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MOUTHPIECE FOR BRASS WIND INSTRUMENTS

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3 Claims. (Cl. 84—398)

This invention relates to mouthpieces for brass wind instruments, such as cornets, trombones, horns, and like trumpets.

In mouthpieces now generally used in connection with a brass wind instrument, the free and exposed open lip end has an air chamber or cup generally of flared outline. Such formation in the cup affects the quality of the tone produced, since the air space, in the cup, between the lips of the user when compressed against the rim thereof and the restricted bore portion, is relatively large to produce lower tones. With mouthpieces having cups of this construction, it is difficult to play notes in the upper registry, or to obtain notes of brilliant quality.

It is one object of this invention, therefore, to provide a simply constructed and efficiently made integral mouthpiece which will avoid the above-discussed disadvantages.

With these and other objects and features in view, the invention embodied herein generally includes a cup having a lip chamber and a tone-producing chamber with a substantially flat bottom or base making a filleted angular contact with the side wall of the lip chamber to form a comparatively sharp corner, the side wall of said lip chamber being slightly curved to its top portion, while the tone-producing chamber is inclined to form a sharp corner with the base of the cup of the lip chamber, the bore of the tone-producing chamber communicating directly with the bore of the mouthpiece.

The invention further consists in the new and novel features of construction and the new and original arrangement of parts in a mouthpiece hereinafter described and shown in the drawings and finally claimed.

In the accompanying drawing:—

Figure 1 is a magnified longitudinal section of the preferred embodiment; and

Figure 2 is an enlarged top plan view of the embodiment; and

Figure 3 is a diagrammatic view of the curved part of the inside of the lip chamber and tone-producing chamber in respect to the axis of the mouthpiece, and shown with cross lines thereon to indicate the boundaries of the respective lip chamber and tone-producing chamber.

Similar characters of reference designate corresponding parts throughout the view.

Referring to the drawing, there is shown a stem or hollow tube 5 which merges into a throat portion 6. At the end of tube 5 and merging with the throat portion 6, is a base collar 7 having a rim 8. The inner contour of the mouthpiece shows an axial bore 9 extending the length of the stem or tube and is restricted at the throat portion and the base collar 7 at 1a. In the base collar the rim 8 has a rounded outer and flat top portion 10. Each of these elements of the mouthpiece are integrally made and of fixed form.

The novel feature consists in providing a lip chamber and a tone producer. The lip chamber 12 extends from the rim of the top portion 10 to 10 a table portion formed by a flat surface 13 which at its outer periphery makes a sharp angle with the side wall of the tone chamber 17, a fillet 12a being interposed between the table portion 13 and the portion 15 of relatively long curvature. 15 The bottom base 13 is smoothed and planed. The inner curved wall 15 of rim 8 is vertically disposed but of curvate contour, opening outwardly with the smallest diameter at the table portion and the largest diameter at the rim portion, so as to provide a substantially evenly decreasing cross-sectional chamber, into which the lips can enter and the air passing through the lips disseminates. The upper portion 14 of the wall 15 may be slightly rounded inwardly from the top 25 toward the axis of the cup to form a slightly convex contour.

The lower wall portion 15 of the cup makes a sharp corner and an angle of substantially 90° or more. The center of the flat portion 12 with the opening 16 permits the air waves to pass into the tapering or conical bore 17 of the sound-producing portion.

By the novel construction of the cup formation in the mouthpiece, when the user compresses his lips against the top surface 10 of the rim 8 and the forward part of the lips protrudes into the lip chamber when blowing thereinto, the breath is introduced and strikes against the flat surface 13 having a sharp angle 16 with the wall of the tone chamber 17. Also, the air blown into the lip chamber or cup, strikes the base thereof and the waves thus set up easily and gradually roll toward the flared central opening 18 into the restricted tapering bore 23 in the base collar. 45 After the waves or vibrations pass out of the tone producer 17, they enter the bore 23 as heretofore described.

The mouthpiece described herein is adapted for easy blowing, and is highly effective and desirable for producing clear tones. In construction, the mouthpiece is provided with a cup having a flat base making a sharp-cornered edge 12a with the upwardly projecting curved side.
wall forming the lip portion, and with a tone-producing portion below the flat base. The plane passing through the rim is substantially parallel with the flat base portion of the cup. The base of the tone-producing portion is provided with a central flared opening leading into a restricted bore of the mouthpiece, the flare continuing from the flat portion or base and the base is substantially perpendicular to the longitudinal axis of the mouthpiece. Instead of having the base perpendicular to the axis of the piece, this flat base may incline very slightly to aid in the moisture more readily moving toward the central opening.

While one embodiment of my invention taken in connection with the accompanying drawing has been described, it is evident that various changes and modifications as to form, size, and use of material, may be made without departing from the spirit and scope of my invention as defined in the herein appended claims.

I claim:—

1. A mouthpiece for brass wind instruments comprising a member having an opening therethrough and provided with an outwardly enlarging tone chamber, said member having a lip chamber extending outwardly of the tone chamber, said lip chamber being greater in diameter than the greatest diameter of the tone chamber and having its bottom wall thereof disposed substantially perpendicular to the longitudinal axis of the member, the side wall of the lip chamber meeting the outer edge of the bottom wall of the lip chamber on a relatively long curvature.

2. A mouthpiece for brass wind instruments comprising a member having an opening therethrough and provided with an outwardly enlarging tone chamber, said member having a lip chamber extending outwardly of the tone chamber, said lip chamber being greater in diameter than the greatest diameter of the tone chamber and having its bottom wall thereof disposed substantially perpendicular to the longitudinal axis of the member, the side wall of the lip chamber meeting the outer edge of the bottom wall of the lip chamber on a relatively long curvature.

3. A mouthpiece for brass wind instruments comprising a member having an opening therethrough and provided with an outwardly enlarging tone chamber, said member having a lip chamber extending outwardly of the tone chamber, said lip chamber being greater in diameter than the greatest diameter of the tone chamber and the wall of said lip chamber being flared outwardly, and a table portion interposed between the inner end of the lip chamber and the outer end of the tone chamber, said table portion being substantially perpendicular to the axis of the mouth-piece.