

Jan. 18, 1966

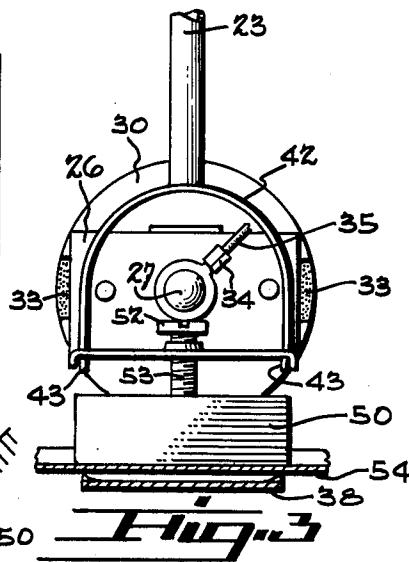
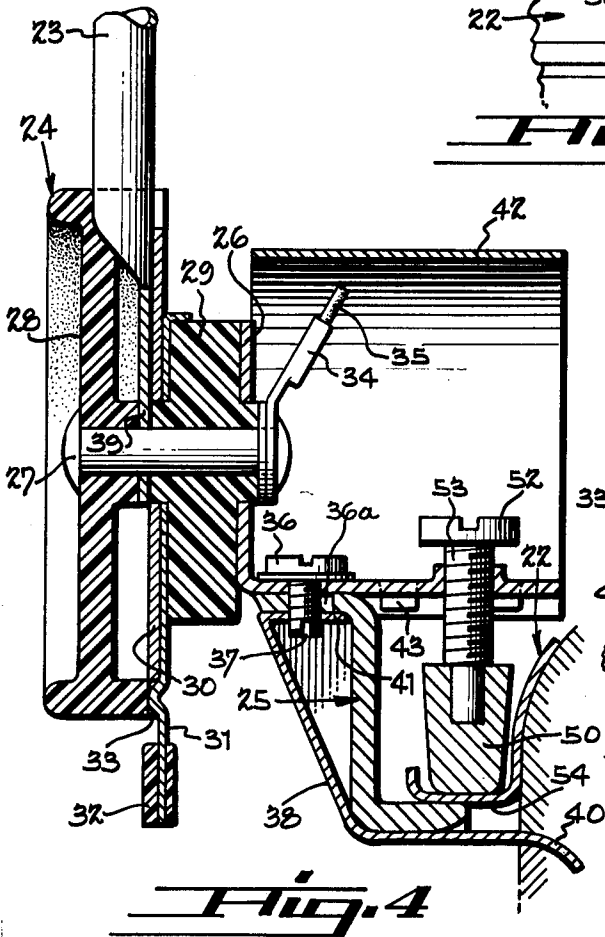
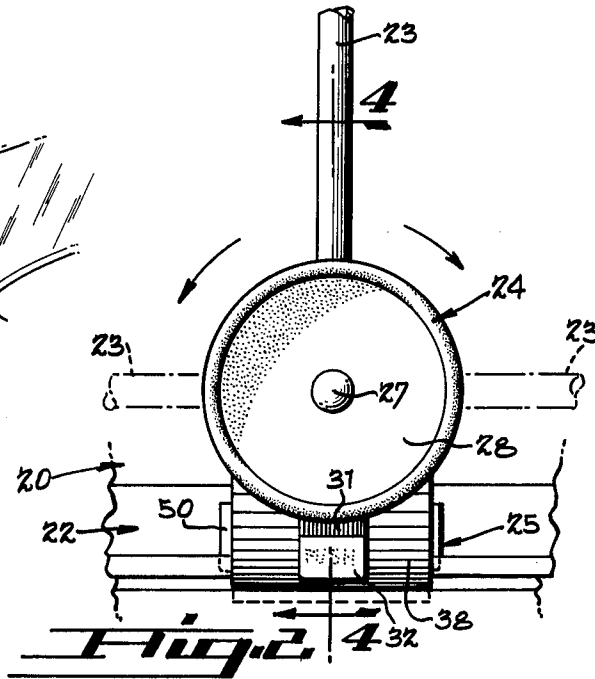
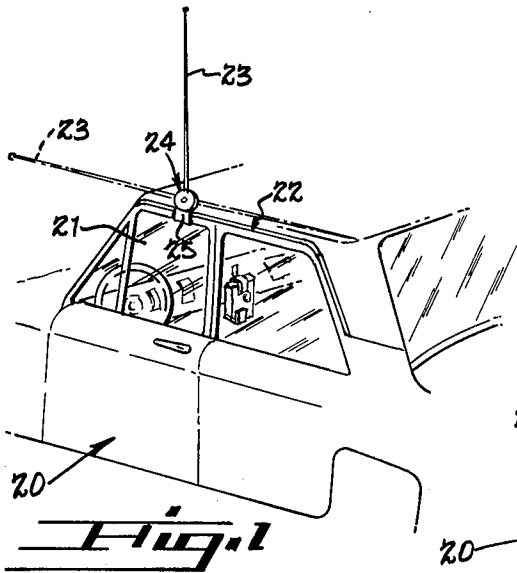
R. J. BRILL

