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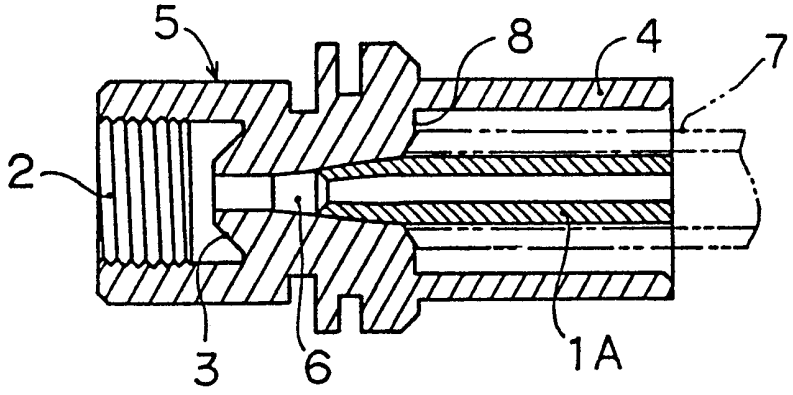
B3A
(71) Applicant
Toyoda Gosei Co Ltd
(Japan)
1 Aza-Nagahata
Ohaza-Ochiai
Haruhimura
Nishikasugai-gun
Aichi-ken
Japan
(72) Inventors
Kenji Sugiyama
Takeshi Miyazaki
(74) Agent and/or Address for Service
Withers and Rogers
4 Dyer's Buildings
Holborn
London EC1N 2JT

(54) Manufacture of a hose mouthpiece

(57) A process for manufacturing a hose mouthpiece by joining a nipple 1A to a mouthpiece body 5 having an axial nipple holding hole 6 which includes a tapered portion. The tapered portion has a diameter which gradually increases toward that end of the hole around which a surface defining a seat 8 for one end of a hose is formed in the body. One end of the nipple is press fitted into the tapered portion, and the seat defining surface is caulked about the nipple using a tool 7, whereby the nipple is secured to the body. The process is suitable for making, for example, a mouthpiece for a brake hose, and is inexpensive, since it does not include welding or brazing.

Fig. 3



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Prior Art 2121705

Fig. 1

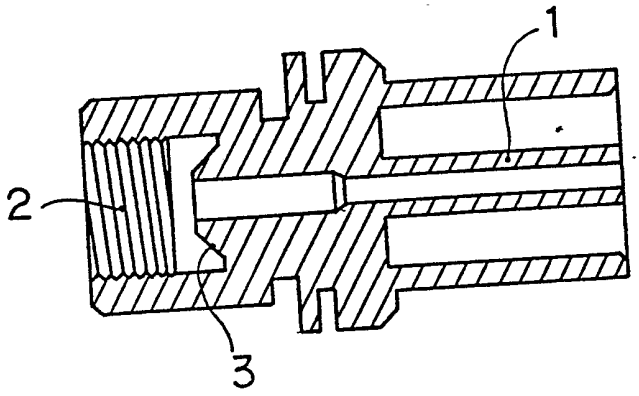


Fig. 2

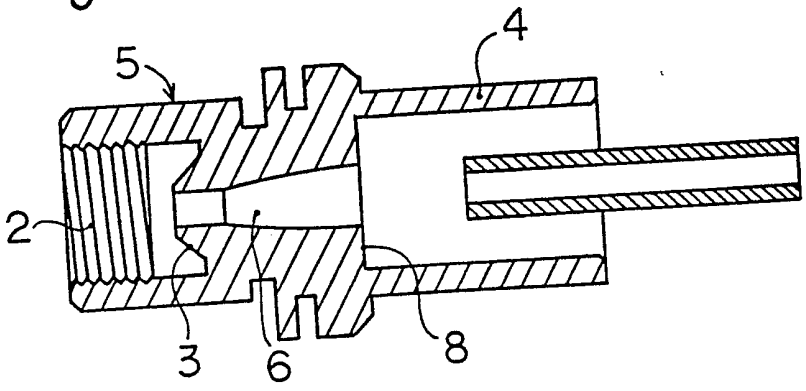
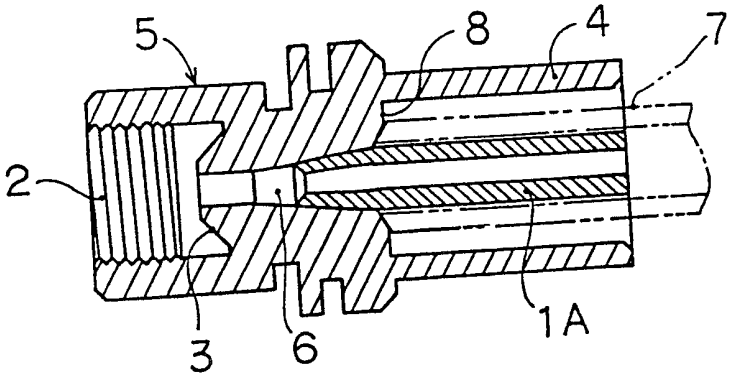


Fig. 3



SPECIFICATION

Process for manufacturing a hose mouthpiece

BACKGROUND OF THE INVENTION

1. *Field of the Invention:*

This invention relates to a process for manufacturing a hose mouthpiece, such as for a brake hose, by joining a mouthpiece body and a nipple together.

