

12 **EUROPEAN PATENT APPLICATION**

21 Application number: 79302724.4

51 Int. Cl.³: **G 10 D 9/06**
G 09 B 15/00

22 Date of filing: 29.11.79

43 Date of publication of application:
10.06.81 Bulletin 81/23

84 Designated Contracting States:
BE DE FR IT NL

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54 **An instrumental mute.**

57 An instrumental mute is provided which is capable of use as a 'straight', 'cup' or 'wah-wah' type mute in muting sounds produced by wind instruments. The apparatus comprises a vessel 1 internally divided into first and second adjacent chambers 9 and 10 respectively, support means 5 enabling the vessel to be secured within an instrument bellmouth and including a cylindrical portion allowing communication between the chambers 9 and 10, the vessel 1 being displaceable along an extension 12 by rotation about screw thread 18, to open or close the instrument bellmouth.

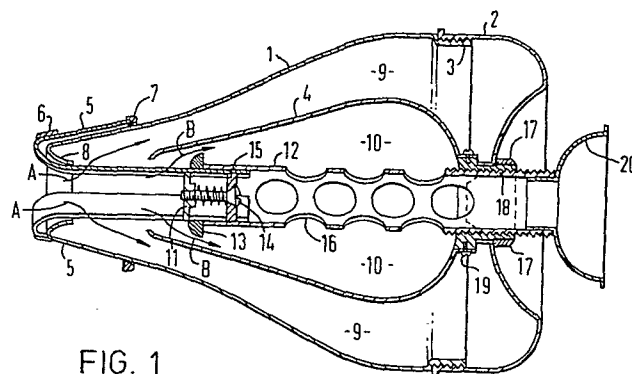


FIG. 1

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TITLE

An Instrumental Mute.

This invention relates to an improved mute intended for use in variably muting sounds produced by brass wind instruments.

An object of the invention is to provide an apparatus capable of being used as a 'straight', 'cup' or 'wah-wah' type mute.

According to this invention there is provided an apparatus for muting sounds produced by wind instruments, the apparatus comprising a vessel internally divided into first and second adjacent chambers, chamber closure means to either prevent or allow communication between said chambers by adjustment thereof, support means for securing the vessel to an instrument, the arrangement being such that the vessel is displaceable towards and away from said instrument to open or close one of said chambers to the instrument bellmouth.

Preferably, the mouth of the vessel engages the support means, an extension of the latter extending through the vessel and upon which one end of the vessel may be mounted.

Muting accessories including cone types, baffle types and wah-wah type inserts are preferably enterable within the support means extension forming a close fit therewith.

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The support means is preferably adapted to engage a wind instrument bellmouth and includes apertures through which sounds produced by the instrument pass into both first and second chambers only or pass into the first chamber and outside of the vessel.

The support means may include exterior segments of cork or similar frictional material, enabling a snug fit with an instrument bellmouth, and a sealing collar of nylon or similar soft plastic which engages the exterior surface of the vessel when the vessel is displaced, towards the instrument bellmouth, providing a gasket type seal between bellmouth and vessel exterior surface.

A similar gasket is preferably located at one end of the support means extension, which forms a seal at the mouth of the second chamber, when the vessel is displaced away from the bellmouth.

The invention will now be described by way of example with reference to the accompanying drawings, illustrating an embodiment.

Figure 1 is a cross sectional view of the apparatus in closed position,

Figure 2 is a cross sectional view of the apparatus in extended position,

Figure 3 is an isometric view of the end segment,

Figure 4 illustrates the support means,

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Figure 5 is an end elevation of Figure 4, and Figure 6 illustrates a support means extension.

Referring firstly to Figure 1, the muting apparatus comprises three separate elements, a generally conical portion 1 having lips 8 at the mouth of the vessel, a generally pear shaped internal element 4, these elements connected through a joining segment 2, screw threaded at 3 to engage similar thread in element 1. Thus connected, the vessel includes first 9 and second 10 chambers.