3,230,533

BRACKET TO MOUNT ANTENNA AND PORTABLE RADIO ON AUTOMOBILE WINDOW

Filed April 9, 1962

3 Sheets-Sheet 1



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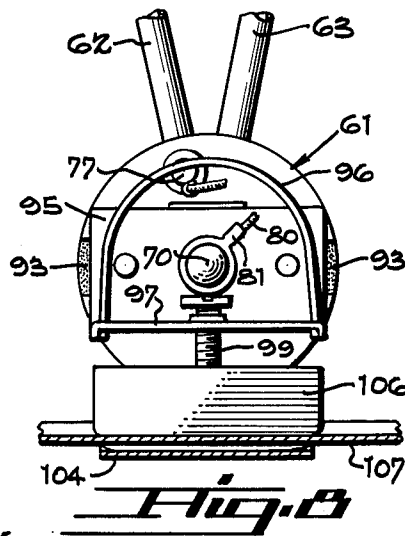
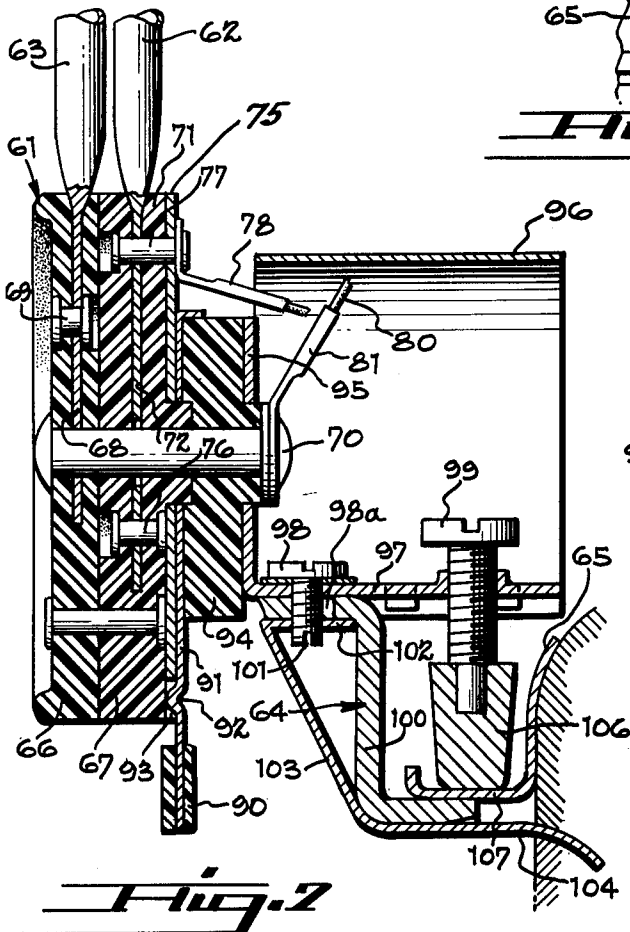
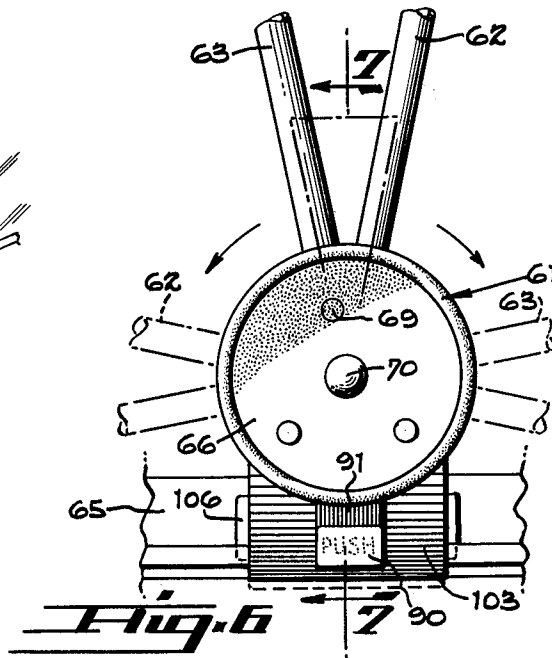
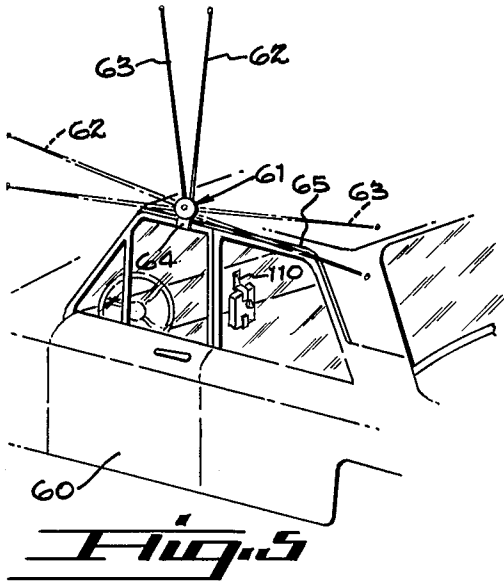
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BRACKET TO MOUNT ANTENNA AND PORTABLE RADIO ON AUTOMOBILE WINDOW

