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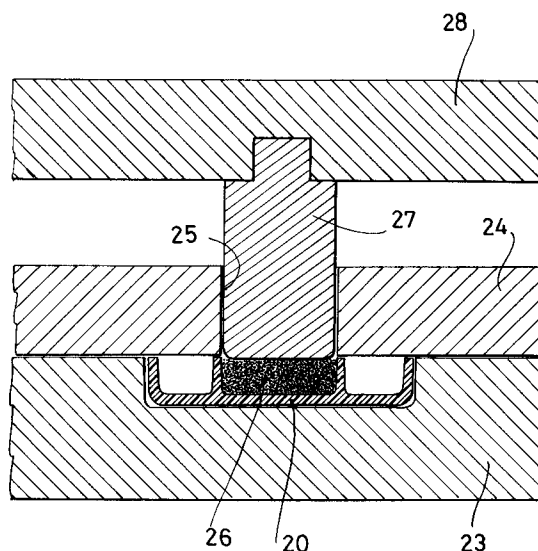
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Gestaltung und Vertrieb von kosmetischen
Verpackungen
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I-20099 Sesto San Giovanni (Milano) (IT)(54) **Process and apparatus for filling a container with compact powder for cosmetic usage, and obtained product.**

(57) A process for filling a container (20) with a dose of compact powder (26) for cosmetic usage comprises the steps of:

- positioning said container (20) inside a complementary seat (22) of a die (23);
- covering with an intermediate mask (24) the zones of said container (20) which are not to be filled and/or which must not come into contact with said powder, with said mask (24) being provided with an opening (25) which, together with a seat (21) provided in the container (20) defines an empty room into which the desired dose can be added of powder (26) suitable for being compacted;
- charging said dose of powder (26) to said empty room;
- compacting said powder dose (26) inside said seat (21) by means of a punch (27) mounted on a counter-die (28); and
- withdrawing the container (20) from its seat (22).

**Fig.9****EP 0 605 035 A2**

The present invention relates to an improved process and apparatus for filling a container with compacted powders for cosmetic usage, such as, e.g., compact eye shadows, powder fard, powder lipsticks, powder, and the like.

The present invention relates furthermore to the product obtained by means of said process and apparatus.

As those skilled in the art are well aware of, the powders for cosmetic usage have been compacted heretofore inside small metal cups destined to be subsequently inserted and stably fastened inside containers of complementary shape -- commonly referred to as "godets" in this field -- which, in their turn, are destined to be removably housed inside suitable seats provided inside cases of plastics material which may also contain other suitable objects for make-up, as a mirror and one or more brushes.

According to the prior art, said metal cup can also be directly fastened inside a corresponding seat provided inside the case.

The manufacture of these articles comprising said metal cup and the container of plastics material causes several drawbacks which can be summarized as follows:

- need for separating, owing to environmental and material recycle reasons, the metal parts from plastics material at waste disposal time;
- manufacturing process requiring a plurality of steps which are not easily automated; and
- impossibility of working simultaneously with a plurality of different colours.

The purpose of the present invention is of obviating the drawbacks which affect the prior art, and the above said purpose is achieved by using a manufacturing process and a relevant apparatus having the characteristics detailed in the appended claims.

The structure and functional characteristics of the invention and the advantages of the invention as compared to the prior art will be still more evident from a study of the following disclosure made by referring to the accompanying schematic drawings, which display the operating steps and the apparatus used for a process known from the prior art, and the operating steps and apparatus for the process according to the present invention. In the drawings:

- Figures from 1 to 5 show the operating steps of, and the apparatus for carrying out, a process according to the prior art; and
- Figures from 6 to 9 show the operating steps of, and the apparatus for carrying out, the process according to the present invention.

Referring to Figures from 1 to 5, (10) and (11) indicate, respectively, a die and a counter-die, movable according to the directions of arrows (F)

and (F1), respectively. The die (10) is structurally formed by a plate (12) provided with a plurality of through openings (13) (only one of which is displayed), through which a punch (14), destined to cooperate with a counter-punch (15) installed on said counter-die (11), is driven to slide.

With (16), a metal cup is indicated which is charged to the seat (17) of the die (10), defined by the through bore (13) provided through the plate (12), and the punch (14).

A dose of a desired powder (18) is charged to said seat (17), filling the cup (16) (Figure 1).

The powder is compacted inside said cup (16) as shown in Figures 2 and 3, by means of the introduction of said counter-punch (15) into said seat (17) and simultaneously moving the punch (14) in the direction of arrow (F).

The die is opened as shown in Figure 4, by lifting the counter-punch (15), and the cup (16), filled with compacted powder (18), is expelled from its seat (17) by lifting the punch (14), and is discharged from the apparatus, e.g., by means of a side pusher schematically shown with (19) and mobile in the directions of arrow (F2) (Figure 5).

This operating way, as briefly mentioned above, is relatively time-consuming and laborious, difficultly automated, and requires that the metal cup is separated from the container of plastics material at waste disposal time.

According to the present invention, as shown in Figure 6, inside a container of plastics material (20) a seat (21) is already provided, which is suitable for receiving a powder for cosmetic usage, destined to be compacted.

