



[54] RADIATION SHIELDING AND RANGE EXTENDING ANTENNA ASSEMBLY

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[58] Field of Search ..... 343/702, 841, 343/790, 791, 818, 819; 455/89, 90; H01Q 1/24

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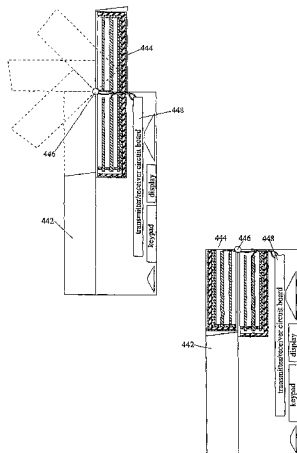
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[57] ABSTRACT

An antenna assembly for transmitting a radio signal from a radio signal transmitting device includes an antenna unit comprised of a dipole driven antenna member for transmitting a radio signal from the radio signal transmitting device. A radiation reflector reflects the radio signal transmitted by the driven antenna member, and a support member supports the driven antenna member and the radiation reflector so that a predetermined gap is precisely maintained between the driven antenna member and the radiation reflector. A shielding member shields a portion of the radio signal transmitted by the driven antenna member in a direction toward the shielding member. The antenna unit is pivotally mounted so that it is disposable at selectable positions relative to the shielding member. The output of the radio signal transmitted by the driven antenna member can be controlled depending on a position of the antenna unit. The dipole driven antenna member comprises a first and a second segment made from a metal foil. To reduce the overall length of the antenna, each segment has an unfolded portion and a folded portion. The radiation reflector is a metal wire, also having an unfolded portion and folded portions. This construction makes the inventive antenna assembly compact, while being effective both as a transmitting and receiving unit. The radiation reflector directs a portion of the radio signal toward the open transmission area, so as to extend a transmission range of the antenna assembly, and thus extend the transmission range of the radio signal transmitting device. By this construction, at least some of the radiation signal that is emitted from the driven antenna member in directions toward the user is blocked by the shielding member. Thus, the inventive antenna assembly has a compact construction, prevents unwanted exposure of the user to potentially harmful radiation, and provides an enhanced and extended transmission signal to enable improved communication.

