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⑦① Applicant: **APH ROAD SAFETY LIMITED, Unit 7 Dunlop Road Hunt End, Redditch, B97 5XP (GB)**

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⑦② Inventor: **Myers, Frank, 40 Oak Tree Lane Cookhill, Alcester Warwickshire, West Midlands (GB)**

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⑦④ Representative: **Lally, William et al, FORRESTER & BOEHMERT Widenmayerstrasse 4/I, D-8000 Munchen 22 (DE)**

⑤④ **Improvements relating to road signs.**

⑤⑦ A road sign is stamped from sheet plastics material, comprising a stem portion (22) and a display area (14), the stem portion (22) being adapted to be inserted diagonally within the aperture of a base member (6). The display portion may be curved, such as by a thermo-forming operation, or may be provided with a slot (20) to enable a similar supplementary display portion to be interfitted with the display portion (14). The display portion may carry a light, which is electrically interconnected with a power source provided in the base.

EP 0 145 349 A2

Title: "Improvements relating to road signs"

This invention is concerned with improvements relating to road signs, particularly of the kind (hereinafter referred to as being of the kind specified) as are used to indicate temporary road restrictions and/or conditions, such road signs being readily transportable.

5 Numerous specialist road signs are in use, which are placed in appropriate positions to indicate to road users a particular road condition. Examples include indicators for road works, uneven road surfaces, slippery road conditions and the like. Such road signs are used in pairs or in small numbers, e.g. indicating merely the extremities of the particular road condition.

10 However there is an increasing use of indicators of the type as are used to indicate the lateral boundaries of a road condition, or the division of a road into contraflow lanes, and it is with this latter type that the present invention is particularly concerned.

15 Conventionally used for this purpose are generally conical, plastics-moulded bollards. These suffer from some at least of the following disadvantages:-

- a) they are expensive;
- 20 b) it is difficult to provide a bollard with adequate stability, particularly in windy conditions;
- c) their profile tends to cause them to be drawn from position by the slip stream of large vehicles such as lorries;
- d) once displaced they tend to roll round in the road, presenting a danger to road users;
- 25 e) they occupy relative large volumes and are in consequence expensive to transport and store.

To reduce the difficulties b) to d) above, it has become practice to stack two or even three bollards, to increase the weight/surface area ratio. However this results in an even greater expense, and cost of transport.

30 According to this invention there is provided a road sign suitable for use to indicate temporary restrictions and/or road conditions, comprising a portion which provides an area for display, and mounting means in the form of a stem portion integral with the display portion, said road sign being formed from plastics material of substantially uniform thickness.

Preferably the road sign is adapted for use in conjunction with a relatively robust base member, preferably one which is moulded from plastics material and which comprises a downwardly-extending aperture.

5 Thus, in use, base members may be located as desired, and the road sign slotted into the aperture of the base member. Whilst the road sign may itself be damaged during use, the broken road sign may readily be removed from the base member and replaced by a new road sign.

10 Alternatively, the stem portion may extend generally at right angles to the height of the display portion, and be provided with means (such as a hole) to enable it to be secured to a support member, such as a road surface, for example by studs.

Preferably the road sign is formed by cutting or stamping from sheet plastics material.

15 The road sign may be used in flat form: whilst in such form it will be readily visible only in two opposite directions, this will cause no difficulty in contra-flow systems, since it, and the manner in which it is mounted, may be oriented so that the road sign will be visible in the required directions of travel.

20 Being flat, and light in weight, the road sign may be packed and transported for use, together with base members, relatively economically, and road signs may be erected on the base members without difficulty.

25 The road sign may be cut or stamped from sheet plastics material which may be pre-painted or pre-coated with light-reflective material as desired, or may be moulded from self-coloured plastics material, or may be provided with a suitable coating subsequent to stamping.

30 If desired, the display portion at least may be formed (such as by a thermo-forming operation) into part-cylindrical or part-conical shape. Alternatively, the road sign may comprise a supplementary portion which is adapted to be mounted on the display portion to provide depth in the direction at right angles to the plane of the display portion, the supplementary portion being cut or moulded from plastics material.