Filed April 9, 1962

3 Sheets-Sheet 2



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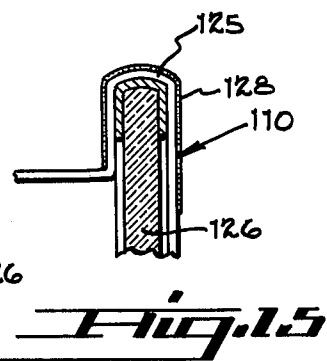
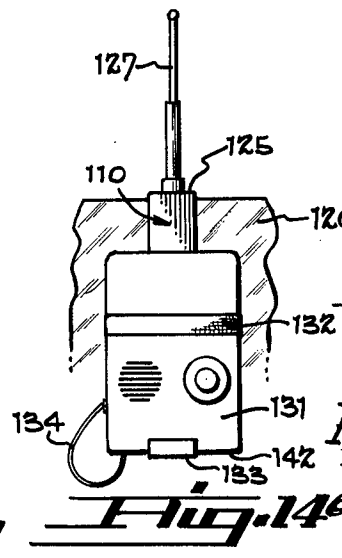
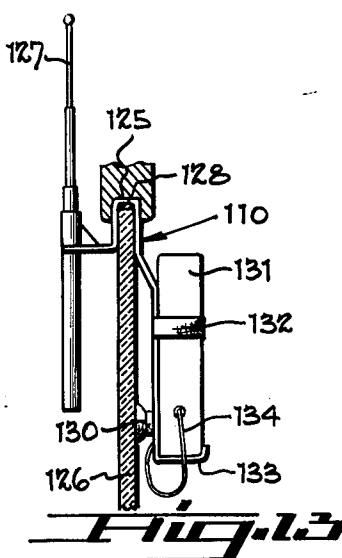
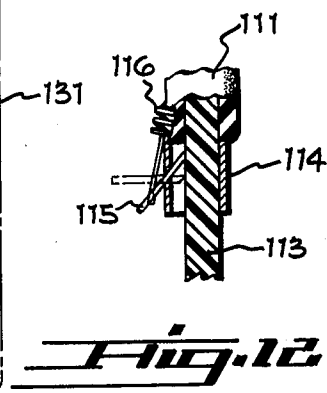
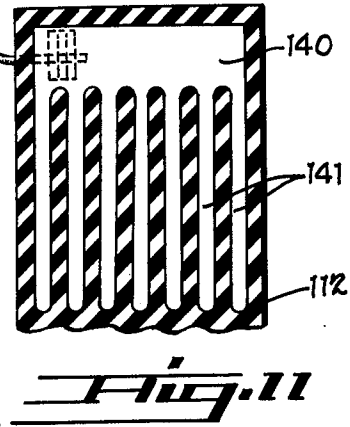
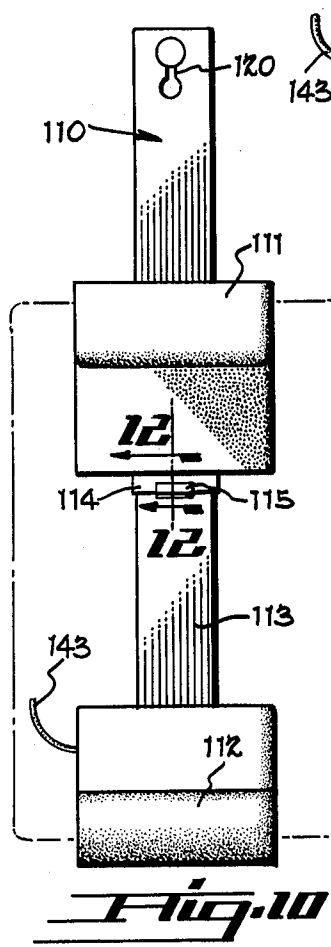
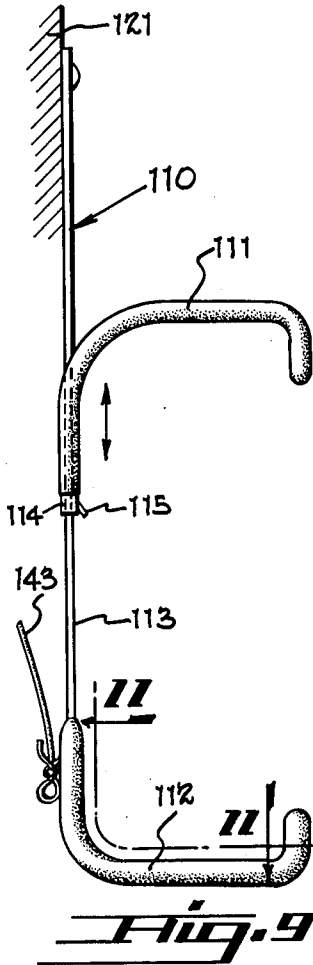
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BRACKET TO MOUNT ANTENNA AND PORTABLE RADIO ON AUTOMOBILE WINDOW

Filed April 9, 1962

3 Sheets-Sheet 3



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3,230,533

BRACKET TO MOUNT ANTENNA AND PORTABLE RADIO ON AUTOMOBILE WINDOW

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Filed Apr. 9, 1962, Ser. No. 185,957

1 Claim. (Cl. 343—702)

My invention relates to an aerial for use with automobiles, and more particularly to an aerial which is easily attached to and removed from a part of an automobile.

The principal object of my invention is to provide an aerial which is adapted for use with a transistor-type radio, such as a small radio adapted to be carried by a person which does not require for its effective operation that it have a permanent installation.

Another object of my invention is the provision of an aerial for use with a transistor-type radio which aerial may be attached to the gutter of the automobile with which it is desired to be used.

Another object of my invention is the provision of an aerial and radio-carrying device which may be easily adapted from one automobile to another and which may be easily removed and does not require permanent installation or permanent installing procedures.

