April 24, 1945. A. BRILHART 2,374,579

DOUBLE REED

Filed Sept. 15, 1942

Fig. 1

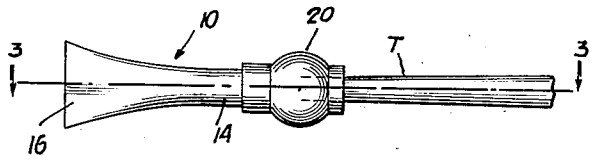


Fig. 2

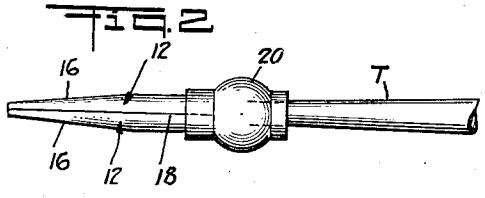


Fig. 3

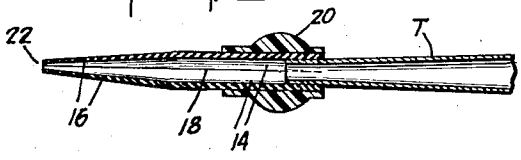


Fig. 4

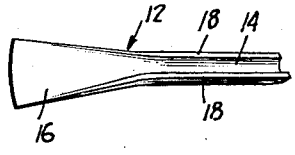


Fig. 5

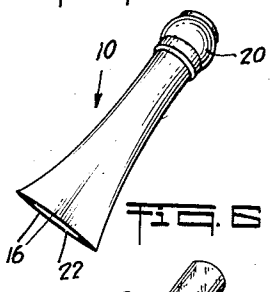


Fig. 6

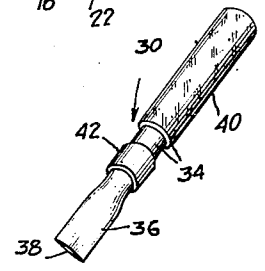


Fig. 8

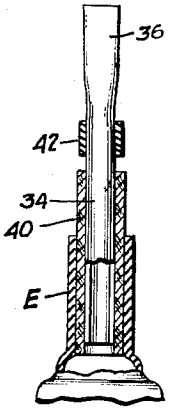


Fig. 7

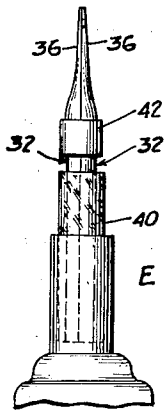


Fig. 9

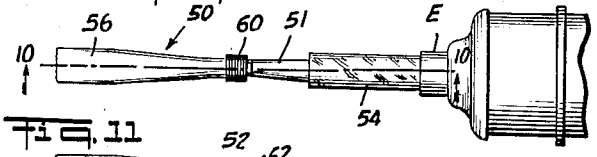


Fig. 11

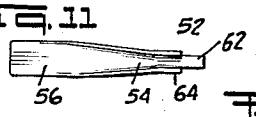
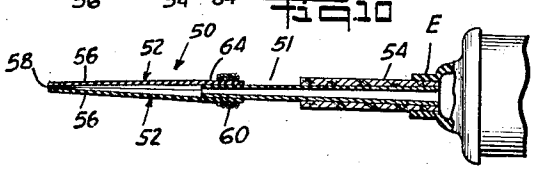


Fig. 10



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UNITED STATES PATENT OFFICE

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DOUBLE REED

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Application September 15, 1942, Serial No. 458,357

3 Claims. (Cl. 84—383)

This invention relates to reeds for musical instruments of the double reed type, for example, bassoons, oboes and English horns.

The primary purpose of the present invention is to obviate the objections and disadvantages in respect to the wooden reeds for musical instruments of the double reed type and to provide double reeds which possess important advantages over double reeds made of wood.

When a double reed which is made of wood is used, the opening between the vibratile tongue portions of the reed varies with the degree of wetness or dryness of the reed, so that it is difficult and takes time to condition the reed properly in respect to the moisture content thereof so that the reed is suitable for use. Moreover, after the reeds have been used, they usually become wet and the opening changes beyond a tolerable limit. Moreover, when these reeds are made of wood, it is difficult to provide in the same reed, companion reed members which properly match each other and it is also difficult to make reeds of uniform characteristics or to duplicate reeds which have happened to satisfy the wishes of various musicians. Further, in the case of a double reed for a bassoon, the part which fits over the air-supply pipe or neck of the bassoon being initially substantially elliptical in cross section must be reamed out in order to fit over the end of said air-supply tube. In the case of a double reed for an oboe, the two reed parts made of wood and combined to form the double reed form an opening which is approximately the shape of a flattened ellipse and it is accordingly necessary to flatten the end of the tube upon which the reed parts of the double reed are mounted.