Said container (20) is positioned inside a complementary seat (22) provided in a die (23), and an intermediate mask (24) (Figure 7) covers the zones which must not be filled with powder and, thanks to a through opening (25), defines, con-jointly with the seat (21), an empty room to which the desired dose of powder (26) suitable for being compacted can be charged (Figure 8).

Now, as displayed in Figure 9, a punch (27) installed on a counter-die (28) is entered into said opening (25) in order to compact inside the interior of said seat (21) provided in the container (20), the powder (26), and after such an operation the container (20) will be withdrawn from the complementary seat (22) of the die (23).

Of course, the container (20) may also be constituted by a simple cup of plastics material suitable for being installed, in a freely removable way, together with other units, inside the interior of a larger case, also of plastics material, inside which suitable seats are provided for that purpose.

As it will be evident for those skilled in the art, the present invention achieves in an extremely simple and cheap way, the purposes of eliminating

the metal cup, of producing the article with a lower number of operating steps which are more easily automated than the systems adopted hitherto, and of simultaneously compacting powders with different colours

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Claims

1. A process for filling a container (20) with a dose of compact powder (26) for cosmetic usage comprises the steps of:
 - positioning said container (20) inside a complementary seat (22) of a die (23);
 - covering with an intermediate mask (24) the zones of said container (20) which are not to be filled and/or which must not come into contact with said powder, with said mask (24) being provided with an opening (25) which, together with a seat (21) provided inside the container (20), defines an empty room into which the desired dose can be added of powder (26) suitable for being compacted;
 - charging said dose of powder (26) to said empty room;
 - compacting said powder dose (26) inside said seat (21) by means of a punch (27) mounted on a counter-die (28); and
 - withdrawing the container (20) from its seat (22).
2. An apparatus for implementing the process according to Claim 1, is characterized in that it comprises, in combination: a die (23) provided with a seat (22) suitable for receiving a container (20) inside which a seat (21) is provided, into which a dose of powder (26) for cosmetic usage, to be compacted, is destined to be charged, a counter-die (28) provided with a punch (27) suitable for compacting said powder dose, with, between said die (23) and said counter-die (28) an intermediate mask (24) being installed which is suitable for covering the zones of said container (20) which must not be filled and/or which must not come into contact with said powder, with said mask (24) being provided with an opening (25) which, together with the seat (21) of the container (20), defines an empty room suitable for receiving said dose of powder (26).

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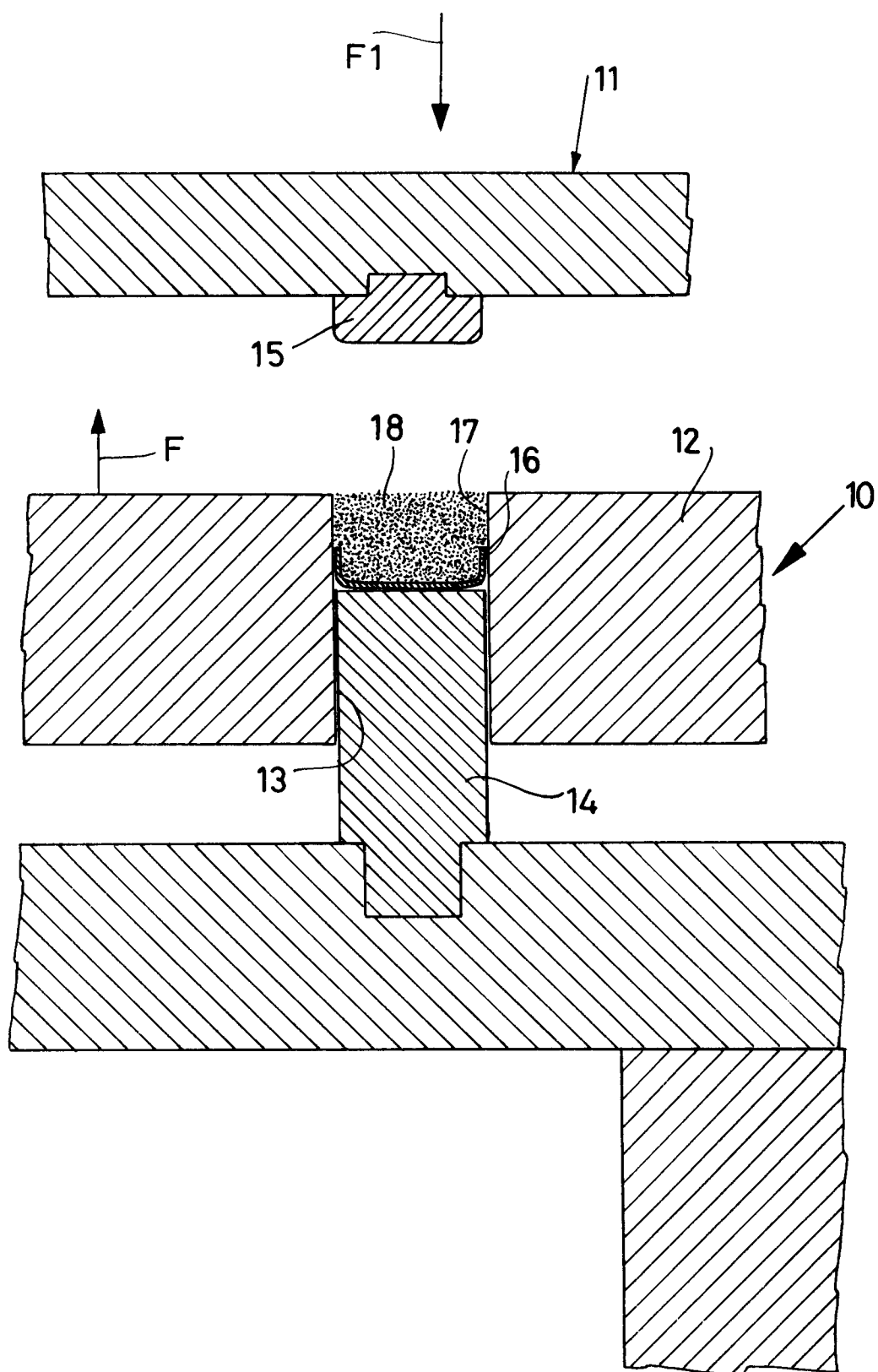


