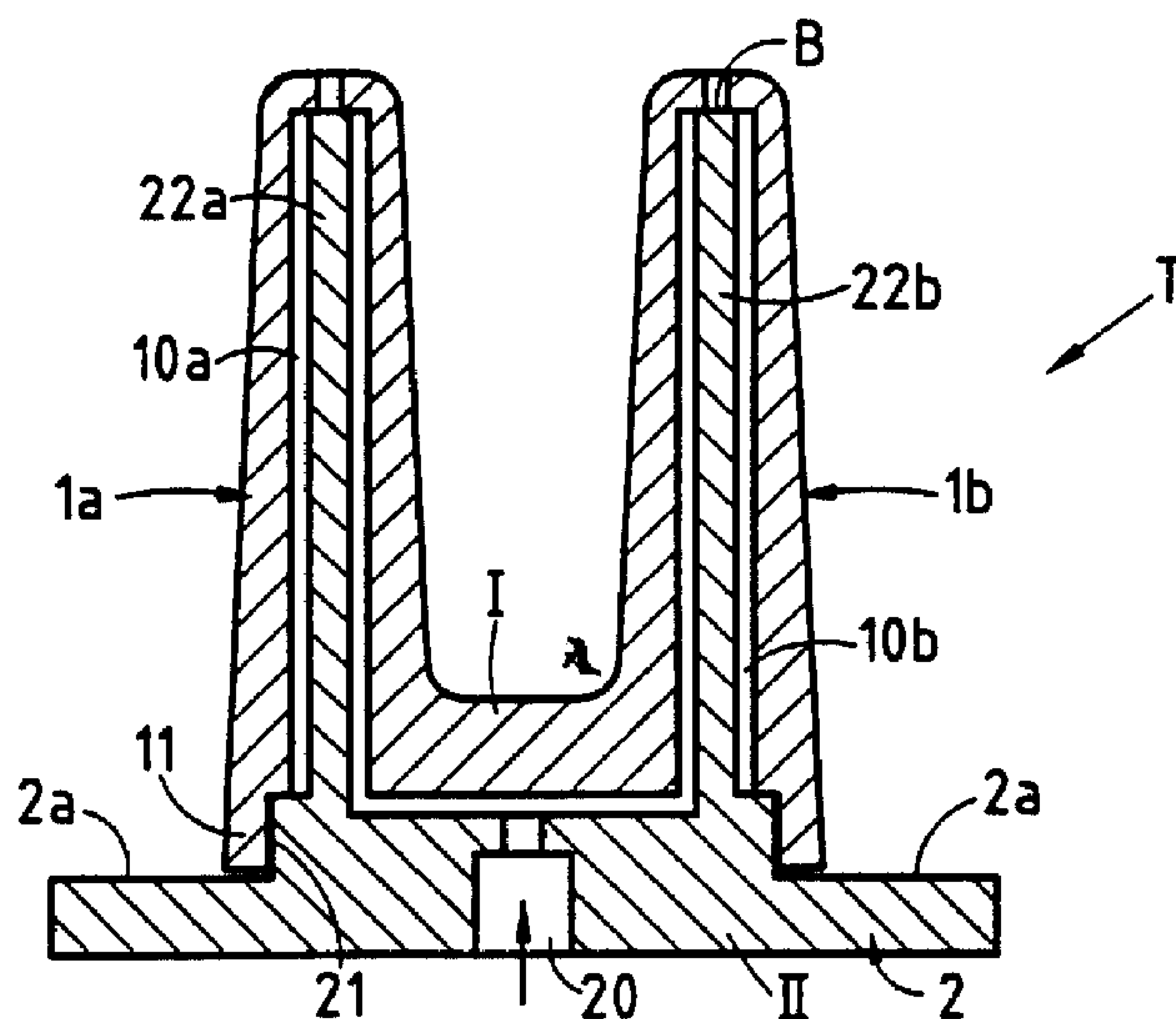




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(54) **PULVERISATEUR NASAL**  
(54) **NOSE SPRAYER**



