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(71) Applicant: **INNOVAZIONE S.P.A.**
Via Matteotti, 5
I-20060 - Pessano con Bornago (Milano) (IT)

(72) Inventor: **Apostolo, Carlo**
Via San Marcellino, 25
I-22055 Merate (Como) (IT)

(74) Representative: **Cicogna, Franco**
Ufficio Internazionale Brevetti Dott.Prof. Franco Cicogna
Via Visconti di Modrone, 14/A
I-20122 Milano (IT)

(54) Variable message optic fibre signalling device, particularly designed for traffic signs.

(57) The invention relates to a variable message optic fibre signalling device particularly designed for traffic signs, which comprises a plurality of optic fibres (1), arranged between a light source (3) and a first intermediate panel (11), which is arranged in a facing and spaced relationship with respect to a second intermediate panel (12), therefrom a second plurality of optic fibres extend, which are coupled to an outer panel (15).

Between the intermediate panel there is arranged a shutter element (20), of variable position, and adapted to modify a message which can be displayed on the outer panel.

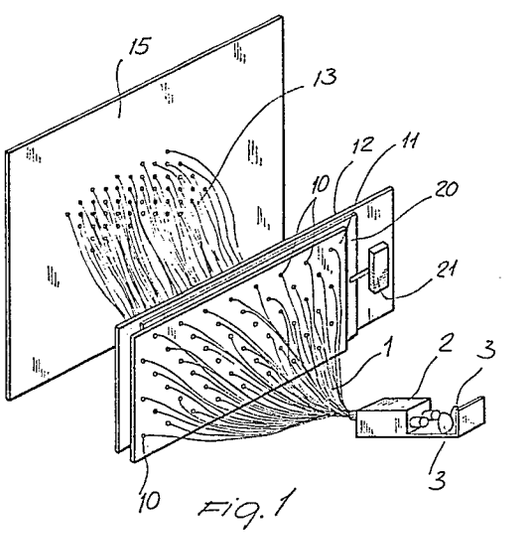

Fig. 1

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Description

VARIABLE MESSAGE OPTIC FIBRE SIGNALLING DEVICE PARTICULARLY DESIGNED FOR TRAFFIC SIGNS

BACKGROUND OF THE INVENTION

The present invention relates to a variable message optic fibre signalling device, which has been particularly designed for traffic signs.

There are already known optic fibre signalling devices which are used as traffic signs or other signalling boards or light panels, as used in very different fields.

However, known signalling devices are affected by some drawbacks, one of which is a great difficulty in changing the light message to be detected from outside,

Because of these reasons, optic fibre light panels have been generally made exclusively for not modifiable messages.

SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to overcome the above mentioned drawbacks, by providing an optic fibre variable message signalling device, specifically designed for traffic signs, which is able of changing, in a quick and easy way, the message to be presented on a panel, without affecting the optic fibres or their arrangement.

Within the scope of the above mentioned aim, a main object of the present invention is to pro vide such an optic fibre signalling device which affords the possibility of modifying the message by simply modifying a middle panel which is not directly coupled to the optic fibres.

Another object of the present invention is to provide such an optic fibre variable message signalling device which is very reliable in operation.

Yet another object of the present invention is to provide such an optic fibre variable message signalling device which can be easily made starting from easily available elements and materials and which, moreover, is advantageous from a mere economic 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 an optic fibre variable message signalling device, particularly designed for traffic signs, characterized in that said signalling device comprises a first plurality of optic fibres, arranged between at least a light source and a first intermediate panel, arranged with a facing and spaced relationship with respect to a second intermediate panel, from said second intermediate panel a second plurality of optic fibres extending which are coupled to an outer panel, between said intermediate panels there being provided a shutter element adapted to modify the message on said outer panel.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the invention will become more apparent from the following description of a preferred, though not exclusive, embodiment of an optic fibre variable message signalling device, particularly designed for traffic signs, which is illustrated, by way of an indicative but not limitative example, in the accompanying drawings, where:

Figure 1 is an exploded schematic view illustrating the optic fibre variable message signalling device according to the invention;

Figure 2 is another schematic view illustrating the configuration of the intermediate or middle panels for coupling the optic fibres;

Figure 3 is another schematic view illustrating a possible embodiment of a shutter element to be arranged between the intermediate panels;

Figures 4 and 5 are further schematic views illustrating two possible messages which can be displayed on an outer panel.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the figures of the accompanying drawings, the optic fibre variable message signal ling device, particularly for traffic signs according to the invention, comprises a first plurality of optic fibres, indicated at the reference number 1, which extend from a light collector element 2, adapted to cause the light beam emitted from two light sources 3 to converge.

