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EUROPEAN PATENT APPLICATION

21 Application number: **90830220.1**

51 Int. Cl.⁵: **E01F 9/01, B60Q 7/00,
F21V 8/00, G09F 13/00**

22 Date of filing: **18.05.90**

30 Priority: **02.06.89 IT 2077489**

43 Date of publication of application:
05.12.90 Bulletin 90/49

84 Designated Contracting States:
BE CH DE ES FR GB LI NL SE

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54 **Portable device for signalling emergency events on roads and the like, in particular in poor visibility conditions, in tunnels and during the night.**

57 The present invention relates to a portable device for signalling emergency events on roads and the like, in particular in poor visibility conditions, in tunnels and during the night, the main feature of which is that it comprises a support member adapted to receive the terminal portions of a plurality of optical fibres which are adapted to provide at least a signalling pattern corresponding to a signal of the enforcing road code.

The support member is coupled to a base, which houses a light source which can be power supplied by a rechargeable battery or through the coupling to an outside power supply mains.

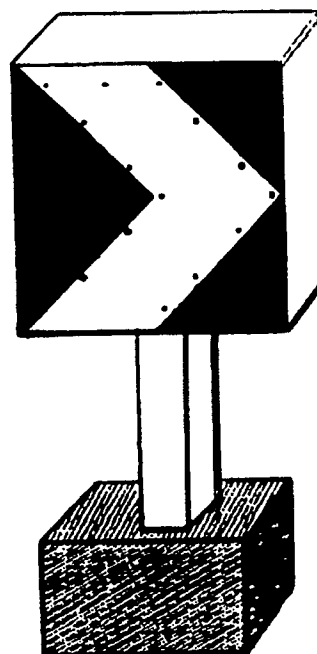


FIG. 1

EP 0 401 175 A2

BACKGROUND OF THE INVENTION

The present invention relates to a portable device for signalling emergency events on roads and the like, in particular in poor visibility conditions, in tunnels and during the night.

As is known, one of the most important problems in the motor vehicle field is that of suitably indicating emergency and dangerous conditions by means of suitable signalling means and traffic signs, which must be properly illuminated during the night, in tunnels and in poor visibility conditions.

Presently known road traffic signalling devices have not been found as suitable to properly solve the mentioned problem since they are substantially based on the principle of illuminating the traffic sign by a light source arranged outside of said sign, or on the principle of providing said traffic signs with flashing light sources in order to indicate the dangerous situation.

This problem, on the other hand, is further aggravated in fog conditions, in which the driver of a motor vehicle can not promptly see the danger sign which is of an occasional and removable type.

Under these conditions, the signalling by flames has not been found as suitable.

For solving the above mentioned problems, refracting devices have also been used which, however, have also been found unsatisfactory.

SUMMARY OF THE INVENTION

Accordingly, the main object of the present invention is to overcome the above mentioned drawbacks by providing a portable device for signalling emergency events on roads and the like, in particular in poor visibility conditions, in tunnels and during the night, which is specifically adapted to provide to a driver of a motor vehicle a clear signalling even under heavy foggy conditions and in tunnels.

Within the scope of the above mentioned aim, a main object of the present invention is to provide such a portable device for signalling emergency events on roads and the like, which is adapted to provide the motor vehicle driver with the indication provided on a traffic sign corresponding to the enforcing road code, in a clearly visible way, both during the night and in tunnels, even in the absence of illuminating devices and in foggy conditions.

Another object of the present invention is to

provide such a portable signalling device which is very reliable in operation.

Yet another object of the present invention is to provide such a portable signalling device which can be easily handled and, moreover, can be obtained by using easily commercially available elements and materials.

Yet another object of the present invention is to provide such a portable device for signalling emergency events on roads and the like, in particular in poor visibility conditions, in tunnels and during the night which is very competitive from an economic and maintenance standpoint.

According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a portable device for signalling emergency events on roads and the like, in particular in poor visibility conditions, in tunnels and during the night, said device being characterized in that it comprises a support member adapted to receive the terminal portions of a plurality of optical fibres adapted to provide at least a signalling pattern, said support member being coupled to a base housing a light source.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the present invention will become more apparent hereinafter from the following disclosure of a preferred, though not exclusive embodiment, of a portable device for signalling emergency events on roads and the like, in particular in poor visibility conditions, in tunnels and during the night, which is illustrated, by way of an indicative but not limitative example, in the accompanying drawings, where:

Figure 1 is a schematic perspective view showing a signalling device according to the invention adapted to signal the direction of the road path or track;

Figure 2 is another schematic view illustrating a portable signalling device according to the invention adapted to provide a generical danger signal; and

Figure 3 shows several possible types of warning signals, in conformity with the enforcing road code, which can be provided by using optical fibres.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the figures of the accompanying drawings, the portable device for signalling emergency events on roads and the like, according to the invention, comprises a supporting base, overallly indicated at the reference number 1.