The support means in the form of three fins 5 angled to provide flanges, is located within the mouth of the vessel at the lip 8. The support means includes a cylindrical portion extending into the second chamber 10, through which musical sounds may pass via paths A and B.

A cork or plastic lining 6 is provided at the periphery of the support means to engage an instrument bellmouth. A sealing collar 7 of plastic joins the fins 5 to act as a ring gasket seal between the vessel element 1 and an instrument bellmouth (not shown). A threaded insert 11 is positioned within a cylindrical portion of the support means.

At the other end of the vessel, element 4 is attached through screw 19 to a threaded, retaining collar 17. The joining segment 2 is a press fit within this collar 17.

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A cylindrical support means extension 12 has apertures 16 and is threaded at 18 to engage the retaining collar 17. The other end of the extension has a sealing collar 13, and a fixture plate 15 through which a spring loaded screw passes to engage threaded insert 11 within the support means. This fixing method allows the apparatus to be assembled and dismantled with relative simplicity, allowing adjustment to accommodate the varying bellmouth geometry of different manufacturers.

The vessel is displaceable along the extension 12 by rotating same via its retaining collar 17 about the screw threaded portion 18.

Muting accessories, wah-wah type 20 illustrated, are inserted within the extension 12.

The apparatus shown in Figure 1 is in a closed position, the instrument bellmouth (not shown). A threaded insert 11 is positioned within a cylindrical portion of the support means.

At the other end of the vessel, element 4 is attached through screw 19 to a threaded, retaining collar 17. The joining segment 2 is a press fit within this collar 17.

A cylindrical support means extension 17 has apertures 16 and is threaded at 18 to engage the retaining collar 17. The other end of the extension has a sealing

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collar 13, and a fixture plate 15 through which a spring loaded screw passes to engage threaded insert 11 within the support means. This fixing method allows the apparatus to be assembled and dismantled with relative simplicity, allowing adjustment to accommodate the varying bellmouth geometry of different manufacturers.

The vessel is displaceable along the extension 12 by rotating same via its retaining collar 17 about the screw threaded portion 18.

Muting accessories, wah-wah type 20 illustrated, are inserted within the extension 12.

The apparatus shown in Figure 1 is in a closed position, the instrument bellmouth (not shown) being sealed by the element 1 of the vessel. Sounds cannot escape without passing through the vessel via paths A and B, through apertures 16 in the extension and out via the muting accessory 20. This position provides for communication between chambers 9 and 10.

Figure 2 illustrates the apparatus in extended position, wherein the instrument bellmouth (not shown) is directly open to the surroundings via path C, the second chamber 10 is closed via seal 13 on the extension 12; communication between chambers 9 and 10 thus being prevented. A proportion of sound from the instrument enters the first chamber 9 via path A and is absorbed

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within the vessel. The apparatus in this position functions as a straight mute or cup type mute, the accessory 20 not functioning. An exterior sliding cup 22 fits around the apparatus in close proximity to the instrument bellmouth (not shown).

A detail of the joining segment 2 with screw thread 3 is shown in Figure 3.

Figures 4 and 5 show a preferred arrangement of support means with fins 5 having cork lining 6 and sealing collar 7 conjoining the ends of each fin 5. A threaded insert 11 is arranged to lie between the fins 5, to receive the spring loaded screw in joining the extension to the support means.

Referring to Figure 6, a support means cylindrical extension 12 is shown having apertures 16 through which sounds may pass and an internal fixture plate 15 for receiving a screw.

The apparatus in accordance with the invention thus provides a versatile mute which eliminates the need to carry a plurality of conventional single tone mutes and has the capacity to receive a number of lightweight muting accessories.

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I CLAIM

1. Apparatus for muting sounds produced by wind instruments, the apparatus comprising a vessel characterised in that the vessel is internally divided into first (9) and second (10) adjacent chambers, means (13) provided to either prevent or allow communication between said chambers (9,10), support means (5) securing the vessel to an instrument, the vessel being displaceable towards and away from said instrument to open or close one of said chambers (9,10).