The provision of two light sources 3 provides a safety feature,since a light source practically operates as a back -up source for a possible malfunction of the other source.

The optic fibres 1 are caused to pass through holes 10 which are formed through a first intermediate or middle panel 11.

Facing the first intermediate panel 11 and spaced therefrom there is provided a second intermediate panel 12, which also includes throughgoing holes having an arrangement which corresponds to that of the holes 10 formed through the first panel 11.

From the second intermediate panel 12 there extend a second plurality of optic fibres 13 which are coupled to an outer panel 15 for displaying the message.

In order to allow for the displayed message to be changed, between the first intermediate panel 11 and second intermediate panel 12 there is arranged a shutter element 20 also of plate-like shape which is provided with a plurality of throughgoing holes sets.

These throughgoing holes are collimated or registered with preset holes of the intermediate panels, so as to allow for the light beam to pass through exclusively at given points thereby causing the displayed message to change.

The provision of throughgoing holes and dark regions arranged therebetween, affords the possibility of displaying a broad range of messages which can be simply modified by suitably changing the position of the shutter element arranged between the intermediate panels.

More specifically, the shutter element 20 is driven by a linear actuator 21 which affords the possibility of obtaining a given number of desired patterns.

In fact, the shutter element 20 can assume eight different positions between the panels.

The disclosed arrangement is accordingly such as to quickly modify the light message displayed on the panel, without the need of modifying the connections of the optic fibres which are always coupled at the same points and which will transmit a dif ferent message depending on the position of the shutter element arranged between the intermediate panels.

Thus, it should be apparent that the mentioned shutter element practically operates as a diaphragm, allowing for light to pass through some regions, corresponding to the throughgoing holes, while preventing light from passing through the dark regions, thereby quickly and easily changing the message being displayed, and which has been overally indicated at the reference number 30 in the accompanying drawings.

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

In particular, the fact is to be pointed out that the signalling device according to the invention is very simple construction-wise since it, by using a simple shutter element which can be arranged at different positions, affords the possibility of easily changing the message being displayed without modifying the interconnections of the optic fibres.

Moreover, another important feature of the invention is that two light sources have been provided for a very reliable operation of the signalling device.

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 several modifications and variations all of which will come within the spirit and scope of the appended claims.

Claims

1. An optic fibre variable message signalling device, particularly for traffic signs, characterized in that said signalling device comprises a first plurality of optic fibres, arranged between at least a light source and a first intermediate panel, facing and spaced from a second intermediate panel, therefrom a second plurality of optic fibres extend which are coupled to an outer panel, between said intermediate panels there being arranged a variable position shutter element to modify a message to be displayed on said outer panel.

2. A variable message signalling device according to the preceding claim, characterized in that said signalling device comprises two light sources to be selectively operated.

3. A variable message signalling device according to the preceding claims characterized in that said first and second optic fibre pluralities are engaged in holes respectively formed through said first and second intermediate panels, said holes being mutually registered with one another.

4. A variable message signalling device according to one or more of the preceding claims, characterized in that said shutter element consists of a plate- like element having a plurality of differently arranged throughgoing holes alternating with dark regions, said throughgoing holes registering with said holes through said intermediate panels, in order to allow for a light beam to pass threrethrough, at given optic fibres.

5. A variable message signalling device according to one or more of the preceding claims, characterized in that said shutter element can be linearly moved between said intermediate panels by means of a linear type of actuator.

6. A variable message signalling device according to one or more of the preceding claims, characterized in that said shutter element is of an interexchangeable nature.