Another object of my invention is the provision of an aerial which has di-pole antenna which may be utilized with the automobile in order that F-M transmission may be adequately received within the automobile without the static and other noises which necessarily accompany its reception when di-pole antennas are not employed.

Another object of my invention is to provide for an aerial which is so mounted and constructed that the di-pole antenna may be moved so as to pick up signals in various directions.

Another object of my invention is to provide for an aerial easily adapted to any automobile or to the gutter along the top of any automobile and which has antenna which may be rotated within an arc of at least 180°.

Another object of my invention is to provide for an antenna so mounted that it is permanently locked to a gutter of an automobile and may not be removed unless the car to which it is attached is open and access is gained to the interior of said automobile.

Another object of my invention is to provide for the construction of an antenna having a carrying device attached thereto, which is provided with a pair of arms, one of said arms being adjustable so that a transistor-type radio may be secured within the grip of said arms by reason of the adjustable feature provided on one or the other or both of said arms.

Another object of my invention is to provide for an antenna having a stationary arm and an adjustable arm with a ratchet device which has a spring attachment which is adaptable when locked in one position to provide for micro-expansion of said arm to securely hold a transistor radio between the movable arm and the stationary arm.

Another object of my invention is to provide an antenna having a pair of arms, one of said arms being provided with means for inducing within said transistor radio signals from without.

Another object of my invention is to provide an antenna having one antenna and a pair of arms for gripping a transistor type radio. This one antenna need not be made rotatable through any arc since it is specifically designed to fit over door glass and to ensure reception of the A-M transmission within a car.

Another object of my invention is to provide an antenna having two poles which is adapted to be secured

to a door glass and which has a pair of arms which grip a transistor-type radio which is adapted to receive F-M transmission.

Prior to my invention the modern automobiles which commonly incorporate radio receivers or provision for their installation, were designed for the regular A-M broadcast service. It has been my experience that car users often find other communication services desirable and one of these services is the F-M broadcast. In addition there is a general use of the small personal radio receiver which has created a demand for means to conduct stronger signals inside a closed steel-body car.

Having these problems in mind, I have invented a means for signal pickup and distribution to radio receiver equipment on the inside of an automobile which comprises a radio antenna, wired signal transmission means to a termination element, and loops either with or without iron cores. The antenna of my device is mounted on some suitable part of the car, preferably the gutter, and a terminal coupler rack may be mounted on the back of the front seat or other convenient spot inside of the automobile. In a preferred embodiment of my invention, I mount the antenna in one of the gutters by locking means such as a setscrew type of clamp. Suitable insulation methods are provided to insulate the interceptor elements from the support bracket. Likewise, I provide a universal joint-mounting preferably such that the antenna may be rotated within an arc of 180°. I also provide for dipole antenna elements especially for F-M application.

In my invention I provide an economical method for the use of a portable or transistor-type radio in an automobile without the necessary and attendant expense of complicated installation jobs which require insulation groundings and special conducting elements in order to effectively provide for the reception of transmitted signals within the automobile.

Other objects of my invention and economies of construction will be apparent from the detailed description to follow. In one instance I have illustrated my invention in the accompanying drawings in which:

FIGURE 1 shows the single antenna mounting of my invention mounted on the gutter of an automobile.

FIGURE 2 shows the detail of my invention illustrated in FIGURE 1.

FIGURE 3 is a partial section of the structure illustrated in FIGURE 2.

FIGURE 4 is a detailed, sectional view taken along the lines 4—4 of FIGURE 2.

FIGURE 5 shows the dipole antenna mounted on the gutter of an ordinary automobile.

FIGURE 6 shows rotating means for the dipole antenna illustrated in FIGURE 5.

FIGURE 7 is a detailed, sectional view taken along the lines 7—7 of FIGURE 6.

FIGURE 8 is a partial sectional view of the dipole antenna shown in FIGURE 5.

FIGURE 9 shows a view in side elevation for holding a transistor or portable-type radio.

FIGURE 10 is a view in front elevation of the structure shown in FIGURE 9.

FIGURE 11 is a detailed sectional view taken along the lines 11—11 of FIGURE 9.