(57) L'invention concerne un pulvérisateur nasal comprenant un réservoir (R) de produit actif liquide équipé de moyens de pressurisation et/ou de dosage (P) destinés à coopérer avec une tête (T) de distribution comprenant deux embouts (1a, 1b) juxtaposés pourvu chacun d'au moins un conduit d'éjection (10a, 10b) débouchant à son extrémité externe sur une buse (B) de pulvérisation et communiquant à son extrémité interne avec le réservoir (R) via les moyens de pressurisation (P), et qui sont fixés sur une embase de liaison avec le réservoir (R), caractérisé en ce que ladite tête (T) comprend une première pièce (I) portant les deux embouts (1a, 1b) et une jupe inférieure externe (11) destinée à venir en serrage radial étanche avec une portée interne cylindrique (21) réalisée à la partie supérieure d'une seconde pièce (II) portant l'embase (2): les deux pièces (I, II) délimitant entre elles la partie basse des conduits d'éjection (10a, 10b).

(57) The invention concerns a nose sprayer comprising a reservoir (R) for an active liquid product provided with pressurising and/or dosing means (P) designed to cooperate with a dispensing head (T) including two juxtaposed connecting pieces (1a, 1b) each provided with at least a discharge conduit (10a, 10b) emerging at its outer end on a spray nozzle (B) and communicating at its inner end with the reservoir (R) via the pressurising means (P), and which are fixed on a base linking with the reservoir (R). The invention is characterised in that said head (T) comprises a first part (I) bearing the two connecting pieces (1a, 1b) and a lower outer skirt (11) designed to be urged in sealed radial clamping with an inner cylindrical bearing (21) produced in the upper portion of a second part (II) bearing the base (2): the two parts (I, II) defining between them the bottom part of the discharge conduits (10a, 10b).

## A B S T R A C T

## A NASAL SPRAY DEVICE

5           The invention relates to a nasal spray device  
comprising a container (R) of active liquid, which  
container is equipped with pressurizing and/or measuring-  
out means (P) serving to co-operate with a dispenser head  
(T) comprising two juxtaposed applicators (1a, 1b), each  
10 of which is provided with at least one expulsion duct  
(10a, 10b) opening out at its outer end in a spray nozzle  
(B) and communicating at its inner end with the container  
(R) via the pressurizing means (P), which applicators are  
fixed to a base for coupling them to the container (R),  
15 said nasal spray device being characterized in that the  
head (T) comprises a first part (I) carrying the two  
applicators (1a, 1b) and an outer bottom skirt (11)  
serving to clamp radially and in leaktight manner onto a  
cylindrical inner bearing surface (21) provided at the  
20 top of a second part (II) carrying the base (2), the two  
parts (I, II) defining between them the bottom portions  
of the expulsion ducts (10a, 10b).

25           Figure 2

30

Translation of the title and the abstract as they were when originally filed by the  
35 Applicant. No account has been taken of any changes that may have been made  
subsequently by the PCT Authorities acting ex officio, e.g. under PCT Rules 37.2,  
38.2, and/or 48.3.

## A NASAL SPRAY DEVICE

The present invention relates to a nasal spray device, and more particularly to an improvement of the dispenser head of such a device.

5 Such spray devices are designed mainly for treating illnesses or conditions affecting the nasopharyngeal region (colds, rhinitis, sinusitis, etc.).

A conventional spray device comprises a container of active liquid, which container is equipped with  
10 pressurizing and/or measuring-out means serving to cooperate with a dispenser head. The head is provided with at least one expulsion duct opening out at its outer end in a spray nozzle and communicating at its inner end with the container via the pressurizing means.

15 Unfortunately, the head of such a spray device is provided with a single applicator only, so that, in order to apply the treatment, it is necessary to spray successively into each nostril while simultaneously blocking off the other nostril.

