Oct. 27, 1925. 1,559,112

M. L. LUJÁN

UNIT CONTROL FOR RADIO RECEIVING SETS

Filed Oct. 8, 1924

Fig. 1.

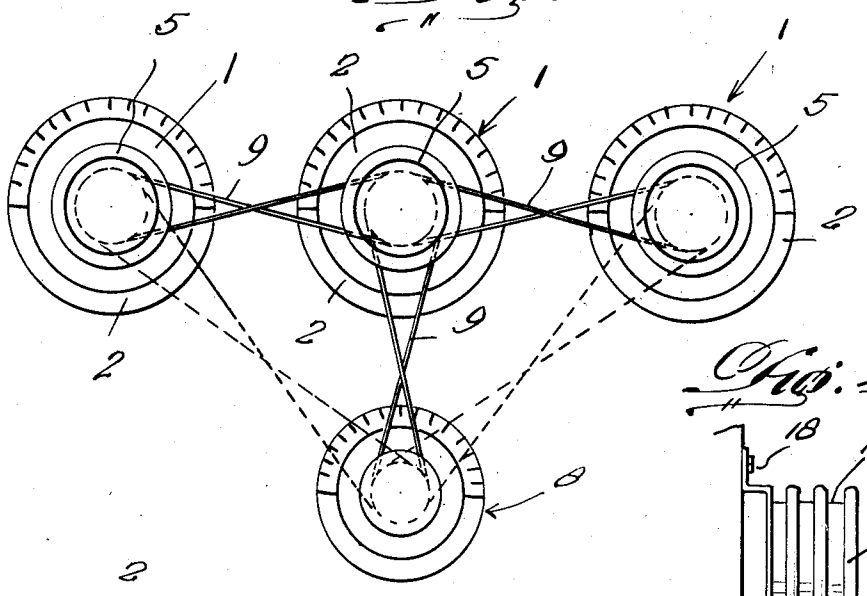
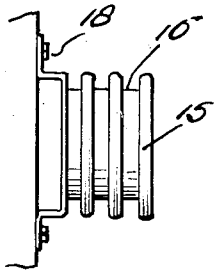


Fig. 4.



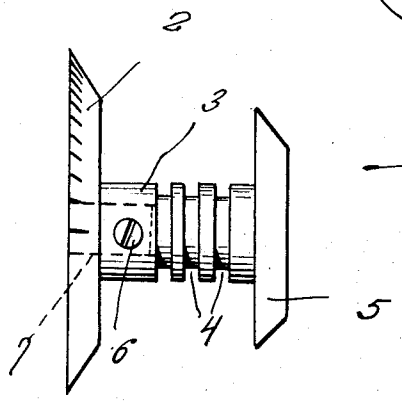
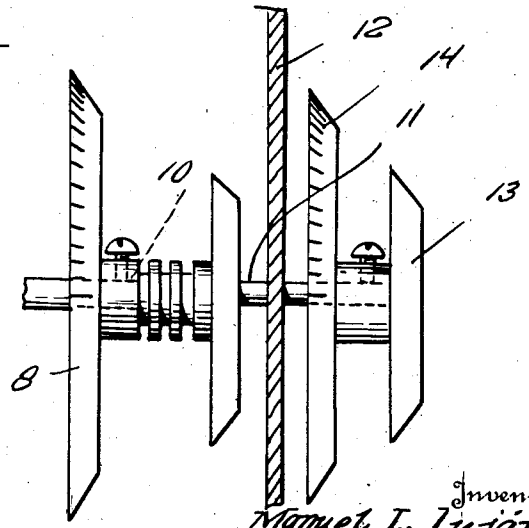


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

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UNIT CONTROL FOR RADIO RECEIVING SETS.

Application filed October 8, 1924. Serial No. 742,418.

To all whom it may concern:

Be it known that I, MANUEL L. LUJÁN, a citizen of the United States of Mexico, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Unit Controls for Radio Receiving Sets, of which the following is a specification.