The above mentioned and other objections to double reeds made of wood are obviated in accordance with the present invention. More particularly, the double reeds embodying the present invention are formed by molding them of a plastic, for example, "Lucite," "Vinylite," Bakelite, Celluloid, etc., whereby said reeds are uneffected by moisture and therefore retain their shape and whereby said reeds or the companion parts thereof can be uniform or in accordance with the musician's preferences. Also, the double reed can be easily provided with a circular inner surface at the end thereof which is attached to the air-inlet pipe, or to a metal tube which connects the reed to the musical instrument, thus eliminating the reaming operation heretofore necessary in fitting a wooden double reed to an instrument such as a bassoon, or, in the case of the oboe, eliminating the necessity for flattening the small metal tube on which the reeds are mounted.

The above and other objects, features and advantages of the invention will be fully understood from the following description, considered in connection with the accompanying illustrative drawing.

In the drawing:

Fig. 1 is a top view of a reed embodying the present invention attached to the air-supply tube or neck of a bassoon;

Fig. 2 is a side view of the reed and part of the neck of the bassoon illustrated in Fig. 1;

Fig. 3 is a sectional view on the line 3—3 of Fig. 1;

Fig. 4 is a perspective view of a reed member for forming a double reed for a bassoon;

Fig. 5 is a perspective view of a double reed for a bassoon;

Fig. 6 is a perspective view of a double reed for an oboe;

Fig. 7 is a side view of an oboe reed mounted in the end of the oboe;

Fig. 8 is a top view of an oboe reed and the end of the oboe in which the reed is mounted, parts being cut away for the purpose of illustration;

Fig. 9 is a top view of an oboe reed made in accordance with another form of the invention, said reed being attached to the oboe;

Fig. 10 is a sectional view on the line 10—10 of Fig. 9;

Fig. 11 is a view of an oboe reed member for forming the reed illustrated in Figs. 9 and 10.

Referring now to the drawing in detail and first to the bassoon reed 10 illustrated in Figs. 1 to 5, said reed is formed of two reed members 12 of identical construction, one of said members being illustrated in Fig. 4. Said reed member 12 is molded by any suitable molding operation of a suitable plastic, for example, "Lucite," "Vinylite," Bakelite, Celluloid, cellulose acetate, etc., and comprises a semi-cylindrical tubular part 14 and a vibratile tongue part 16. When two reed members 12 are combined to form the double reed 10 illustrated in Figs. 1 to 3, and 5, said double reed comprises a molded-plastic body having a hollow tubular part defined by the parts 14 of the companion members 12, and a vibratile tongue formed by the tongue portion 16 of said companion reed members. In the double reed 10, the companion members 12 are secured to each other along the adjacent side edges 18 of the two members from the rear end of the dou-

ble reed into which the tube T of the musical instrument is fitted substantially to the forward end of said tubular part, that is at the point at which the laterally flaring tongue portions 16 merge into the tubular part. Edges 18 may be joined to each other in any suitable way, depending upon the nature of the plastic material used in forming the reed members, for example, by fusing said edges to each other by heat or by a solvent, when the nature of the plastic permits of this, or by joining said edges by any suitable adhesive or adhesive-forming substance applied to said edges. As here shown, the double reed 10 is provided with an enlargement 20 formed of a plastic or of any other suitable material positioned over the tubular part of the double reed, this enlargement providing a finger piece for facilitating the application to and removal of the reed from the tube T and serving also as additional means for reinforcing the securement of the two reed members together. When enlargement 20 is formed of a plastic, it is preferably molded over the reed in any suitable way, as by a second molding operation.

It will be understood that the vibratile tongue portions 16 of the reed are free from direct securement to each other, and that they can vibrate and move relatively to each other. Said vibratile tongue portions 16 are outwardly convex, and being disposed with their inner concave surfaces in opposed or confronting relation, define an opening 22 which leads to the interior of the tubular part of the reed, the latter being in communication with the interior of tube T for the passage of the air to the bassoon. The vibratile tongue portions 16 taper in thickness to a suitably thin front edge portion and progressively increase in width from their juncture with the tubular part of the reed toward the free front end of the vibratile tongue. In the double reed, the tongue portions 16 of the companion reed members converge toward each other from their tubular parts.