Fig.1

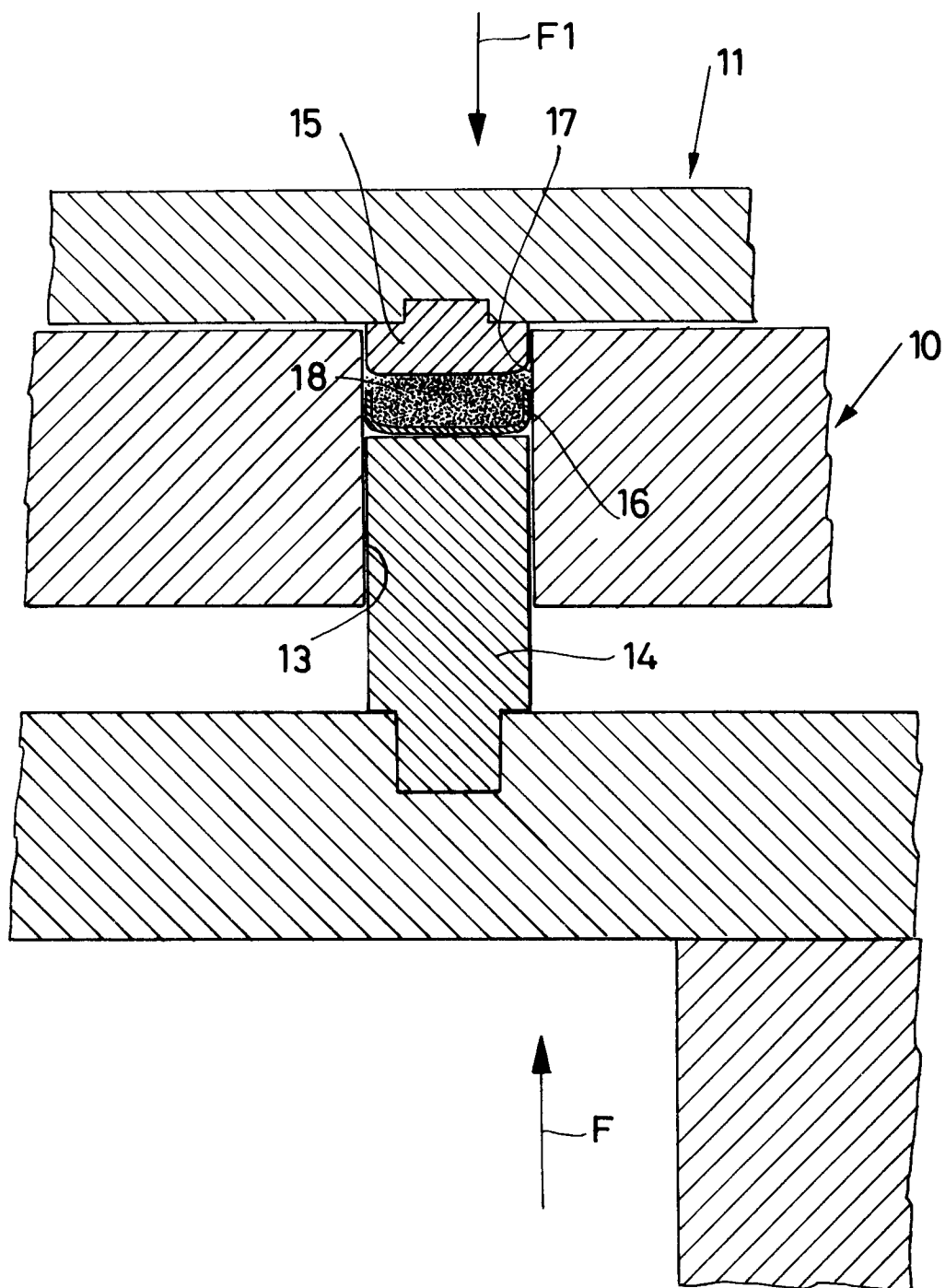


Fig.2