35 According to this invention there is also provided, in combination, a base member and a road sign adapted to be releasably interfitted with the base member, the base member comprising a body and a downwardly-extending aperture in the body, the road sign being formed from a sheet of substantially uniform thickness and comprising a display portion and a stem

portion extending from the display portion, the stem portion being of such a size as to enable it to be slotted into the aperture.

Preferably the road sign carries a lamp, connection means being provided by which the lamp may be illuminated from a power source on the base member.

If desired, to reduce the reaction of the road sign to wind pressures, slots may be provided in the display portion.

There will now be given a detailed description, to be read with reference to accompanying drawings, of road signs which are the preferred embodiments of this invention, which have been selected for the purposes of illustrating the invention by way of example.

In the accompanying drawings:-

FIGURE 1 is a perspective view of a base member for the road sign which is the first embodiment of this invention;

FIGURES 2, 3 and 4 are respectively front elevation, side elevation and plan view of the road sign which is the first embodiment of this invention;

FIGURE 4a is an elevation of an alternative construction of the stem of the road sign;

FIGURE 5 is a view illustrating a modified form of the first embodiment, when mounted on the base member;

FIGURE 6 is a perspective view of the road sign which is the second embodiment of this invention;

FIGURE 7 is a vertical sectional view of the second embodiment;

FIGURE 8 is a side elevation of the road sign which is the third embodiment of this invention; and

FIGURES 9, 10 and 11 are respectively front elevation, side elevation and plan view of the road sign which is the fourth embodiment of this invention.

The road sign which is the first embodiment of this invention is particularly adapted for use with a base member of the kind illustrated in Figure 1, the base member comprising a body 6 which is generally rectangular in shape, moulded from plastics material such as re-claimed P.V.C. or polyurethane and which is provided with a generally rectangular aperture 8 extending downwardly through an upper surface 10 of the body 6.

The road sign which is illustrated in Figures 2, 3 and 4 is stamped from sheet plastics material, similarly of reclaimed P.V.C. or polyurethane conventionally in the order of 1cm thickness, and comprises a display portion

14 which is generally triangular in shape, having a narrow top edge 18 and a base 16 which is of a dimension similar to the diagonal dimension of the body 6 of the base member. Extending downwardly from the base surface 16 is a short stem portion 22, which is slightly tapered, being of a dimension such as to enable the stem portion to be fitted into the aperture 8, diagonally thereof. Alternatively the stem portion 22 may be parallel sided, although fitting of the stem portion 22 into the aperture 8 is facilitated when the stem portion is slightly tapered.

The road sign which is the first embodiment is cut or stamped from at least semi-rigid sheet plastics material, and is preferably provided with visual "depth" by a thermo-forming operation, in which the sign is formed to a shape which is curved about its vertical axis, specifically into a part-conical shape. The road sign as a whole may be formed from pre-coated plastics sheet material, or the display portion at least may be painted or coated such as by self-adhesive tape to provide a surface of appropriate reflectivity.

If desired, the stem portion 22 may be provided with a central slot, as is shown in Figure 4a, to enable the limbs 22a, 22b provided thereby to be resiliently deformed inwardly. Thus, by the provision of feet 23 at the end portions of the limbs 22a, 22b, the stem 22 may be press-fitted into the aperture 8, and held in place by engagement between upwardly facing surfaces of the legs 23 with a shoulder on the interior of the base member. This will enable the road sign and base member to be picked up by grasping an upper portion thereof, and moved as a whole to a desired position.

In the modification illustrated in Figure 5, a lamp 20 is secured to an upper part of the display portion, such as in an aperture in a generally central, upper part thereof. The lamp is connected by wiring 22 to connection means, such as a jack plug 24, secured to the stem 22, and which, on the mounting of the road sign on the base member 6, interfits with a receiving jack socket 26 on the base member, whereby the lamp 20 is connected to a supply of electricity, such as a battery 28 provided within the base member 6.

By the provision of the lamp within the display area afforded by portion 14, light from the lamp is also reflected towards oncoming vehicles from the display surface, increasing the effective luminescence of the lamp.

In the second embodiment illustrated in Figures 6 and 7, the road sign is flat, but is provided with a slot 20 extending from the upper surface 18 of the

display portion. The road sign comprises a supplementary portion 24 which is similar to the display portion 14, other than the slot 20 is omitted therefrom, and instead, a slot 28 is provided (illustrated in chain dot lines in Figure 7) which extends upwardly through the stem portion 22, and which terminates at the level at which the slot 20 terminates. In this manner, the supplementary portion 24 may be mounted over the display portion 14, with the two stem portions engaging within respective diameters of the aperture 8 of the base member.

