660737

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Regulation 3.1 (2)

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Patents Act 1990

NOTICE OF ENTITLEMENT

I, **LÁSZLÓ GYÖRGY** of, Széchenyi u. 19, H-2013 Pomáz, Hungary, being the applicant in respect of Application No. **29129/92** state the following:-

The Person nominated for the grant of the patent is the actual inventor.

The person nominated for the grant of the patent is the applicant of the application listed in the declaration under Article 8 of the PCT.

The basic application listed on the request form is the first application made in a Convention country in respect of the invention.

LÁSZLÓ GYÖRGY

By my Patent Attorneys,
WATERMARK PATENT & TRADEMARK ATTORNEYS

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Louis C. Gebhardt
Registered Patent Attorney

19 April 1995

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(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 660737

(54) Title
HORN FOR SPORTFANS

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(56) Prior Art Documents
WO 88/03744
US 4706295
US 4686928

(57) Claim

1. A horn provided with a pressure tube, a membrane and a sound tube, wherein both the pressure tube and the sound tube are in connection with said membrane **characterized** in that

- the membrane is streched out on the front face of the pressure tube,
- the sound tube is arranged within and coaxial with the pressure tube and its front face rests flat against the central part of the membrane,
- an annular air gap is arranged between the outer surface of the sound tube and the inner surface of the pressure tube, said gap being closed at the end opposite to the membrane and
- there is a sound hole in the wall of the pressure tube.

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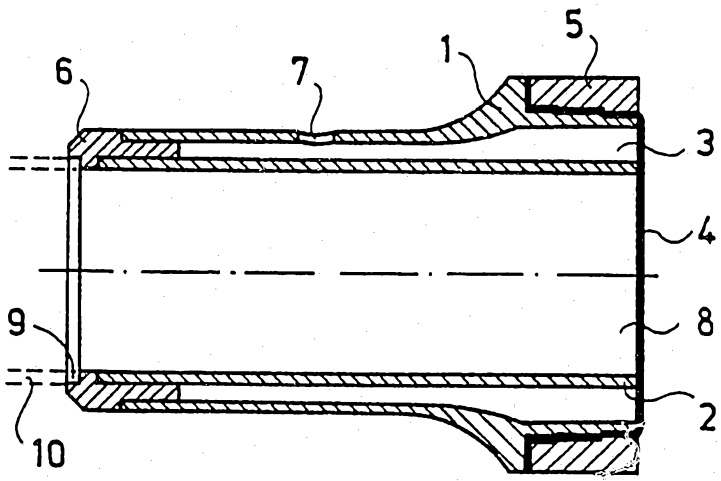

(57) Abstract

The horn according to the invention is provided with a pressure tube, a membrane and a sound tube, wherein both the pressure tube and the sound tube are in connection with said membrane. The horn is characterized in that the membrane is streched out on the front face of the pressure tube, the sound tube is arranged within and coaxial with the pressure tube and its front face rests flat against the central part of the membrane, an annular air gap is arranged between the outer surface of the sound tube and the inner surface of the pressure tube, said gap being closed at the end opposite to the membrane and there is a sound hole in the wall of the pressure tube.

HORN FOR SPORTFANS

The present invention relates to a sport horn provided with a pressure tube, a membrane and a sound tube, wherein both the pressure tube and the sound tube are in connection with said membrane.

The horns of the art produce a sound by the membrane, which is vibrated by a pressure fluid, generally air. Such horns are generally used as ship horns or sirens in factories etc. Accordingdly, they are generally of considerable dimensions and weight, thus a relativly high pressure is needed for producing a very strong sound.

The HU-PS 89 973, 95 819, 98 353, 100 289 and 101 300 all disclose such horns. The membrans of these horns are of metal sheets and are prestressed. The pipe introducing the pressure fluid is always arranged at the central part of the membrane, meanwhile a sound tube or horn is coaxial with the pressure tube and the end thereof bearing the membrane is arranged around the pressure tube.

On the other hand, people on sport events, (for instance football match) or festivals often use horns made of paper. These horns produce, however, a rather poor sound.