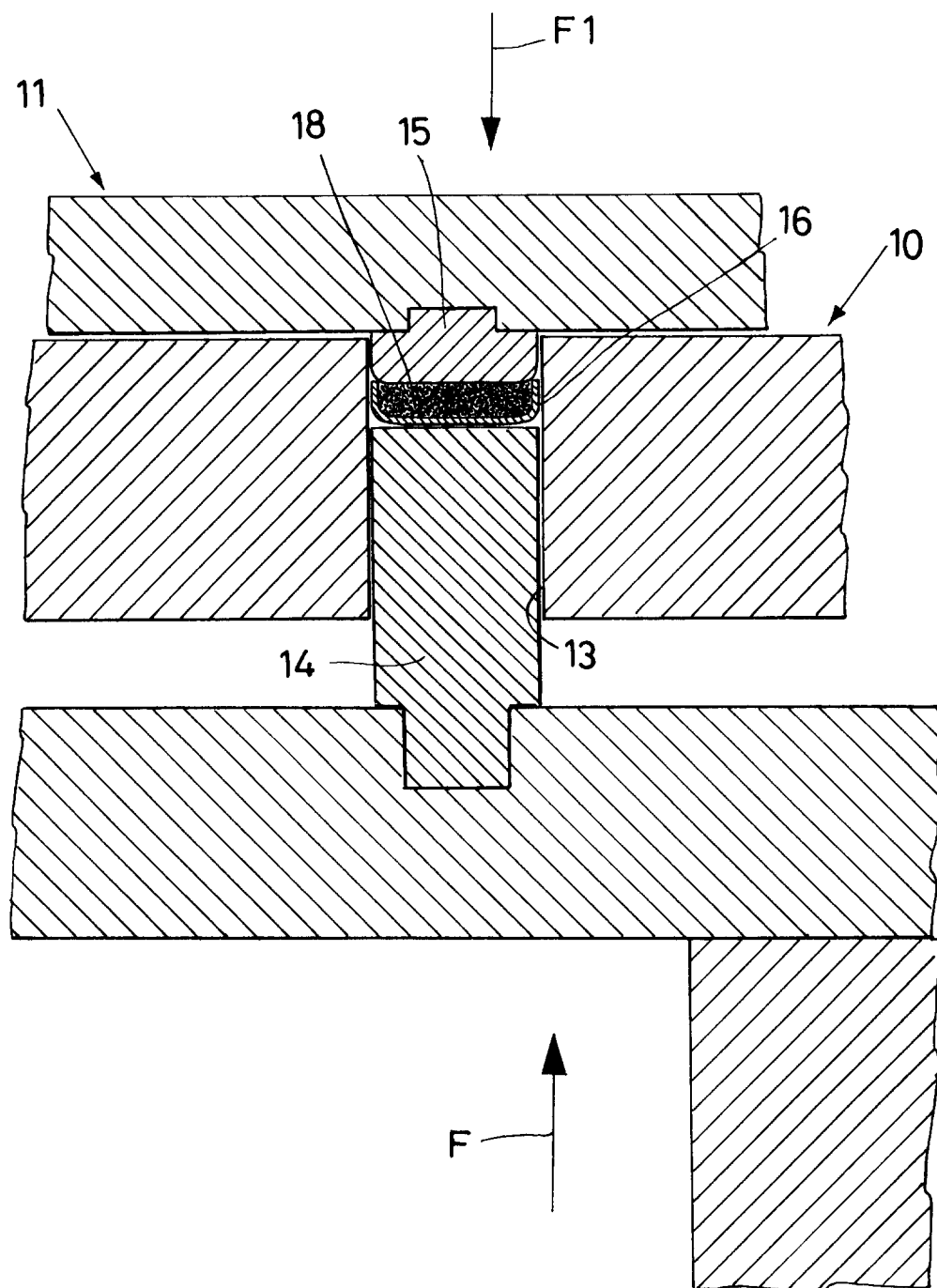
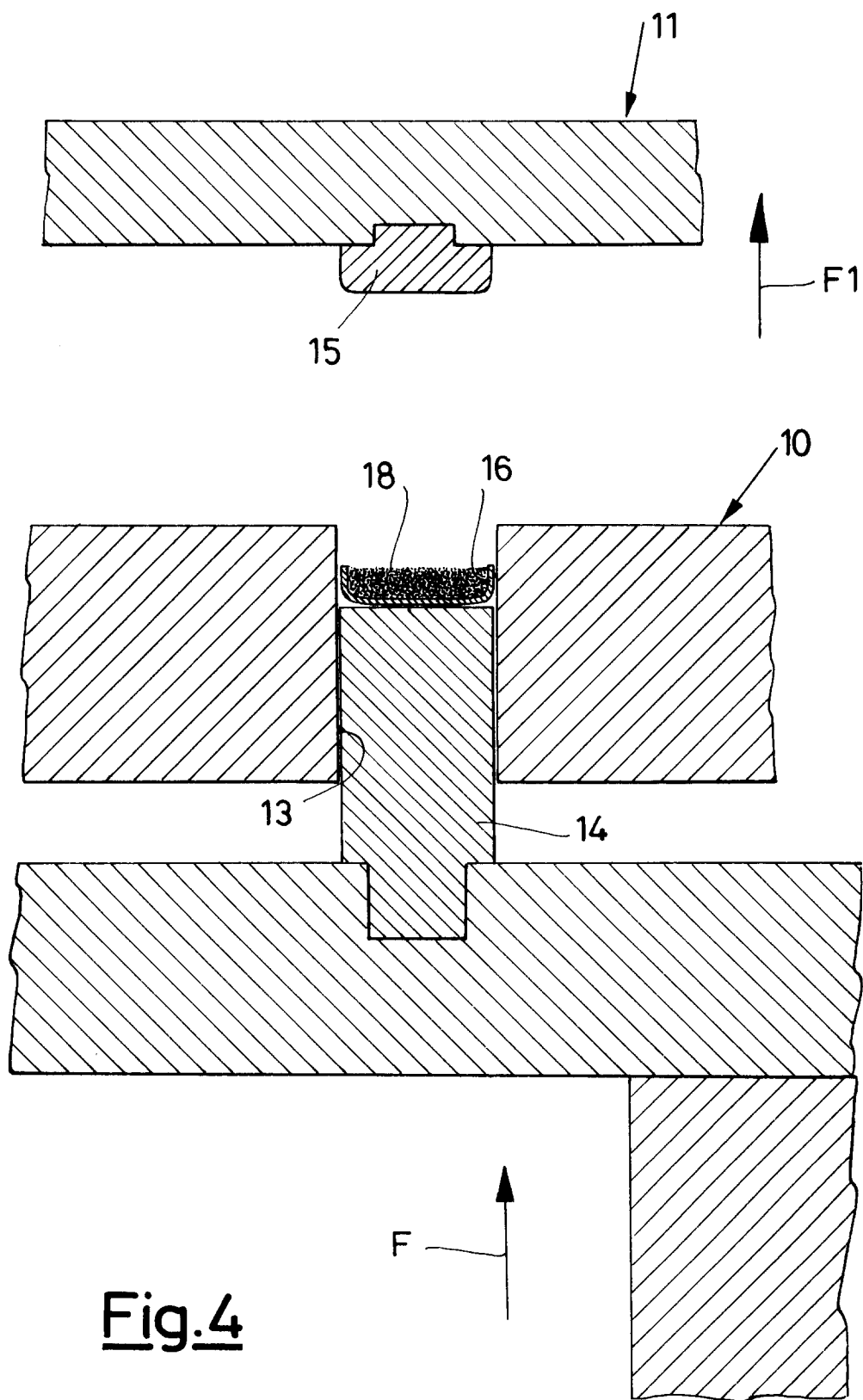