2. Apparatus in accordance with Claim 1 characterised in that the means (13) preventing or allowing communication between the chambers (9,10) forms an integral part of the support means (5).

3. Apparatus in accordance with either preceding claim characterised in that the means preventing or allowing communication are apertures within a cylindrical portion of the support means (5).

4. Apparatus in accordance with any preceding claim characterised in that the vessel (1) has a mouth opening (8) which engages the support means (5).

5. Apparatus in accordance with any preceding claim characterised in that the support means (5) includes a cylindrical extension (12) extending through the vessel (4), at one end of which said vessel (4) is secured by

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by a screw threaded collar (17).

6. Apparatus in accordance with Claim 5,
characterised in that muting accessories selected from
straight, cup or wah-wah (20) are enterable within the
support means extension (12).

7. Apparatus in accordance with any preceding claim
characterised in that, the support means (5) includes
segments of frictional material (6) which engage an
instrument bellmouth and includes a collar (7) providing
a gasket seal between the vessel (1) exterior surface and
an instrument bellmouth.

8. Apparatus in accordance with any one of Claims 5,
6 or 7 characterised in that the support means extension
(12) includes a gasket seal (13) at one end thereof to
form a seal at the mouth of the second chamber (10) when
the vessel is displaced away from an instrument bellmouth.

9. Apparatus in accordance with any preceding claim,
characterised in that the vessel comprises three separate
elements, a generally conical portion (1) attached to a
generally pear shaped portion (4) by a joining segment (2).

10. Apparatus in accordance with any preceding claim,
characterised in that the support means comprises three
fins (5) angled to provide a flange enterable within an
instrument bellmouth.

11. Apparatus in accordance with any one of Claims 5

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to 8 characterised in that the cylindrical extension (12) is secured to the support means (5) by spring loaded screw (14) acting through a fixture plate (15) within said extension (12) and co-operating with a threaded insert (11) within the support means (5).

12. Apparatus in accordance with any one of Claims 5 to 11 characterised in that the cylindrical extension (12) is perforated (16) and includes a screw thread (18) which engages a collar (17) secured to the vessel (2).

13. Apparatus in accordance with Claim 12 characterised in that the vessel (1,2) is displaced by rotation of same via the collar (17) about the screw thread (18) in the extension (12).

14. Apparatus in accordance with any preceding claim characterised in that first (9) and second (10) chambers are open to the instrument and are in mutual communication when the vessel (1,2) is displaced towards the instrument.

15. Apparatus in accordance with any preceding claim characterised in that the second chamber (10) is closed to the instrument and prevented from communication with the first chamber (9) when the vessel (1,2) is displaced away from the instrument.

