

April 2, 1957

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2,787,169

ANTENNA ROTATING MEANS

Filed Jan. 28, 1954

2 Sheets-Sheet 1

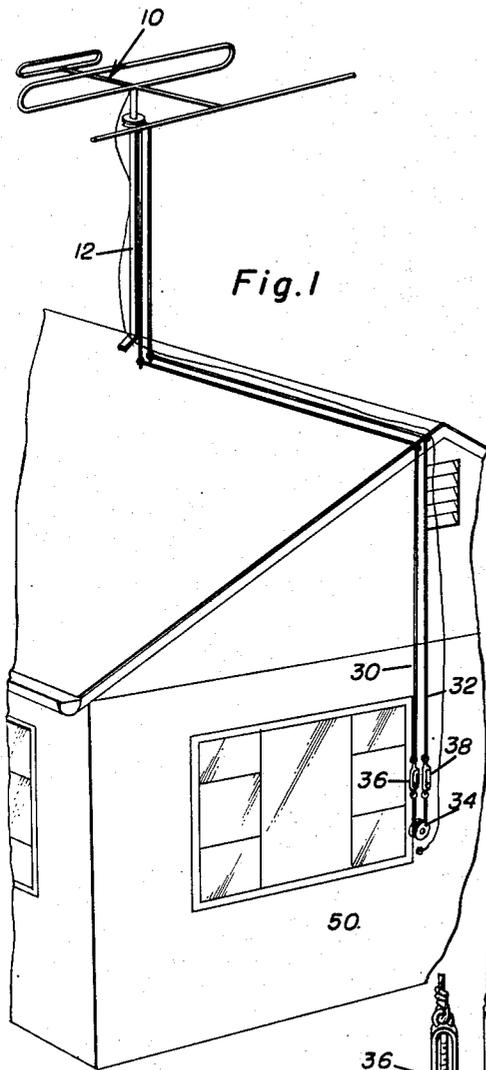


Fig. 1

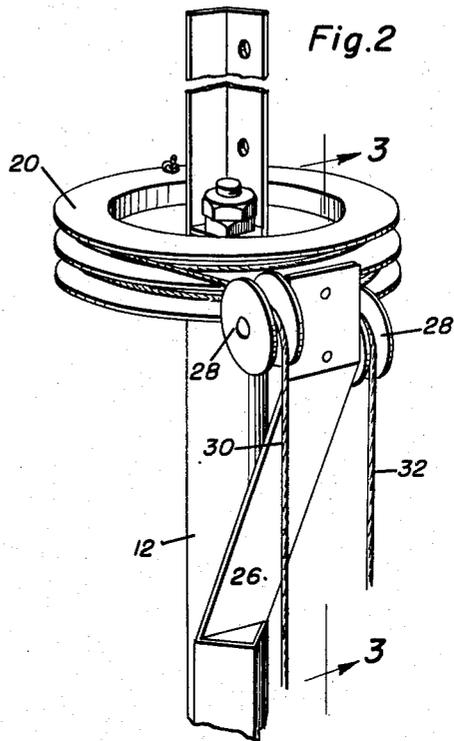


Fig. 2

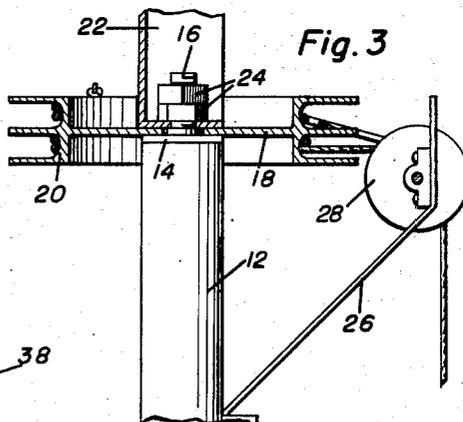


Fig. 3

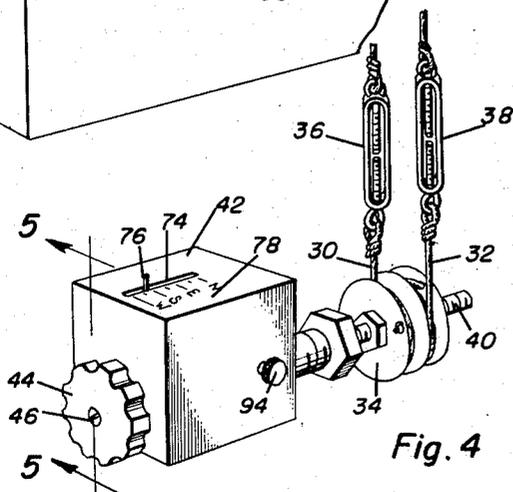


Fig. 4

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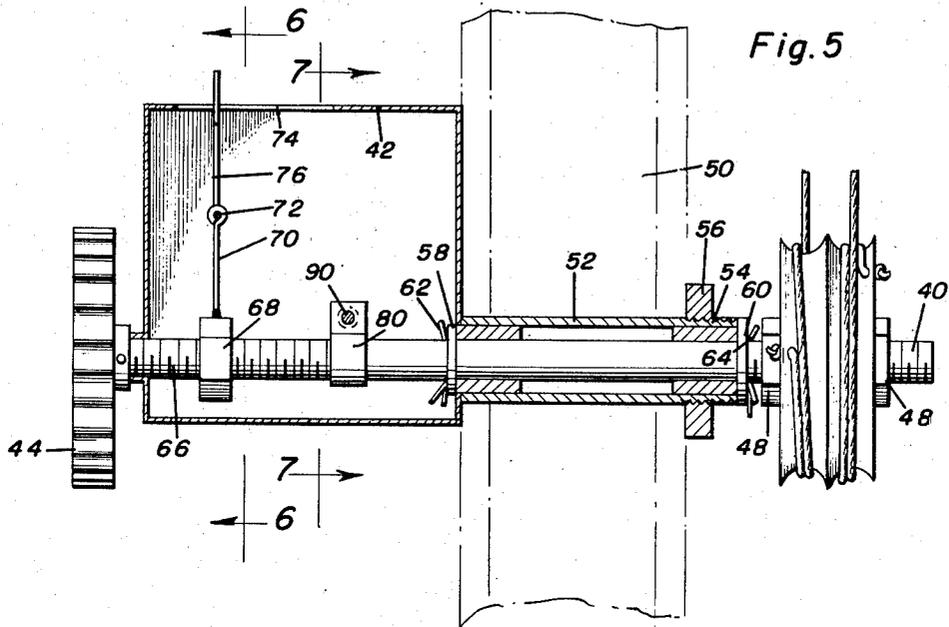


Fig. 5

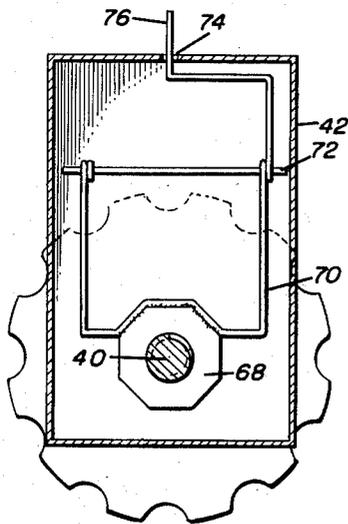


Fig. 6

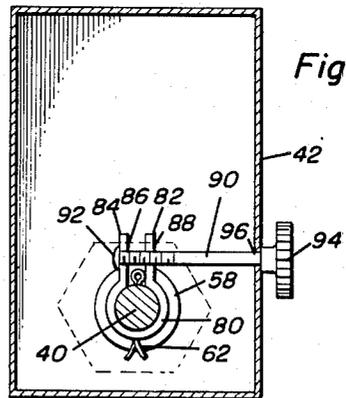


Fig. 7

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1

2

2,787,169

ANTENNA ROTATING MEANS

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1 Claim. (Cl. 74—506)

This invention relates to an antenna rotating apparatus, and more particularly to a device for positioning an antenna for most advantageous reception of wave energy.

The primary object of the present invention resides in the provision of manually operable means for rotating an antenna.

A further object of the invention resides in the provision of positive means for adjustably positioning and locking an antenna in a desired position.

One of the features of the invention resides in the provision of means for indicating the position of the antenna.

Still further objects and features of this invention reside in the provision of an antenna rotating means that is strong and durable, simple in construction and manufacture, easy to operate by manual manipulation, and which may be installed on any suitable structure.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by this antenna rotating apparatus, a preferred embodiment of which has been illustrated in the accompanying drawings, by way of example only, wherein:

Figure 1 is a perspective view illustrating the antenna rotating means as operatively installed;

Figure 2 is a perspective view illustrating the arrangement of parts in conjunction with the mast of the antenna;

Figure 3 is a vertical sectional view as taken along the plane of line 3—3 in Figure 2;

Figure 4 is a perspective view of the actuating mechanism of the antenna rotating apparatus;

Figure 5 is a vertical sectional view as taken along the plane of line 5—5 in Figure 4;

Figure 6 is a vertical sectional view as taken along the plane of line 6—6 in Figure 5 and illustrating in particular detail the construction of the indicator; and

Figure 7 is a vertical sectional view as taken along the plane of line 7—7 in Figure 5, illustrating the brake means comprising one of the important elements of the invention.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates any conventional antenna array, or the like, which is adapted to be supported by a mast 12 in such manner that the antenna rotating apparatus comprising the present invention can be utilized to rotate the antenna 10 so that the antenna 10 may receive an optimum signal.