11 Claims, 48 Drawing Sheets



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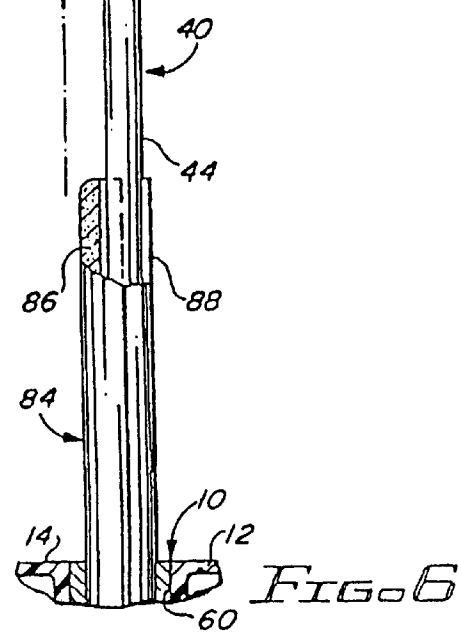
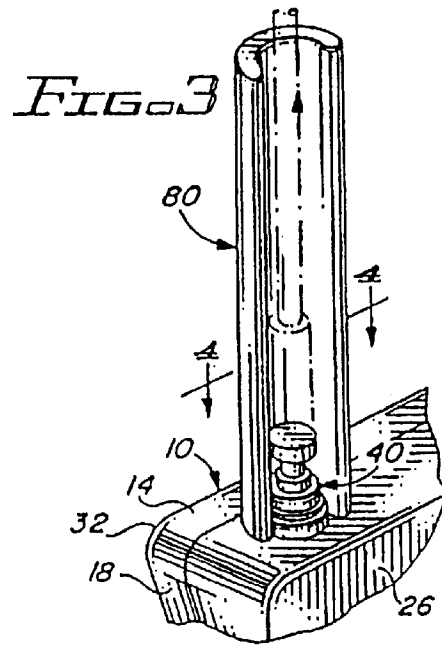
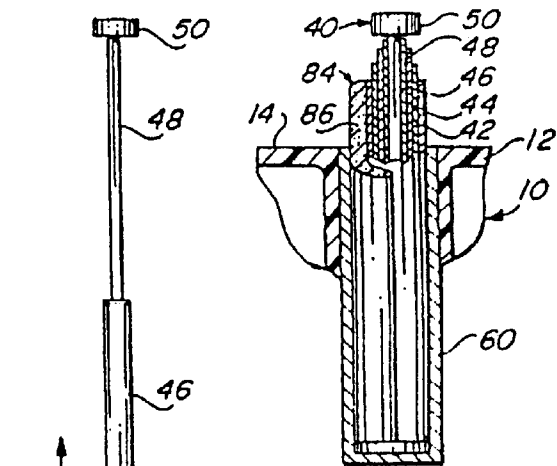
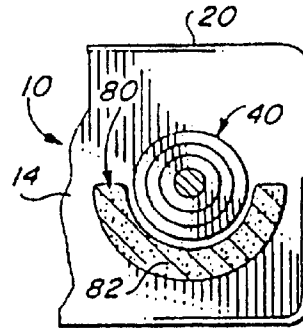
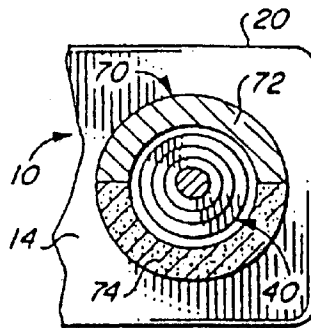
