

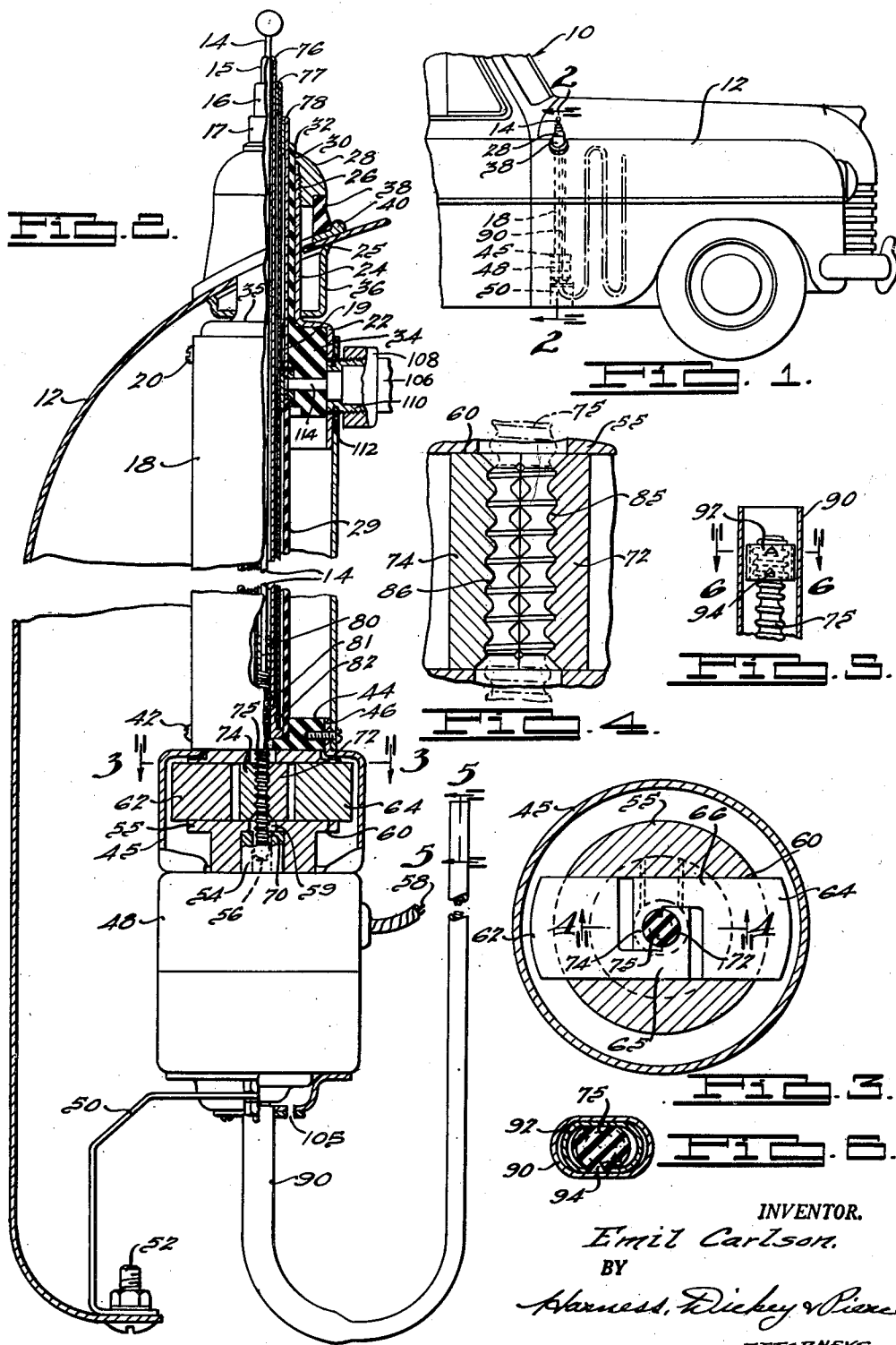
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E. CARLSON

2,634,370

EXTENSIBLE: ANTENNA CONSTRUCTION

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UNITED STATES PATENT OFFICE

2,634,370

EXTENSIBLE ANTENNA CONSTRUCTION

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7 Claims. (Cl. 250—33)

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This invention relates to extensible and retractable radio aerials, and particularly to motor driven telescopic aerials adapted for vehicular installation.