FIGURE 12 is a detailed, sectional view taken along the lines 12—12 of FIGURE 10.

FIGURE 13 is a sectional view of the structure shown in FIGURE 9 and particularly showing the antenna and the radio in position mounted over a window of an automobile.

FIGURE 14 is a front view of the structure shown in FIGURE 13.

FIGURE 15 shows the detail of the antenna mounting over a window glass of a convertible car with a metal frame around the window.

In the drawings the same reference numerals refer to the same objects throughout and the views are taken looking in the direction of the arrows at the ends of the section lines.

Referring now to the drawings (FIG. 1) I show an automobile indicated generally at 20, provided with door glass such as 21, and a metal gutter such as 22. Secured to the metal gutter is a single pole antenna 23, attached to a rotating unit 24. The rotating unit 24 is secured to the gutter 22 by means of a clamp 25. The positioning disc 24 is rotatably mounted on the upper portion 26 of clamp 24 by means of a rivet 27 (FIG. 4). The positioning disc 24 is provided with a cover such as 28. The positioning disc 24 is provided with the antenna pole 23 which extends down within the positioning disc 24, and at its lower end surrounds the pin 27. Its lower end 39 is secured to the pin 27. Surrounding the pin 27 I provide insulation 29. Behind the positioning disc 24 I provide an additional disc 30 between the insulation and the positioning disc 24.

In order to move the positioning disc 24, a lever attachment 31 is provided, having a finger piece 32 which may be depressed inwardly to release a portion of said disc from the slot 33 to permit the positioning disc 24 and the antenna pole 23 which it carries to be moved through an arc.

I provide a lug 34, which receives a wire 35, which lug 34 is attached to the antenna pin 27 at one end, and which provides for receiving the signal from the antenna pole 23 to the reception set. The insulation material indicated at 29 is employed to prevent the grounding of the signal. The clamp 26 is releasably secured by means of a bolt 36 to clamp 25. This bolt 36 is provided at its lower end with a slot 37. The arm 25 has a slot 36a to allow for longitudinal adjustment of the clamp 26. A cover member 38 surrounds the clamp 25 and extends at its one end within the automobile, that is, under the door frame. This end 40 is made of flexible material so that it is easily adaptable to the contour of the door when the door is in its closed position. The other end 41 of the cover 38 extends around and is fastened to the clamp 25 by means of the threaded screw 36, and it is so made and constructed that access to the grooved portion of screw 36 is not possible unless the door of the automobile is opened. This provides for a safety lock preventing the removal of the aerial by persons unable to open the door. The arm 100 and the arm 25 are provided at their upper portions with a slot indicated at 98a which permits the member 97 to be moved longitudinally with reference to the gutter member 105.

I provide a shield 42, which has at its lower ends lugs such as 43 which are adapted to pass under the clamp 26 or are secured to said clamp. I provide a pressure gutter block 50, which has a screw 52 affixed to it. The screw 52 has threads 53 which are received in the bracket 26, and are adjustable so that one end of the gutter pressure box may be securely held within and against the gutter 54 to hold it against clamp member 25.

In FIGURES 5, 6, 7 and 8 I illustrate the attachment for a dipole antenna. Referring specifically to FIGURE 5 I show an automobile side 60, to which is secured my antenna device with the positioning disc 61, supporting the antenna arms 62 and 63, secured to the gutter 65 of the automobile by means of clamp 64. The antenna 62 and 63 are mounted within the positioning disc 61 which in this instance comprises two members, a front member 66 and a member 67 mounted immediately adjacent to said front member 66, both of which form a combined

positioning disc 61. The front member 66 of the positioning disc 61 is insulation material and carries within it the lower portion 68 of antenna arm 63. This portion 68 of the antenna arm 63 is secured to the insulation by means of a rivet 69. The antenna 62 is rotatable upon the pin 70. Immediately behind the insulation 67 is further insulation material 71, within which is carried the lower portion 72 of antenna 62 which is riveted to the disc 75 by means of rivet 76. The disc 75 is also secured to it by means of a rivet, a connector 77 which carries a lug 78. The lug 78 is not riveted to the portion of the antenna arm 62. The lug 77 slides on the disc 75 and is not riveted to it. The connection 78 being a wire is one of the two transmission lines that go to the transistor-type radio or F-M type radio. The other of the transmission lines 80 is secured to a lug 81 which is riveted to the pin 70 and connects the antenna arm 63 with the transistor or F-M type radio. A release attachment 90 is provided and has an arm 91 provided with a detent 92 which detent 92 is adapted to be releasably secured within a groove 93 provided in the positioning disc 75.