This invention relates to controlling means for radio receiving sets and more particularly to a means for mechanically controlling the adjustment of a plurality of dial members, in order to effect the simultaneous adjustment of all of said members in the operation of one, so that all of the circuits of a radio receiving set may be properly maintained in a resonant condition for the efficient reception of any desired signal through the adjustment of a single dial.

An object of the invention resides in providing a plurality of similarly constructed shaft operating devices adapted for mounting on the dial shaft, adapted in rotation to effect an adjustment of the wave length capacity of the radio receiving circuit, which are provided with a plurality of grooves for receiving suitable belt or chain members interconnecting the several devices, so that the manual rotation of one of said devices will effect a corresponding rotation of all of the others, in order that the dial shaft will be operated, in a manner that the resonance of all circuits of said radio receiving set will be maintained throughout the adjustment of the parts for receiving signals of different wave lengths, in an efficient manner.

Another object of the invention resides in providing a device of the character above mentioned, wherein a cylindrical element is provided with a plurality of peripheral grooves and an operating knob, whereby the same may be manually operated, either in combination with a suitable dial or for attachment to dials now in use on radio sets, for effecting the operation of the adjustable parts of the set in a simultaneous and uniform manner through the several cylindrical elements having interconnecting belts or chains, so that the rotation of one of said members will effect a corresponding rotation of all of the others and the adjustment of the wave length capacity of the receiving set, to efficiently receive a signal of the desired wave length.

The invention further comprehends the provision of a special adjusting member which may be connected with any one of the several dial shafts or dials, so that it may be used for effecting a vernier adjustment of the respective shafts and the apparatus connected therewith as well as to produce a major and micrometric control when the several dial constructions are connected for unit control.

The invention also includes other objects and improvements in the details of construction and arrangement of the parts, for carrying out the invention, which are more particularly pointed out in the following description and claims, directed to a preferred embodiment of the invention, it being understood that various ways other than those illustrated in the accompanying drawing, may be used for carrying out the invention in a similar manner, without departing from the spirit and scope of the invention as described and claimed.

In the accompanying drawing, forming a part of this application:

Figure 1 is a front elevation of a plurality of controlling elements for a radio receiving set, constructed according to the present invention, showing the manner of interconnecting them for unit operation.

Figure 2 is a side elevation of one of the control members.

Figure 3 is a side elevation of one of the control members mounted on a shaft, and in the rear of the instrument panel of the receiving set, so that the connection for effecting unit operation may be concealed behind the panel and operated from a single dial mounted on the projecting end of the shaft in front of the panel.

Figure 4 is a detail side elevational view of a member adapted for attachment to the usual type of dial now in use on radio sets, so that the unit control may be adapted thereto.

A plurality of adjusting members are indicated at 1, which are of similar size and construction and are adapted to be removably mounted on the rotatable shaft of adjustable radio instruments, preferably in front of the instrument panel, in order that the adjustment of the instrument may be effected through the operation of said members. Each member, as illustrated in Figures 1 to 3 inclusive includes a dial por-

tion 2 from which extends a cylindrical portion 3, having a plurality of annular grooves 4 formed therein in spaced relation, and on the outer end of which cylindrical portion is formed a knob 5, by which the member may be manually operated, in the adjustment of the radio instrument to which it is attached, while the graduations on the dial portion 2 are adapted to indicate in conjunction with a graduation on the instrument panel in the usual manner, a desired adjustment of the instrument affected thereby. A set screw 6, mounted in the cylindrical portion 3, adjacent the dial 2 is adapted to extend into the socket 7 and engage and lock the adjusting member on the shaft of a desired radio instrument. A main control member, indicated at 6 is of identical construction with the adjusting members 1, as above described, and is also mounted on the front of the instrument panel in a convenient position with respect to the adjusting members 1, such as illustrated in Figure 1, said main control member having the dial portion and the cylindrical portion extending therefrom of substantially smaller diameter for purposes which will presently be described.

Flexible belts 9 are connected between the several valves 1, as indicated in full lines in Figure 1, and between the central adjusting member 1 and the main control member 8, so that in the rotation of the control member 8, a corresponding and simultaneous rotation of the adjusting members 1 will be effected for the unit control of the adjustment of all instruments in a radio set.

