

Dec. 28, 1926.

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1,612,427

RADIO WARNING SYSTEM FOR USE ON VEHICLES

Filed Nov. 13, 1923

Fig. 2

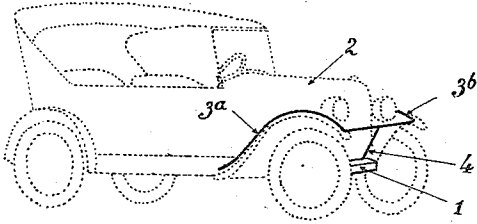


Fig. 3.

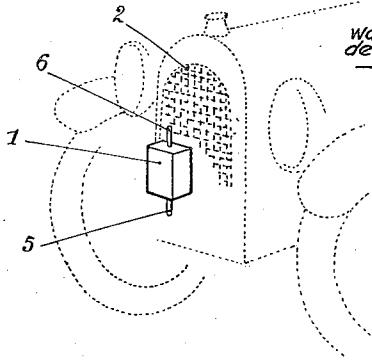


Fig. 4.

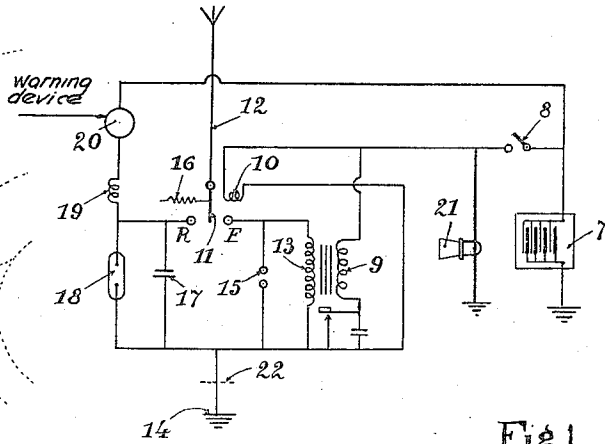
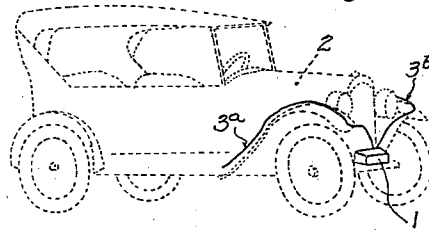


Fig. 1



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RADIO WARNING SYSTEM FOR USE ON VEHICLES.

Application filed November 13, 1923, Serial No. 674,439, and in France December 5, 1922.

The present invention relates to radio warning systems for use on vehicles intended to permit a vehicle to signal its presence by means of electric waves to all other vehicles in its more or less immediate vicinity, equipped with similar or equivalent apparatus and devices, particularly to such vehicles located in front or on the side of the vehicle signalling its presence and facing in the approximate direction of said signalling vehicle.

According to the invention, the body of the vehicle is used as a wave reflector in such a way that the field of action of the antenna extends in front and on the side of the vehicle to the total or partial exclusion of the rear. The radio warning system of the invention comprises an antenna system extending on the lower part of the vehicle before the metallic body of the vehicle acting thus as a wave reflector, and means for receiving and emitting waves connected to said antenna system.

Various examples of radio warning systems according to the invention are given in the accompanying drawings, wherein:

Figs. 1, 2 and 3 show various forms of antenna.

Fig. 4 shows diagrammatically an arrangement adapted for emitting and receiving electric waves for the purpose set forth.

Referring to Fig. 1, the apparatus for emitting and receiving the waves are mounted in a suitable box 1 placed at the front part of the vehicle 2, the latter being shown in dotted lines for sake of clearness of the figure. The antenna arrangement comprises on the one hand the metallic body of the vehicle which forms the ground or counterpoise of the antenna system; and on the other hand two wires 3^a and 3^b extending along the flaps of the mud guard or along the sides of the vehicle and connected directly to the box 1.

Fig. 2 shows an arrangement which is analogous to that of Fig. 1, but the wires 3^a and 3^b are connected with the box 1 by means of a single wire 4 instead of being separately connected with said box as in the preceding case.

