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(72) Inventor(s): Ian Stephenson	(58) Field of Search: UK CL (Edition W) H4F FAAE INT CL ⁷ B60R, H04N Other: Online databases: WPI, EPODOC, JAPIO
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(54) Abstract Title: **Child monitoring apparatus for a vehicle**

(57) Child monitoring apparatus includes an image capture device (1) and a viewing device (2). Real time moving images are picked up by the image capture device (1, Fig 2) and transmitted to the viewing device (2, Fig 2). The image capture device is located with a view of the child in the rear of an automobile. The image viewing device is located so occupants in the front of the automobile can see real time moving images of the children transmitted from the rear.

Connection between camera and display may be wireless and the camera may be disguised in a toy.

Fig 2

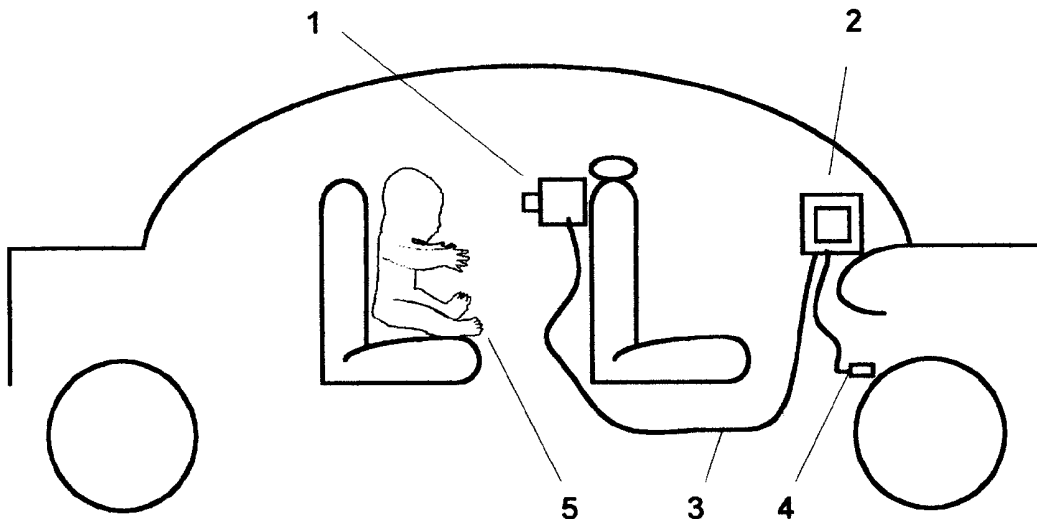


Fig 1

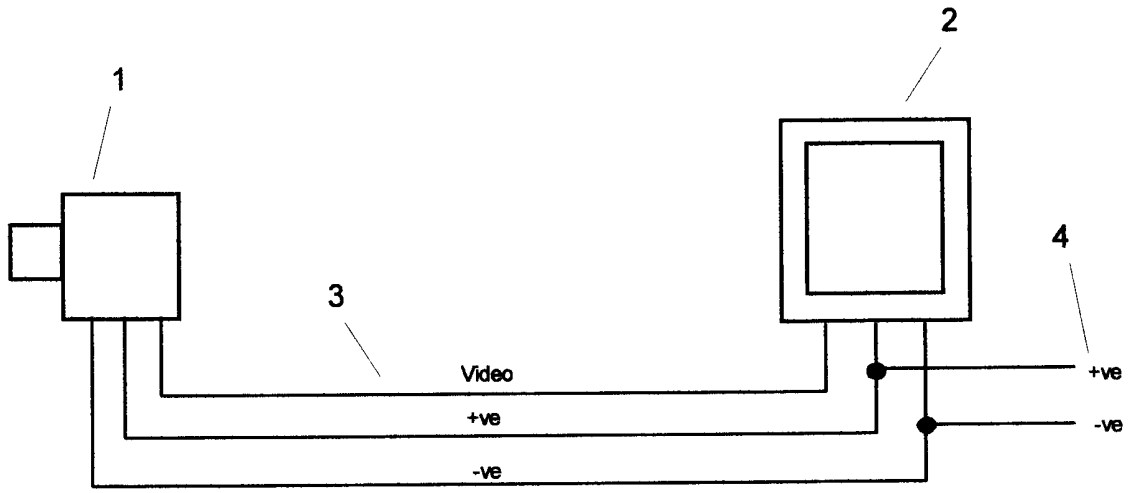
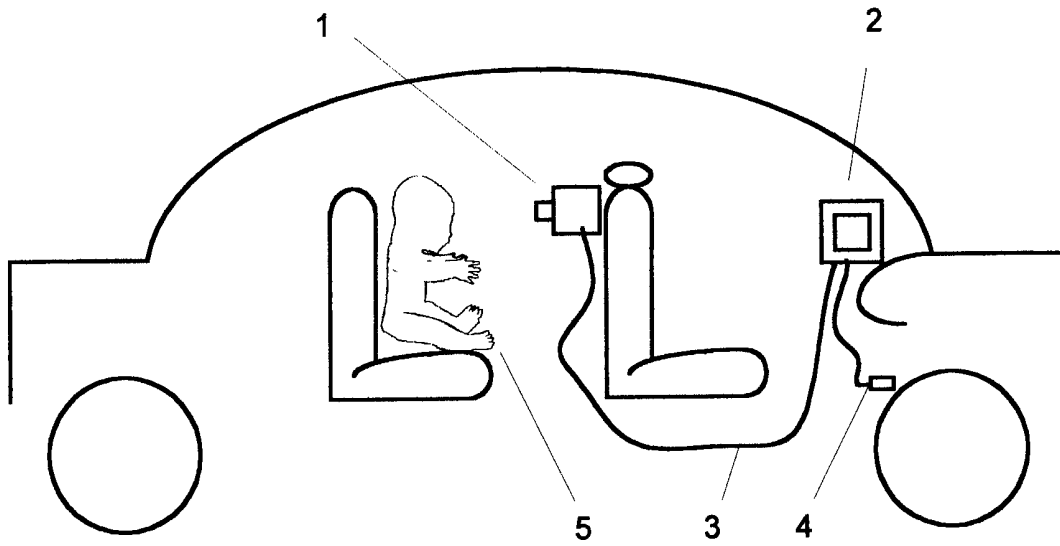


