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J. DREYFUS

2,131,797

TRANSMISSION MEANS FOR CONTROL MEMBERS

Filed Dec. 6, 1934

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Fig. 1

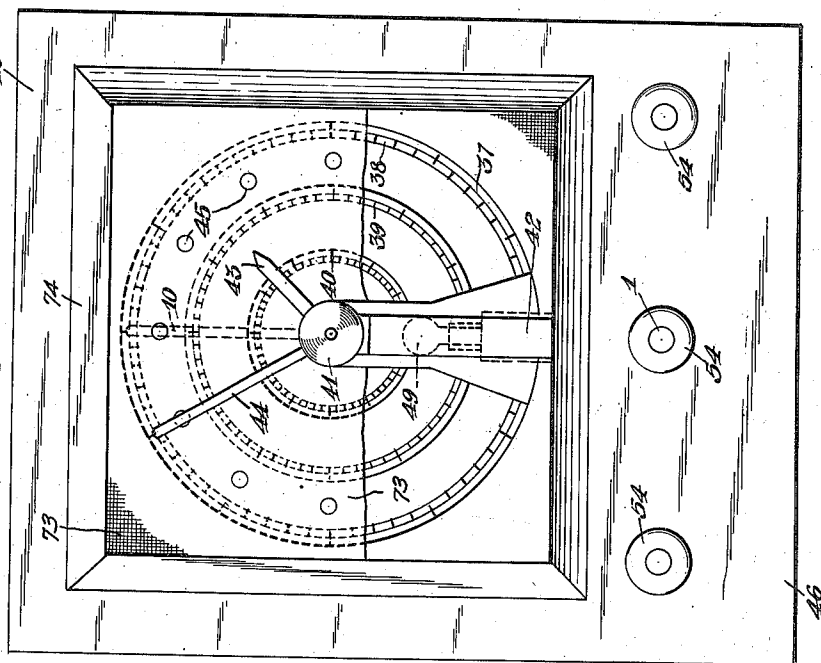


Fig. 4

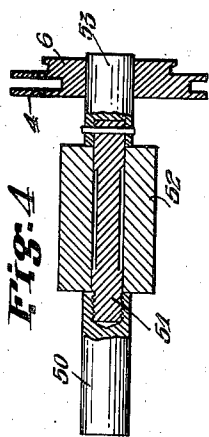
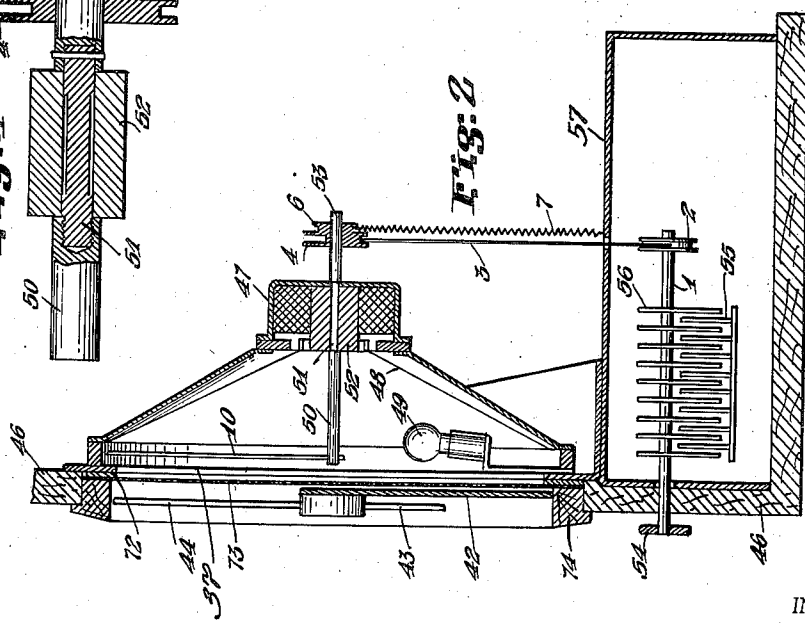


