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2,857,783

VARIABLE POSITION RADAR SCANNING SWITCH

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Fig. 1

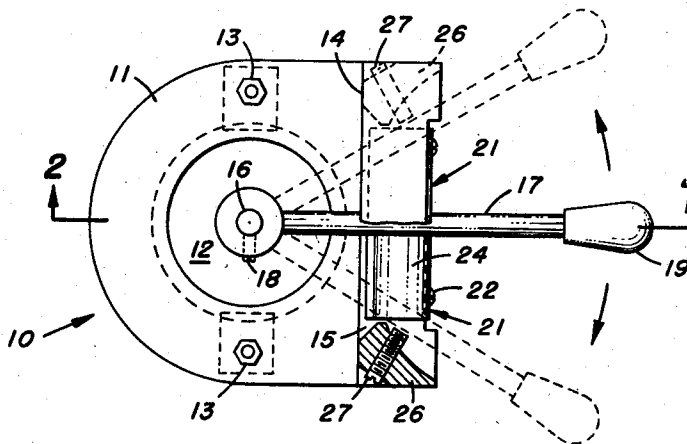


Fig. 2

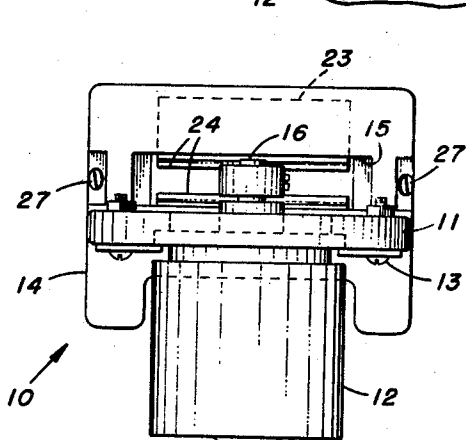
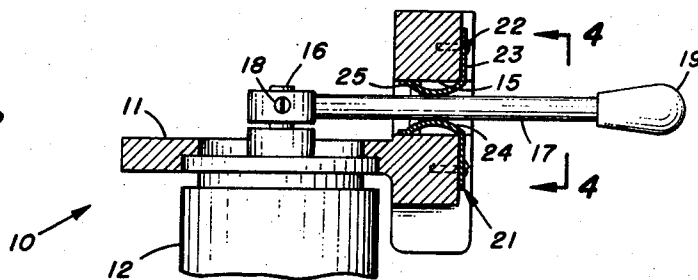


Fig. 3

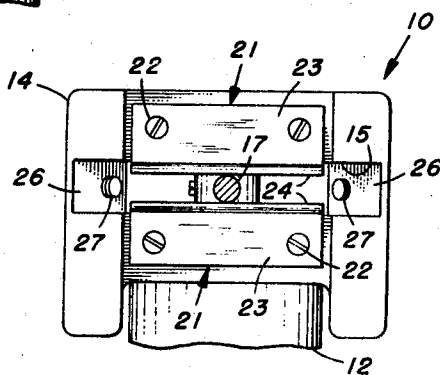


Fig. 4

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VARIABLE POSITION RADAR SCANNING SWITCH

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2 Claims. (Cl. 74—531)

The present invention relates to a selectively variable position sector switch for controlling the particular sector in which a radar scans. More particularly the invention relates to a variable position sector switch for radar control in which the switch arm may be firmly held in any position within its range of movement, thus to adjust the scanning of the radar beam with great accuracy.

Prior art switches have been limited in their adjustment to a number of spaced positions with no provision for holding the switch arm in any of the positions between the aforementioned spaced positions.

An object of the present invention is to provide a new and improved variable position sector switch for controlling the scanning sector of a radar beam which may be held in any position within its range of adjustment.

Another object of the invention is to provide a new and improved variable position sector switch for controlling the scanning sector of a radar beam which is simple in construction and economical to construct.

A further object is to provide a control lever of simple construction which will remain in any selected position and which may be set at any position within its limits.

