



PATENT SPECIFICATION

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(54) Title: The road charger

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The Road Charger

5 The concept of the road charger is illustrated on the attached drawing figure and can be described as follows.

The road charger is a device designed to provide electrical power via an inbuilt electric motor and electrical charge to road vehicles.

10 The road charger comprises of an electrical transmitter set into the road surface and protruding circa 15 to 20mm above the road surface. This allows traffic to change lanes without any significant impact. The transmitter receives electricity supply from mains via a cable in a duct route set in the verge of the carriageway and connected at intervals across the pavement to the
15 transmitter. This transmitter/conductor in turn provides electricity that is picked up by a rotating receiver mounted to the underside of an electrically powered car with an inbuilt electric motor to propel the vehicle.

It is envisaged that this transmitter would only be placed on dual carriageways
20 and motorway networks. The transmitter would be insulated to the underside of the top plate as shown on the attached drawings. The section of the transmitter above the road surface would have insulated sleeves passing through to ensure surface water can pass through freely. It is probable that the level of voltage passing through could be set to strike a balance between
25 levels to control danger associated with any risk of body contact and yet high enough to provide the necessary output required. As a secondary control measure the transmitter would be fitted with earth leakage circuit breakers to minimise any risk of electrocution. If necessary, further control measures can be considered in this regard.

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The electrically powered car would also have an inbuilt battery pack which would further receive charge from the transmitter and also have the facility to

be charged via the standard car charger already available at some garage forecourts. This new concept therefore overcomes the major drawback associated with the present design of electric cars which are limited to distance between charges of circa 130 to 170 Km at best. This new concept
5 furthermore has the potential to provide almost limitless distance without the need to charge the vehicle from a stationary position.

It is further envisaged that the design of the main body of an electric car could provide for greater space and passenger comfort given that higher
10 torque/power output can be achieved from the inbuilt electric motor.

The power is provided to the electrical receiver via a rotating cylinder mounted telescopically to the underside of the vehicle. The receiver is also spring loaded to ensure that contact is maintained between the cylinder receiver and
15 the road surface transmitter. The receiver is also automatically retractable being set to retract when not receiving from the road surface transmitter. This allows for smooth use of the vehicle when changing lanes and when being used on routes other than motorway/dual carriageway. The cylinder would
Probably be best made from a rubber-type hard-wearing material that would
20 have a series of copper coils cast within to ensure that electricity is picked up efficiently with reduced friction and noise emission.

The cylinder would be best suited to be approximately 1.1m wide given that the lane width would be between 3.5 to 3.75m wide and allowing for a
25 standard car width (outside of wheel to outside of wheel) of circa 1.75m and the general proximity maintained between car centre and lane centre of the average qualified driver.

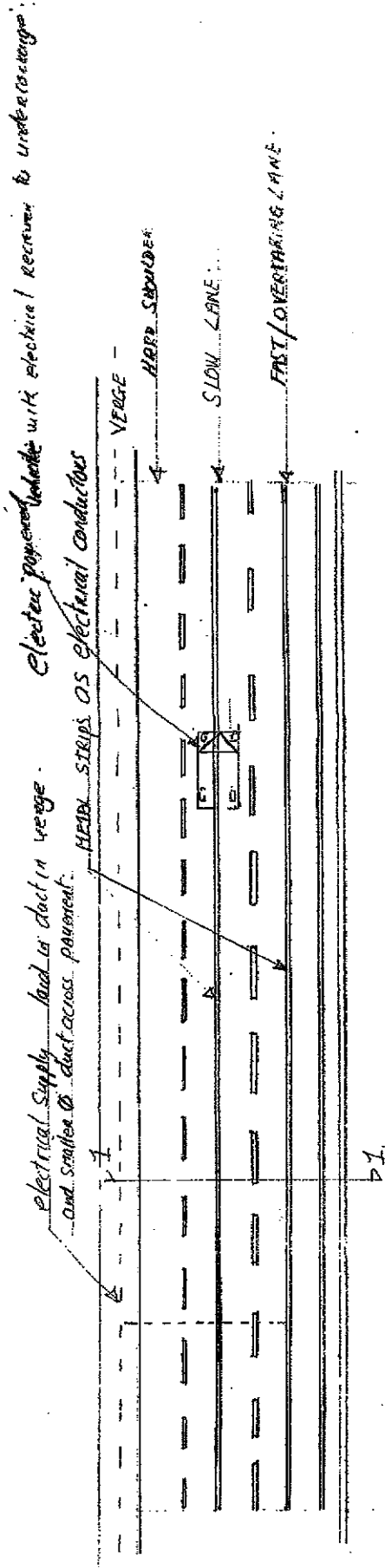
The above outlined concept has the potential to provide for reduced carbon
30 emissions stemming from the transport sector worldwide particularly if coupled with increasing advances in renewable energy production and provide a viable solution to efficient and comfortable road travel on into the future.

