(12) UK Patent Application (19) GB (11) 2 215 158 (13) A

(43) Date of A publication 13.09.1989

(21) Application No 8802437.7

(22) Date of filing 04.02.1988

(71) Applicants
Peter Anthony Lennon
The Turbine House, Hampermill, Hampermill Lane, Watford, Herts, WD1 4PL, United Kingdom

John McNulty
Oxhey Hall, Oxhey, Herts, WD1 4NU, United Kingdom

(72) Inventors
Peter Anthony Lennon
John McNulty

(74) Agent and/or Address for Service
Peter Anthony Lennon
The Turbine House, Hampermill, Hampermill Lane, Watford, Herts, WD1 4PL, United Kingdom

(51) INT CL⁴
G01S 17/88

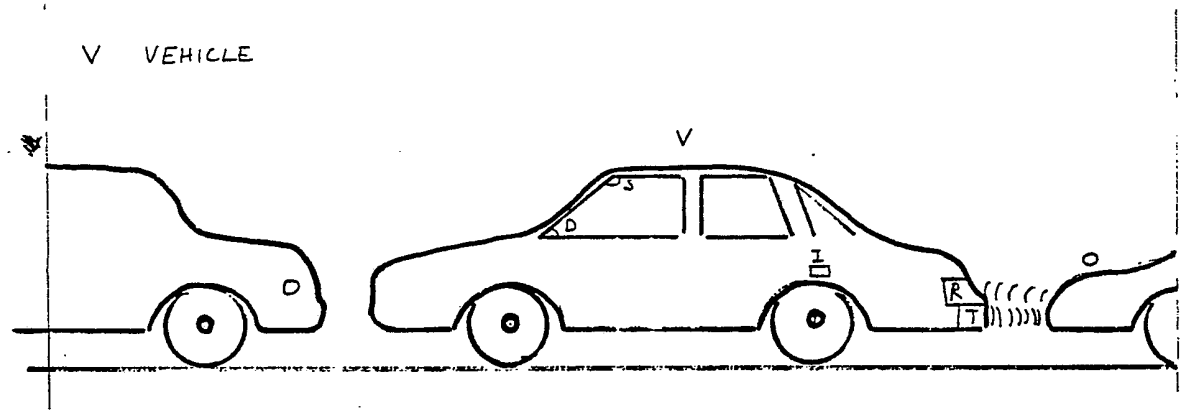
(52) UK CL (Edition J)
H4D DLRG D260 D714 D749 D781 D782
U1S S1820

(56) Documents cited
GB 2140918 A **GB 2139036 A** **GB 2137449 A**
GB 2131642 A **GB 2090410 A** **GB 2081547 A**
GB 2050745 A **GB 2040092 A** **EP 0109056 A**
New Scientist 15 August 1985 page 27

(58) Field of search
UK CL (Edition J) **G1G, H4D**

(54) Vehicle obstacle detector

(57) A device for detecting obstacles from a vehicle, comprising a transmitter (T) a receiver (R) operating within a suitable energetic wavelength, an integrator (I) for processing the reflected signals into a proximity signal, a display (D) and a sounder (S) for warning of proximity. Allowance is made for building the device into existing vehicle lighting and wiring assemblies, thereby reducing manufacturing modifications. Allowance is also made for signalling proximity either through the existing wiring to the display (D) or sounder (S).

