

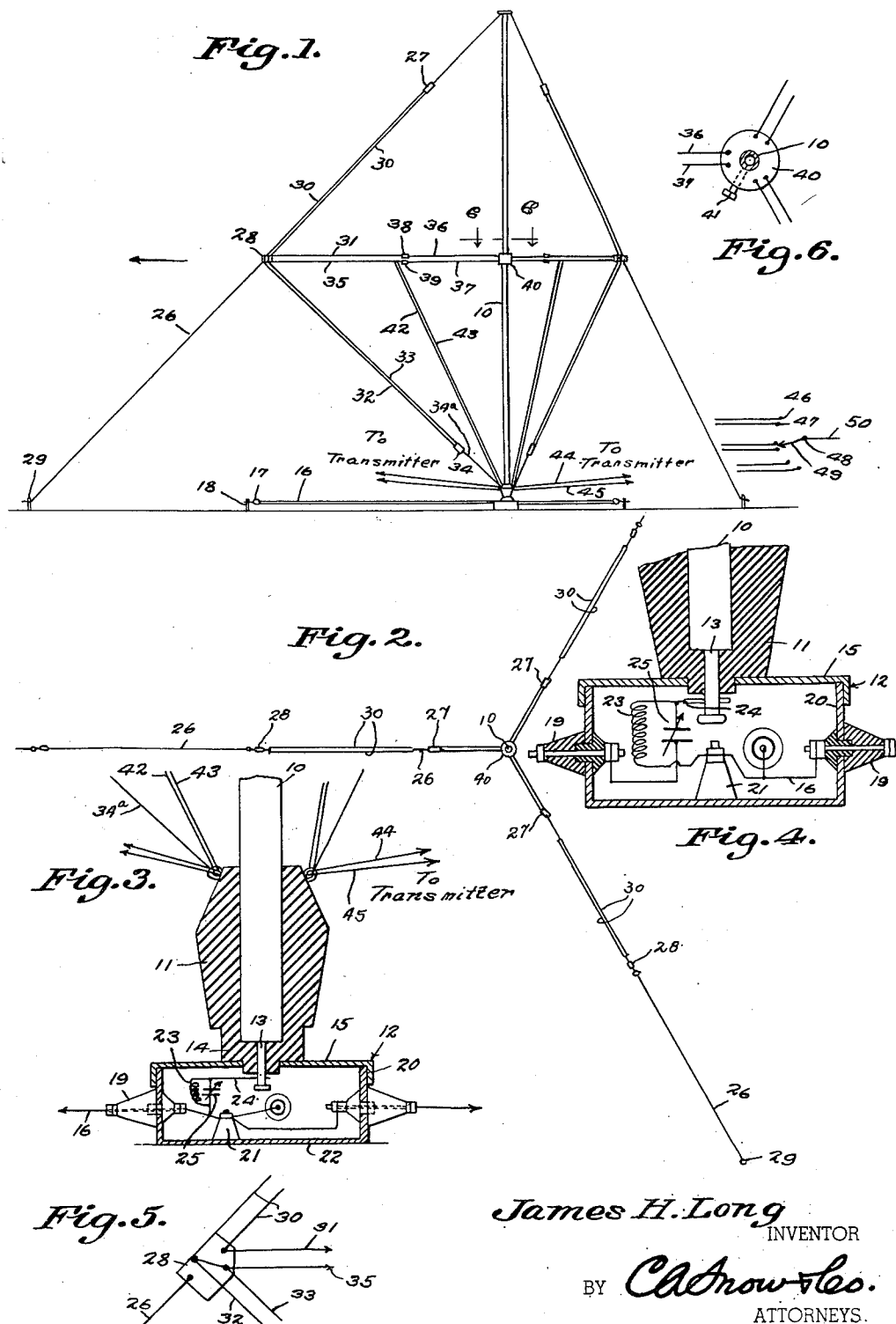
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TRIPLE-TILT ANTENNA

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1

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TRIPLE-TILT ANTENNA

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2 Claims. (Cl. 343—846)

This invention relates to an antenna or a radio transmitter or receiver of intermediate frequency.

An object of this invention is to provide an improved antenna for quickly receiving radio signals at an optimum angle and to concentrate the signal horizontally within one of a plurality of arcs of azimuth.

Another object of this invention is to provide an antenna, which is particularly adapted for intermediate frequencies at the optimum angles and reducing interference in radio communication.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts, hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing:

Figure 1 is a detail side elevation partly diagrammatic of a triple-tilt antenna constructed according to an embodiment of this invention.

Fig. 2 is a plan view partly broken away of the antenna.

Fig. 3 is a fragmentary vertical section showing the lower portion of the antenna assembly.

Fig. 4 is a fragmentary vertical section similar to Fig. 3, on an enlarged scale.

Fig. 5 is a fragmentary side elevation showing the mounting of the guide wires and the antenna wires.