Fig.3



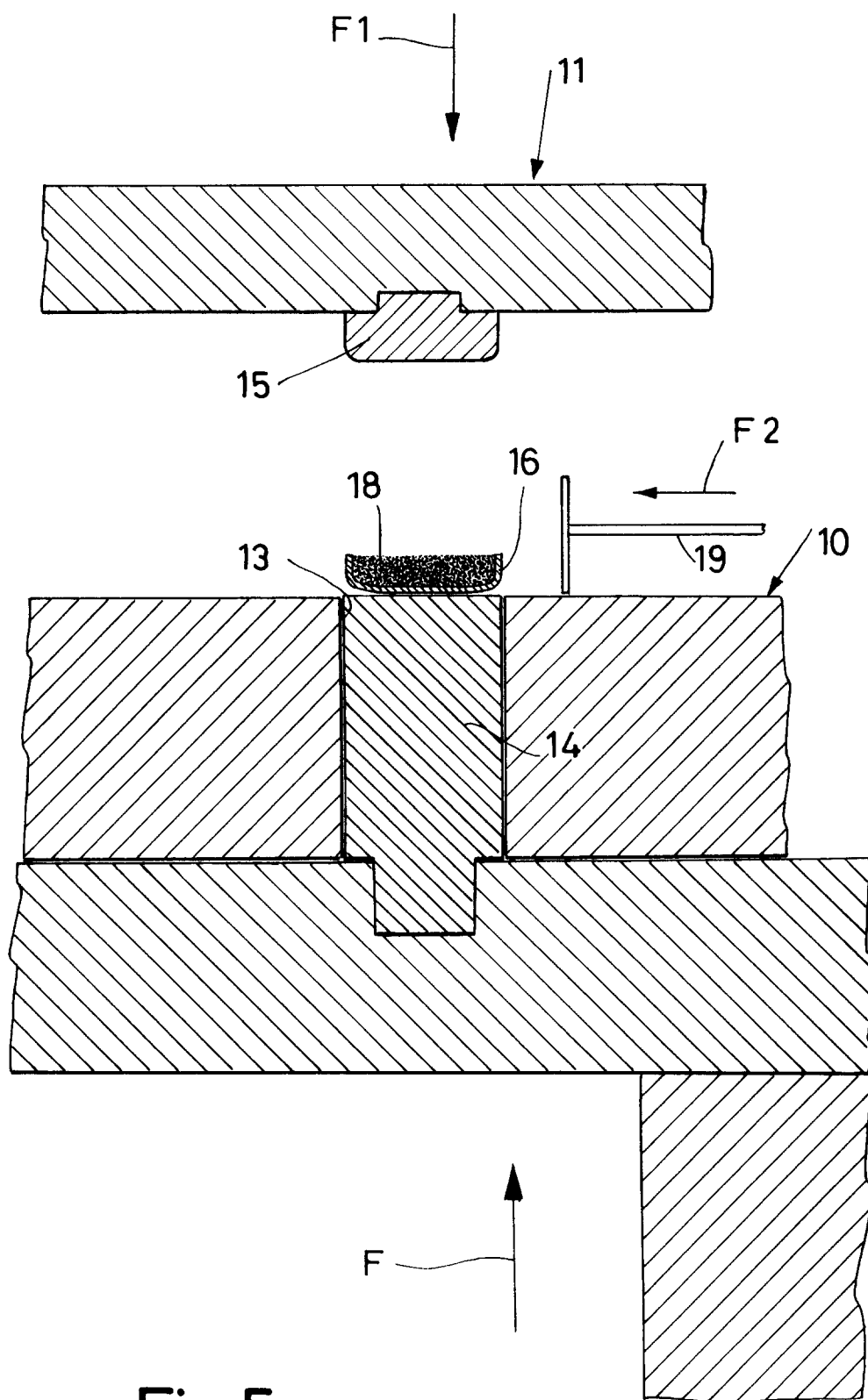


Fig.5

