United States Patent [19]

Dolmetsch

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[54] **RECORDERS**

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[52] **U.S. Cl.** **84/380,** 84/384

[51] **Int. Cl.** **G10d 7/00**

[58] **Field of Search** 84/380, 375, 383, 84/384

[56] **References Cited**

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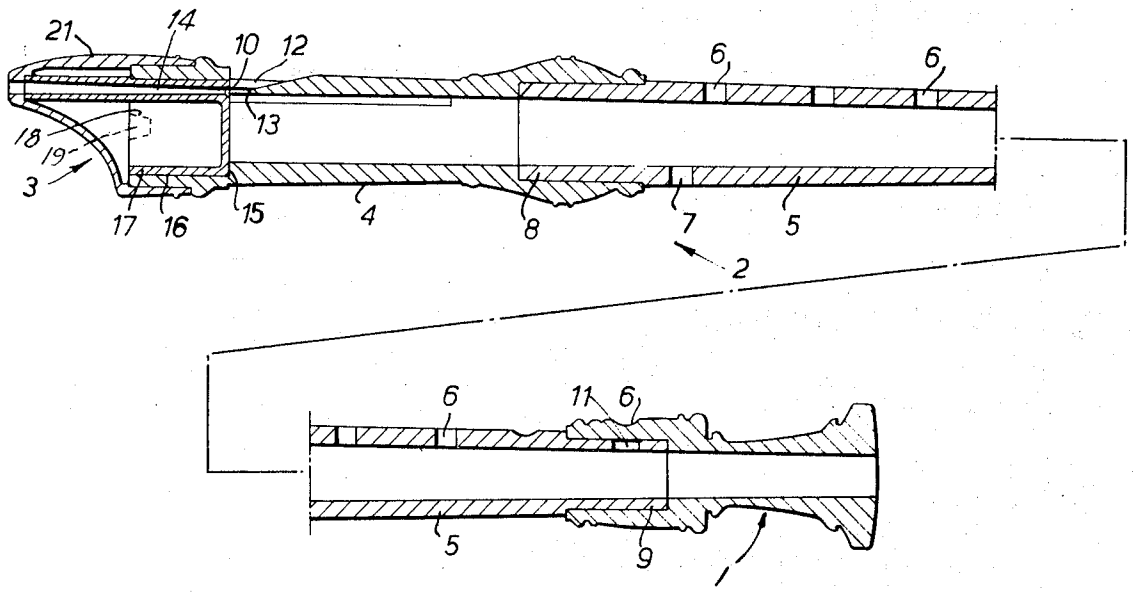
[57] **ABSTRACT**

A recorder having a windway which is rigid with a unit to be inserted in the body of the recorder. The unit has a portion of substantial length arranged to fit into a portion forming part of the body of the recorder. Means are provided for bringing the two portions together to locate the windway angularly relative to the sounding slot.

2 Claims, 1 Drawing Figure



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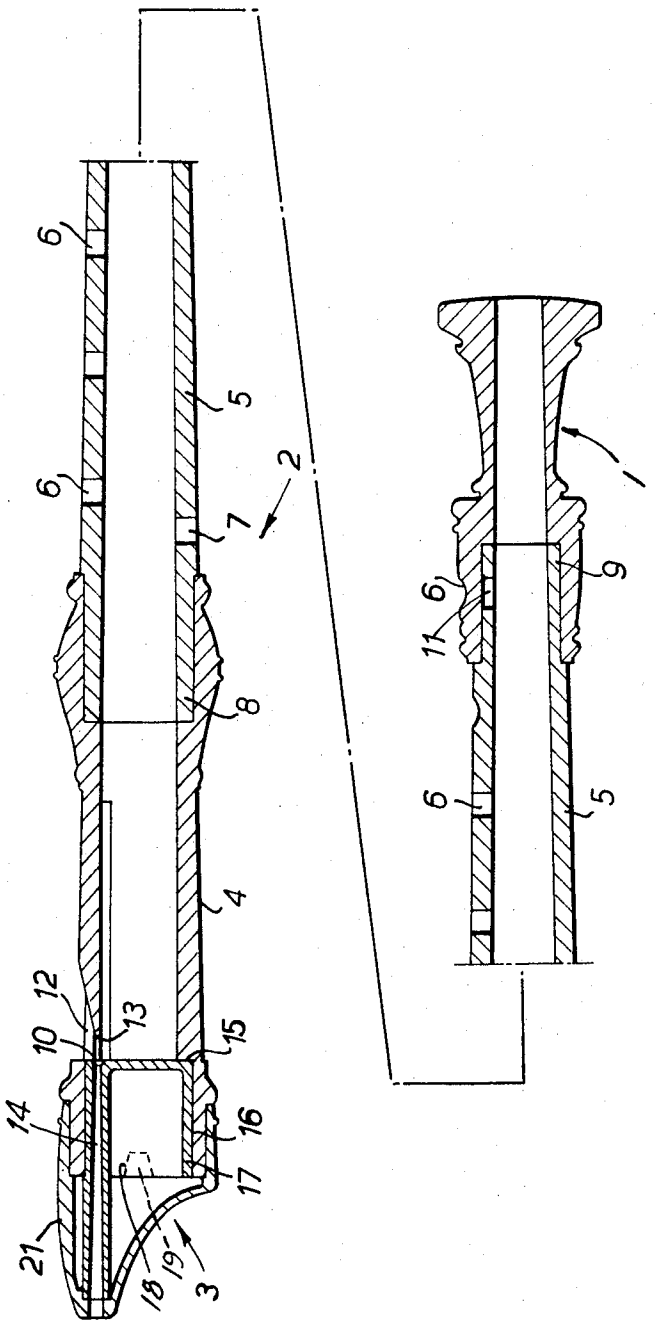

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RECORDERS

This invention relates to recorders.