This supporting base houses, in its inside, a light source which can be power supplied through a 12 V battery, or can be coupled to a possible power supply mains, through the interposition of a 220/12 V electrical transformer.

From the supporting base 1 a variable height tubular body 2 extends, which bears a support member, overallly indicated at the reference number 3.

This embodiment provides a portable signalling device which can be easily handled and oriented, so as to afford the possibility of timely indicating emergency events.

The support member 3 is provided with a panel 4, of any suitable shape, provided that it corresponds to those imposed by the enforcing road code.

On at least a region of the panel, there are coupled the end portions of a plurality of optical fibres 5, adapted to provide a road indication, in conformity with the enforcing road code.

According to a preferred embodiment, there is provided that the signal emitted by the optical fibres, which can be clearly detected at a great distance, must not be visible as the visible angle is greater than 12° so as to not provide any glare phenomena.

Advantageously, the bottom of the panel 4 is made starting from a light refracting type of film, indicated at the reference number 6, which is adapted to improve the visual efficiency.

In this connection it should be pointed out that the optical fibre signalling devices have a high brillancy, and, therefore, they can also be clearly seen under a heavy fog condition providing the driver with a perfect indication of the road path.

In cooperation with the above illustrated signalling device there can be also used apparatus adapted to provide an intermittent light through the optical fibres.

In the case of a very serious danger, it is possible to cause the light signal to be switched on and off so as to provide the driver with a clearly visible light signal.

By this means, a very important result is achieved since the motor vehicle driver can be immediately alerted on the dangerous condition caused by emergency events or accidents which are particularly dangerous in the case of a foggy

wheather.

It should be apparent that the light signalling devices according to the invention, which are applied on the rod-like member, will correspond to the enforcing road code and can be modified depending on the road code requirements.

The provision of a light refracting type of film bottom greatly increases the efficiency of the light signal.

A light intensity adjusting system could be also provided for adapting the optical fibre brillancy to the environment illumination thereby safely eliminating any glare phenomena.

From the above disclosure it should be apparent that the invention fully achieves the intended aim and objects.

In particular, the fact is to be pointed out that the use of optical fibres is such as to perfectly solve the problem of making road traffic signalling devices and signs, which can be clearly seen from a great distance and which do not cause any undesired glare phenomena for a motor vehicle driver, said devices having in the meanwhile a very reduced making and maintenance cost.

While the invention has been disclosed and illustrated with reference to a preferred embodiment thereof, it should be apparent that the disclosed embodiment is susceptible to many modifications and variations all of which will come within the spirit and scope of the appended claims.

In particular, the signalling devices can also be mounted on service motor vehicles and can be power supplied from the same battery of the motor vehicle: thus, these signalling devices will provide a clear indication both of the service motor vehicle and of the path to be safely taken or any other signals which can also be seen from both side of the road track.

Claims

1. A portable device for signalling emergency events on roads and the like, in particular in poor visibility conditions, in tunnels and during the night, said device being characterized in that it comprises a support member adapted to receive the terminal portions of a plurality of optical fibres adapted to provide at least a signalling pattern, said support-member being coupled to a base housing a light source.

2. A device according to claim 1, characterized in that said support member has a panel like body, said panel like body being adapted to house said optical fibre terminal portions.

3. A device according to the preceding claims, characterized in that said optical fibres are adapted to emit a highly directional signal which can be

seen exclusively under a visual angle less than 12°.

4. A device according to one or more of the preceding claims, characterized in that in said base there is arranged an inner power supply source, of the battery type, or a coupling connector for an outer power supply.

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5. A device according to one or more of the preceding claims, characterized in that said device is adapted to be mounted on service motor vehicles and power supplied from the battery of said service motor vehicles.

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6. A device according to one or more of the preceding claims, characterized in that it can be seen from both sides of the road path.

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7. A device according to one or more of the preceding claims, characterized in that said panel comprises at least a light refracting region arranged on the panel portion devoid of optical fibres.

8. A device according to one or more of the preceding claims, characterized in that it comprises light switching on and off devices adapted to intermittently on and off drive said light source.

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9. A device according to one or more of the preceding claims, characterized in that said device comprises adjusting means, controlled by the light intensity of the light source, adapted to adjust the optical fibre brilliancy depending on the environment light.

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10. A road signalling portable device according to one or more of the preceding claims, characterized in that said device is constructed in conformity with the enforcing road code.