In the embodiment illustrated in Figure 8, a supplementary portion 34 is provided which is similarly stamped from sheet plastics material, which is round in shape, and which is provided with a radial slot 36. Thus, the supplementary portion 34 may be mounted on the display portion 14 by passing the slot 36 over the slot 20.

In the embodiment illustrated in Figures 9 to 11, a road sign is provided comprising a display portion 44 which is somewhat more part-cylindrical than part-conical. Additionally, in the fourth embodiment, the stem portion 52 extends at right angles to the height of the display portion, and is provided with an aperture 54 by which it may be secured to a support member, or direct to the road surface, by bolting.

By the use of this invention, a road sign is provided which is relatively inexpensive, light in weight, and may very easily be erected in the desired position, and conveniently changed if damaged. Being of plastics sheet material, such as semi-rigid plastics sheet material of 1cm thickness, it will be flexible, allowing the road sign to temporarily deform under load, and return to its original position.

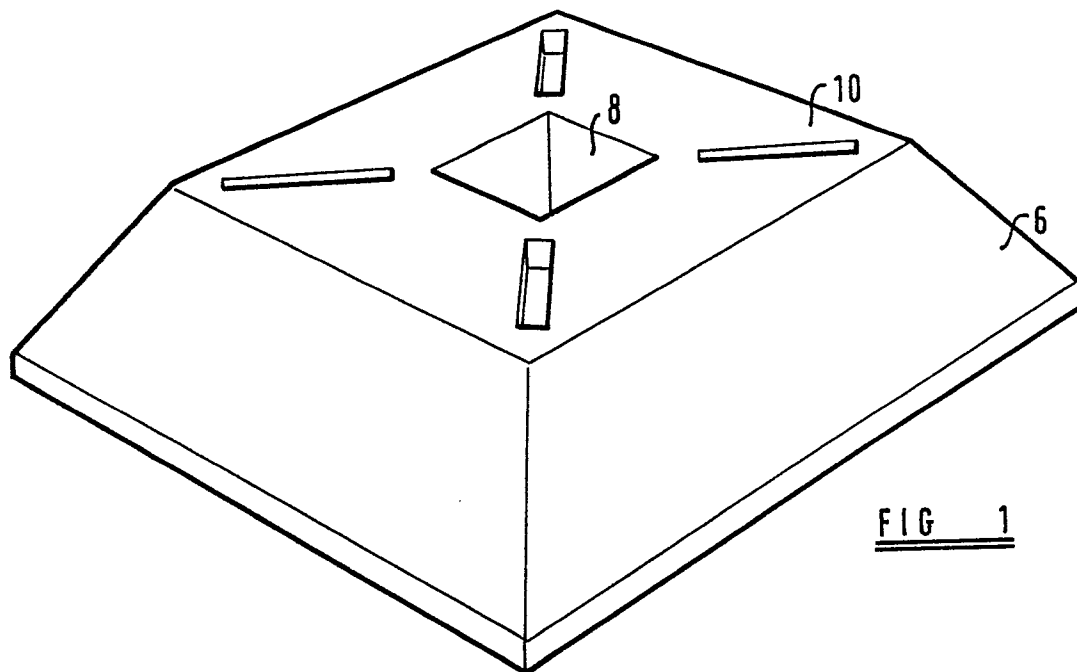
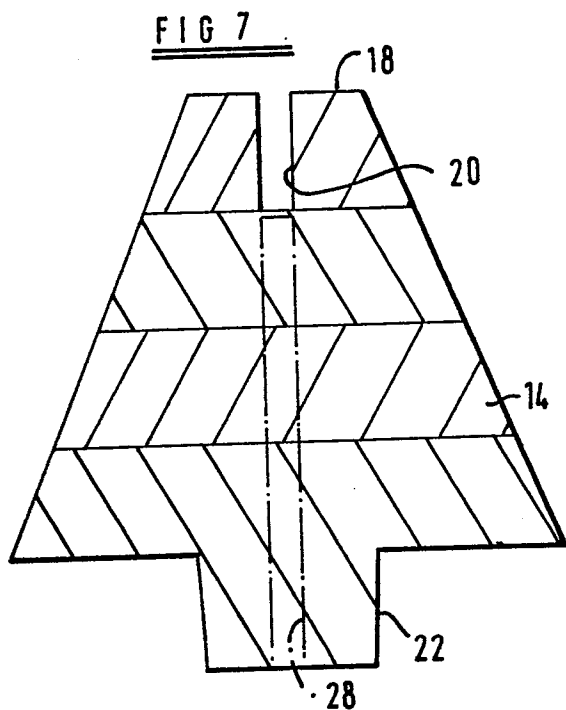
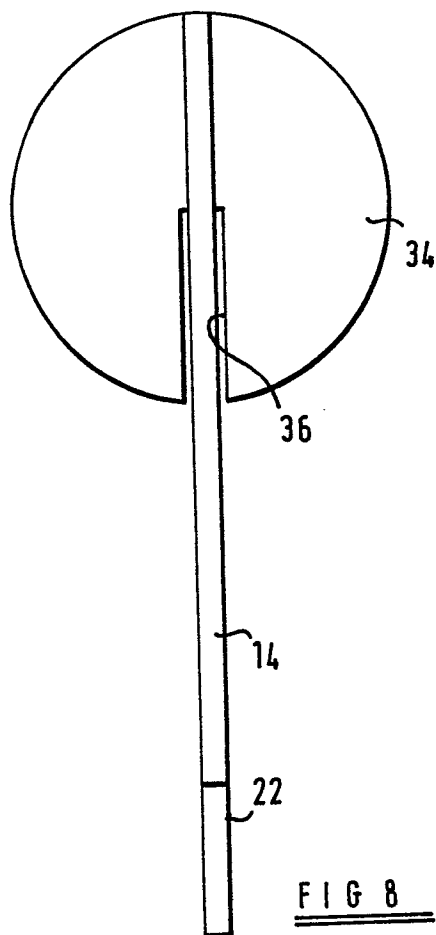
If desired, slots may be provided in the display portion, to reduce wind resistance, and thereby reduce movement of the road sign under the effect of road vehicle slip stream.

