Oct. 19, 1948. S. ROSENBLUM 2,451,979

INDICATING DEVICE

Filed Sept. 4, 1943

Fig. 1

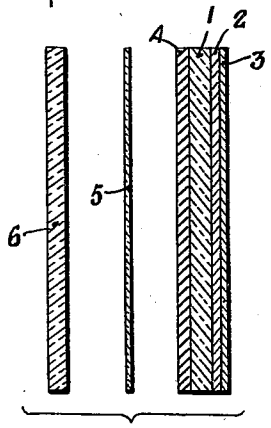
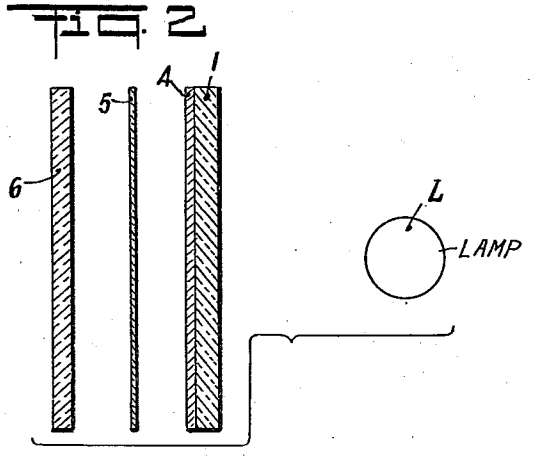


Fig. 2



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INDICATING DEVICE

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4 Claims. (Cl. 282—28)

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My invention relates to a new and improved indicating device.

One of the objects of my invention is to provide a device which can be used for indicating written or printed or pictorial messages in the dark.

Another object of my invention is to provide a device of this type, whereby messages can be written and such messages can be readily removed from the device.

Another object of my invention is to provide a device of this kind, in which the illumination is provided either by a lamp or by a radioactive paint or by any suitable phosphorescent material.

Numerous additional objects of my invention will be stated in the annexed description and drawings which illustrate preferred embodiments thereof.

Fig. 1 is a diagrammatic vertical section of the first embodiment, in which I utilize a radioactive paint or other phosphorescent material.

Fig. 2 is a vertical diagrammatic section of the second embodiment, in which I use a lamp as a source of illumination.

Fig. 1 shows a transparent glass body 1 which has front and rear planar faces. This glass body 1 constitutes a non-compressible and light-permeable carrier. Said glass body 1 may be rectangular or any other shape. Said carrier or body 1 may be made of any suitable transparent resin or other transparent material. An adherent layer 2 of a light-emitting or fluorescent composition is applied to the rear face of the carrier 1. Said layer 2 may be applied in the form of an adherent paint. The material of said layer 2 can include zinc sulfide intermixed with a radium salt, so that said layer 2 will emit light continuously in the dark, due to the activation of the zinc sulfide or other suitable material.

This layer 2 is either translucent or transparent. Said layer 2 is covered by a reflecting layer 3 which is applied to the rear face of the layer 2. Said layer 3 may be an opaque reflecting white paint, or a mirror surface of any kind.

The front face of the carrier 1 is provided with a tablet layer or writing layer 4 of a material which can be easily deformed under pressure, and which will remain in its deformed shape under the applied pressure. Said layer 4 may be a suitable wax, such as beeswax, a mixture of waxes, etc. Compositions of this type are well-known, so that they require no further description. Such compositions are indentable at ordinary temperature of 70° F., by an unheated pencil or stylus. The layer 4 is light-permeable and it is preferably translucent.

The carrier 1 and its layers 2, 3 and 4, are permanently connected to each other, so as to form a sub-unit of the device.

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The reference numeral 5 indicates a thin and flexible sheet of pyroxylin or other suitable transparent or translucent material. Said thin sheet 5 can be releasably applied to the front face of the layer 4. If desired, the sheet 5 may be kept separate from the layer 4. The thin sheet 5 is readily deformable under applied pressure.

The reference numeral 6 indicates a light-permeable sheet of pyroxylin or other suitable flexible and light-permeable material. The sheet 6 is thicker than the sheet 5.

In order to use the device of Fig. 1, the thin and flexible sheet 5 is applied under little or no pressure to the front face of the tablet layer or writing layer 4. There will be little or no adherence between sheet 5 and layer 4. The sheet 5 is held against shifting, relative to layer 4, either by hand or in any manner. The flexible sheet 6 is applied to the front or exposed face of the sheet 5.

The message is then written or drawn upon the front face of the sheet 6, using a pencil or stylus or any other tool which can exert the desired writing or drawing pressure. The writing or drawing pressure is applied through the flexible sheets 6 and 5 to the deformable material of the tablet layer 4, so that the tablet layer 4 is indented along the line or lines or point or points which correspond to the words or pictures which are to be exhibited, and which are drawn or written or impressed on the front face of sheet B.