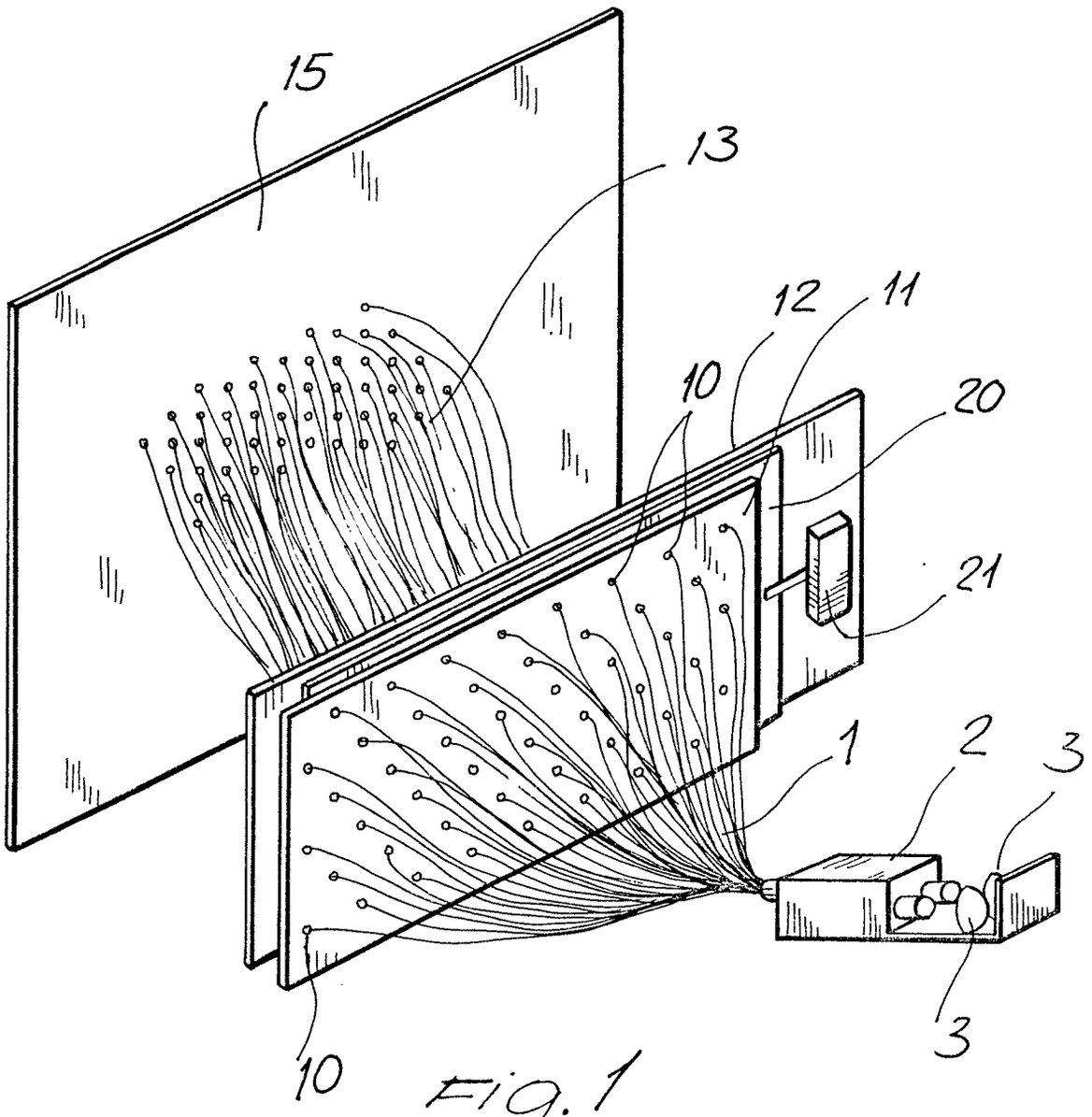

Fig. 1

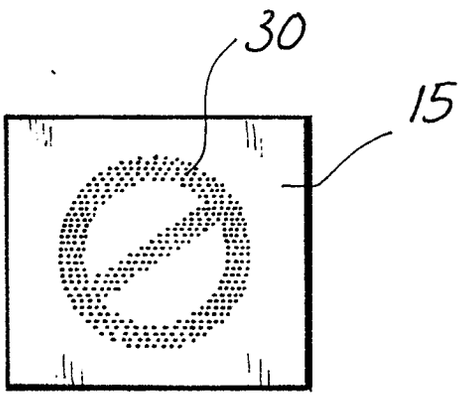

Fig. 4

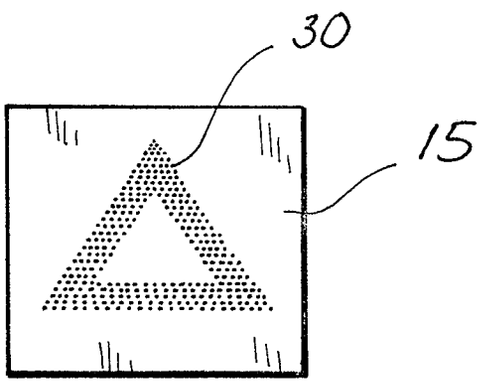