20 An object of the present invention is to solve that technical problem satisfactorily.

The invention achieves this object by means of a nasal spray device of the above type, in which the dispenser head comprises two juxtaposed applicators, each  
25 of which is provided with at least one expulsion duct, the ends of the applicators being separated by a distance that corresponds substantially to the mean spacing between the nostrils, and the applicators being fixed to a base for coupling them to the container.

30 In a preferred embodiment, the two applicators are identical, each of them being provided with a respective expulsion duct which extends axially at least in its end portion.

35 According to an advantageous characteristic, the expulsion ducts of the two applicators merge at the bottom to form a single feed duct.

In a first variant, the duct is constituted by a central bore in said base.

In a second variant, the feed duct is constituted by a central sleeve that projects into said base.

5 In an advantageous embodiment, said head is made up of a first part carrying the two applicators and designed to be assembled together with a second part carrying the base.

10 Preferably, the two parts then define between them the bottom portions of the expulsion ducts.

In another variant, the first part is provided with an outer bottom skirt serving to clamp radially and in leaktight manner onto a cylindrical inner bearing surface provided at the top of the second part.

15 In another variant, the bottom face of the first part and/or the top face of the second part is/are provided with a groove/respective grooves defining at least in part the walls of the bottom portions of the expulsion ducts.

20 According to another characteristic, said base supports two column-shaped cores serving to be engaged axially into the end portions of the expulsion ducts so as to define annular cross-sections.

25 According to yet another characteristic, the bottom portions of the expulsion ducts slope relative to the axes of the applicators.

In an advantageous configuration, the two applicators are of substantially frustoconical profile with curved end edges.

30 The spray device of the invention is particularly ergonomic and makes it possible to improve and to simplify the therapeutic treatment.

35 The two-applicator dispenser head is also suitable for use with conventional pressurizing means and containers without it being necessary to modify them in any way.

In addition, the embodiment comprising only two parts is particularly easy to manufacture and assemble, which makes it very reliable and very low in cost.

Thus, regardless of the form of the pressurizing and measuring-out means, the volume of active liquid delivered is divided into two flows via the two-applicator head, which makes it possible to treat both nostrils simultaneously.

The invention will be better understood on reading the following description accompanied by the drawings, in which:

Figures 1a and 1b are elevation views of an embodiment of the spray device of the invention shown respectively from the front and from the side;

Figure 2 is a section view of the dispenser head of the embodiment shown in Figures 1a and 1b; and

Figure 3 is a section view of the dispenser head of another embodiment of the invention, as mounted on a container.

The nasal spray device shown in Figures 1a and 1b includes a container R containing an active liquid.

The container R is equipped with pressurizing and/or measuring-out means P, such as a pump, serving to cooperate with a dispenser head T.

The head T is conventionally provided with at least one expulsion duct opening out at its outer end in a spray nozzle (not shown in Figures 1a and 1b), and communicating at its inner end with the container R via the pressurizing means P (shown in Figure 3).

In the invention, the head T comprises two applicators 1a, 1b juxtaposed and fixed to a base 2 via which they are coupled to the container R.

The ends of the applicators 1a, 1b are separated by a distance corresponding substantially to the mean spacing between the nostrils.

In the embodiments shown in the figures, the two applicators 1a, 1b are identical, each of them having a

substantially frustoconical profile with curved end edges facilitating insertion into the nostrils.

By pressing manually against the flat margins 2a of the base 2, it is possible to actuate the pressurizing and/or measuring-out means P, thereby causing the active liquid to be sprayed into the nostrils via the expulsion ducts in the applicators 1a, 1b and via the nozzles.

In the embodiment shown in section in Figures 2 and 3, each applicator 1a, 1b is provided with an expulsion duct 10a, 10b that extends substantially axially at least in the end portion, upstream from the spray nozzle B.

The expulsion ducts 10a, 10b of the two applicators 1a, 1b merge at the bottom to form a single feed duct 20.