2. *Description of the Prior Art:*

A hose mouthpiece, such as for a brake hose, has hitherto been manufactured by cutting, for example, a steel bar having a predetermined length into a shape having a nipple 1 to which a hose is connected, a female screw thread 2 by which the mouthpiece is connected to a nozzle member, and a seat 3 for the nozzle member, as shown in Fig. 1. This method, however, requires a lot of time and labor because of, for example, complications involved in the formation of the nipple. Various methods have, therefore, been proposed to overcome those disadavantages. According to these methods, a mouthpiece body having a nipple holding hole and a nipple are prepared separately from each other, and the nipple is inserted into the nipple holding hole, and secured to the mouthpiece body by welding or brazing or otherwise. These methods, however, require an expensive welding or brazing apparatus, and a lot of time and labor for the welding or brazing job.

SUMMARY OF THE INVENTION

This invention provides a simple process which makes it possible to manufacture hose mouthpieces at a low cost without requiring any welding or brazing apparatus. The process of this invention employs a mouthpiece body and a nipple which are prepared separately from each other. The mouthpiece body has a nipple holding hole, and a seat surface encircling one end of the hole, while another seat surface defining a seat for a hose is provided around the other end of the hole. The hole includes a portion having a diameter which gradually increases toward the other end thereof. The nipple has an outside diameter which is substantially equal to the largest diameter of the nipple holding hole. The nipple is inserted at one end into the hole by press fitting through the other end thereof, and the seat surface around the other end of the hole is caulked about the nipple, whereby the nipple is secured to the mouthpiece body.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a longitudinal sectional view of a conventional hose mouthpiece;

Figure 2 is a longitudinal sectional view of the nipple and the mouthpiece body which are going to be joined to each other in accordance with the process of this invention; and

Figure 3 is a longitudinal sectional view of a hose mouthpiece obtained by the process of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The process of this invention employs a nipple 1A and a mouthpiece body 5 which are prepared separately from each other as shown in Fig. 2. The mouthpiece body 5 is prepared from a steel bar or the like by cutting, and has a female screw thread 2, a first seat surface 3, a sleeve 4, a nipple holding hole 6 which defines a fluid passage with the axial bore of the nipple, and a second seat surface 8 defining a seat for one end of a hose. The first seat surface 3 encircles one end of the hole 6, while the second seat surface 8 is provided around the other end of the hole 6. The hole 6 includes a portion spaced inwardly of one end thereof, and having a diameter which gradually increases toward the other end thereof. This portion has a tapered contour in longitudinal section as shown in Fig. 2. It is tapered at an angle of 4° to 8°. If this angle is smaller, the nipple 1A may fail to fit in the hole 6 tightly enough to achieve a tight seal therebetween. If the angle is too large, the nipple is liable to buckling when press fitted in the hole 6. The nipple 1A is prepared from a steel tube or the like having a predetermined length. If desired, it is possible to use a nipple having a fir-tree end which may be prepared by rolling or cutting.

The nipple 1A is press fitted into the tapered portion of the hole 6 in the mouthpiece body 5, and the seat surface 8 is caulked about the nipple 1A by a tubular punch 7 as shown in Fig.3, whereby the nipple 1A is secured to the body 5. Thus, the nipple 1A is firmly joined to the mouthpiece body 5 by press-fitting and caulking, and a tight seal is obtained between the nipple 1A and the mouthpiece body 5.

A hose may be connected to the mouthpiece in a customary manner, i.e., one end of the hose is inserted into an annular space between the nipple 1A and the sleeve 4, and the sleeve 4 is caulked about the hose.

CLAIMS

1. In a process for manufacturing a hose mouthpiece by joining a nipple to a mouthpiece body having a nipple holding hole, the improvement which comprises:

forming said hole with a tapered portion having a diameter which gradually increases toward that end of said hole around which a surface defining a seat for one end of a hose is formed in said body;

press fitting one end of said nipple into said tapered portion through said end of said hole; and

caulking said surface about said nipple, whereby said nipple is secured to said body.

2. A process as set forth in claim 1, wherein said tapered portion has a taper angle of 4° to 8°.

3. A hose mouthpiece when made in accordance with the process claimed in any one of claims 1 to 3.

4. A process for manufacturing a hose mouthpiece substantially as hereinbefore described and with reference to Figs. 2 and 3 of the accompanying drawings.

5. A hose mouthpiece constructed and arranged substantially as hereinbefore described with reference to Fig. 3 of the accompanying drawings.

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