CLAIMS

1. An electrically powered vehicle charging transmitter in the form of a continuous metal strip which is insulated to a point above the road surface
 5 with the means via insulated slots to allow surface water to pass through and not interfere with the transmission of electrical current from its top surface to a receiver mounted to the underside of an electrically powered vehicle travelling on a standard road.
- 10 2. A receiver comprising of a rotating cylinder of rubber or other suitable material incorporating copper coils mounted telescopically to the underside of an electric vehicle to pick up electrical current from a transmitter above the road surface and of sufficient width to allow contact to be maintained between the transmitter and receiver allowing the vehicle to be steered within 0.2m of
 15 the road markings defining a standard dual carriageway width.
3. A battery pack mounted within the rear of an electrically powered vehicle capable of propelling the vehicle and of being charged by electrical current received from a continuous strip of electrified metal protruding above
 20 the road surface and also incorporating a portal to allow for charging from a standard electrical charge point available at garage forecourts or possibly from home electric mains.
4. An electric motor fitted within an electrically powered passenger vehicle
 25 capable of propelling the vehicle which receives power from a cable connected to a cylindrical receiver which in turn maintains contact with an electrified metal strip set above the road surface.

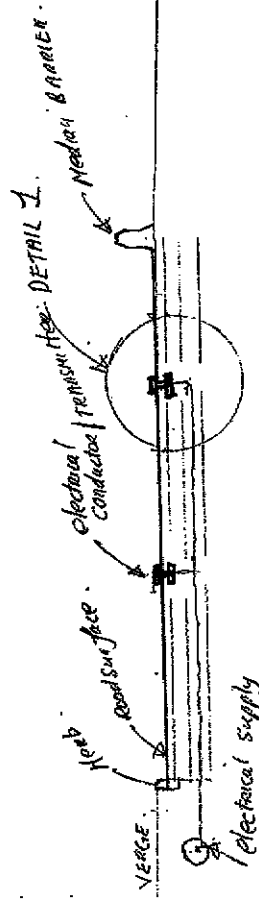
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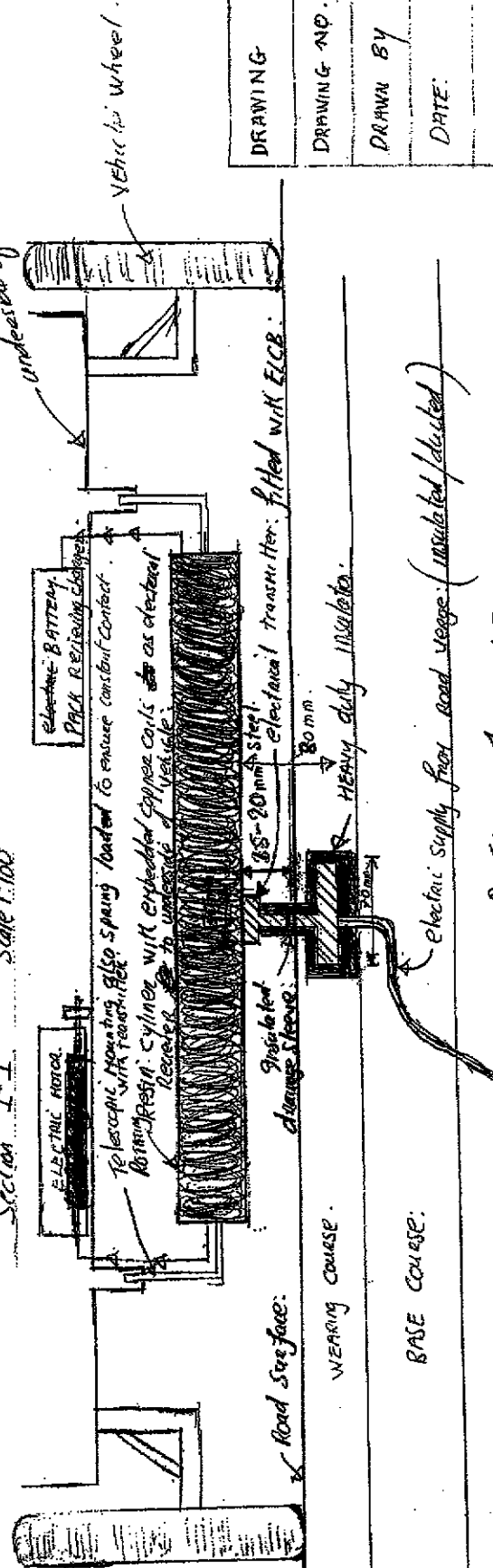


PLAN OF TYPICAL CARRIAGEWAY OF DUAL CARRIAGEWAY/MOTORWAY

Scale 1:250



Section 1-1 Scale 1:100



John Cunningham
24/06/09

DRAWING	"ROAD CHARGER"
DRAWING NO.	1009 JSC/009 REV 1.
DRAWN BY	John Cunningham GALLY LEMMON, GORE, Co. Galway
DATE	24/06/09
Scale	As shown