranged within the bore 2 of the tubular body 1 for the purpose of gradually changing the effective cross-sectional area of the bore 2 when the wedge-shaped member 14 is slidably adjusted lengthwise of the bore. This wedge-shaped member 14 occupies the entire width of the substantially rectangular bore 2 and is movable along the inner face of the inclined top wall 3. The member 14 is attached to one end of a rigid rod 15 the other end of which is attached to a slide 16 which is slidably mounted in a half-open groove 17 provided in the body 1 to extend parallel to the inclined wall 3. A knob 18 projects upwardly from the slide 16 and outwardly from the groove 17 so as to be accessible from the outside for permitting a manual adjustment of the slide 16 and therewith of said wedge-shaped member 14. If desired, a Bowden cable 20 may lead from the slide 16 to the keys of the instrument so that the wedge-shaped member 14 may be adjusted manually during the playing of the instrument. For the purpose of holding the Bowden cable attachment in place on the mouthpiece a suitable slideable and pivotally mounted cover 21 is provided.

The operation of the mouthpiece of the invention is as follows:

Depending upon the desired tone color the wedge-shaped member 14 is adjusted lengthwise along the inner face of the inclined wall 3 by the knob 18 or by the Bowden cable. FIG. 1 illustrates in dash lines the two possible end positions of the member 14, while FIG. 2 illustrates the forward end position in full lines and the rear end position in dash lines. In the illustrated embodiment of the invention the total length of the adjustment path is about equal to the length of the wedge-shaped member 14. Furthermore, in the rear end position of the member 14 the effective cross-section of the air channel in the bore 2 is substantially the same as the forward end position of the member 14.

When the effective cross-sectional area of the bore 2 is small, then very high pitched and brilliant tones are produced. If, however, the effective cross-sectional area is large, the sound will be full and mellow. The tone color may be changed gradually between these two limits by a slidable adjustment of the wedge-shaped member 14, even during the playing of the instrument.

What I claim is:

1. A mouthpiece for a saxophone and a clarinet, comprising a beak-shaped tubular body having an air channel therethrough and provided with an inclined top wall and a flat bottom wall, a reed detachably attached to said bottom wall, a separate member restricting the cross-sectional area of said air channel in said tubular body and mounted for lengthwise adjustment on the inner face of said inclined top wall, and means accessible from the exterior of said mouthpiece for adjusting said separate member lengthwise along said inclined wall during the playing of the instrument.

2. A mouthpiece for a saxophone and a clarinet, comprising a beak-shaped tubular body having an air channel therethrough and provided with an inclined top wall and a flat bottom wall, a reed detachably attached to said bottom wall, a separate wedge-shaped member restricting the cross-sectional area of said air channel in said tubular body and mounted for lengthwise adjustment on the inner face of said inclined top wall, and means accessible from the exterior of said mouthpiece for adjusting said separate wedge-shaped member lengthwise along said inclined wall during the playing of the instrument.

3. A mouthpiece according to claim 1, in which said tubular body has a substantially rectangular bore and that
said separate member having a width equal to the width of said rectangular bore.

4. A mouthpiece for a saxophone and a clarinet, comprising a beak-shaped tubular body having an air channel therethrough and provided with an inclined top wall and a flat bottom wall, a reed detachably attached to said bottom wall, a separate member restricting the cross-sectional area of said air channel in said tubular body and mounted for lengthwise adjustment on the inner face of said inclined top wall, and means accessible from the exterior of said mouthpiece for adjusting said separate member lengthwise along said inclined wall, said means including a slot provided in said top wall, a slide slidably mounted in said slot and having a knob extending outwardly from said slot and accessible from the outside of said body for manual slidable movement along said slot during the playing of the instrument, and means rigidly connecting said slide with said separate member.

5. A mouthpiece for a saxophone and a clarinet, comprising a beak-shaped tubular body having an air channel therethrough and provided with an inclined top wall and a flat bottom wall, a reed detachably attached to said bottom wall, a separate member restricting the cross-sectional area of said air channel in said tubular body and mounted for lengthwise adjustment on the inner face of said inclined top wall, and means accessible from the exterior of said mouthpiece for adjusting said separate member lengthwise along said inclined wall, said means including a manually operable slide mounted in said body and operatively connected with said separate member for moving it along said inner face of said inclined wall during the playing of the instrument.

6. A mouthpiece for a saxophone and a clarinet, comprising a beak-shaped tubular body having an air channel therethrough and provided with an inclined top wall and a flat bottom wall, a reed detachably attached to said bottom wall, a separate member restricting the cross-sectional area of said air channel in said tubular body and mounted for lengthwise adjustment on the inner face of said inclined top wall, and means for adjusting said separate member lengthwise along said inclined wall, said means including a manually operable slide mounted in said body and operatively connected with said separate member for moving it along said inner face of said inclined wall, and a Bowden cable connected to said slide for adjusting the latter from a point remote from said mouthpiece.

7. The combination of a saxophone and clarinet mouthpiece having an air channel extending therethrough, with a separate adjustable member arranged within said mouthpiece in such a manner that the cross-sectional area of said air channel is varied when said member is adjusted lengthwise of said air channel, and means adapted to continuously adjust said member during the playing of the instrument to which said mouthpiece is attached.

References Cited by the Examiner

UNITED STATES PATENTS

2,397,593 4/46 Brilhart 84--383

FOREIGN PATENTS

646,895 11/50 Great Britain.

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