An important object of the invention is to provide an improved extensible aerial vertically movable by electric motor driving means controllable from a remote point. Aerials constructed in accordance with my invention are adapted to be installed in the body of a motorcar in such manner as to be largely concealed within the body, means being provided convenient to the driver's seat for extending and retracting the aerial with respect to the body.

Another object is to provide such an antenna construction constituting an improvement upon the disclosure of my Patent No. 2,346,728, both in electrical characteristics and in mechanical performance, and which is less expensive to construct.

Another important object of the invention is to provide improved driving means for a vertically actuatable aerial of the telescopic type wherein all of a plurality of telescopic sections may be extended and retracted by power driving means controllable from a remote point, the driving means being of novel and improved character, capable of exerting relatively high driving effort upon the aerial sections but so arranged that the aerial sections are also directly actuatable by hand without injuring or disturbing the normal operation of any part.

Still another object is to provide an improved antenna construction of the indicated character including a tubular housing adapted to be mounted in a concealed position within the body of a motor vehicle and having power driving means included in a casing section forming a downward extension of the tubular housing and carrying driving motor means also assembled therewith as a unit, the entire unit being supportable from opposite ends as a rigid assembly, an antenna being slidably extensible from the top of the unit, and a flexible actuating wire connected to the antenna and drivable by the motor being extensible from the lower end of the unit.

Other objects and advantages of the invention will become apparent upon consideration of the present disclosure in its entirety.

In the drawing:

Figure 1 is a somewhat diagrammatic side elevational view of the front portion of a motor vehicle provided with an extensible aerial con-

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Figure 2 is a composite view, partly in elevation but principally comprising a section taken substantially on the line 2—2 of Figure 1, with parts broken away and looking in the direction of the arrows;

Figure 3 is a cross-sectional view on a somewhat larger scale, taken substantially on the line 3—3 of Figure 2 and looking in the direction of the arrows;

Figure 4 is a sectional view on a still larger scale taken substantially on the line 4—4 of Figure 3 and looking in the direction of the arrows;

Figure 5 is a fragmentary longitudinal sectional view also upon an enlarged scale taken substantially on the line 5—5 of Figure 2 and looking in the direction of the arrows; and

Figure 6 is a cross-sectional view taken substantially on the line 6—6 of Figure 5 and looking in the direction of the arrows.

Referring now to the drawing, reference character 10 designates generally a closed motor vehicle body having a front fender portion 12, which may conveniently be made to serve as a support and enclosure for my improved antenna construction. The antenna proper consists of a plurality of rigid tubular or telescopically interfitted and slidable sections 14, 15 and 16 which are largely concealed within the fender when the antenna is retracted. The outer antenna tube 16 is supported by and slidably movable into and from a fixed supporting and contact tube 17, while the middle section 15 and inner section 14 are in turn slidably fitted in outer section 16. All of such parts are carried by a housing tube 18 of substantially larger diameter and which may be formed of aluminum tubing.

At its upper end, the housing tube 18 is connected as by screw means 20 to a tubular metallic neckpiece 22 fitted in the upper end of the tube 18 and projecting a relatively short distance thereinto. An upper portion of the neckpiece is of reduced diameter and is adapted to project upwardly through an opening as 25 in the fender 12 or other supporting body portion, a portion of the upper end of the neckpiece portion 24 being externally threaded as indicated at 26 to receive a domed cap nut 28 which has a central opening 30 therein, substantially larger than the outer antenna section 16. The fixed contact supporting tube 17 surrounds and slidably supports the outer antenna section 16 and a spring wire contact brush 19 provides continuous electrical connection between the antenna sections

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ably engageable with the noncircular portion of the external guide tube section to prevent unwanted rotation of said actuating member under the torque exerted thereon by the driver without preventing sliding travel thereof.