Fig. 2



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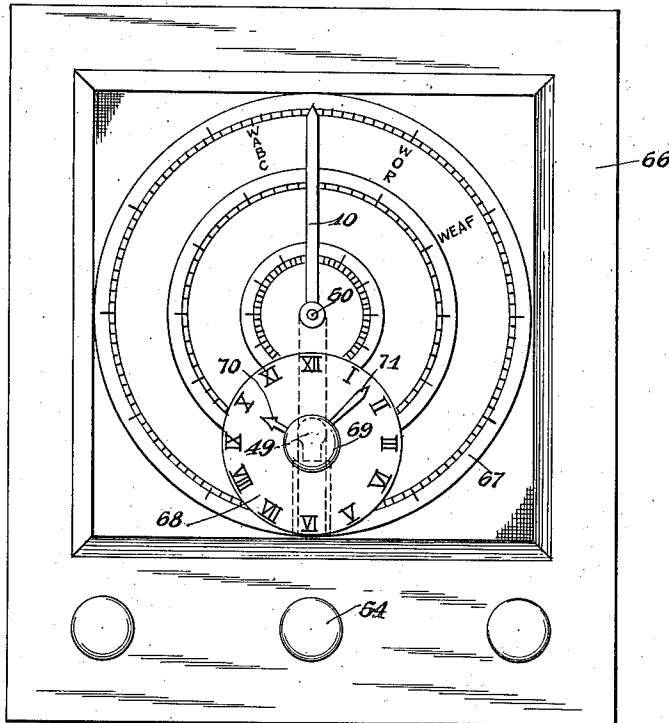
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Fig. 3



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TRANSMISSION MEANS FOR CONTROL
MEMBERS

Jean Dreyfus, Paris, France

Application December 6, 1934, Serial No. 756,378
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8 Claims. (Cl. 250-14)

The present invention relates to radio receivers and among the objects of the invention are a better utilization of the mounting space available for the receiver to improve its compactness without impairing its tonal characteristics and quality of acoustic reproduction.

A more specific object of the invention is to provide a pointer operating mechanism adapted for sound pervious tuning dials disposed in front of the orifice of the loud speaker of a radio receiver or the like such as of the type described in my U. S. Patent No. 2,044,759.

A further object of the invention is the provision of a mechanical transmission device for a sound pervious tuning dial and pointer disposed across the orifice of a loud speaker in a radio receiver and combined with a clock and its dial associated with the tuning dial.

Another object is to provide a mechanical transmission device in a radio receiver structurally combined with the loud speaker of the receiver adapted for operating the pointer of a tuning dial, more particularly a sound pervious tuning dial disposed over a sound transmitting orifice of the loud speaker.

Other objects and advantages inherent in the novel design and construction of my invention will appear more fully as this specification proceeds.

In the accompanying drawings, wherein elements not forming a part of the invention have been omitted for clearness of illustration, and wherein elements of like function are designated by like reference numerals in the different views thereof,

Figure 1 illustrates a radio receiver with a sound pervious tuning dial and a clock with its dial incorporated in the structure.

Figure 2 is a vertical and central cross-section of the receiver according to Figure 1.

Figure 3 illustrates a modification of the receiver according to Figure 1; and

Figure 4 is an enlarged longitudinal section of the pointer shaft and its associated parts as shown in Figure 2.

Referring to Figures 1 and 2, the receiver shown comprises a cabinet 46, a chassis 57 supporting the parts of the receiver of which only the tuning condenser having a stator 55 and a rotor 56 has been shown, and a dynamic cone loud speaker 47 of known design mounted in an opening in the front wall of the cabinet 46. Item 37 represents a dial occupying the orifice of the loud speaker and composed of a material having openings or pores therein to form a plurality of acoustic paths to render it pervious to the sounds generated by the loud speaker. Thus, the dial may consist of a suitable fabric as described in more detail in my above identified patent.