Fig. 5

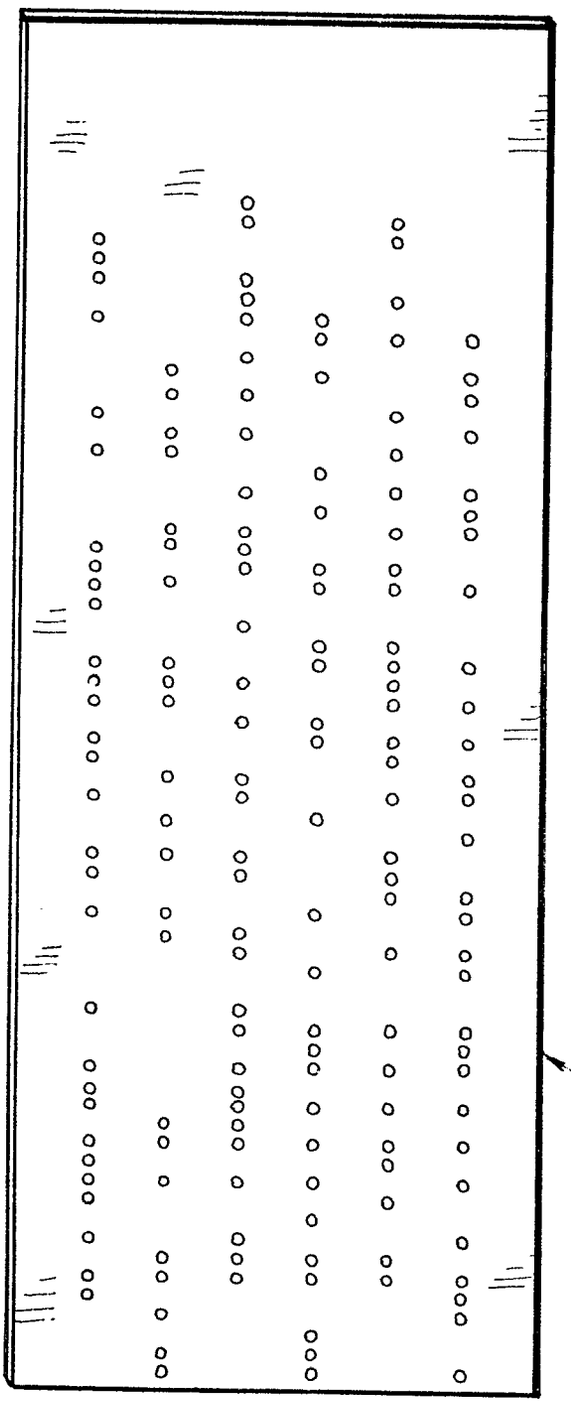

Fig. 3

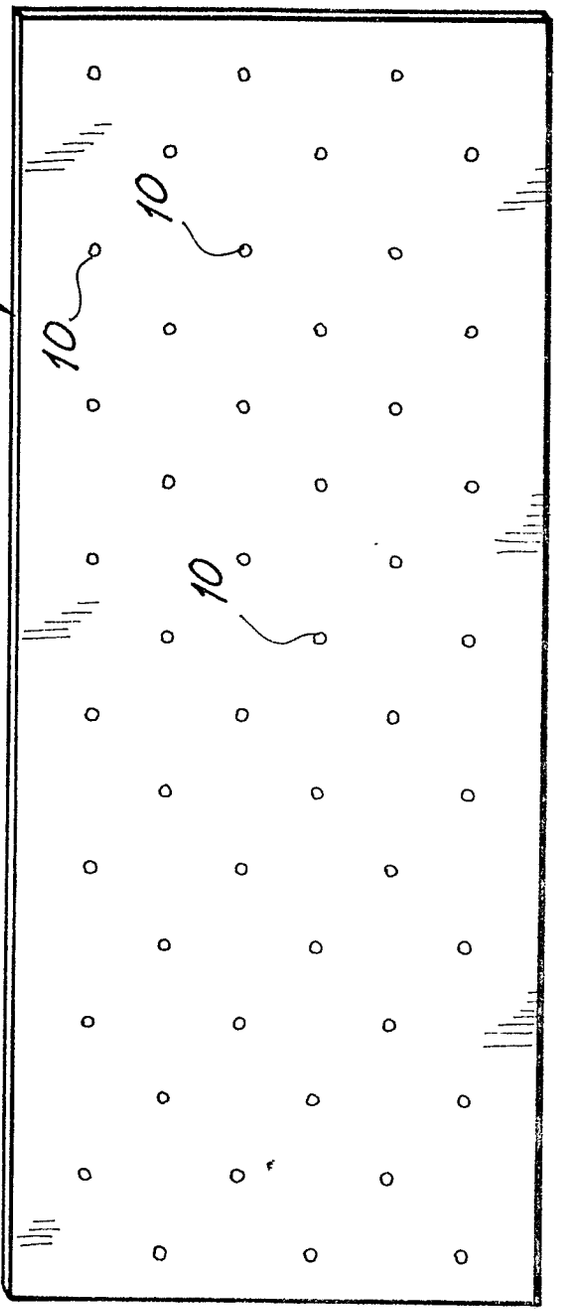

Fig. 2