I provide insulation material 94 between the positioning disc and the release arm. This insulation material 94 abuts a clamp member 95 which is provided with a cover 96 and has at its lower portion 97 provision for receiving two threaded screws 98 and 99. Threaded member 98 extends through clamp 95 and into clamp member 100, and threaded member 98 has at its lower portion a slot 101. The threaded member 98 also extends through a guard member 102 which has an arm and an annular portion 103, and a lower portion 104, which extends within the automobile and is adapted to be locked upon the closing of the car door.

The antenna is clamped to the gutter 65 of the automobile by means of a clamping block 106, which is releasably secured at its upper end by the screw 99. The screw 99 is adjustable so that the block 106 may be pressed against the gutter portion 107, to hold the antenna device in place.

In FIGURES 9, 10, 11, 12, 13 and 14 and 15 I show a simplified attachment for securing an antenna to the door glass of an automobile.

Referring to FIGURE 9 I show a bracket 110 having an upper arm 111, and a lower arm 112. The upper arm 111 is vertically adjustable on member 113. This adjustment is shown in detail in FIGURE 12 wherein the member 113 is provided with an extension portion 114 which surrounds the vertical member 113, is provided with a pin 115, which is pivotally mounted on 114 and is adapted to be pressed against member 113. The pin 115 is pulled outwardly and upwardly against a spring 116 which is attached at its upper end to the arm 111. This provides for minute adjustment of the vertical space between the upper arm 111 and the fixed arm 112. The arm 110 is provided with a key slot 120, which is so made that the arm may be secured to a body portion of an automobile such as 121.

In a similar version of this structure I show the extension of the arm 110 provided with an angular member 125, which extends over the glass of an automobile door such as 126, and carries at its outer end the antenna 127. The antenna extension 125 is insulated from the automobile by means of some suitable material such as 128. At its lower end the arm 110 is insulated by means of a pressure cup 130. The portable radio 131 is held within the bracket 110 by means of a strap such as 132, which may extend laterally from the arm 110, or may extend from the upper portion of the arm down to the lower portion of the bracket 110 at 133. The portable transistor-type radio is connected to the antenna by a wire 134, or by the use of an inductive plate shown in FIGURE 11 and indicated at 140. The inductive plate

140 is made of some suitable metallic material, and has

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a series of members 141 and is secured in the arm section 112. Thus the transistor-type radio, for example, at the base 142 of the antenna 131, shown in FIGURE 14, is secured to the antenna by means of a wire 143, and provides for the induction of the signal from the antenna into the transistor-type radio.

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

An antenna device for use with a portable radio in an automobile comprising in combination, an antenna arm, a bracket to which said arm is secured, said bracket including means for releasably holding a portable radio, said bracket adapted to fit over the glass door of an automobile and insulation means between said glass and door and bracket, a suction cup on said bracket for holding said bracket against said door glass, and connections between said antenna carrying bracket and said radio for transmitting a signal.

6

References Cited by the Examiner

UNITED STATES PATENTS

2,702,604	2/1955	Hocks et al.	343—720 X
2,829,367	4/1958	Rychlik	343—850
3,056,570	10/1962	Slavin	343—715 X
3,071,338	1/1963	Kaufman et al.	343—713 X
3,087,117	4/1963	Mitchell	343—702 X
3,087,118	4/1963	Goffstein	343—715 X
3,099,797	7/1963	Piccinini	343—713 X

FOREIGN PATENTS

1,200,425	6/1959	France.
1,203,227	7/1959	France.
1,246,871	10/1960	France.
1,247,047	10/1960	France.

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