CLAIMS

- 5 1. A road sign suitable for use to indicate temporary restrictions and/or conditions, comprising a portion (14) which provides an area for display, and mounting means (22) in the form of a stem portion integral with the display portion (14), and which is formed from plastics material of substantially uniform thickness.
2. A road sign according to Claim 1 wherein the stem portion is of a dimension such that it may be slotted into an aperture (8) of a base member (6).
- 10 3. A road sign according to Claim 1 wherein the stem portion (22) extends generally at right angles to the height of the display area (14), and is provided with means to enable it to be secured to a support member.
4. A road sign according to any one of the preceding claims which is formed by cutting or stamping from sheet plastics material.
- 15 5. A road sign according to any one of the preceding claims wherein the display portion (14) is formed such as by a thermo-forming operation into part-cylindrical or part-conical shape.
- 20 6. A road sign according to any one of Claims 1, 2, 3 and 4 comprising a supplementary portion (24) which is adapted to be mounted on the display portion to provide depth in the direction at right angles to the plane of the display portion, the supplementary portion being cut or moulded from plastics material.
7. A road sign according to Claim 6 wherein the supplementary portion is of a size and shape similar to that of the display portion.
- 25 8. A road sign according to any one of the preceding claims wherein the display portion is afforded with slots to reduce wind pressures.

5 9. In combination, a base member and a road sign adapted to be releasably interfitted with the base member, the base member (6) comprising a body (10) and a downwardly-extending aperture (8) in the body, the road sign being formed from a sheet of substantially uniform thickness and comprising a display portion and a stem portion extending from the display portion, the stem portion being of such a size as to enable it to be slotted into the aperture (8).

10 10. The combination according to Claim 9 wherein the road sign carries a lamp, connection means being provided by which the lamp may be illuminated from a power source on the base member.