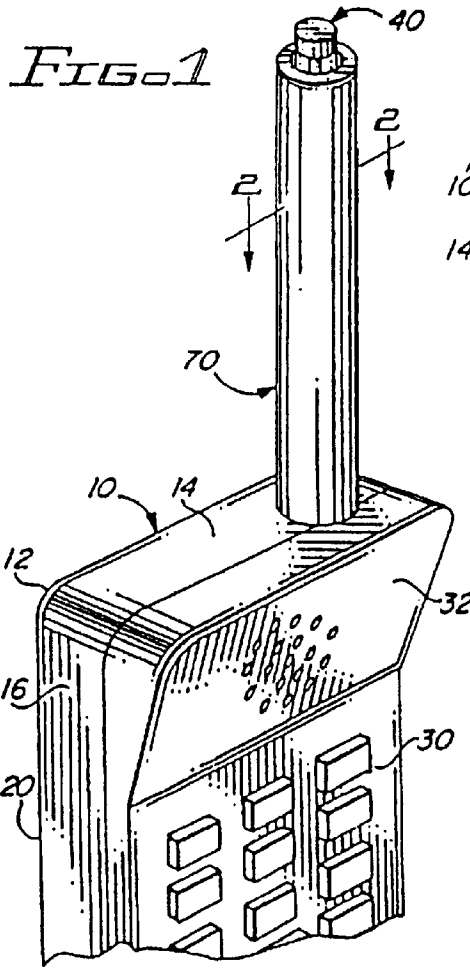
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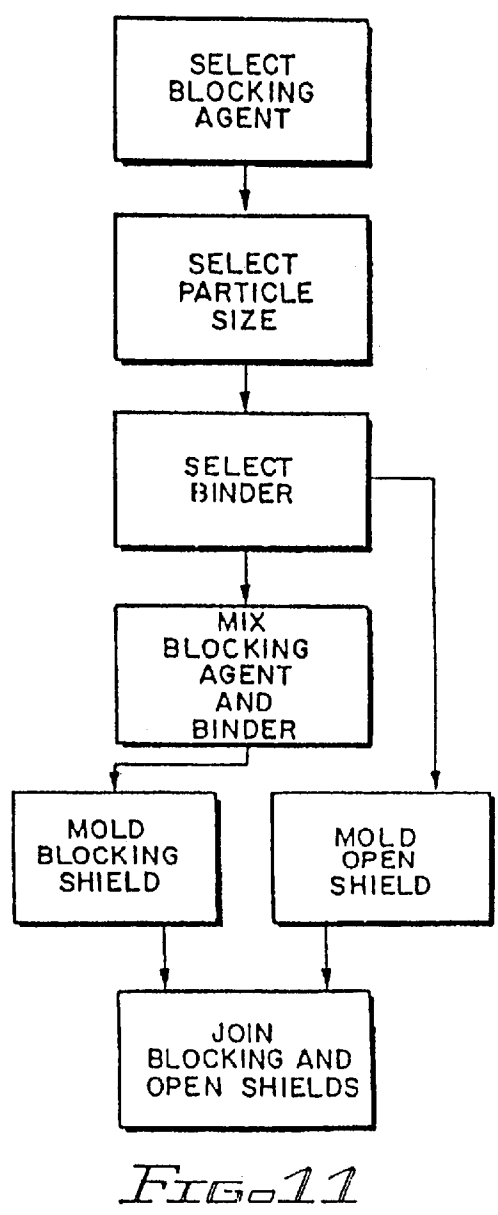
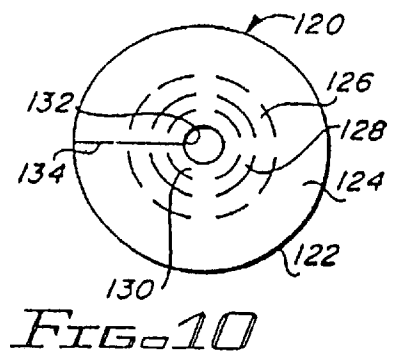
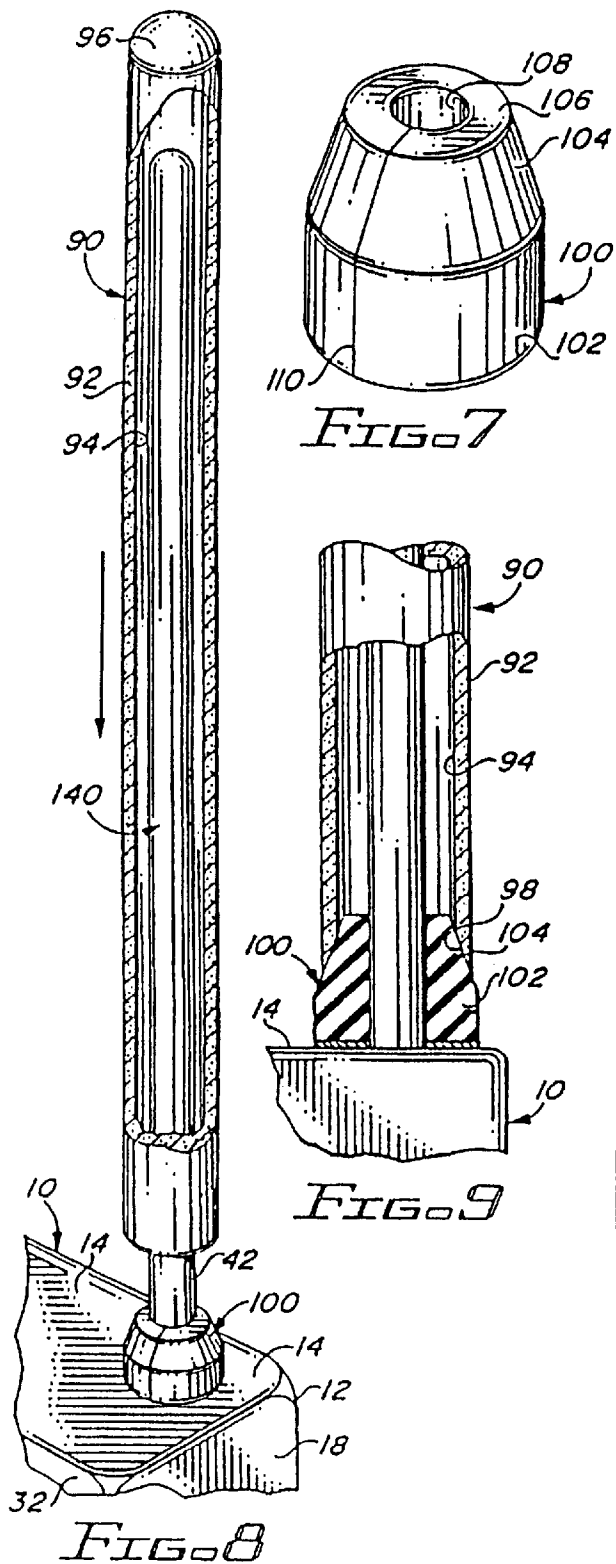
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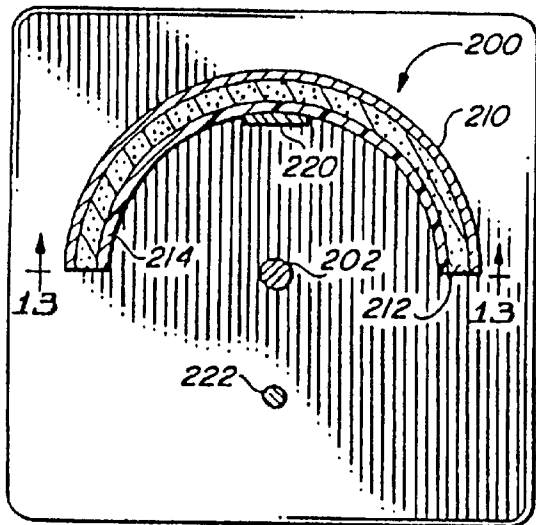


