

Aug. 27, 1940.

F. FRISCHEISEN

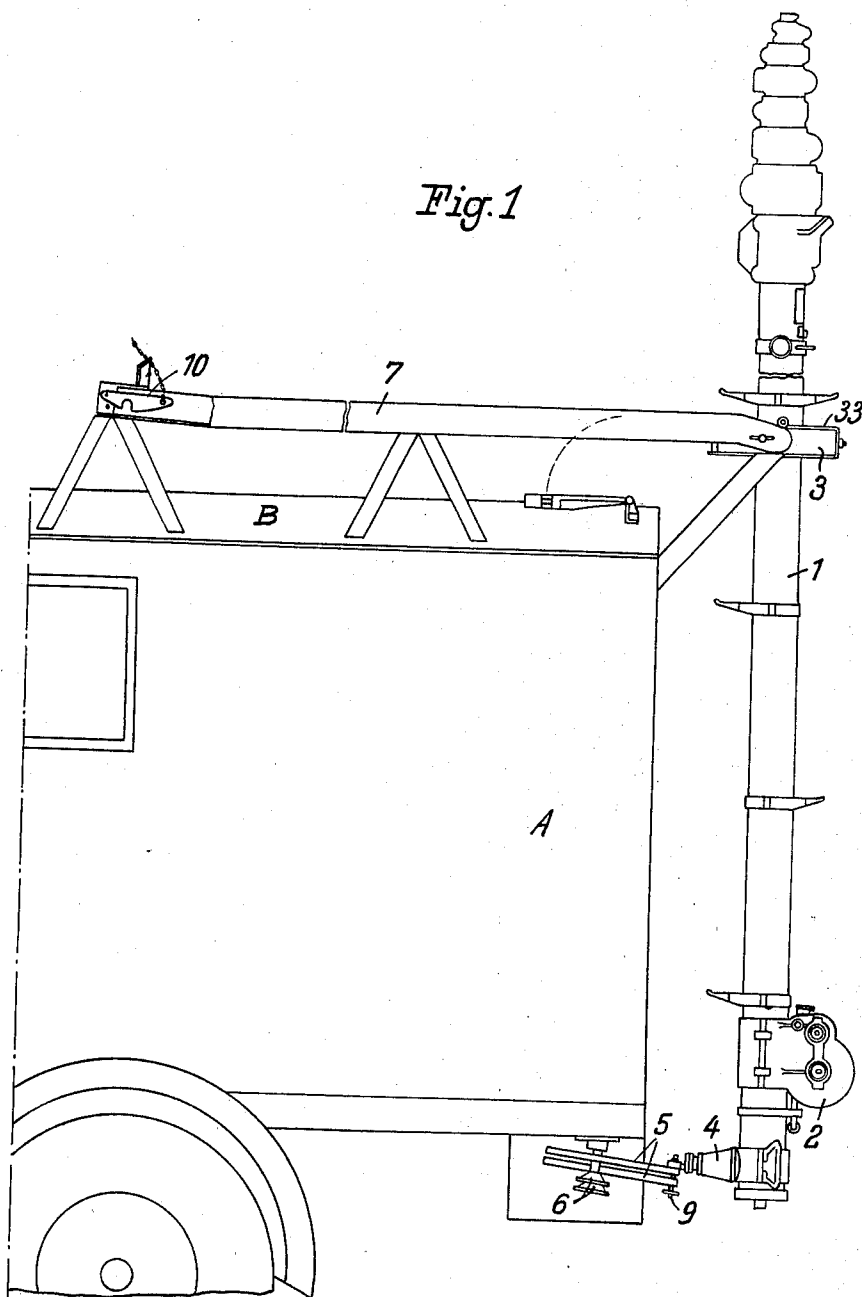
2,212,561

CAR TYPE RADIO STATION

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2 Sheets-Sheet 1

Fig. 1



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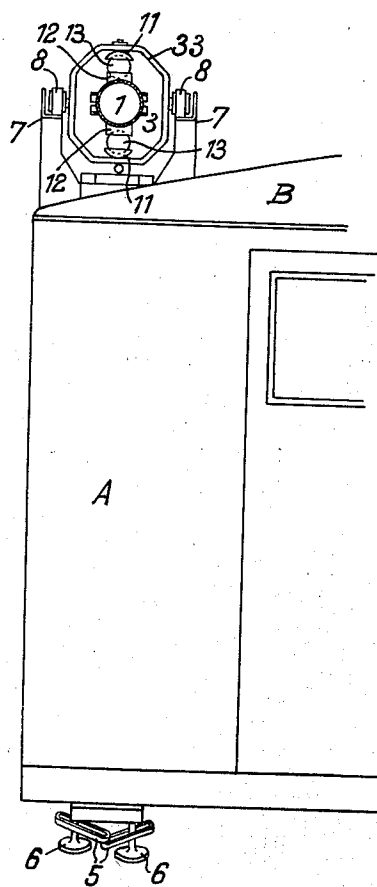
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Fig. 2



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UNITED STATES PATENT OFFICE

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CAR TYPE RADIO STATION

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9 Claims. (Cl. 250—33)

The antenna masts employed in transportable or car type radio stations are so-called telescopic masts, which are rigidly secured to the car and are of small space requirements in transportation. In order to establish the state of operation, such masts are extended in telescopic fashion and then serve to carry the antenna conductors.