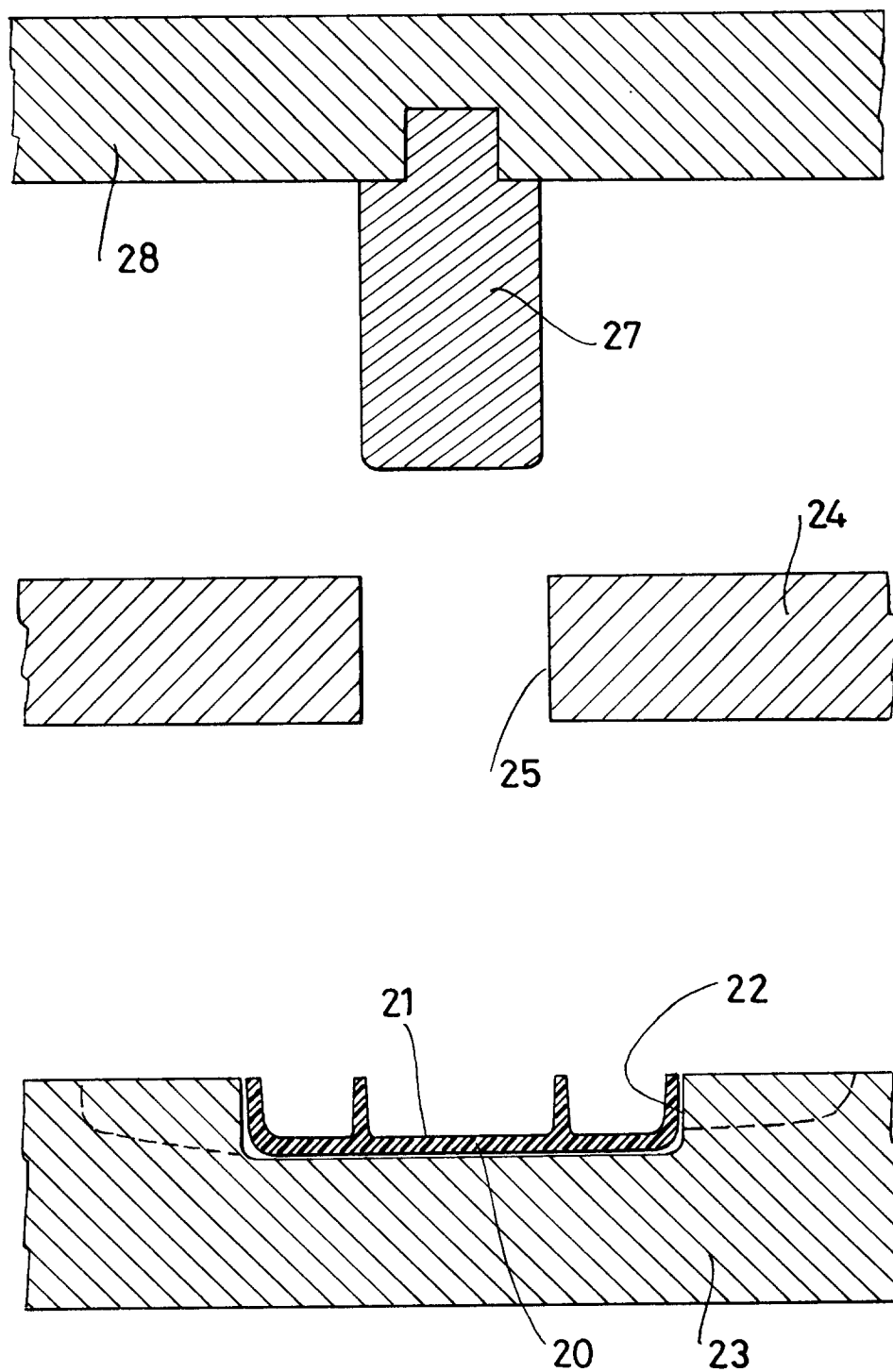


Fig.6