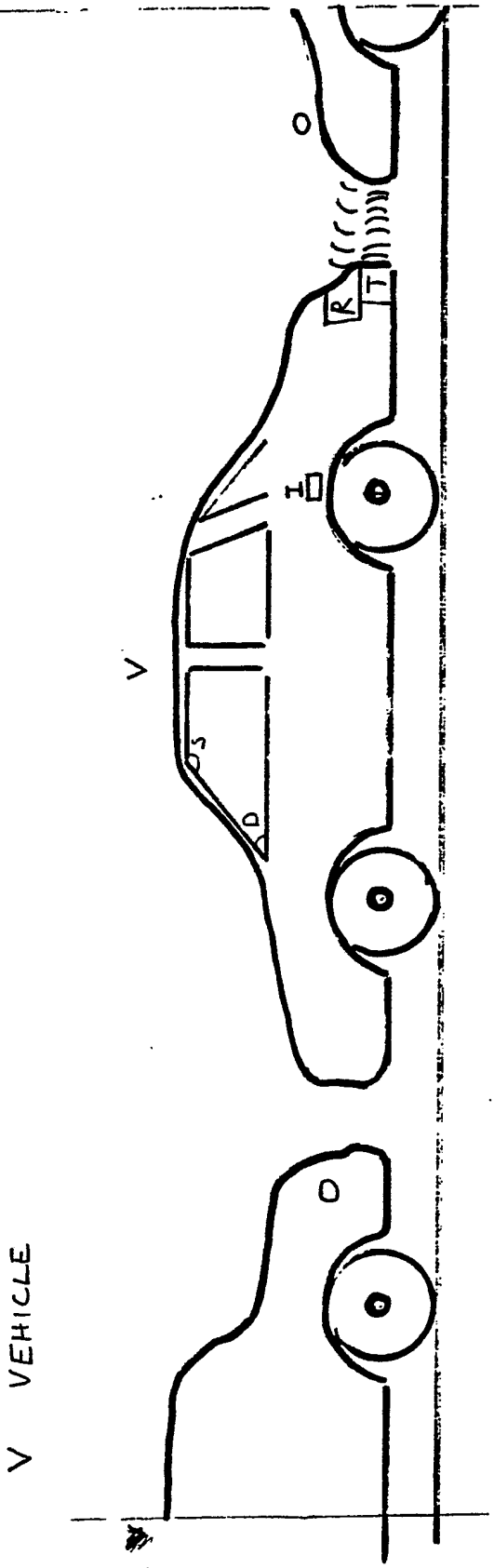


At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

GB 2 215 158 A

2215158



1/1

Method of detecting obstacles from a moving vehicle. 2215158

This invention relates to the automatic detection and indication of obstacles in the path of a moving vehicle.

The system comprises a transmitter (T), a receiver (R), an integrator (I), a display (D) and a sounder (S). When the vehicle (V) is manoeuvring, particularly where visibility is impaired, energy emitted from transmitter T will reflect off an obstacle (O) and be received by receiver R. The strength and delay of the received signal can be compared and computed by integrator I to give an indication of relative proximity on display D and a warning through sounder S.

Although any portion of the energetic spectrum may be used, from sound through microwave to visible light, the example here will use infra red energy.

In a preferred and specific embodiment, the system is used in a vehicle for assisting parking and reversing. The transmitter T and receiver R are mounted together in a suitable position (eg the rear bumper mounting) in a suitable housing (eg a reversing light). When the system is activated by a switch or by engaging 'reverse' gear, the transmitter T will start to emit infra-red light in a characteristic pattern. When the emitted infra-red light strikes an obstacle O (eg another vehicle) a portion of the energy will be reflected back and detected by receiver R. The integrator will compare the timing and power of the received signal to give the closeness of the obstacle O and will cause the display D to show the position. When the obstacle O is very close the sounder S will give a graded warning signal.

It is quite possible, using modern methods of manufacture to produce a miniaturised version of the system which could be fitted in existing reversing lamp assembly. In this case communication to display D (which could be a clock) and/or sounder S (which could be the car radio) could be by means of a modulated signal via the existing vehicle wiring.

2215159

CLAIMS

1 A device for the detection of obstacles from a vehicle, where the transmitter (T) and receiver (R) may operate with any suitable energetic waveforms to effect reflected detection from such obstacles.

2 A device as in 1 above, where the resulting detection of such objects is processed within an integrator (I) to give details of proximity.

3 A device as in 1 & 2 above, where the output can then be used to drive a visible display (D) or audible sounder (S), thus warning of proximity.

4 A device as in 1,2 & 3 above, where it can be accommodated within an existing lamp assembly or wiring.

5 A device as in 1,2,3 & 4 above, where a modulated signal can be used to signal obstacle proximity to another device within the vehicle, either via the existing wiring or via radiated signals.

Published 1989 at The Patent Office, State House, 66/71 High Holborn, London WC1R 4TP. Further copies may be obtained from The Patent Office. Sales Branch, St Mary Cray, Orpington, Kent BR5 3RD. Printed by Multiplex techniques ltd, St Mary Cray, Kent, Con. 1/87