If desired, the flexible connections 9 may be removed from the several adjusting members 1, and a single flexible belt connection may be made between any one of the adjusting members 1 and the main control member 8, as illustrated in dotted lines in Figure 1, so that the control member 8 may be utilized for effecting the vernier adjustment of the adjusting member 1, with which it is connected through a flexible belt connection.

In the use of the unit control as above described, the main control member 8 is first connected with the respective adjusting members 1, through belt connections, in order that a vernier adjustment of each of the instruments may be separately made for tuning the entire receiving circuit controlled by the adjustable instruments into resonance, for the efficient reception of a signal of a predetermined wave length, after which the belt connections are made between the several adjusting members 1, as shown in full lines, in Figure 1, and also with the main control member, so that following the setting of the several instruments in predetermined relation, the operation of the main control member will simultaneously adjust all of the instruments to vary the wave length of the set for receiving signals of a desired wave length, in an efficient manner, and through the operation of a single controlling element, namely, the main control member 8.

Under some conditions, it may be found advisable to construct a radio set with the adjusting members 1 concealed in the rear of the panel of the set and with only one adjustable control mounted in front of the panel. In this case, the adjusting members 1 are mounted on the shaft of the instrument in the same manner as above described, and illustrated in Figure 1, while the main control member 8 is provided with a cylindrical bore extending entirely through the cylindrical portion thereof as indicated at 10, in Figure 3, so that a shaft 11 may be rotatably mounted in the instrument panel 12, on which the main control member 8 is mounted in the rear of the panel, while the end of the shaft in front of the panel receives any desired form of control member, as indicated at 13, having a graduated dial 14 thereon, for cooperation with scale markings on the face of the panel, so that only a single controlling element is exposed on the face of the panel. The connections for the simultaneous operation of the controlling members 1 is the same as illustrated in Figure 1, but it will be readily appreciated that the flexible connections 9, as well as the several adjusting members will be concealed within the cabinet to which the panel 12 is secured.

Where it is desired to adapt the above described construction to radio sets now in use, without replacing the adjusting dials thereon, the construction shown in Figure 4 has been provided, wherein a cylindrical member 15 is provided with a plurality of annular grooves 16 arranged in spaced relation thereon for receiving the flexible belt, one end of the member being provided with extensions 17 formed with openings for receiving securing bolts and nuts indicated generally at 18, which may be inserted through suitable openings made in the adjusting dial, on radio sets now in use, so that the cylindrical member 15 may be properly secured to a dial, for adapting the present invention and the unit control to sets at present in use. One of these cylindrical members 15 is attached to each adjusting dial of a set, and the flexible connections made in the same manner as above described, the main controlling member being used in connection with the cylindrical member 15 so as to provide a unit control for the adjustment of the whole set in the same manner as above described. It will thus be seen that a control device has been provided for radio receiving sets adapted

for effecting the vernier adjustment of any instrument in the set and for subsequently effecting a unit control of all of the adjustable instruments of the set, so that the instruments of a radio set may be simultaneously and efficiently tuned to resonance to signals of different wave lengths, through the operation of a single controlling element, providing for unit control of the whole set.

What is claimed is:

An operating device for unit control mechanism of radio receiving sets, wherein a plurality of instruments are provided with rotatable shafts arranged in spaced parallel relation and operable for effecting the adjustment of the receiving capacity of said radio set; comprising an annular disk formed with a central cylindrical projection extending axially therefrom, the end of said projection being formed with an annular flange to provide an operating knob, said cylindrical projection having a plurality of annular grooves formed therein, said disk and cylindrical projection having a socket extending axially therein from one end portion, for receiving the rotatable shaft of one of said instruments, and means mounted in the cylindrical projection for engaging the shaft in said socket and locking the device on said shaft, whereby belts mounted in the grooves on the devices applied to a plurality of instruments serve to transmit the motion of one device to the other.

In testimony whereof I affix my signature.

MANUEL L. LUJÁN.