Fig 2



Child Monitoring Apparatus

This invention concerns child monitoring, and relates to an apparatus which allows remote monitoring of a child/children within an automobile.

Child monitoring by audio and video within the home is well known and enables adults to remotely monitor the child without disturbance.

When children are placed in the rear of an automobile, it is not possible for the occupants in the front seats to gain a clear view of them without turning around. Turning around can be at best uncomfortable, at worst dangerous.

An objective of this invention is to provide a monitor that allows the occupants in the front seats of an automobile to see the children in the rear seats without having to turn around.

Accordingly, this invention provides a monitor apparatus including an image viewing device (positioned in view of the front seat occupants) which is electronically connected to a real time moving image capture device (positioned to capture the child/children in the rear seats), so that front seat occupants can view real time moving images of the children in the rear of the automobile.

Preferably, the viewing device would consist of a colour capable LCD (Liquid Crystal Display). However, the viewing device could be a black and white LCD, CTR (Cathode Ray Tube), Plasma or other form of video monitor.

Also, ideally, the image capture device would be a colour CCD (Charge Coupled Device) camera module (which are common in CCTV - Closed Circuit Television systems) although a Black and White or infra-red module would aid visibility in poor light conditions. Any other video camera device could also be used.

The image capture device and the viewing device preferably would be connected via a cable of wires, but the transmission medium may instead be any of the standard video wireless protocols eg 2.4GHz

The image capture device could be disguised in a child's toy to provide a distraction.

The image capture device and circuitry, image display device and circuitry, and any transmission module and circuitry between these two devices are all individually well known and are readily available.

A preferred embodiment of the invention will now be described.

FIG 1, Shows a connection diagram of how the image capture device and viewing device work together using a cable of wires as the transmission medium

FIG 2, Shows a typical configuration of the monitoring apparatus in an automobile

As shown in FIG 1, the child monitoring apparatus consists of an image capture device – CCD camera (1), transmission medium – Cable of wires (3), and an image viewing device – LCD video display (2). Real time moving images are picked up by the CCD camera (1) and are transmitted over the cable of wires (3) to the LCD video display (2)

In FIG 2, the LCD video display (2) has been mounted on the dashboard of an automobile within view of the front seat occupants. The CCD camera (1) has been hung at the back of the front seat head rests.

The CCD camera (1) is located with a view of the child/children (5) at the rear of the automobile. The LCD video display (2) is located so occupants in the front of the automobile can see the real time moving images transmitted from the rear.

Power is supplied to the monitoring apparatus from the automobile cigarette lighter point (4).

Video signals (standard Video-out 1volt peak to peak) are sent from the CCD camera (1) to the LCD video display (2) through a cable of wires (3) which is used as the transmission medium.

The real time moving image of the child in the rear of the automobile (5) is displayed on the LCD video display (2)

Claims

1. **Child monitoring apparatus including an image capture device electronically connected to an image viewing device allowing real time moving images of a child or children in the rear of an automobile to be viewed by occupants at the front.**
2. **Monitoring apparatus in Claim 1 where the real time moving images are transmitted from the image capture device to the image viewing device by a cable or a wireless medium.**
3. **Monitoring apparatus substantially as herein described above and illustrated in the accompanying drawings.**



INVESTOR IN PEOPLE

Application No: GB 0319276.2
Claims searched: All

Examiner: Sue Willcox
Date of search: 16 February 2004

Patents Act 1977 : Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1	EP 1097844 A2 (TRW Inc) - see particularly paras 13, 14; Fig 1
X	1	CA 2359826 A1 (Rosen Products) - see particularly page 3, lines 15 - 20; page 4, lines 13 - 14; page 6, lines 11 - 14; Fig 2
X	1	US 20010022553 A1 (Pala <i>et al</i>) - see particularly paras 23, 25, 26, 31
X	1	WO 01/49526 A1 (Johnson Controls Technology Co) - see particularly page 7, lines 3 - 16; page 9, lines 17 - 22
X	1, 2	GB 2327823 (Ley) - see particularly page 2, lines 26 - 30; page 4, lines 1 - 2

Categories:

X Document indicating lack of novelty or inventive step	A Document indicating technological background and/or state of the art
Y Document indicating lack of inventive step if combined with one or more other documents of same category.	P Document published on or after the declared priority date but before the filing date of this invention
& Member of the same patent family	E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^w:

Worldwide search of patent documents classified in the following areas of the IPC⁷:

H04N

The following online and other databases have been used in the preparation of this search report:

WPI, EPODOC, JAPIO