In Figure 2, the feed duct 20 is constituted by a central bore in the base 2, and in Figure 3 it is constituted by a central sleeve projecting into said base 2.

The dispenser head T is made up of a first part I carrying the two applicators 1a, 1b and designed to be assembled together with a second part II carrying the base 2

The first part I is provided with an outer bottom skirt 11 serving to clamp radially and in leaktight manner onto an inner cylindrical bearing surface 21 provided at the bottom of the second part II.

Where applicable the assembly may be supplemented by locking, e.g. in the form of snap-fastening the parts I and II together.

The two parts I, II define between them the bottom or upstream portions of the expulsion ducts 10a, 10b.

For this purpose, the bottom face of the first part I and/or the top face of the second part II is/are provided with a groove/respective grooves defining at least in part the walls of the bottom or upstream portions of the expulsion ducts once the two parts I, II have been assembled together.

When each of the parts I, II is provided with a respective groove, the two grooves are formed so that they face each other with their edges touching so as to guarantee that the assembly is leaktight.

5       The base 2 carries two column-shaped cores 22a, 22b serving to be engaged axially into the end portions of the expulsion ducts 10a, 10b so as to define annular cross-sections.

10       In the embodiment shown in Figure 3, the bottom portions of the expulsion ducts 10a, 10b slope relative to the axes of the applicators so as to facilitate the expulsion of the active liquid and or the return of any surplus liquid to recovery or removal means (not shown).

## CLAIMS

1/ A nasal spray device comprising a container (R) of active liquid, which container is equipped with pressurizing and/or measuring-out means (P) serving to  
5 co-operate with a dispenser head (T) comprising two juxtaposed applicators (1a, 1b), each of which is provided with at least one expulsion duct (10a, 10b) opening out at its outer end in a spray nozzle (B) and communicating at its inner end with the container (R) via  
10 the pressurizing means (P), which applicators are fixed to a base for coupling them to the container (R), said nasal spray device being characterized in that the head (T) comprises a first part (I) carrying the two applicators (1a, 1b) and an outer bottom skirt (11)  
15 serving to clamp radially and in leaktight manner onto a cylindrical inner bearing surface (21) provided at the top of a second part (II) carrying the base (2), the two parts (I, II) defining between them the bottom portions of the expulsion ducts (10a, 10b).

20

2/ A nasal spray device according to claim 1, characterized in that the two applicators (1a, 1b) are identical, each of them being provided with a respective expulsion duct (10a, 10b) which extends axially at least  
25 in its end portion.

3/ A nasal spray device according to claim 1 or 2, characterized in that the expulsion ducts (10a, 10b) of the two applicators (1a, 1b) merge at the bottom to form  
30 a single feed duct (20).

4/ A nasal spray device according to claim 3, characterized in that the duct (20) is constituted by a central bore in said base (2).

35

5/ A nasal spray device according to claim 3,  
characterized in that the feed duct (20) is constituted  
by a central sleeve that projects into said base (2).

5 6/ A nasal spray device according to any preceding claim,  
characterized in that the bottom face of the first part  
(I) and/or the top face of the second part (II) is/are  
provided with a groove/respective grooves defining at  
least in part the walls of the bottom portions of the  
10 expulsion ducts (10a, 10b).

7/ A nasal spray device according to any preceding claim,  
characterized in that said base (2) supports two column-  
shaped cores (22a, 22b) serving to be engaged axially  
15 into the end portions of the expulsion ducts (10a, 10b)  
so as to define annular cross-sections.

8/ A nasal spray device according to any preceding claim,  
characterized in that the bottom portions of the  
20 expulsion ducts (10a, 10b) slope relative to the axes of  
the applicators (1a, 1b).

9/ A nasal spray device according to any preceding claim,  
characterized in that the two applicators (1a, 1b) are of  
25 substantially frustoconical profile with curved end  
edges.

