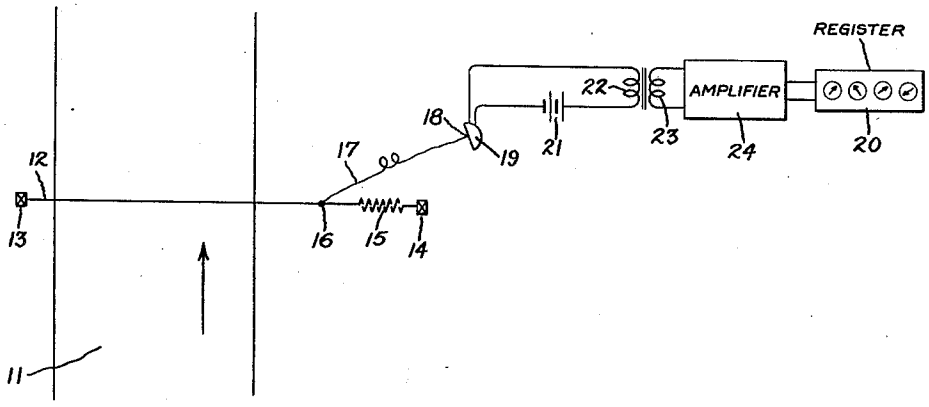
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ROAD CONTACT FOR TRAFFIC ANALYZERS

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ROAD CONTACT FOR TRAFFIC ANALYZERS

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2 Claims. (Cl. 177—339)

Our invention relates to arrangements for detecting, indicating and counting passing objects, particularly road vehicles.

It is an object of our invention to provide relatively light and compact, but accurate apparatus adapted to be carried about and set up temporarily at various positions on the highways for marking traffic surveys.

It is also an object of our invention to provide a device for detecting the passage of vehicles which is so unobtrusive as not to cause motorists to avoid the traffic artery on which the apparatus is installed and not to cause any change in speed at which the motorists drive past a counting and detecting station.

A further object of our invention is to provide apparatus responsive to the passage of a vehicle which may be used in place of conventional road contacts in traffic analyzers, such as described in United States Patents 2,150,776, Moles, and 2,181,728, Greentree, for example. Other and further objects and advantages will become apparent as the description proceeds.

The invention will be understood more readily from the following detailed description when considered in connection with the accompanying drawing and those features of the invention which are believed to be novel and patentable will be pointed out in the claims appended hereto. The single figure of the drawing is a schematic diagram of one embodiment of the invention.

In the drawing a roadway for vehicles, such as automobiles and other wheeled vehicles, is represented at 11. For the detection of vehicles crossing a transverse line on tne road 11 a relatively fine wire 12 is extended across the roadway along the pavement surface between a pair of stakes 13 and 14, which are driven into the ground or roadside at road level. The wire 12 is composed of a suitable relatively durable material such as metal which readily transmits longitudinal vibrations, such as sound vibrations. Number 14 B. & S. gage steel wire, e. g., is satisfactory. If desired, a spring 15 may be interposed between one of the stakes 14 and a point of attachment 16 to the wire 12 to enable the wire to be stretched relatively smooth without danger of breakage due to any strain which may be imposed on the wire by moving vehicles; but the spring 15 need not be of sufficient strength to stress the wire. It merely provides a resilient means for securing the wire. An end 17 of the wire is free or lies loose with the extreme tip end 18 attached to the diaphragm of an acoustic microphone 19 of any suitable type, such as a carbon button microphone, for example. The output terminals of the microphone 19 are connected directly or indirectly, according to the type of microphone, to a suitable electro-responsive device such as an alarm, register, recorder, relay or other suitable device, for detecting, counting, recording, or the like. In the case of a carbon microphone, its output terminals are preferably connected in series with a source of potential, such as a battery 21, to a primary winding 22 of a microphone transformer having a secondary winding 23, which is connected to the input terminals of an amplifier, such as a vacuum tube amplifier, for example, having its output terminals connected to the electro-responsive device 20.

Any vehicle passing along the roadway 11 will travel over the wire 12 and when the wheels strike the wire 12 the impact will cause a sound impulse or a compression wave to be transmitted longitudinally along the wire, including also the dangling end 17. The sound impulse is picked up by the microphone 19 and amplified by the amplifier 24 to actuate the register 20. In this manner, each axle of a truck or trailer train is counted. If the vehicle should be traveling at a great speed the wire 12 may be momentarily displaced somewhat transversely, but nevertheless the scuffing caused by the passing wheels will produce a sound impulse which is picked up by the microphone 19. It is not necessary that the wire 12 be stretched tight, for the actual motion of the wire produced by the passing vehicle is not transmitted to the microphone 19, as this merely picks up the longitudinal wave or sound impulse transmitted through the molecules in the wire. Inasmuch as the operation does not depend upon physical motion of the wire, the use of our invention is not limited to hard-surfaced roads. The spring 15 is not absolutely essential to the operation of the apparatus but helps to keep the wire 12 down on the surface of the pavement making it less likely to be noticed by the passing motorists. Relatively fine wire may be used and is preferable since it is practically unnoticeable. Owing to the thinness of the wire it adapts itself to the contour of the pavement and the apparatus is equally applicable to high-crowned and flat roads.

In accordance with the provisions of the patent statutes, I have described the principle of operation of my invention together with the apparatus which I now consider to represent the best em-

bodiment thereof but I desire to have it understood that the apparatus shown is only illustrative and that the invention may be carried out by other means.

What we claim as new and desire to secure by Letters Patent of the United States is:

1. A device responsive to the passage of a vehicle along a roadway, which comprises a wire secured across and lying on such roadway with one end of the wire sufficiently loose so as not to be moved by transverse movement of the wire upon passage of a vehicle, a securing device at road level beside the roadway to which the other end of the wire is attached, a second securing device at road level on the other side of the roadway, a non-rigid connection between said securing device and a point in the wire between the first securing device and the loose end of the wire but on the same side of the roadway as the second securing device, an acoustic microphone to which the loose end of the wire is attached and electro-responsive means electrically connected to the microphone.

2. Apparatus responsive to the movement of objects along a surface comprising a member resting against and extending along the surface transverse to the anticipated line of motion of moving objects, a securing device substantially in said surface at one side of the said anticipated line of motion, to which one end of the member is attached, a second securing device substantially in said surface at the opposite side of the said anticipated line of motion from the first securing device, a flexible connection between said second securing device and a point in said member between the first securing device and the remaining end of the member but on the same side of the said anticipated line of motion as the second securing device, the said remaining end of said member extending loosely, said member being composed of a material capable of longitudinally transmitting vibrations of the nature of sound impulses, and means secured to the said loosely extending end of the said member responsive to such vibrations.

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