Aug. 5, 1952 P. WARE 2,605,735

SPIRAL TUNING DIAL

Filed March 18, 1948 2 SHEETS—SHEET 1

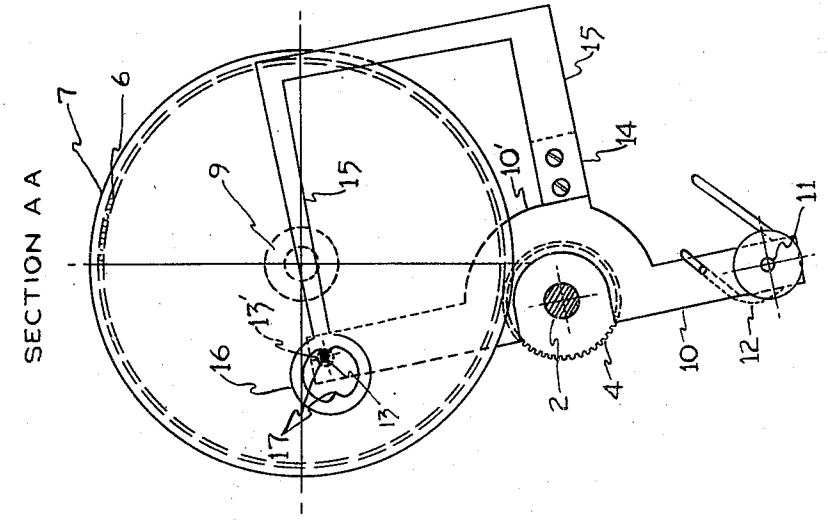


FIG. 2

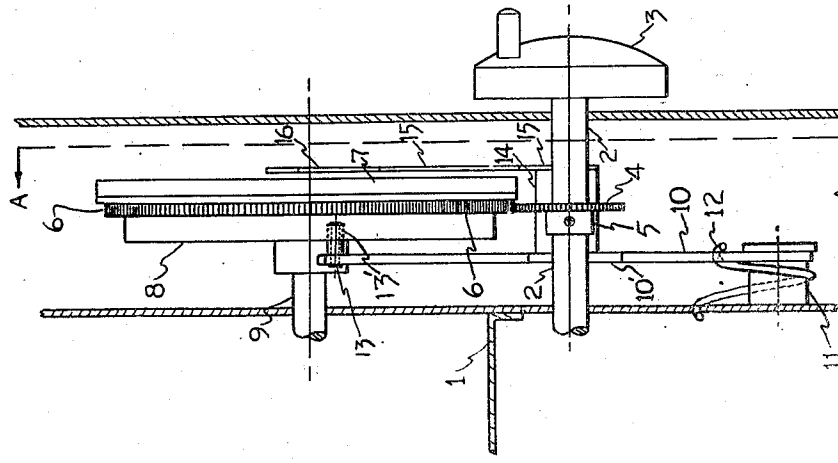


FIG. 1

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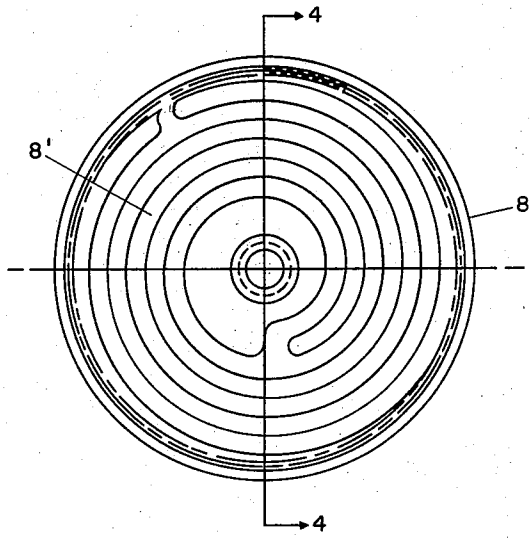


Fig. 3

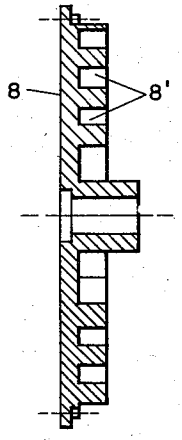


Fig. 4

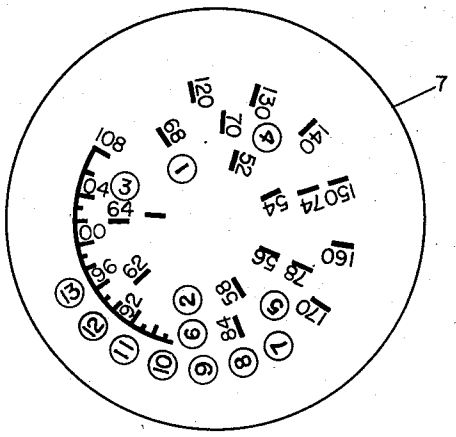


Fig. 5

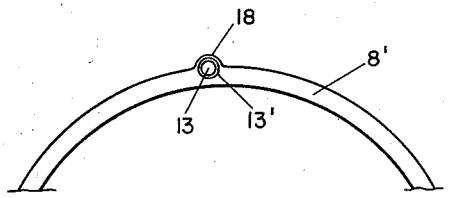


Fig. 6

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2,605,735

SPIRAL TUNING DIAL

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Application March 18, 1948, Serial No. 15,549

2 Claims. (Cl. 116—124.2)

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This invention relates to an indicating device that is provided with a dial on which markings or calibration points are arranged in the form of a spiral. It will be particularly described and illustrated as it is used as a high frequency radio tuning dial. It is not restricted to this use, however, being particularly suited for any use where it is desirable to indicate the position of a shaft which may turn a plurality of times between stops.