Object of the present invention is therefor to provide a horn, which is small, light and of simple structure, but is able to produce a considerable sound, when blown by the mouth.

Accordingly, the present invention relates to a horn provided with a pressure tube, a membrane and a sound tube,

wherein both the pressure tube and the sound tube are in connection with said membrane. According to the invention the membrane is streched out on the front face of the pressure tube, the sound tube is arranged within and coaxial with the pressure tube and its front face rests flat against the central part of the membrane. An annular air gap is arranged between the outer surface of the sound tube and the inner surface of the pressure tube, said gap being closed at the end opposite to the membrane and there is a sound hole in the wall of the pressure tube.

Both the pressure tube and the sound tube are stright tubes being arranged coaxially. The end part of the pressure tube may have a diameter at the membrane, which is greater than that of the other end part.

The thickness of the membrane is preferably between 0,01 and 2 mm and is a plastic foil.

The sound tube may be provided with one or more extension tubes. The width of the air gap is preferably at least 0,2 mm, meanwhile the diameter of the sound hole is preferably between 0,2 and 50 mm.

The invention is based on the recognition that a very strong sound may be produced, when a rather thin and elastic membrane is applied and a pressure fluid is guided to the outer annular part of the membrane instead of the central part thereof. In this way, the membrane may be vibrated easily and the produced sound is rather strong.

Further details and advantages of the present invention will be explained by way of an example with reference to the accomponying drawing, wherein Fig. 1 shows an embodiment of the present invention.

The horn according to Fig. 1 consists of a pressure tube 1, a sound tube 2, a membrane 4, a retainer ring 5 and a locking collar 6.

All the tubes and rings are cylindrical and coaxial. Instead of locking collar 6, the pressure tube 1 and/or the sound tube 2 may be provided with an appropriate flange for closing the room between pressure tube 1 and sound tube 2. This room, which is actually an air gap 3, is closed on the other end of the horn by membrane 4.

The membrane 4 is streched out on the front faces of pressure tube 1 and sound tube 2 and is hold by retainer ring 5. The membrane 4 is streched out in order to be prestressed, when fixed by the retainer ring 5.

The end of sound tube 2 opposite to the membrane 4 is open and pressure tube 1 is provided with a sound hole 7.

The room within the sound tube 2, limited by the membrane 4 on the one side and open on the other side acts as sound generating chamber 8. The volume of the sound generating chamber 8 may be enlarged by extension tubes 10 fitted into the shoulder 9 of the locking collar 6.

The measures of the horn are defined by the intended use on the one hand and by well-known acoustic correlations on the other hand.

The embodiment shown in Fig. 1 is constructed for funs of football or hockey matches. Accordingly, the length of the whole device is about 100 mm, the outer diameter is about 50 mm.

The membrane is a polietilen foil of about 0,05 mm thickness. The sound hole has a diameter of 10 mm.

The above device prooved to be a very effective horn producing a surprisingly strong sound.

The sound is produced similarly to the usual horns, which means that the air under pressure is arriving to the membrane 4 and a vibration takes place. That goes with a sound effect amplified by the sound tube 2. The only difference, which goes with a considerable increase in the sound producing effect is that the fluid (air under pressure) arrives to the membrane around the sound tube, at the perifery of the membrane. Due to this effective sound producing situation, a relatively small and thin membrane is suitable for a rather strong sound effect.

In order to change the frequency of the sound produced by the device according to the invention, one or more extension tube 10 can be attached to the basic device. The first extension tube 10 is seated in the shoulder 9 of the closing collar 6 and the next one in the shoulder of the pevious tube.

All the shoulders 9 are preferably constructed in a way that the extension tubes 10 would fall out due to a rather low side force. In this way, the use of the device as a veapon is impossssible.

The device shown in Fig. 1 is of course only an illustration of the invention and it is generally not intended to be restricted in the scope of protection by the example given above. The horn may have different shapes, the thickness of the membrane may be between 0,01 and 2 mm and its material can also be polipropylene, celophane, gummi etc.