The mast 12 has affixed thereto an upper mounting plate to which a threaded portion 16 of reduced cross sectional area is appended. The portion 16 of the mast 12 extends through an aperture in the web 13 of a twin driven pulley 20. An antenna supporting member 22 is affixed to the web 13 by any suitable means such as welding. The pulley 20 as well as the antenna supporting member 22 is held in place on the threaded upper end portion 16 of the mast 12 by means of the nuts 24.

Carried by the mast 12 is a support bracket 26 which carries guide pulleys 28. Secured to the pulley 20 and entrained about the pulleys 28 are cables 30 and 32, the cables 30 and 32 being entrained in opposition about the pulley 20 and each having one end thereof secured to the pulley 20.

The other ends of the cables 30 and 32 are secured to a drive pulley 34, it being noted that turnbuckles as at 36 and 38 are utilized within the cables 30 and 32 for maintaining the cables 30 and 32 taut.

The pulley 34 is mounted on a shaft 40 which is rotatably mounted within a substantially rectangular facing 42 and one end of the shaft 40 which extends through the casing 42 has affixed thereto a handle 44 by any suitable fastener, as at 46. The handle 44 is adapted to be utilized in rotating the shaft 40 and hence the pulley 34 which is, of course, keyed to the shaft 40 and lockingly held in place on the shaft by means of nuts 48 which are threadedly engaged on the shaft 40. It is to be noted that the shaft 40 extends through the wall 50 of the building in which the present device is installed. A sleeve 52 is first inserted in the wall 50, the sleeve being provided with a threaded end as at 54. A threaded stop member 56 is engaged on the sleeve 52 for lockingly holding the sleeve 52 in position. Collars as at 58 and 60 are positioned on the shaft 40 and are held in place by cotter keys 62 and 64 extending through transverse apertures in the shaft 40.

It is to be noted that the collar 58 is within the casing 42 thus holding the shaft 40 relative to the casing 42.

Threadedly secured on the threaded portion 66 of the shaft 40 is an indicator member 68 which has attached thereto a substantially rectangular wire frame 70. The frame 70 is attached to the member 66 as by welding or the like and carries a substantially horizontal rod 72 extending transversely of the casing 42 and which upon rotation of the shaft 40 will abut against one of the walls of the casing 42, thus preventing rotation of the indicator member 68 when the shaft 70 is being rotated and thus causing, because of the threaded advance of the portion 66 of the shaft 40, the indicator member 68 to move relative to the casing 42. The casing 42 is provided with an elongated slot 74 therein through which an indicator flag 76 appended to the rectangular frame 70 of the indicator member 66 extends. Suitable indicia as at 78 indicative of direction such as north, east, south and west are printed or otherwise applied on the casing adjacent the slot 74 and the flag 76 of the indicator 68 cooperates with the indicia 78 to designate the position of the antenna 10. Secured about the shaft 40 is a substantially U-shaped clamp member 80 which has a pair of legs 82 and 84. The leg 82 is provided with an aperture therethrough as at 86 and the leg 82 is threaded as at 88. There is provided a threaded rod 90 which extends through the aperture 86 and is threadedly engaged within the threaded aperture 88. The rod 90 is provided with a head as at 92. A handle 94 is provided for the rod 90 which extends through an aperture 96 in the casing 42. Hence, upon rotation of the handle 94 the clamp can be tightened or loosened about the shaft 40 as may be desired to thus clampingly hold the shaft 40 in a desired position.

The operation of this device is quite simple. With the clamp 80 in a loosened position, the handle 44 may be rotated until the indicator 76 is at the position which has previously been determined to be the best for the particular frequency over which wave energy has been broadcast and which it is desired to utilize the antenna 10 to receive. Upon rotation of shaft 40, the pulley 34 will, of course, be rotated, thus actuating the cables 30 and 32 which, in turn, will actuate the pulley 20 to rotate the pulley 20 and hence the antenna 10.

3

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claim.

What is claimed as new is as follows:

An antenna rotating means comprising an operating shaft, a drive pulley on said shaft, a pair of endless cables entrained about said drive pulley, said shaft being rotatably mounted in a casing, an elongated slot in said casing, said shaft extending through said casing, a handle on said shaft for manually rotating said shaft, said shaft having a threaded portion, an indicator threadedly secured on said shaft having a portion extending through said slot, brake means extending through said casing and engaging said shaft for holding said shaft in a locked position, a rectangular stop carried by said indicator engaging the interior walls of said casing for holding said indicator against rotation upon rotation of said shaft so that said indicator will advance along said shaft upon

4

rotation of said shaft, said brake means including a U-clamp positioned about said shaft, said U-clamp having a pair of legs, an aperture through one of said legs, a rod extending through said aperture and threadedly engaging the other of said legs, said rod extending through said casing, and a handle on said rod for rotating said rod to tighten said U-clamp about said shaft.

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