Referring now to the double reed 30 for an oboe, as illustrated in Figs. 6 to 8, said oboe reed is formed substantially in the same way as reed 10 except that its tubular part is of smaller diameter and that its vibratile tongue is narrower than the corresponding parts of the bassoon reed. Said oboe reed 30 is formed of two identical reed members 32, each having a semi-cylindrical tubular part 34 and a vibratile tongue portion 36. Each reed member 32 is formed by molding the same of a suitable plastic as indicated above with reference to the bassoon reed 10, whereby two of said reed members can be readily combined to form a double oboe reed. It will be understood that the companion reed members 32 are secured together at their adjacent side edges to form the cylindrical tubular portion which extends rearwardly from the vibratile tongue of the reed, said vibratile tongue portions of the two reed members being free from direct securement to each other whereby said vibratile tongue portions can vibrate and move with respect to each other. As in the case of the bassoon reed, the vibratile tongue portions 36 are outwardly convex, and being disposed in opposed confronting relation, they define an opening 38 at the forward end of the reed which communicates with the interior of the tubular part of the reed, the latter communicating with the inlet of the oboe. A cork or other gasket sleeve 40 is fitted over the tubular part of the reed for engagement in the inlet end E of the oboe. A collar 42 preferably formed of a plastic or of a thread wound around the tubular part of the reed adjacent the vibratile tongue thereof provides a finger piece and reinforces the securement of the tubular parts of the reed members to each other adjacent the vibratile tongue portions thereof.

In the form of the invention illustrated in Figs. 9 to 11, the oboe reed 50 is shown attached to the end of a metal tube 51 which carries the cork or other gasket sleeve 54 which connects the reed to the inlet end E of the oboe. Said double reed 50 is formed of two reed members 52, one of which is shown in Fig. 11. Reed member 52 is formed by molding the same from a suitable plastic as referred to above in connection with reeds 10 and 30, but differs from the latter in that reed member 52 has a relatively short portion 54 leading rearwardly from the vibratile tongue portion 56. The vibratile tongue portions 56 of a pair of reed members 52 define the vibratile tongue of the double reed 50 and being outwardly convex define an opening 58 at the forward tip of the reed which leads to the interior of the double reed and from the latter to the interior of the metal tube 51. The companion reed members 52 can be secured together to the outer end portion of the metal tube 51 substantially in the same way as heretofore in the attachment of wooden reed members to the small metal tube of the oboe, for example, by winding a cord 60 around the rearwardly projecting end portions 62 of the two reed members. It will be noted that reed member 52 is provided with a relatively short semi-cylindrical tubular part 64 of such diameter that when the companion reed members 52 are combined for forming the double reed, two cylindrical portions 64 of the companion reed members form a cylindrical portion in which the outer end portion of tube 51 fits, so that it is unnecessary to flatten said outer end portion as was heretofore necessary when the reeds were made of wood. If desired, the edges of the cylindrical portion 64 of the companion reed members can be secured to each other as described above with respect to the securement of the tubular parts of reeds 10 and 30. It will be understood that the vibratile tongue portions 56 of reed 50 taper in thickness toward the forward ends thereof and that they flare laterally toward their forward ends, respectively.

It will be understood that various changes may be made in the double reeds and in reed members for double reeds embodying the present invention. Accordingly, I do not wish to be limited to the invention as herein specifically shown or described except to the extent which may be required by the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A double reed for a musical instrument of the double reed type, said reed comprising a plastic body having an integral, hollow, substantially cylindrical part and having extending from one end thereof a pair of vibratile tongues composed of opposed relatively movable vibratile, longitudinally separable and contacting portions defining an opening extending to the interior of said tubular part.

2. A double reed for a musical instrument of the double reed type, said reed comprising a plastic body having substantially semi-cylindrical portions integrally united at their edges to form an integral, hollow, substantially cylin-

drical part and having extending from one end thereof a pair of vibratile tongues composed of opposed relatively movable vibratile longitudinally separate and contacting portions defining an opening extending to the interior of said tubular part.

3. A double reed for a musical instrument of the double reed type, said reed comprising a plastic body having substantially semi-cylindrical portions integrally united at their edges to form an integral, hollow, substantially cylindrical part and having extending from one end thereof a pair of vibratile tongues composed of opposed relatively movable vibratile longitudinally separate and contacting portions defining an opening extending to the interior of said tubular part and a plastic enlargement surrounding and reinforcing said tubular part.

ARNOLD BRILHART.