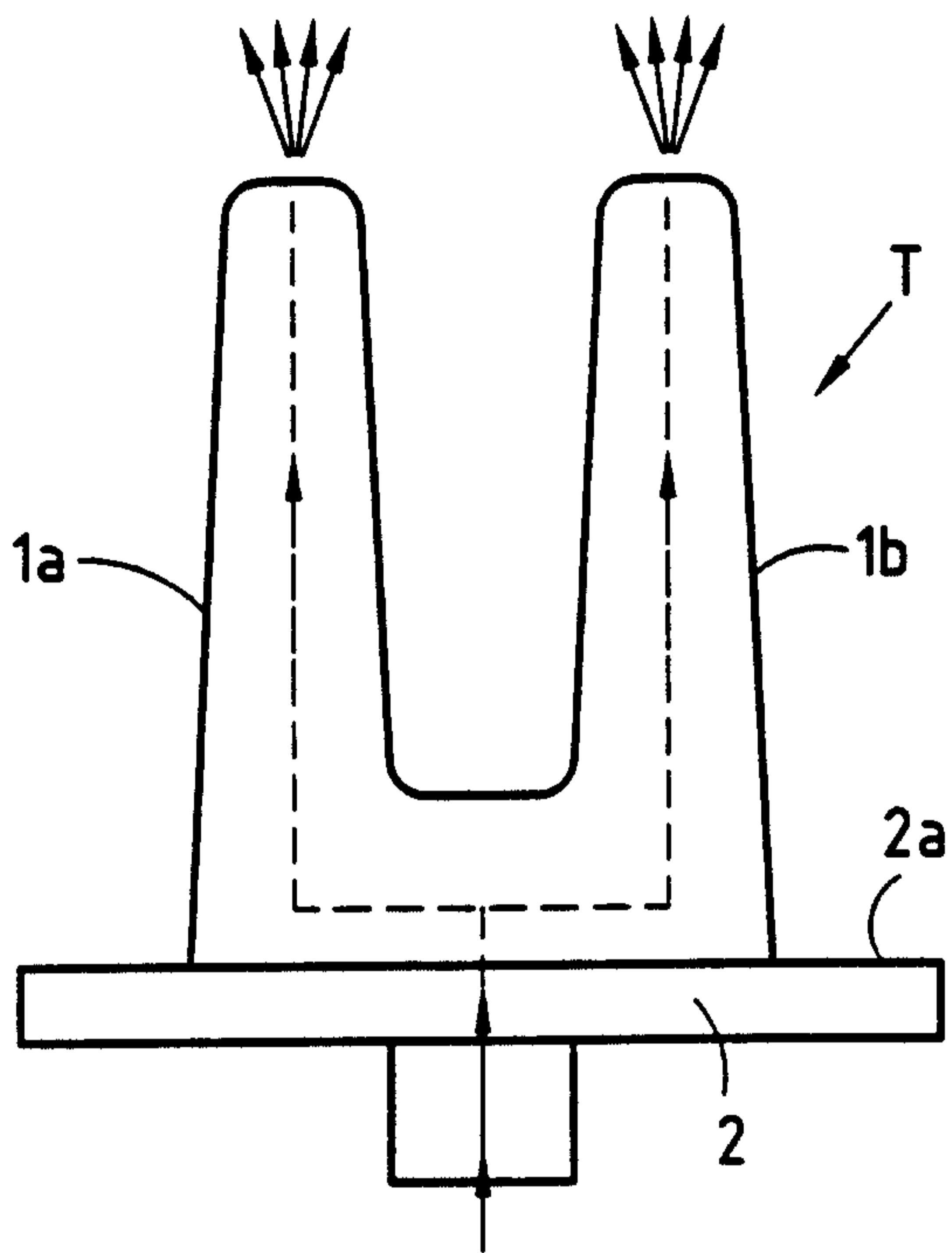


FIG. 1A