Fig. 6 is a fragmentary sectional view taken on line 6—6 of Fig. 1.

Referring to the drawing, the numeral 10 designates generally a vertically disposed mast which has secured to the lower end thereof an insulator 11. The mast 10 is encompassed by the insulator 11 and the insulator 11 is mounted on a hollow base member generally indicated at 12. The mast 10 includes a reduced diameter stud 13 extending downwardly through the bottom wall 14 of the insulator 11 and projecting through the top wall 15 of the base member 12. A plurality of counterpoise conductors 16 extend radially upwardly from the base 12 and are connected at their outer ends to insulators 17 which are attached to stakes or supporting members 18 which are driven into the ground. These counterpoise conductors are disposed substantially parallel with the surface of the ground and at their inner ends extend through insulators 19 secured to the cylindrical side wall 20 of the base 12. The conductors 16 are secured at their inner ends to a terminal 21 positioned on the bottom wall 22 of the base 12 and the terminal 21 is connected to coil 23 which is connected by means of a conductor 24 to the stud 15. A variable condenser 25 is connected across the ends of the coil 23. The mast 10 is held in vertical or upright position by means of guy wires 26. These guy wires 26 have interposed between the length thereof upper and lower insulators 27 and 28. There are three of these guy wires 26 which are disposed substantially 120° apart about the mast 10 and the lower

2

ends of the wires 26 are secured to stakes 29 which are driven in the ground. A pair of conductors 30 are connected between the insulators 27 and 28 and conductors 30 have connected therewith a horizontally extending conductor 31. A downwardly and inwardly inclined conductor 32 is connected at its upper outer end to wire 30 at insulator 28 and is connected at its inner lower end to an insulator 34. A conductor 33 is connected between the insulator 28 and insulator 34, and a guy wire 34^a is interposed between insulators 11 and 34. Conductor 33 has connected to its outer upper end a conductor 35 which extends parallel with conductor 31 and the two conductors 31 and 35 are maintained substantially taut and in a horizontal position by means of a pair of wires 36 and 37, respectively.

An insulator 38 is connected between conductor 31 and wire 36 and an insulator 39 is connected between wire 35 and wire 37. The inner ends of the wires 36 and 37 are secured to a collar 40 which is fixed by fastening means 41 to the mast 10. The wires or conductors 31 and 35 have connected thereto at a point adjacent the insulators 38 and 39 a pair of conductors 42 and 43 respectively. The conductors 42 and 43 extend downwardly to the insulator 11 and are then extended horizontally and outwardly by conductors 44 and 45 to the transmitter. Preferably the conductors 44 and 45 are connected to pairs of contacts 46 and 47 which are carried by a switch 48. The switch 48 includes a switch arm 49 adapted to bridge each pair of contacts 46 and 47 and the arm 49 is connected by means of conductor 50 to the transmitter. Each pair of wires 31 and 35 radiate outwardly from the mast 10 and the pairs of wires 31 and 35 are arranged on an arc of 120° apart.

With an antenna as hereinbefore described, connected to the transmitter or receiver through the selective switch 48 the radio signals may be received from predetermined directions and these directions may be selected to provide for the least interference in the signals.

What is claimed is:

1. A receiving and transmitting antenna comprising a vertical mast, guy wires supporting said mast, a pair of insulators interposed in each guy wire, an insulator fixed to said mast in the horizontal plane of the lower one of said pair of insulators, a conductor extending between each pair of insulators, a downwardly and inwardly extending conductor extending from the lower one of said pair of insulators, an insulator disposed between said latter named conductor and the base of said mast, pairs of horizontal conductors extending between said mast insulator and the lower one of said pair of insulators, one conductor of each of said horizontal conductors being connected to said first named conductor, the other conductor of each horizontal conductor being connected to a downwardly and inwardly extending conductor, said horizontal conductor being arranged on an angle of 120°, and a plurality of obtusely related horizontal counterpoise wires extending radially outwardly from said mast.

2. A receiving and transmitting antenna comprising a vertical mast, a base for said mast, guy wires supporting said mast, a pair of insulators interposed in each guy wire, an insulator fixed to said mast in the horizontal plane of the lower one of said pair of insulators, a conductor extending between each pair of insulators, a downwardly and inwardly extending conductor extending from the lower one of said pair of insulators, an insulator disposed between said latter named conductor and the base of said mast, pairs of horizontal conductors extending between said mast insulator and the lower one of said pair of insulators, one conductor of each of said horizontal conductors being connected to said first named conductor, the other conductor of each horizontal conductor being

connected to a downwardly and inwardly extending conductor, said horizontal conductor being arranged on an angle of 120° , a plurality of obtusely related horizontal counterpoise wires extending radially outwardly from said mast, said base being hollow, a coil in said base connected to said counterpoise wires, and a condenser connected across said coil.

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