According to the present invention a recorder has a windway rigid with a unit to be inserted in the body, the unit having a portion of substantial length which is arranged to fit into a second portion of substantial length which forms part of the body of the recorder and means for keying the two portions together so as to locate the windway angularly relatively to the sounding slot.

Conveniently the recorder is made of plastics material. It is known that thick walls of plastics material are likely to deform, which is undesirable, particularly in cases in which accurate location im important. In the case of a recorder the windway must be shaped accurately and located accurately relatively to the sharp edge of the sounding slot and in the present case thick deformable walls are avoided by the use of two thin walls keyed together, while yet accurate location of the two walls is achieved.

The means for keying the two portions together may comprise a slot in one portion and a key on the other portion. The interior of the second portion may be stepped so as to locate the unit lengthwise.

The recorder may be made in at least three sections, including a foot section which contains a stopping hole. The part of the recorder upstream of the foot section may have a portion of a reduced diameter which fits snugly into the foot section and this reduced diameter portion may contain a slot which coincides with the twin stopping holes in the foot section. Preferably the slot is of a length sufficient to enable the foot section to be rotated relative to the remainder of the recorder while maintaining overlap between the slot and the stopping holes.

The invention may be carried into practice in various ways, but one embodiment will now be described by way of example with reference to the accompanying drawing of which the single FIGURE is a longitudinal section of a descant recorder.

The recorder comprises a foot section **1**, a body section **2** and a mouth portion **3**. The body section **2** is made in two parts, **4** and **5**, the part **5** containing eight of the ten stopping holes of the recorder. The remaining stopping holes are situated in the foot section **1**. Nine of the stopping holes **6** are in the front of the recorder, including the two in the foot section, and the additional stopping hole **7** is at the back of the recorder. The two holes furthest form the mouth portion **3** are twin holes to enable the intervening simitones to be obtained.

The part **5** has at each end a portion **8** or **9** of reduced diameter which fits snugly into the part **4** and the foot section **1** respectively. The portion **9** contains an arcuate slot **11** which extends around the portion **9** at right angles to the longitudinal axis of the recorder. The slot **11** extends over about 100° of arc of the portion **9** and is arranged to coincide with the stopping holes **6** in the foot section. The foot section can thus be rotated through about 90° relative to the part **9** with the holes **6** within the slot **11** so as to adjust the angular position of the stopping holes. This adjustibility is desirable as the lowest stopping holes are played with the little finger and the position of the holes can be adjusted to suit the length of the finger of the player. The part **9** is of sufficient length to prevent an angular displacement of

the longitudinal axis of the foot section relative to the longitudinal axis of the recorder.

The part **4** contains a sounding slot **12** which is provided with a sharp edge **13** facing the bevelled edges **10** of a windway **14**. The inside of the part **4** beyond the slot **12** contains a step **15** leading to a portion **16** having a larger internal diameter than the remainder of the part **4**. The portion **16** also has a thinner wall thickness than the remainder of the part **4**.

The windway **14** is defined by a tube integral with a part **17** of circular cross-section and having an axial length equal to that of the part **16**. The part **17** also has a wall thickness approximately the same as that of the part **16**. When the part **17** is inserted in the part **4**, the end of the part **17** abuts the step **15** which locates the windway axially of the slot **12**. The part **17** contains a key **18** which mates with a keyway **19** provided in the part **16** so locating the windway in its correct position relative to the sharp edge **13**.

All the parts of the recorder are made by an injection moulding method from a plastics material which may be plastics resin cycolact EUR/8 made by the Borg Warner Corporation of the United States of America. The fact that the windway is integral with the part **17** enables the portion of the recorder around the windway to have a thin wall thickness which is not so subject to deformation as a thick plastics wall. Clearly it is important to locate the windway accurately with respect to the sharp edge **13**, and this is achieved by the substantial overlapping locating surfaces of the parts **16** and **17**, and by the key **18**. The locating surfaces are each in a wall having a small wall thickness so that deformation is unlikely. When the windway has been located with respect to the sharp edge, a mouthpiece **21** is glued in position over the windway.

What we claim as our invention and desire to secure by by Letters Patent is:

1. A recorder having a moulded plastics body portion defining a sounding edge and a slot and having an inlet end with a counter-bore at least as deep as its diameter terminating in a locating shoulder nearer to the inlet end than is the sounding edge, an insert unit comprising a wind-way which is a plastics moulding integral with a thin-walled cylindrical mounting piece which is slidably received in the counter-bore and sits against the shoulder at one end of the mounting piece and is flush with the inlet end of the body portion at the other end of the mounting piece, the mounting piece being axially slidable out of the counter-bore but being located against rotation in the counter-bore by cooperating keying means respectively moulded on the mounting piece and the wall of the counter-bore, the wind-way having an outlet opening with beveled sides opposite the sounding edge and disposed in an inner end face of the mounting piece which sits on the shoulder, whereby the outlet opening of the wind-way is in the plane of the shoulder, and a thin-walled moulded plastics mouthpiece fitted around the inlet end of the body portion and fitted around the end of the wind-way remote from the sounding edge, and having an opening aligned with the wind-way.

2. A recorder as claimed in claim **1** in which the body portion is made in two moulded plastics sections which have cooperating telescoping portions enabling them to be fitted together, one of the portions having a stopping hole and the other having a slot extending circumferentially around a part of the portion whereby it is in communication with the stopping hole over a range of relative angular positions of the sections.

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