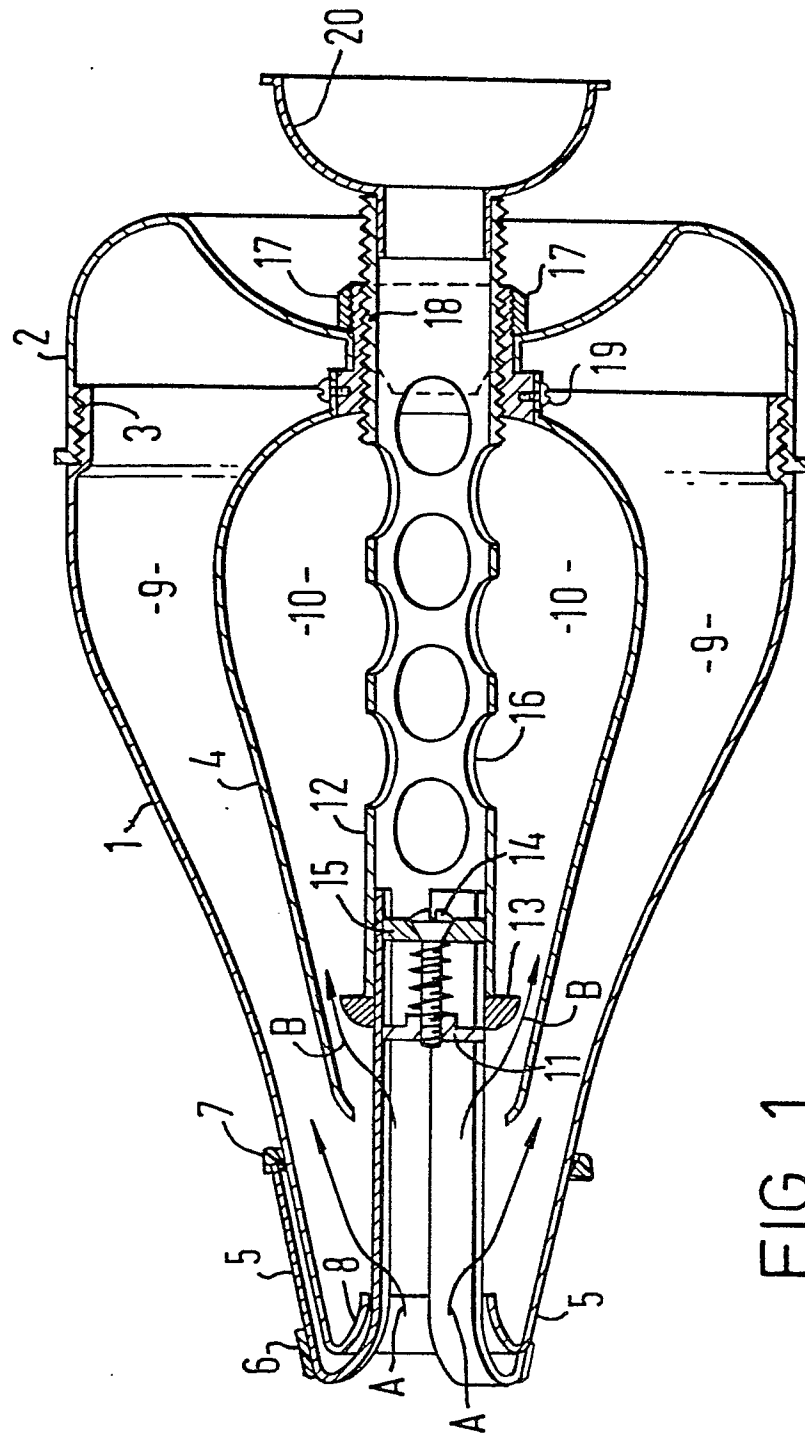


FIG. 1

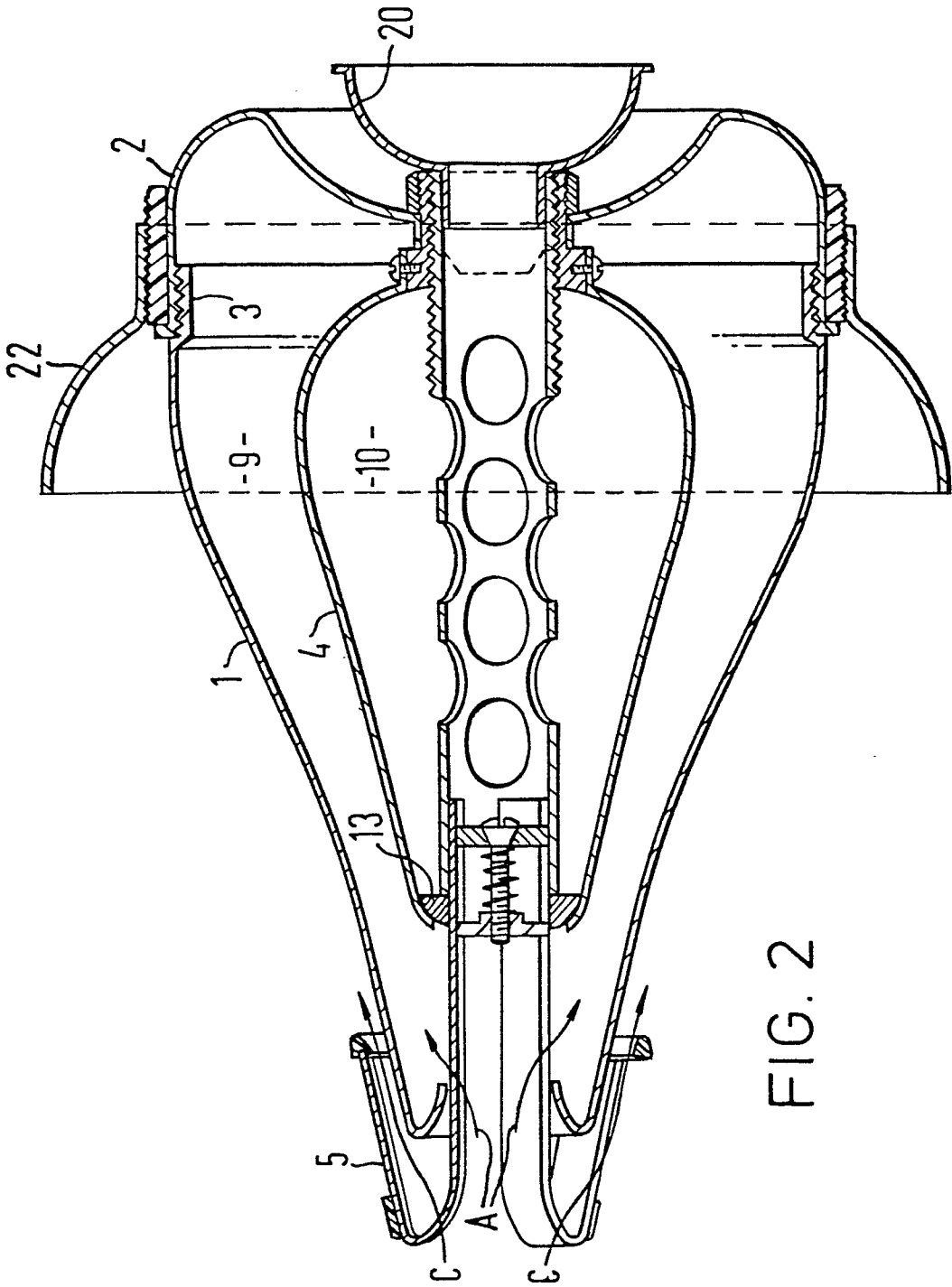


FIG. 2