Arrangements may be provided which do not use such telescopic masts as a means for carrying the antenna conductor, as has been the case heretofore, but to arrange for using the metallic mast itself as antenna conductor and to feed this from the high frequency generator. In this way the advantage is obtained that the antenna wires are dispensed with and that, therefore, the station can be quickly set up and readily taken down. Propositions of this kind, it is true, have been made as regards broadcast stations, namely, to use a lattice mast directly as an antenna. In connection with car type radio stations equipped with telescopic masts, however, a construction of this kind is novel.

In arrangements as provided by the invention the self-oscillating telescopic mast is attached to the car by means of a universal joint and in a manner to insulate it therefrom. Preferably, such insulation is obtained by means of this joint itself, which to such end contains members of a high-grade insulating material which by preference is of the ceramic type.

In this way the invention provides for positioning the mast vertically on any territory, that is, irrespective of the position the car may be given by the earth's surface. In addition, the insulated suspension of the mast insures a perfect feeding from the energy generator, losses being precluded even with very high antenna voltages.

In accordance with the invention it is proposed also not to secure the universal joint rigidly to the car but to provide for moving it along a runway. This provision presents the advantage that the mast may be placed entirely on the top of the car and that in this way a few manipulations will be sufficient for changing from the state of operation to the state of transportation.

One embodiment of the invention is shown in the accompanying drawings, in which:

Fig. 1 is a somewhat diagrammatic fragmentary side elevation of a car equipped with a mast as provided by the invention, while Fig. 2 is a partially sectioned fragmentary rear view of this arrangement with the antenna system in a position different from that represented in Fig. 1.

The mast 1 serving as antenna conductor is in

a manner well known per se adapted to be extended by means of a crank-operated gearing 2. According to the invention this mast is suspended from the car A by means of a universal joint 3 so as to be movable in all directions. In Fig. 1 this joint has only its outer frame 33 shown. The inner parts of the joint 3 are made of a high-grade insulating material. Mast 1 is at its lower end connected with a sort of toggle joint 5 by a spreader insulator 4. The joint 5 is fastened to car A by means of nut screws 6 and on loosening these screws may be readily adjusted in all directions.

In order to make the station ready for transportation by placing the mast 1 entirely on top of the car the universal joint 3 is according to a further feature of the invention not rigidly secured to the car but is mounted on a runway 7 with the aid of rollers 8, as shown in Fig. 2. Preferably, runway 7 is located on the roof B of the car. After loosening a bolt 9, Fig. 1, arranged to interconnect insulator 4 and joint 5, the mast is free to move in the joint 3 and hence may be turned down onto the roof B and be shifted towards the front end of the car, that is, the end thereof not represented in the drawings. A locking device 10 serves to hold the joint 3 after the mast has been brought into the described inoperative position on the roof B.

The construction of the universal joint 3 is shown in Fig. 2 by way of example. The mast 1 is here diagrammatically represented in cross section. The frame 33 of the joint 3 has globular cups 11 fixed to it, while mast 1 is furnished with similar cups 12. Between these cups balls 13 of a high-grade insulating material, such as ceramic balls, are arranged to form ball-and-socket joints therewith.

What is claimed is:

1. A radio station comprising a car, a mast-shaped extensible antenna conductor, a universal joint mounted on said car and fixed to an intermediate point on said mast-shaped antenna, and means connected to another point on said antenna for adjusting the vertical angle of said antenna conductor.

2. A radio station according to claim 1, wherein the antenna conductor is a telescopic mast.

3. A radio station according to claim 1, further comprising a runway mounted on said car, and means for guiding said universal joint for movement along said runway.

4. A radio station according to claim 1, wherein the universal joint comprises parts made of a high-grade insulating material.

5. A radio station according to claim 1, wherein the universal joint comprises ceramic members.
6. A radio station according to claim 1, wherein said last named means comprises a toggle joint
- 5 fixed to the car and arranged in engagement with the antenna conductor.
7. A radio station according to claim 1, in which the universal joint comprises a frame, cups fixed to this frame, cups fixed to the antenna
- 10 conductor, and balls of a high-grade insulating material, these cups and balls being arranged to form ball-and-socket joints.

8. A radio station according to claim 1, further comprising a roof on said car, a runway mounted on said roof, and means for guiding said universal joint along said runway.

9. A radio station according to claim 1, further 5 comprising a roof on said car, a runway mounted on said roof, means for guiding said universal joint for movement along said runway, and a locking device for fixing said universal joint in a predetermined position on said runway. 10

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