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H. ATWOOD, JR

2,435,564

RADIO DIAL SCALES PROJECTOR

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Fig. 1

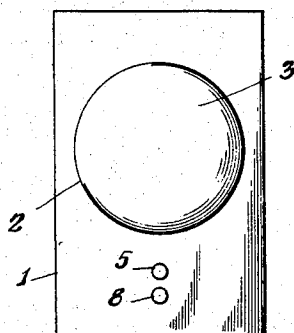


Fig. 2

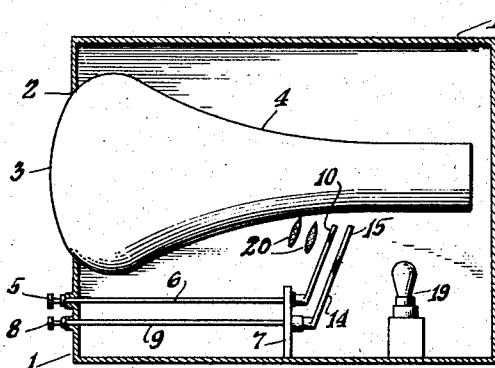
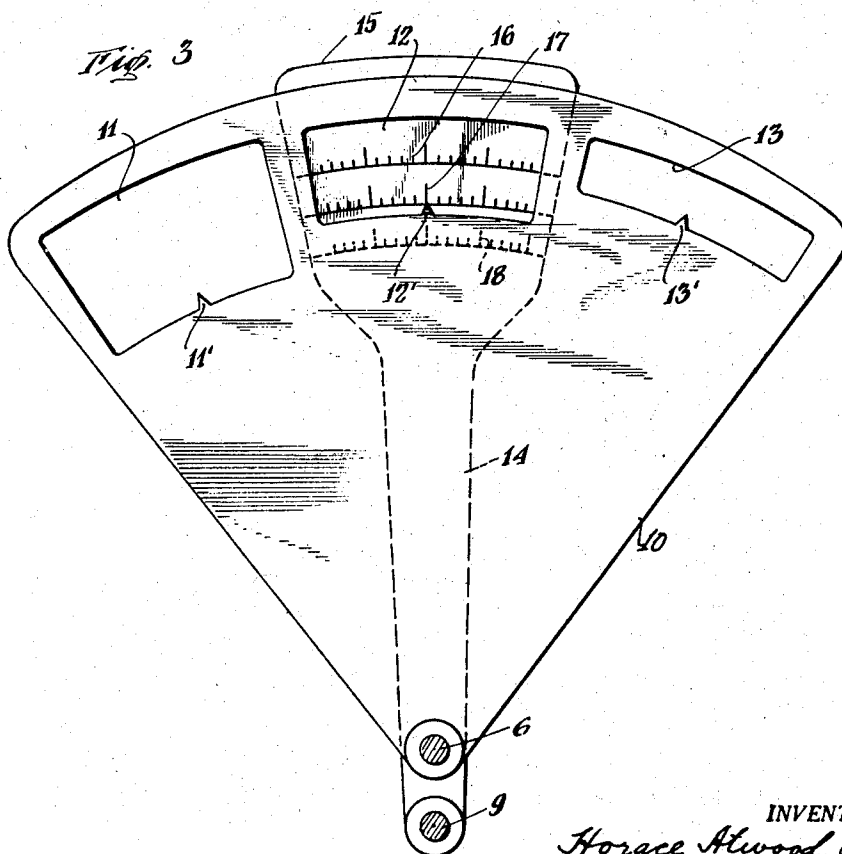


Fig. 3



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RADIO DIAL SCALES PROJECTOR

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1 Claim. (Cl. 88—24)

1

This invention relates to a device which facilitates the tuning of the radio in a combined radio and television receiver. With this device visual indication is provided to show when the radio receiver is tuned to the desired station whether that station is transmitting at the time of tuning or not.

In carrying out the invention a scale is projected by light upon the inside surface of the screen of the cathode-ray tube of the television receiver where it can be seen at the position of an observer of the screen. This scale is located upon a plate. A mask or shutter is located in front of the plate and is adapted to be moved with the band-changing switch.

The invention may be understood from the description in connection with the accompanying drawing, in which—

Fig. 1 is a somewhat diagrammatic end view of a combined radio-television set;

Fig. 2 is a side view; and

Fig. 3 is a front view on an enlarged scale showing some of the details.