In the arrangement of Fig. 3, the rods 5 and 6 are the two radiating members of the antenna system. These two members have the shape of two straight metal rods disposed vertically and in line with one another, at the proper distance in front of

the vehicle body 2 and extending out of the box 1. Obviously, this latter may be large enough to contain both rods, or else the two rods may be so short as not to extend out of the box. Further, one can mount the apparatus so that the rods have a horizontal or oblique position according to the form which it is desired to obtain for the field of inter-communication of the apparatus. These rods may also be more or less crooked instead of being straight as on Fig. 4.

But the characteristic feature of all the above arrangements is an antenna system constituted by wires extending but about the front part of the vehicle, in such way that the metallic body of the vehicle forms a wave reflector. The function of the body of the vehicle is then to prevent the radiation of waves to the rear of the vehicle or the receiving of waves coming from the rear of the vehicle. The box 1 needs not to be mounted in the very forepart of the vehicle but may be placed in any position on the front part of the vehicle, for example near the driver, provided that the metallic body of the vehicle situated on the rear of the antenna system may be used as a wave reflector. The system of antenna above described can be used with any apparatus for wave emitting and receiving. In general, strong and simple apparatus will be preferred and also those which afford easy changing over from receiving to emission and vice-versa.

An example of apparatus is shown diagrammatically in Fig. 4. Referring to this figure the closing of the control switch 8 connects the battery or direct current generator 7 to the winding 10 of an electromagnet operating the single pole double throw switch 11 which is thereby pulled into the position E (on the drawing this switch is shown in an intermediate position). This connects the antenna 12, disposed on the vehicle in a manner explained previously and permanently connected to the contact blade of said switch 11, to one side of the secondary winding 13 of an induction coil 9—13 the other side of which is connected to the metallic frame 14 of the car or vehicle serving as a counterpoise. Across this same secondary 13 the spark gap 15 is permanently connected. Through the closing of the switch 8 the battery 7 is also connected to the primary winding 9 of the induction coil, which is thus set into operation, bringing

about a periodic charging and oscillating discharge of the antenna circuit 12, 11, 15, 14 and producing the emission of electric waves.

8 When now the switch 8 is opened in order to stop the wave emission, the induction coil 9-13 stops operating while the electromagnet winding 19 being no longer energized by the battery 7 the spring 16 pulls the switch
10 11 into the position R. The antenna wire 12 finds itself then connected to one side of the condenser 17 the other side of which is permanently connected to the counterpoise 14, the circuit 12, 17, 14 thus forming the
15 wave receiving circuit. To this circuit is connected or coupled in suitable manner an appropriate wave detecting apparatus. In the case of the figure, a detector 18, which may be a coherer or a rarefied gas tube for
20 instance, is connected across the condenser 17 and also in series with the radio frequency choke coil 19 and the device 20 which may be a lamp, bell, or other warning device, or a relay operating such a warning device. In
25 the particular case where the detector 18 is a coherer, decohesion may be obtained by means of an electromagnetically operated hammer or else simply by means of a hammer ball mounted in a spring or reed and vibrating under the effect of the motions and
30 vibrations of the car.

The figure shows in addition to the apparatus just described an electro-acoustic device 21 such as a klaxon for instance connected in parallel with the radio emitting apparatus and operating therefore at the same
35 time as the latter whenever the switch 8 is closed. An additional switch may be inserted at point 22 of the circuit which, when

opened, puts the entire radio system out of 40 operating condition while still permitting the electro-acoustic warning device to be operated by the closing of the switch 8.

The circuit of Fig. 4 is of course given only as an example and may be changed in 45 many ways.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A radio warning system for use on vehicles comprising an antenna system extending on the lower part of the vehicle before the metallic body of the vehicle acting thus as a wave reflector, and means for receiving and emitting waves connected to said antenna system. 50

2. A radio warning system for use on vehicles comprising an antenna system extending along the lower and lateral parts before the metallic body of the vehicle acting thus as a wave reflector, and means for receiving and emitting waves connected on one side to said antenna system and on the other side to the metallic body of the vehicle constituting the counterpoise of the antenna. 60

3. A radio warning system for use on vehicles comprising an antenna system extending along the lower and lateral parts before the metallic body of the vehicle acting thus as a wave reflector, and a wave receiving and emitting apparatus mounted at the front of the vehicle and connected on one side to said antenna system and on the other side to the metallic body of the vehicle constituting the counterpoise of the antenna. 70

In testimony whereof I have signed my name to this specification. 75

HARRY FLURSCHEIM.