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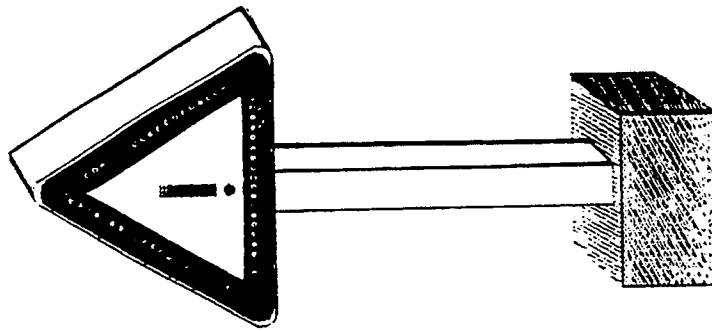


FIG. 2

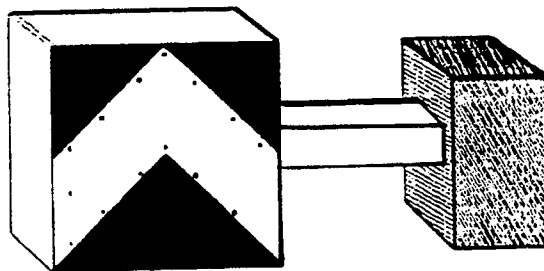


FIG. 1

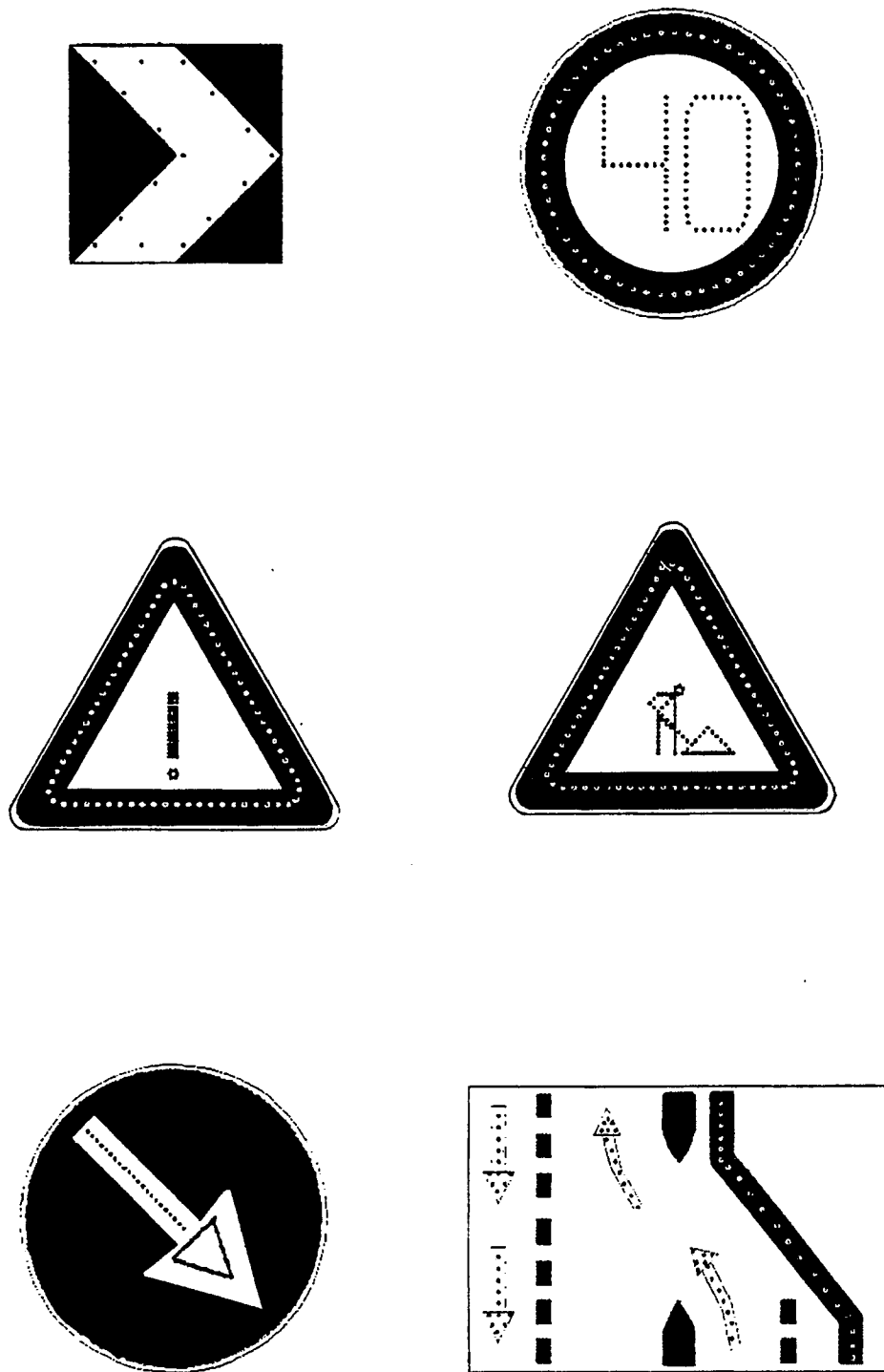


FIG. 3