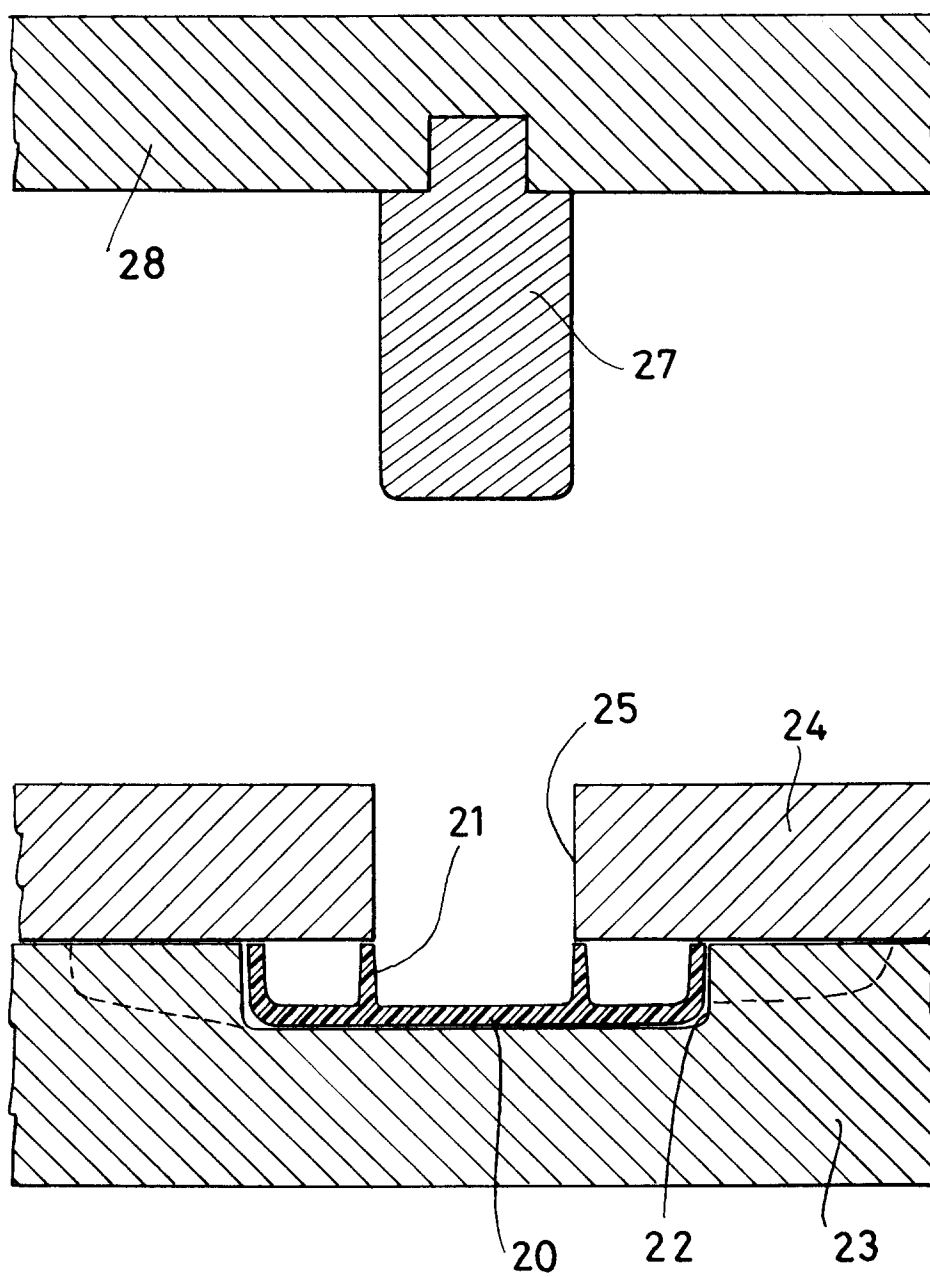


Fig.7

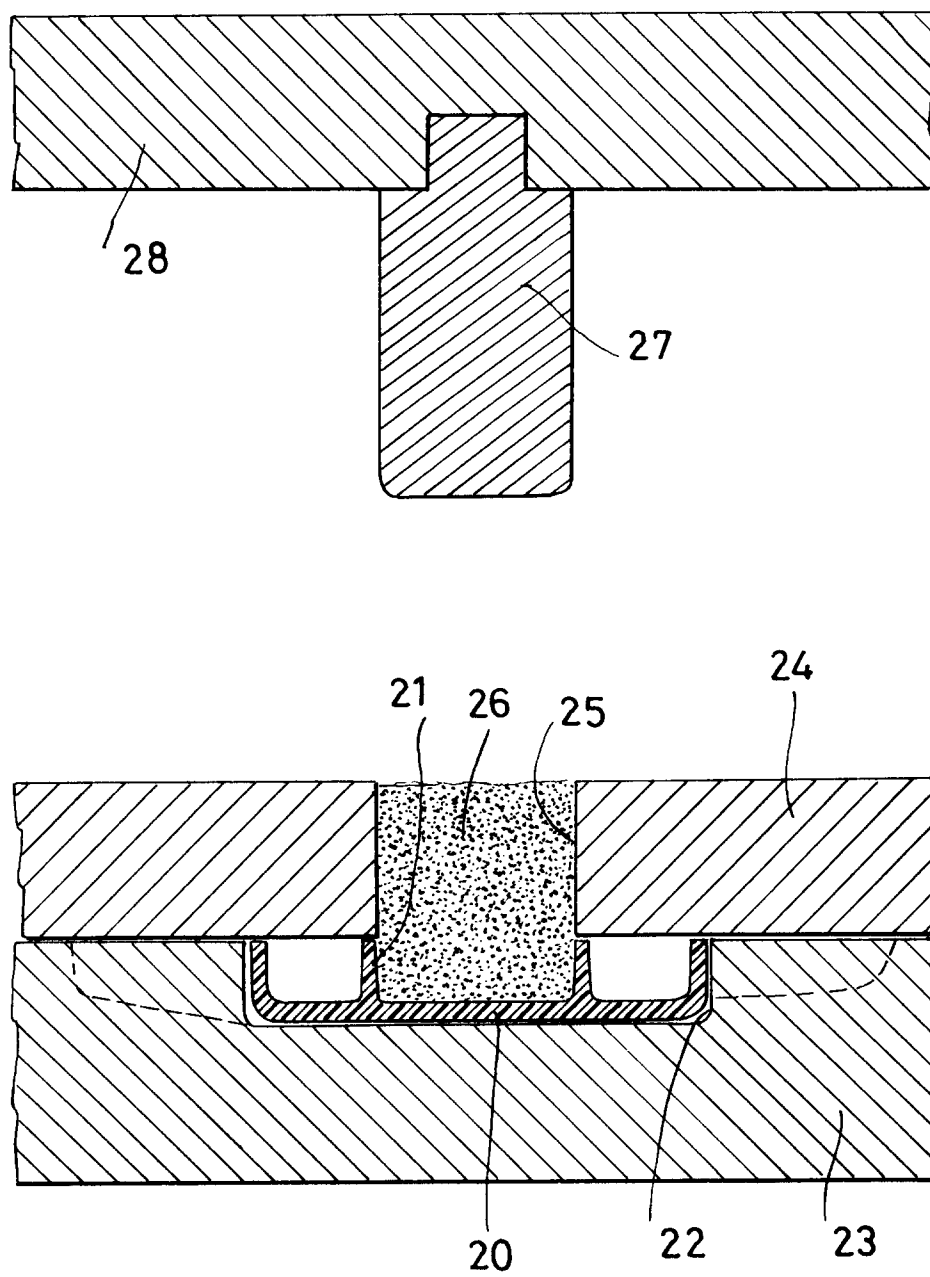