7. A remotely controllable power operated telescopic antenna assembly comprising a tubular housing, a plurality of telescopically slidable antenna sections mounted in said housing in substantially axial position and projectable from and retractable into the housing through one end of the latter, means limiting independent travel of said sections with respect to one another, a flexible actuating element connected to one of said sections and extensible through the other thereof, said actuating element extending slidably through and from the opposite end of the housing, means for actuating said sections including a driver engageable with and rotatable concentrically about the axis of said actuating

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element, means for guiding said actuating element comprising a guide tube secured with respect to said opposite end of the housing, the actuating element being slidable in the guide tube, and keying means carried partly by said actuating element and partly by said guide tube for preventing rotation of the actuating element about its axis.

EMIL CARLSON.

REFERENCES CITED

The following references are of record in the file of this patent:

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R. W. MASTERS
MULTICHANNEL ANTENNA SYSTEM

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Fig. 3

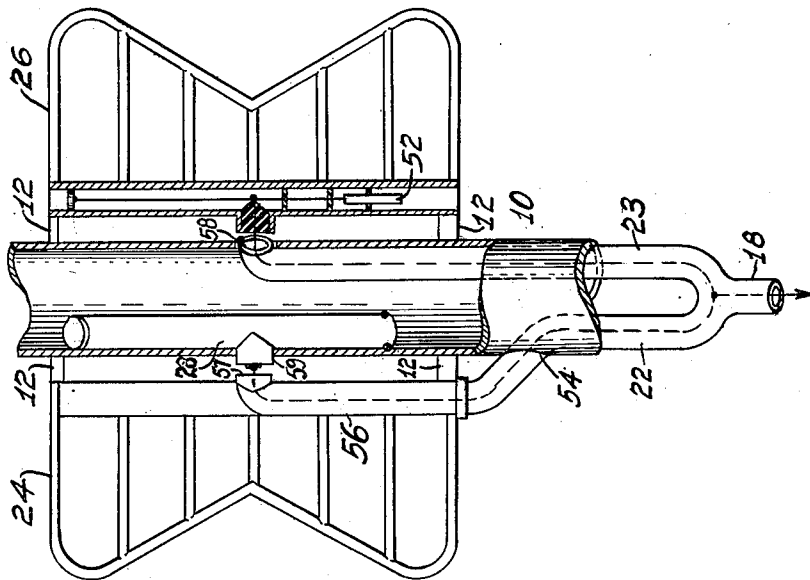


Fig. 2

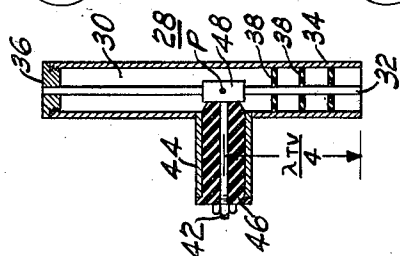
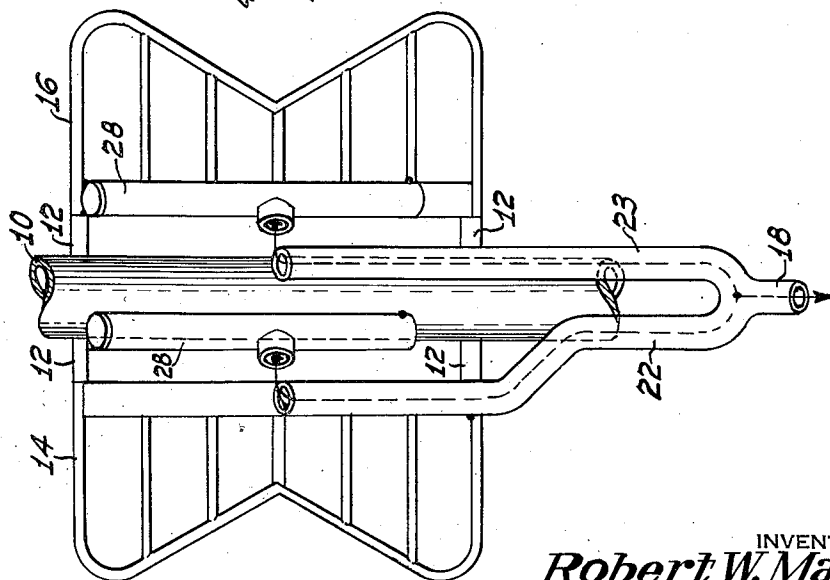


Fig. 1



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