After this has been done, the sheet 6 can be optionally removed from its contact with the sheet 5, and the sheet 5 adheres to the front face of the layer 4 only at the points or lines where the writing or drawing pressure has been exerted, and where the sheet 5 and layer 4 have been indented. The sheet 5 is sufficiently thin and deformable so that it remains indented along the indented and thinned parts of the layer 4. The sheet 6 is sufficiently resilient so that it does not remain indented by the writing or drawing pressure. Sheet 6 can be kept in place or removed.

An observer who is located in front of the sheet 5 will see the desired message, because the light which emanates from the layer 2 is reflected forwardly by the mirror layer 3, and there is enough contrast and difference in the light-permeability between the indented and thinned portions of the layer 4 and the unthinned and unindented portions of said layer 4, and between the indented and non-indented portions of sheet 5, in order to make such message clearly visible.

After the message has been exposed for the desired period, pressure can be applied over the entire front face of the sheet 5 by rubbing said sheet 5 with a ruler or other object which has a straight edge. Said rubbing pressure will cause

the layer 4 to assume the same thickness throughout, thus obliterating the message.

If desired, the translucent sheet 5 can be peeled off the tablet layer 4 after the message has been obliterated, and said sheet 5 can then be reapplied to said tablet layer 4, in order to write a new message. Hence, when I state that sheet 5 is adherently connected to layer 4, said connection may be a releasable connection.

The device can thus be used repeatedly for transmitting written or pictorial messages in a dark place.

Without limiting the invention to the specific dimensions stated herein, the thickness of the layer 4 may be about 0.01 inch, and the thickness of the thin pyroxylin or "Celluloid" sheet 5 may be about 0.003 inch.

Fig. 2 is the same as Fig. 1, save that the layers 2 and 3 have been omitted. In such case, a lamp L provides the transmitted light for reading the message, to an observer who is located in front of the sheet 5.

If desired, the tablet layer 4 can be readily removed by means of a suitable solvent or by mechanical action, and it can be replaced by a fresh layer 4.

I have described preferred embodiments of my invention, but it is clear that numerous changes and omissions and additions can be made, without departing from its scope.

For example, the layer 4 may be transparent or substantially transparent, instead of being translucent. Likewise, the layers 5 and 6 may be light-permeable to any desired extent.

Likewise, in the embodiment of Fig. 2, a phosphorescent layer 2, without a radio-active compound therein, can be provided. Said phosphorescent layer 2 can be activated when desired, by rays emitted by a suitable lamp. Hence, after the lamp L has been extinguished, the layer 2 will emit light for a substantial period of time.

I claim:

1. An indicating device comprising a non-compressible and light-permeable carrier, light-emitting material located upon the rear face of said carrier in order to transmit light through said carrier, tablet material located on the front face of said carrier, said tablet material being light-permeable so that the light which is emitted by said light-emitting material will be transmitted through said tablet material, said tablet material being sufficiently deformable under pressure to change its permeability to light solely under applied pressure, to provide the necessary contrast for reading the markings which are made in said tablet material by applied pressure, said tablet material being adherent, a writing tablet applied to the front face of said tablet material, said writing tablet being light-permeable and being deformable under pressure, so that pressure which is applied to the front face of said writing tablet is transmitted through said writing tablet to deform the tablet material at the point of applied pressure.

2. An indicating device comprising a non-compressible and light-permeable carrier, a layer of light-permeable and light-emitting material located upon the rear face of said carrier in order to transmit light through said carrier, tablet material located on the front face of said carrier, said tablet material being light-permeable so that the light which is emitted by said light-emitting material will be transmitted through said tablet material, said tablet material being sufficiently deformable under pressure to change its permeability to light solely under applied pressure, to provide the necessary contrast for reading the markings which are made in said tablet material by applied pressure, the rear face of said layer of light-emitting material having an opaque reflecting member applied thereto.

3. An indicating device comprising a non-compressible and light-permeable carrier, a light-permeable layer of light-emitting material located upon the rear face of said carrier in order to transmit light through said carrier, tablet material located on the front face of said carrier, said tablet material being light-permeable so that the light which is emitted by said light-emitting material will be transmitted through said tablet material, said tablet material being sufficiently deformable under pressure to change its permeability to light solely under applied pressure, to provide the necessary contrast for reading the markings which are made in said tablet material by applied pressure, said tablet material being adherent, a writing tablet applied to the front face of said tablet material, said writing tablet being light-permeable and being deformable under pressure, so that pressure which is applied to the front face of said writing tablet is transmitted through said writing tablet to deform the tablet material at the point of applied pressure, the rear face of said layer of light-emitting material having an opaque reflecting member applied thereto.

4. An indicating device comprising a non-compressible and light-permeable carrier, a layer of writing material which is adherently connected to and which abuts a face of said carrier, said layer of writing material being indentable under applied pressure at 70° F., a writing tablet adherently connected to and abutting the free face of said layer of writing material, said writing tablet being light-permeable and being deformable under pressure, so that writing pressure which is applied to said writing tablet will be transmitted through said writing tablet to deform the respective part of the layer of writing material, said layer of writing material being sufficiently deformable under said applied pressure to make a marking thereon under such pressure, which is visible under transmitted light through said carrier and through said layer and through said writing tablet.

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