The invention may be understood from the description in connection with the accompanying drawings in which:

Fig. 1 is a side view of an illustrative embodiment of the invention.

Fig. 2 is a section along the line A—A of Fig. 1.

Fig. 3 is a plan view of the spiral selector gear.

Fig. 4 is a section along the line 4—4 of Fig. 3.

Fig. 5 shows an illustrative layout of the dial, and

Fig. 6 shows a portion of the spiral selector gear.

Reference character 1 indicates diagrammatically a support for a tuner or other mechanism of the known sort that is provided with a tuning shaft 2 which is to be rotated. This shaft is turned by means of a knob 3. A gear 4, which may, for instance, be made of fibre is secured to the shaft 2 by holder 5.

Gear 4 meshes with a gear 6 which is attached to a disc 8 which has a spiral groove 8' in one side thereof. Gear 6 and disc 8 are so connected that they rotate together on a shaft 9 that is fixed in position. A dial 7, which is preferably of material such as Lucite or other light transmitting plastic material that can be adapted for edge-lighting, is mounted in front of the gear 6, so that it turns with this gear.

An arm 10 is supported on shaft 11. This arm 10 has a bend 10' in it so that it does not strike shaft 2 before it is turned sufficiently on shaft 11. A pin 13 carrying a roller 13', is mounted on the arm 10 near the opposite end of this arm from shaft 11. This pin and roller extend into the spiral groove 8' in disc 8. A spring 12 keeps tension on arm 10 so that the roller constantly rolls along the outer edge of the groove 8' in the disc 8.

A block 14 which supports a frame 15 is mounted on arm 10. This frame 15 is made of lightweight material and is shaped so as to extend upwardly across the face of the dial 7. The end of frame 15 is formed into a loop or ring 16,

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through which the numerals and markings on the dial 7 may be observed. This loop 16 has radially extending points 17.

An illustrative marked dial is shown in Fig. 5. This particular dial is for use on a television receiver tuning assembly, and shows the numbered television channels as well as frequency in megacycles for tuning in frequency modulated stations, etc.

Fig. 6 shows a portion, greatly enlarged, of the spiral groove 8' of disc 8 in which pin 13 carrying roller 13' is caused by the action of spring 12 to be tensioned against the outer edge of the groove 8'. A V-shaped notch 18 may be provided into which the roller 13' will fall, thus causing a noticeable detent action at each of several predetermined points which may correspond to the numbered television channels shown on the illustrative dial of Fig. 5.

The device is operated by turning the knob 3. When this knob 3 is turned, the dial 7 is turned at a slower rate. As this dial and disc 8 are turned, the pin 13 is moved along the spiral groove 8' of disc 8, thus causing the arm 10 to move on shaft 11 as a pivot. As the arm 10 moves it carries the frame 15 with it. The loop or ring 16 which is carried by this frame is thus caused to move substantially horizontally across the face of the dial 7. Thus the successive portions of this dial that are visible through the loop 16 are in the form of a spiral. Each time a numbered channel appears behind the loop, a detent is felt on the knob, and a click is heard as the roller falls into notch on the spinal groove. A suitable enclosure, not shown, with a slightly arcuate horizontal slot therein, may be used to prevent viewing at one time any of the dial except that portion that is seen through the loop 16. The points 17 aid in reading the positions of the dial. The end of the frame 15 may be rectangularly shaped with a small rectangular opening therethrough so as to obscure all of the dial except that which is behind this opening.

What is claimed is:

1. A radio tuning indicator comprising a rotatable dial rigidly affixed to a rotatable disc in back-to-back relationship, said dial having parallel planar surfaces and being light conducting uninterruptedly throughout and to all outer surfaces thereof and having a scale on one surface thereof, said disc having a spiral groove in the surface thereof, said scale being formed in a spiral corresponding to said groove, a viewing frame having an opening therein adjacent

said scale and being pivotally mounted to move substantially parallel and radially with respect to the parallel surfaces of said dial, and a guide member engaging said spiral groove and rigidly attached to said frame to guide said opening in alignment with said scale, said rigidly connected frame and guide member forming a rigid combination which extends around the edges of said dial and disc.

2. The tuning indicator of claim 1 in which said guide member comprises a pin having a roller mounted on an arm and bearing on the side of said groove, said groove having notches in the side thereof on which said roller bears, said notches acting as detents and being aligned with markings of said scale, said arm being spring biased against said side.

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