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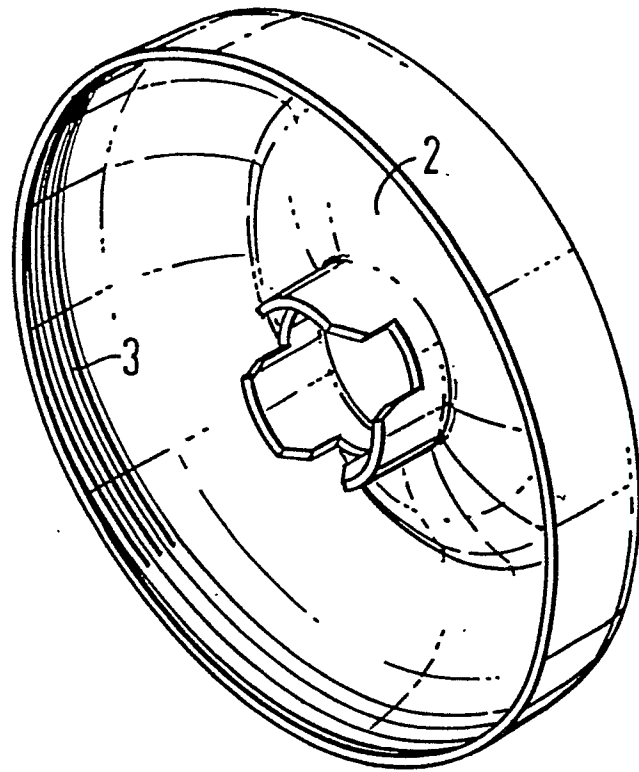