C L A I M S

1. A horn provided with a pressure tube, a membrane and a sound tube, wherein both the pressure tube and the sound tube are in connection with said membrane **characterized in** that

- the membrane is streched out on the front face of the pressure tube,
- the sound tube is arranged within and coaxial with the pressure tube and its front face rests flat against the central part of the membrane,
- an annular air gap is arranged between the outer surface of the sound tube and the inner surface of the pressure tube, said gap being closed at the end opposite to the membrane and
- there is a sound hole in the wall of the pressure tube.

2. The horn according to claim 1 **characterized in** that the pressure tube and the sound tube are straight tubes being arranged coaxially.

3. The horn according to claim 1 or 2 **characterized in** that the end part of the pressure tube has a diameter at the membrane, which is greater than that of the other end part.

4. The horn according to any of claims 1 to 3 **characterized in** that the thickness of the membrane is 0,01 to 2 mm.

5. The horn according to claim 4 **characterized in** that the membrane is a foil.

6. The horn according to any of claims 1 to 5 **characterized in** that the sound tube is provided with one or more

extension tubes.

7. The horn accorrding to any of claims 1 to 6 **characterized in** that the width of the air gap is at least 0,2 mm.

8. The horn according to any of claims 1 to 7 **characterized in** that the diameter of the sound hole is 0,2 to 50 mm.

29129/92

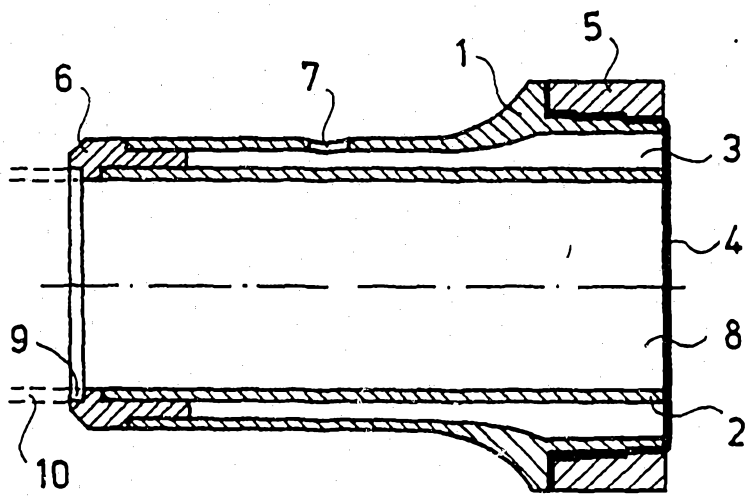

Fig.1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/HU 92/00043

A. CLASSIFICATION OF SUBJECT MATTER

IPC[5]: G 10 K 9/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC[5]: G 10 K 9/00; H 05 K 5/00; B 06 B 1/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DERWENT WPIL/WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 4 706 295 (PUTNAN) 10 November 1987 (10.11.87), abstract; fig. 1-6.	1-8
A	WO, A1, 88/03 744 (TURBOSOUND) 19 May 1988 (19.05.88), abstract; fig. 1-7.	1-8
A	EP, A2/A3, 0 337 067 (HELLA) 18 October 1989 (18.10.89), abstract; fig. 1.	1-8
A	US, A, 4 686 928 (WEISENBERGER) 18 August 1987 (18.08.87) see abstract; fig. 1,2.	1-8

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
15 February 1993 (15.02.93)	17 February 1993 (17.02.93)

Name and mailing address of the ISA/ AT	Authorized officer
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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/HU 92/00043

In Recherchenbericht angeführtes Patentdokument Patent document cited in search report Document de brevet cité dans le rapport de recherche	Datum der Veröffentlichung Publication date Date de publication	Mitglied(er) der Patentfamilie Patent family member(s) Membre(s) de la famille de brevets	Datum der Veröffentlichung Publication date Date de publication
US A 4706295	10-11-87	keine - none - rien	
WO A1 8803744	19-05-88	AU A1 10823/88	01-06-88
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