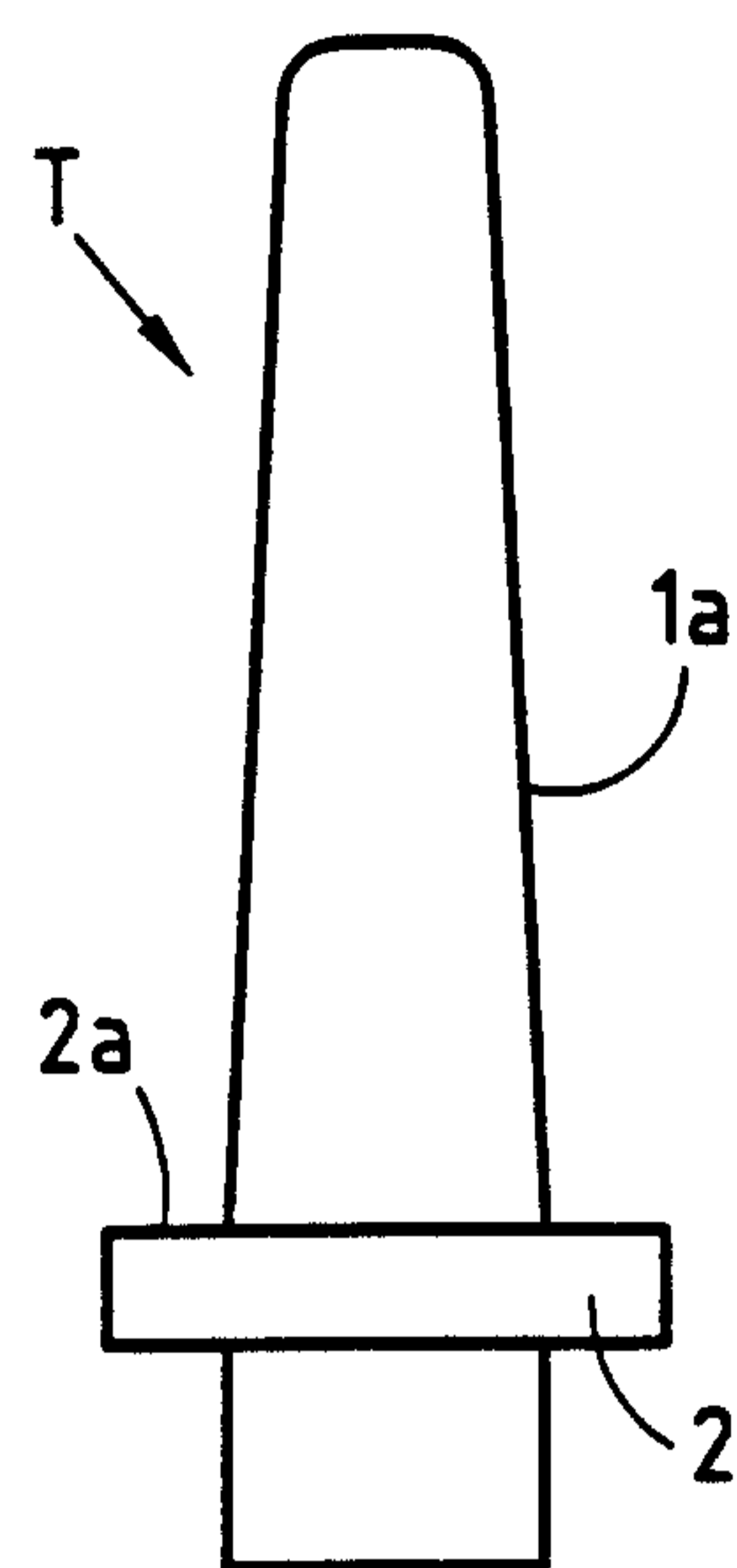


FIG. 1B