FIG. 12

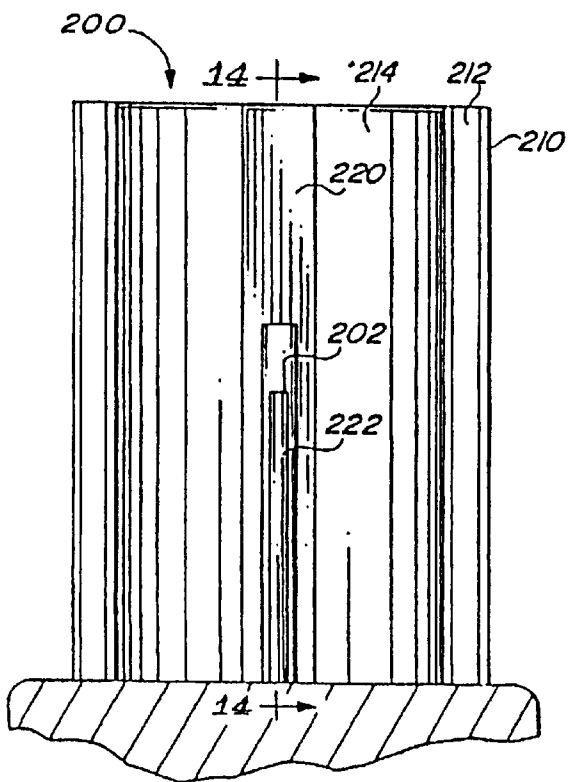


FIG. 13

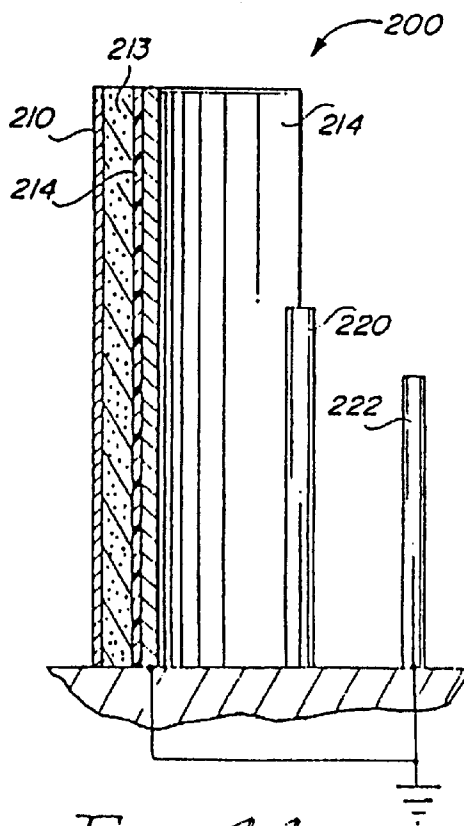


FIG. 14

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