A final object of the invention is to provide an improved friction means for holding in any position within its limits of movement the adjusting arm of a variable position sector switch for controlling the scanning sector of a radar beam.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

Fig. 1 is a view in elevation of the switch of the present invention;

Fig. 2 is a sectional view taken substantially along the line 2—2 of Fig. 1;

Fig. 3 is a side elevation of the device; and

Fig. 4 is a sectional view taken along the line 4—4 of Fig. 2.

Referring more particularly to the drawings wherein like numerals indicated like parts throughout the several views, 10 indicates generally the switch or control means of the present invention. A plate portion 11 is bolted or otherwise secured to a selsyn motor 12 or similar remote control device, the securing means being indicated at 13. One side of the plate portion 11 is enlarged or flanged as at 14 and has a slot 15 formed therein.

Selsyn motor 12 has a shaft 16 extending therefrom for rotating the armature thereof to various positions, thus to control the scanning of a radar beam within desired areas of operation, as is well-known in the art. A

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control arm or handle 17 is fixed to shaft 16 by a set screw 18 and has a gripping portion 19 at the other end thereof. Control arm 17 extends through the slot 15, the gripping portion extending beyond the enlarged portion 14 of the plate 11.

A pair of oppositely disposed substantially L-shaped spring members 21 are mounted in slot 15 in a manner to frictionally engage opposite sides of the arm 17. The spring members 21 are secured to enlarged portion 14 by screws 22 or, if desired, any other means may be employed for securing the springs such, for example, as welding. Springs 21 are each provided with a flange 23 running along the length thereof through which the screws 22 may extend. Springs 21 are also each provided with an arched portion 24 which frictionally engages arm 17. A lip portion 25 extends along the length of each spring 21 on the side opposite to the flange 23, the lip portion engaging one of the walls of slot 15 in each case.

At each end of slot 15 is an angularly disposed wall 26 through which an angularly disposed limit screw 27 extends. Screws 27 govern the outer limits of movement of the arm 17 which swings within the slot 15.

As seen particularly in Fig. 2, the springs frictionally engage opposite sides of the arm 17 with sufficient force to prevent arm 17 from accidentally moving out of an adjusted position. However, the friction on arm 17 provided by the springs is not strong enough to restrict easy manipulation of the arm. If desired, a lubricant such as molybdenum disulphide may be applied to the springs to facilitate manual adjustment thereof without impairing the holding of the arm in a set position.

It will be seen, from the foregoing, that the present invention provides a control arm gripping means having the facility of holding the arm in any position throughout the range of movement of the arm. Thus the sector of scan of the radar beam controlled by the arm may be adjusted infinitesimally in contradistinction to prior art controls wherein the scan of the beam may be controlled only in a set series of spaced steps. Of course, the invention may be used whenever such a control arm is desired, other than in connection with radar apparatus.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

What is claimed is:

1. Radar control apparatus comprising, a frame member having an opening therein, a remote control device secured in said opening for controlling the scanning sector of a radar beam, said remote control device having an axially disposed shaft extending therefrom, a flange member on said frame and having a slot therein, a lever arm secured to said shaft and extending through said slot, a pair of spring members extending along the length of said slot and frictionally engaging said lever arm on opposite sides thereof, said spring members presenting along the entire length thereof a smooth flat surface to said lever arm whereby the arm may be set at any position along the lengths of said spring members.

2. Radar scanning control apparatus comprising, a plate member of substantially T-shaped cross-section, a remote control device secured to said plate member, said remote control device having an adjusting shaft rotatably mounted therein and extending therefrom, said plate member including a flange portion having a slot formed therein, a lever arm fixedly mounted on said shaft and extending at a right angle therefrom through said slot,

a pair of elongated spring members mounted in opposing relation on said flange and being substantially L-shaped in cross-section, one run of the L of each spring member being slightly arched and extending into said slot, the arched portion of each spring member frictionally engaging the lever arm on one side thereof, and adjusting screws threadedly mounted at the ends of said elongated slot to limit the swing of said lever arm.

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