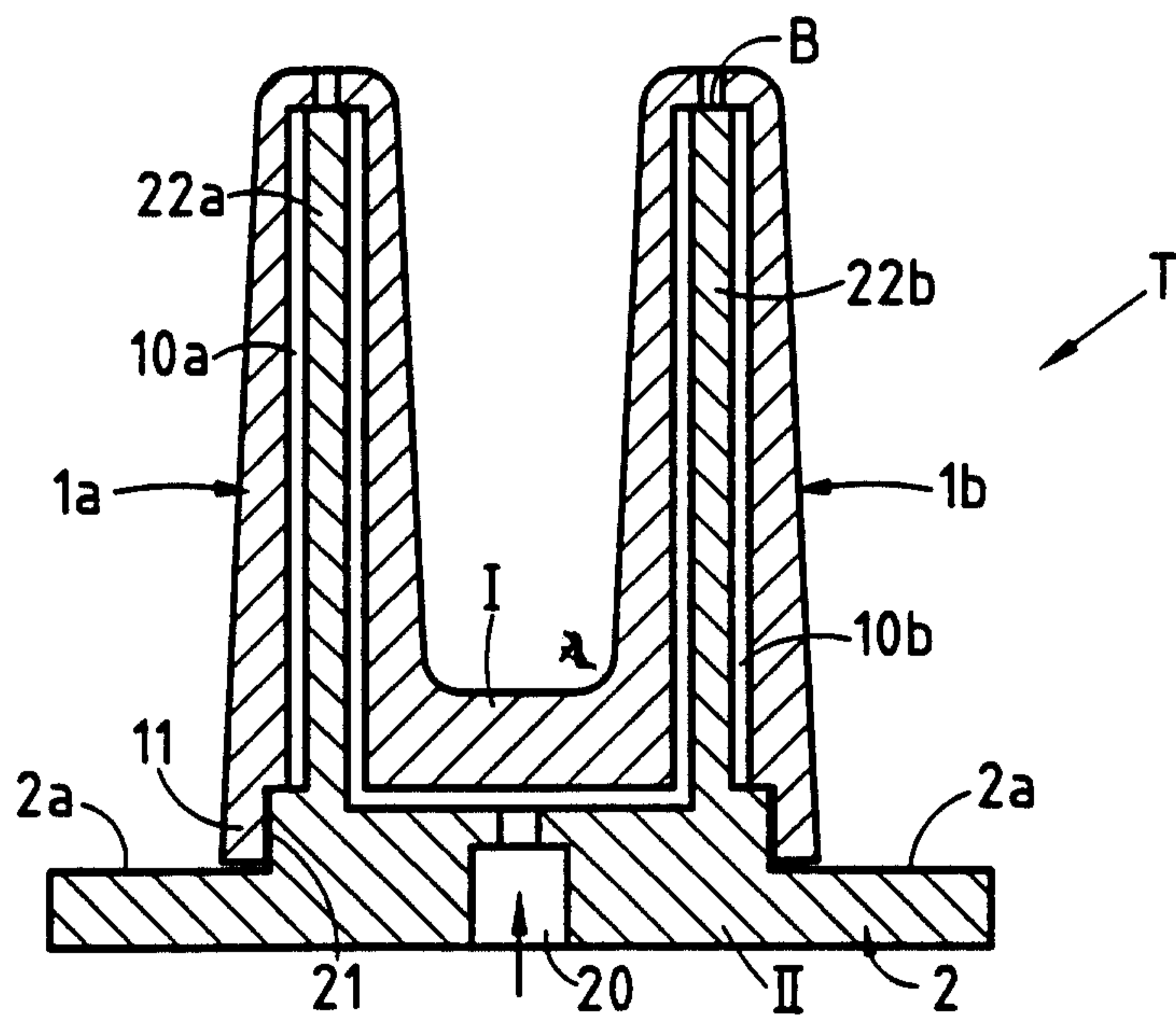


FIG. 2