The tuning dial may be provided with a plu-

ality of scales, each serving to indicate a different wave length range. In the example illustrated, three such scales 38, 39 and 40 are shown arranged circularly and concentrically and covering a low, medium and long wave range in a manner well known. A movable pointer 10 mounted upon a shaft 50 is arranged for rotation in synchronism with the tuning condenser in a manner to be presently described and cooperates with the scales 38 to 40 which latter may cover different receiving wave bands in a known manner to indicate the transmitting stations within the respective wave band to which the receiver is tuned. A clockwork 41 is arranged in front of the dial supported by an upright 42 and having a pair of hands 43 and 44 cooperating with the hour and minute marks 45. Thus, the dial serves both for tuning the receiver and indicating the time thereby enabling the listener to note the proper time of a broadcast program without diverting his attention in operating and adjusting the receiver.

In the example shown, the dial 37 occupies the sound emitting orifice of the loud speaker 47 in which case the cone or diaphragm 48 of the speaker may serve as a reflector for a light source 49 mounted behind the dial and serving for illuminating the latter. The pointer 10 is secured to a shaft 50 which has a reduced portion 51 mounted in a perforation of the magnet core 52 of the loud speaker in such a manner that the latter serves as a bearing for the shaft of the pointer. The rear end of the shaft has an enlarged portion 53, Figure 4, which may be secured thereto in any known manner or may be integral with the shaft and carries a cam pulley 4 having a further round pulley 6 rigidly connected therewith. Due to the larger diameter of the portions 50 and 53, the center portion 51 of the shaft is held within and in rotatable relation to the magnet core 52. Item 3 is a cord or wire connecting the cam 4 with a pulley 2 secured to the rear end of shaft 1 of the variable condenser, the front end of the condenser shaft carrying a control or adjusting knob 54 for operating and tuning the receiver to a desired station in a manner well known. The ends of the cord or wire 3 are secured to the pulleys 2 and 4 respectively in such a manner as to wind and unwind therefrom as the receiver is tuned by operating the control knob 54, thereby in turn rotating the pointer 10 of the tuning dial through the connecting mechanism as described. A counter-acting spring 7 may be attached at one end to the chassis 57 and with its other end to the pulley 6.

In Figure 3 I have shown a modification of a receiver of the type described by Figures 1 and 2 in which the dial 67 of sound pervious fabric and the pointer 10 cooperate in a manner similar as described but wherein a clock work 69 is mounted

in front of the lower portion of the tuning dial provided with clock dial indicia 68 cooperating with the clock hands 70 and 71. The shaft 50 may be arranged for operation in a manner similar to Figures 1 and 2.

In the embodiments of the invention as described, the loud speaker core serves as a bearing for the pointer shaft and the pulley or transmission system is mounted exteriorly of the loud speaker. In such a construction it is preferable to make the front and rear portions 50 and 53 of the pointer shaft of paramagnetic material in order to avoid interference with the magnet circuit of the loud speaker core.

According to a preferred arrangement, the dial is composed of a fabric 37 secured to a frame 72 which is removable from the receiver, and a veil 73 disposed in front of the dial, the latter in turn being held or clamped in place by a frame 74 secured in the opening in the front wall of the receiver cabinet. The veil normally conceals the tuning indicia applied to or carried by the dial in such a manner that the indicia will become visible by transillumination when the light source 49 is lit during the operating condition of the receiver in a known manner. The time indications 45 on the other hand are preferably carried by or applied to the veil 73 shown partly broken away in Figure 1 so as to be visible even when the dial is not illuminated. In both cases the clock hands may be of transparent or translucent material such as celluloid or the like.