FIG. 3

FIG. 4

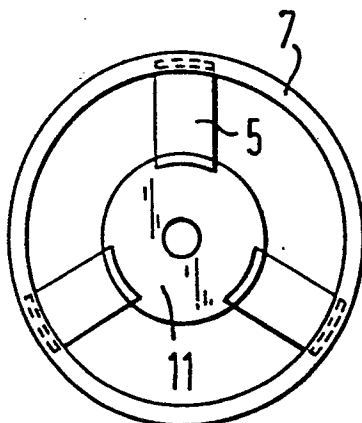
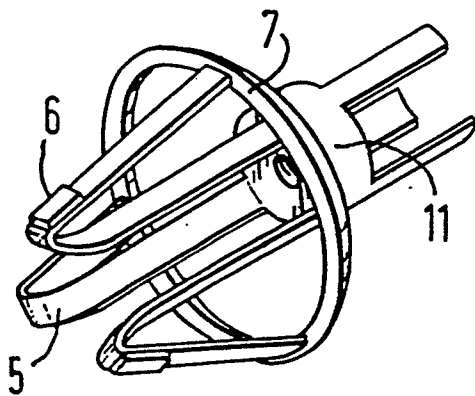


FIG. 5

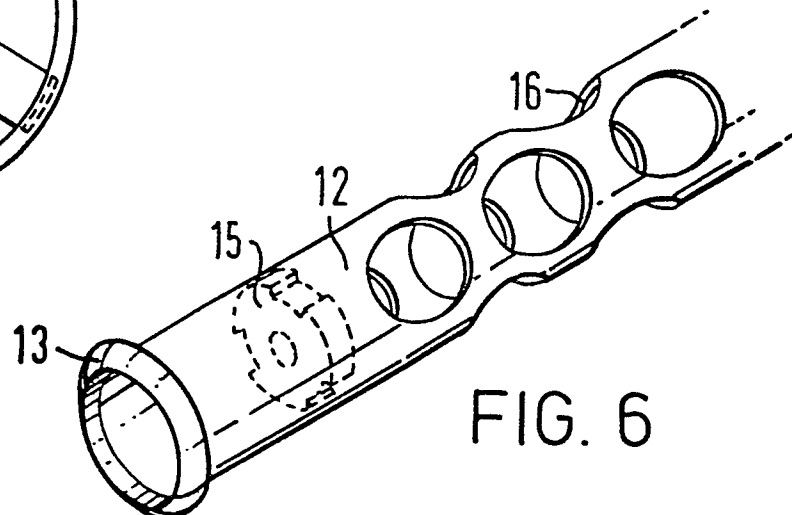


FIG. 6



European Patent
Office

EUROPEAN SEARCH REPORT

0029870

Application number
EP 79 30 2724

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	<u>GB - A - 240 004</u> (G. SCHLUESSEL-BURG) * Page 2, lines 3-64; figure 1 *	1,6	G 10 D 9/06 G 09 B 15/00
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	<u>US - A - 1 855 423</u> (L. SANSONE) * Page 1, lines 90-98; page 2, lines 36-44 *	7	
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	<u>FR - A - 579 875</u> (COUESNON et CIE) * Abstract; figure *	1	TECHNICAL FIELDS SEARCHED (Int.Cl. ³) G 10 D 9/06

			CATEGORY OF CITED DOCUMENTS
			X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
			&: member of the same patent family, corresponding document
☒ The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
The Hague	03-07-1980	HAASBROEK	