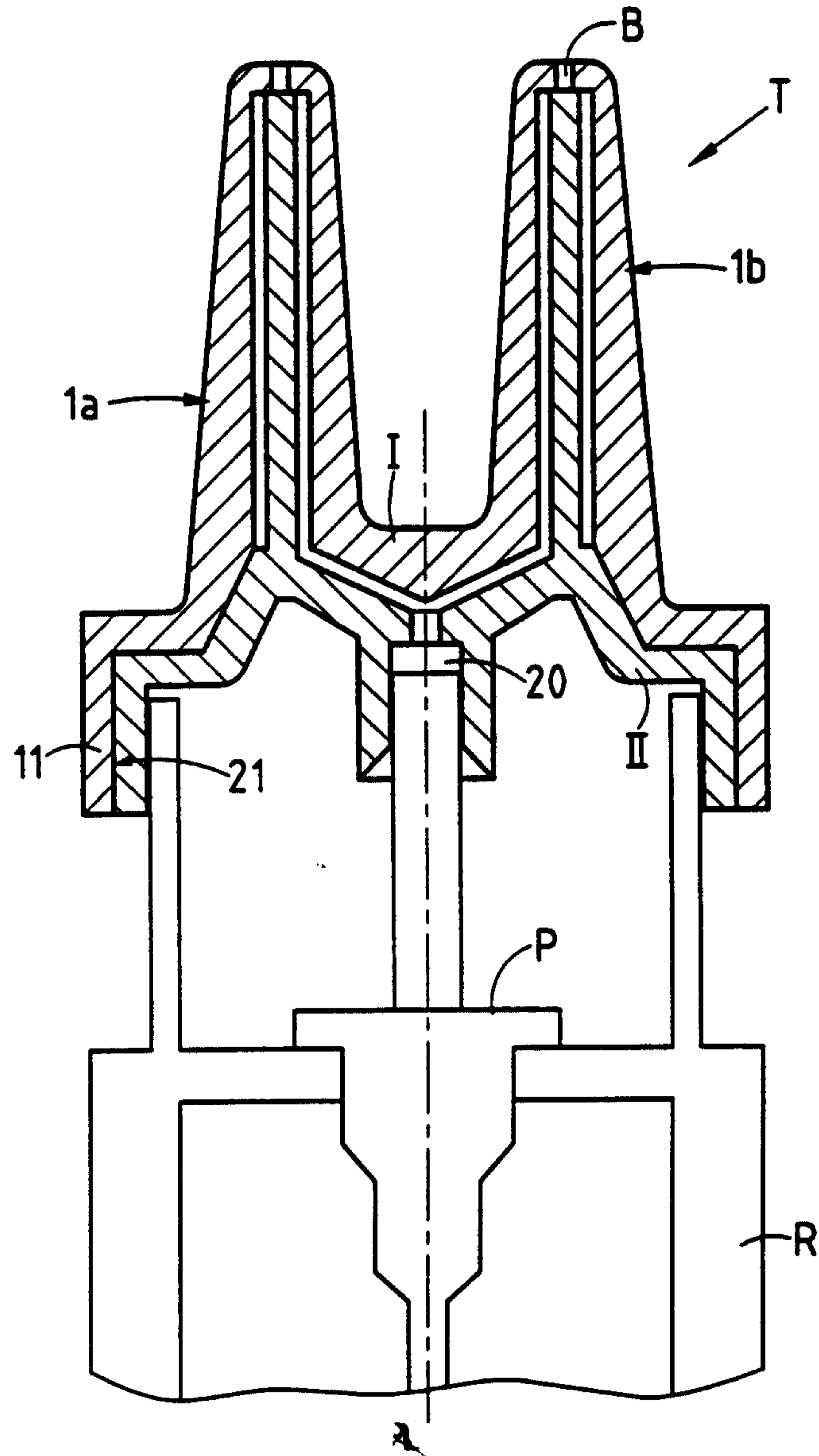


FIG.3