FIG 1FIG 7FIG 8

2/4

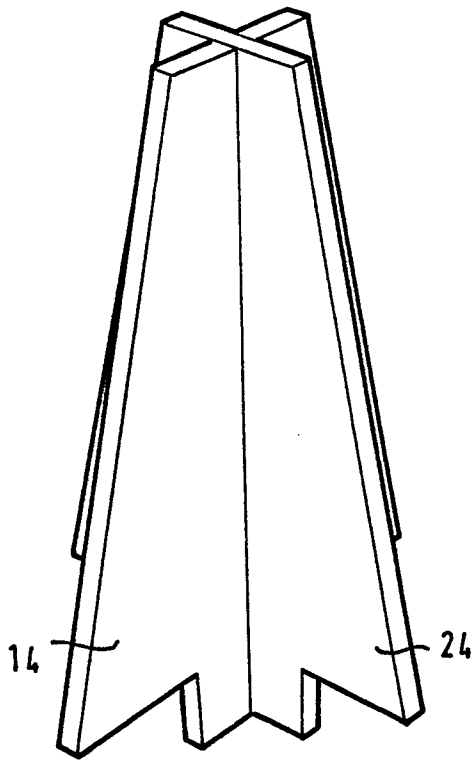


FIG 6

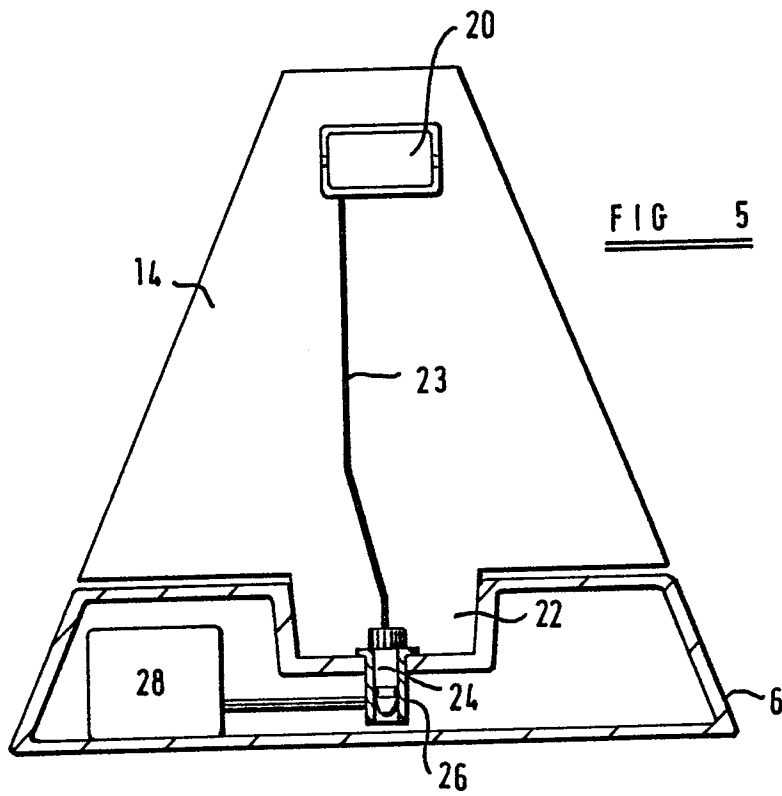


FIG 5

34

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FIG 9

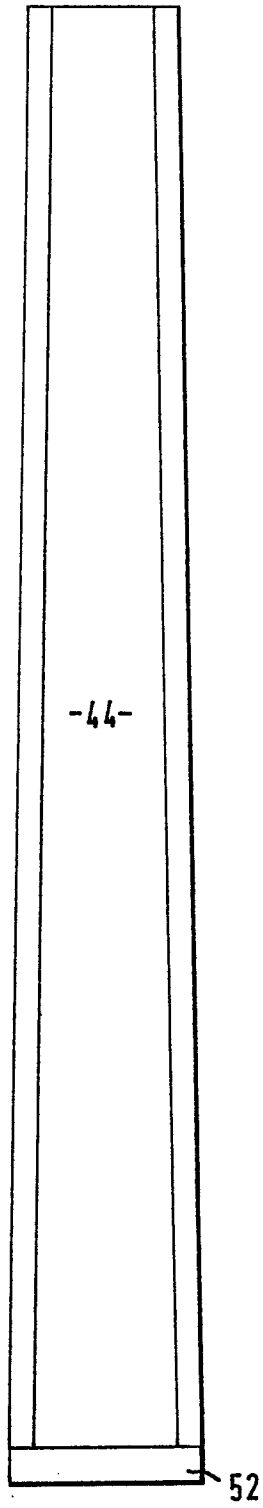


FIG 10

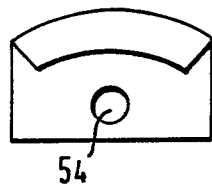