In the drawing, reference character 1 indicates a cabinet for accumulating both a radio and a television set. The electrical connections for the television and radio are not shown as they may be of the well known sort.

An opening 2 is provided at the front of the cabinet 1 through which the face 3 of the television tube 4 may be seen. The television tube is supported as usual on a chassis and is connected to the electric circuits in the usual way. A frequency range selector knob 5 is provided for radio channels not shown. These bands or channels may, for example, be the frequency ranges from 550 kc. to 1500 kc.; 1600 kc. to 4 mc.; and 9 mc. to 11.5 mc. The shaft 6 to which the knob 5 is connected is journaled in the wall 1 and in a bearing in the support 7. It is for operating the frequency selector switches for the radio channels, not shown.

The knob 8 is for turning the shaft 9 that is located below the shaft 6 and is also journaled in the wall 1 and in a bearing in the support 7. It is for tuning to different frequencies in the several channels.

A sector shaped plate 10 (Fig. 3) is attached to the inner end of the shaft 6. This plate is made of opaque material and is provided with somewhat rectangularly shaped openings 11, 12 and 13 with arcuate sides and with the ends extending radially. Pointers or markers 11', 12' and 13' are provided along the inner edges of the openings 11, 12 and 13.

2

An arm 14, which is connected to the inner end of the shaft 9 is parallel to and behind the plate 10. It is provided with an enlarged end portion 15 which is made of transparent or translucent material and may be colored if desired. Three graduated scales 16, 17 and 18 are provided on the portion 15, the lines and other markings of the scales being made of opaque or colored material.

An electric light 19 is located in the cabinet 1 behind the plate 10 and the enlarged portion 15 of the arm 14. A lens system 20 is located in position to focus the graduated scales 16, 17 and 18 upon the inner face 3 of the tube 2.

The shaft 6 is to be connected in the usual way to a selector switch which selects the desired channel corresponding to the position to which the sector 10 is turned. Such circuits are not shown as the usual known circuits now in extensive use may be used, and the invention is not restricted to any particular circuit or circuits of this sort.

When the button 5 connected to shaft 6 is turned to the selected frequency range, the corresponding opening 11, 12 or 13 is brought into position in front of the enlarged scale 15 that is carried by the arm 14. With the desired frequency channel thus selected, the button 8 is used to turn the shaft 9 so that the corresponding scale 16, 17 or 18 will have its lower edge even with the corresponding pointer 11', 12' or 13', so that the radio can be tuned to any particular frequency of whatever channel has been selected by turning the button 5.

With this invention, the tuning to any station in several different frequency channels can be quickly effected and the operator can see the pointer and graduations on an enlarged scale from in front of the face 3 of the tube 4, and since this is shown on the background of a lighted surface, the readings are very easily seen whether the room is dark or lighted.

When the television is not being used the tuning knobs 5 and 8 are used for enabling the magnified images of the tuning scales 16, 17 and 18 and the pointers 11', 12' and 13' to be projected by the lens system 20 upon the face of the television tube 4 where they can be clearly seen on the television screen that is located on the inside surface of the large end of this tube.

The pointers 11', 12' and 13' always show the radio channel to which the radio is tuned, and the graduated scales 16, 17 and 18 show the particular frequencies of the several channels to

3

which the radio set is tuned by the buttons 5 and 8.

The switches and other tuning and station selecting elements which are operated by the buttons 5 and 8 and shafts 6 and 9 are not shown since they may be of many sorts which are now in common use and are well understood by those skilled in this art.

What is claimed is:

A device for facilitating the tuning of the radio in a combined radio and television receiver, which comprises a cabinet having a circular opening at the front thereof, a television receiving tube so located in said cabinet that its face projects into said opening, a source of light in lower rear portion of said cabinet, a lens system in said cabinet adapted to project light from said source onto the inside surface of the face of said tube, two shafts in said cabinet aligned with the axis of said tube, a V-shaped plate of opaque material having an arcuate end and being mounted near its opposite end on one of said shafts and having arcuate openings therethrough near said arcuate end, an

4

arm mounted on the other shaft and having an enlarged end portion of light transmitting material thereon parallel to said V-shaped plate with a scale on said enlarged end portion, said source of light being on the other sides of said plate and scale from said television tube face.

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