If the dial having the tuning indicia thereon consists of a woven fabric or the like with openings or pores as not to obstruct the passage of sound waves, the screen or veil covering it which may also be composed of a suitable fabric or like material should be sufficiently thin in order to afford a clear view of the dial when illuminated and in order to render the same as thin as possible a certain matching of colors is desirable. Thus for instance, a relatively opaque color for printing the indicia upon the dial may be of gold or bronze when using a dial of yellow color, or an opaque white or silver color may serve for printing the tuning indicia upon a dial of white background.

It will be apparent from the above that the invention is susceptible of numerous modifications and variations coming within the broad scope and spirit thereof as expressed in the appended claims and that the above described exemplifications should be considered in an illustrative rather than restrictive sense.

Having now fully described my invention, I claim:

1. In a radio receiver, a loud speaker terminating in an orifice, a sound pervious tuning dial disposed across the front of the loud speaker having tuning indicia thereon arranged within the circumferential edge of the orifice of the speaker, an indicator cooperating with said tuning dial, a sound pervious clock dial superposed upon said tuning dial to normally conceal said tuning dial and having time markings thereon arranged within the circumferential edge of the orifice of the loud speaker, lighting means behind said tuning dial to cause light to appear through said tuning dial and reveal the tuning indicia, and mechanically operated clock hands cooperating with said clock dial to indicate the time independently of said tuning dial.

2. In a radio receiver having a loud speaker, a sound pervious dial occupying a sound emitting orifice of said speaker and having tuning indicia thereon, a pointer cooperating with said tuning dial, a sound pervious clock dial superposed upon said tuning dial and having time markings thereon, means for illuminating said tuning dial and rendering said tuning indicia visible, and mechanically operated clock hands cooperating with said clock dial indicating the time independently of said tuning dial, said clock dial normally concealing said tuning dial when the latter is not illuminated and becoming light pervious by illumination, the time markings upon said clock dial being at least translucent to assist in viewing the tuning dial when illuminated.

3. In a radio receiver as claimed in claim 1 wherein said clock hands are of light pervious material to assist in viewing the tuning indicia beneath when illuminated.

4. A radio cabinet having a loud speaker provided with a magnetic core disposed in line with a sound emitting orifice in a wall of said cabinet, a dial of sound pervious material carrying tuning indicia, means for securing said dial to the portion of said wall facing the orifice, a pointer movable over said dial, said magnetic core having an opening therethrough to provide a bearing, a shaft rotatably mounted in said bearing and carrying said pointer at one end and a drive means at its opposite end, and means to operate said drive means such as to move said pointer over said dial.

5. A radio receiver according to claim 4, wherein the pointer shaft is made of ferrous metal and forms, at least in part, a yoke or armature for the core of the loudspeaker.

6. A radio receiver according to claim 4, wherein the pointer shaft consists in part of paramagnetic material and the remaining portions of diamagnetic material.

7. In a radio receiver, the combination of a loud speaker provided with a magnetic core and disposed in line with a sound emitting orifice in said receiver, a sound permeable tuning dial occupying said orifice having tuning indicia thereon, an indicator cooperating with said tuning dial, a first shaft passing through said loudspeaker core to the rear of the loudspeaker and utilizing said core as a bearing, said indicator being secured to the front end of said shaft, a variable tuning element, a control shaft for manually operating said tuning element, and mechanical transmission means connected between said control shaft and the rear end of said first shaft.

8. In a radio receiver, the combination of a loud speaker provided with a magnetic core and disposed in line with a sound emitting orifice in said receiver, a sound permeable tuning dial occupying said orifice having tuning indicia thereon, lighting means behind said tuning dial to cause light to appear through said dial and reveal the tuning indicia thereon, an indicator cooperating with said tuning dial, a shaft passing through said loudspeaker core to the rear of the loudspeaker and utilizing said core as a bearing, said indicator being secured to the front end of said shaft, a variable tuning element, a control shaft for manually operating said tuning element, and mechanical transmission means connected between said control shaft and the rear end of said first shaft.

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