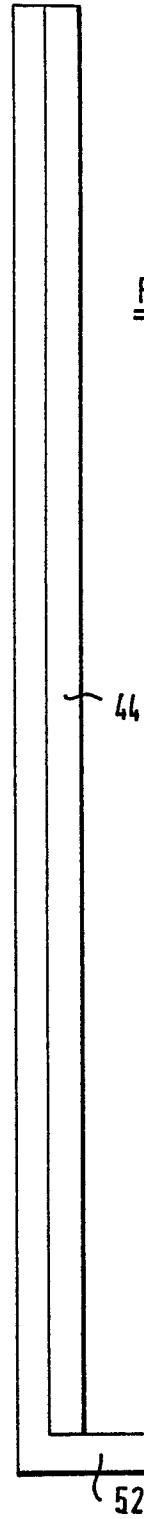


FIG 11

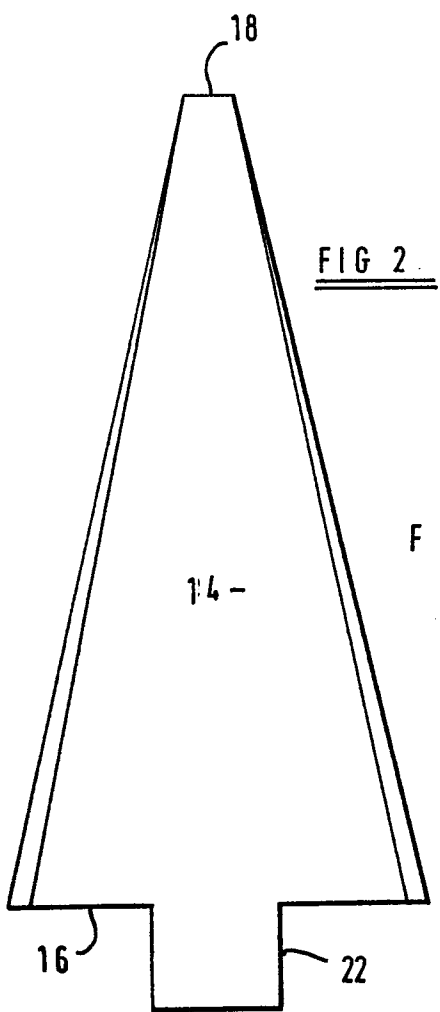


FIG 2

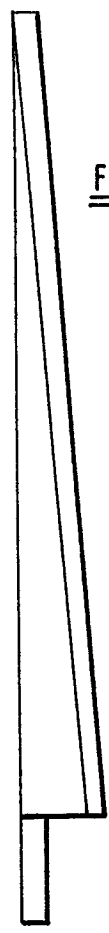


FIG 3

FIG 4

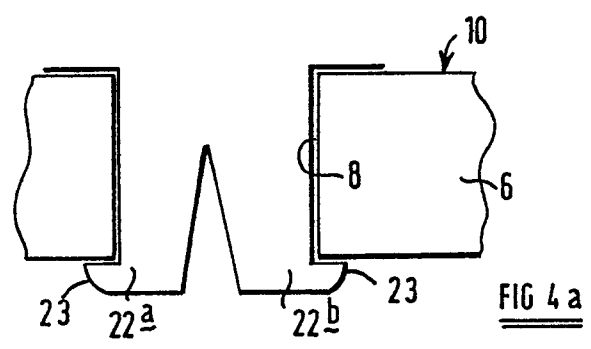
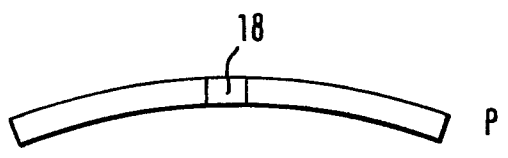


FIG 4a