Fig. 8

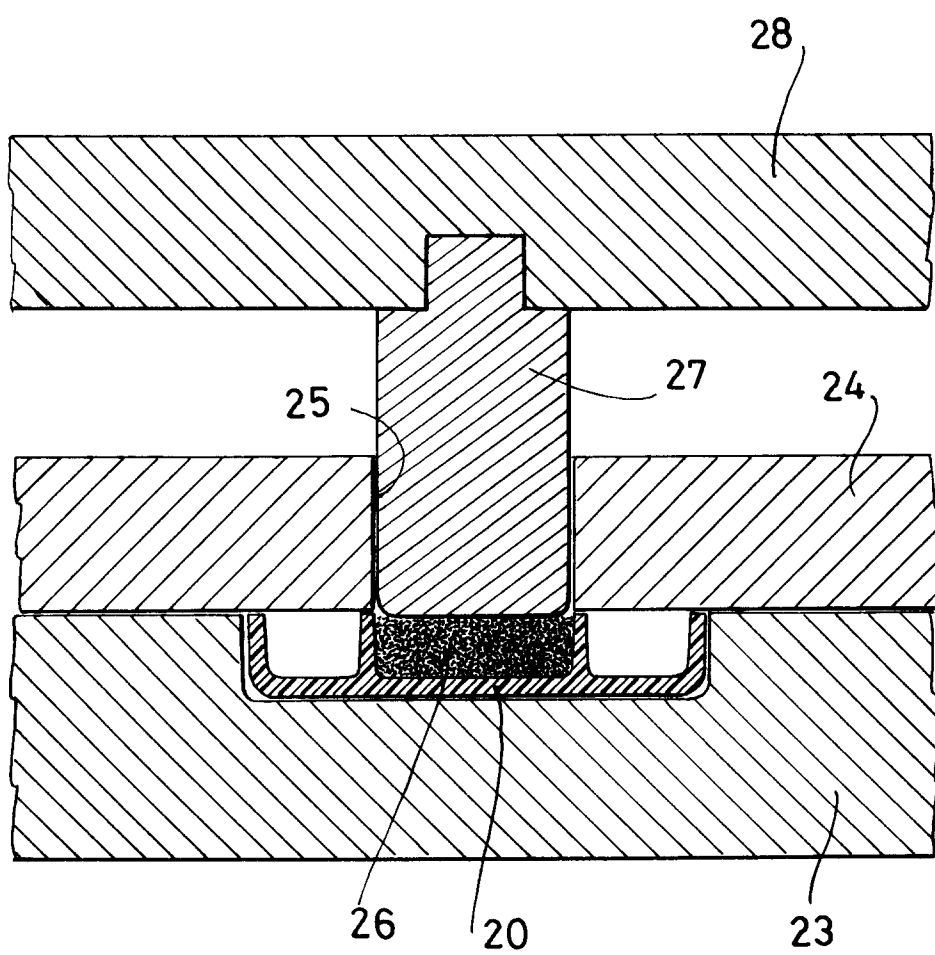


Fig.9