May 4, 1943. C. HORTON 2,318,312

RADIO PROGRAM SELECTING APPARATUS

Filed Dec. 13, 1940 3 Sheets-Sheet 1

Fig. 1

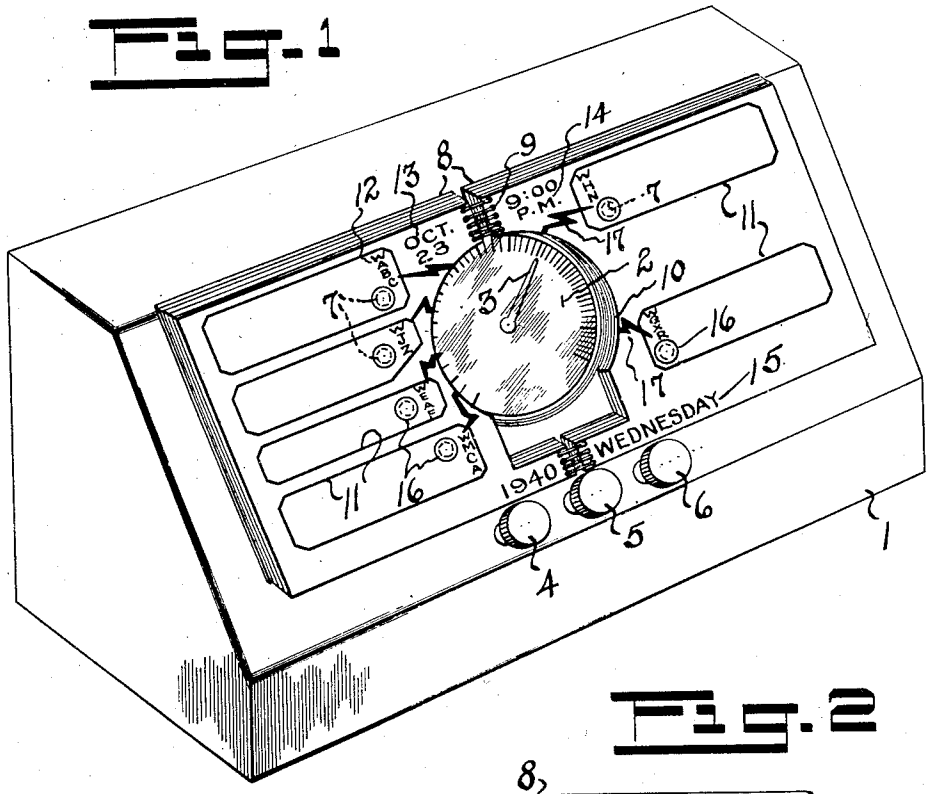
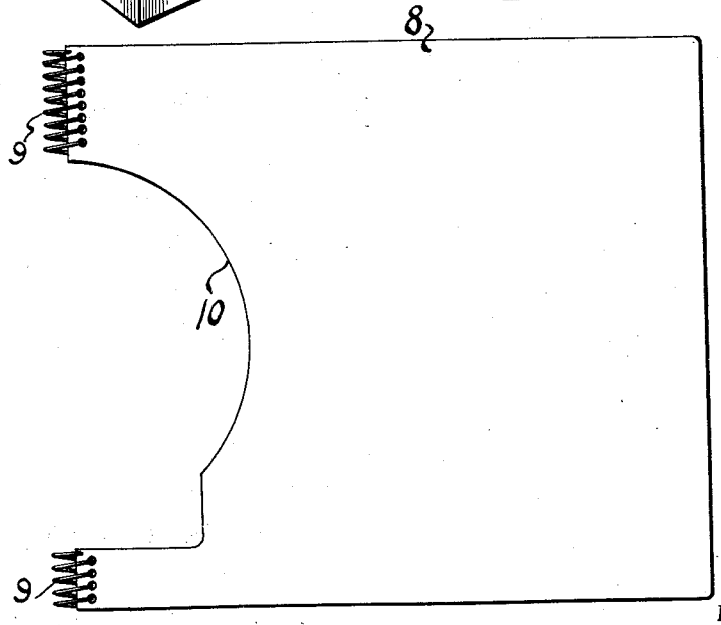


Fig. 2



INVENTOR.
Charles Horton

BY Darby & Darby.
Atts.

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RADIO PROGRAM SELECTING APPARATUS

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Fig. 3

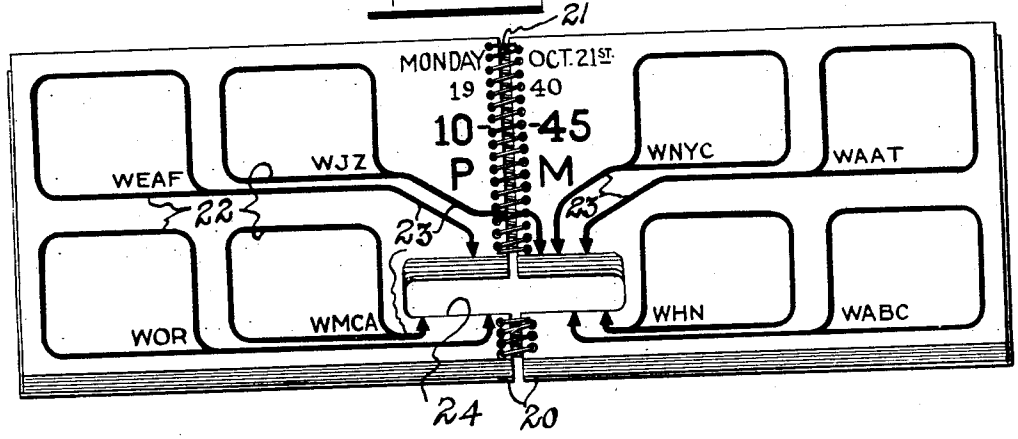
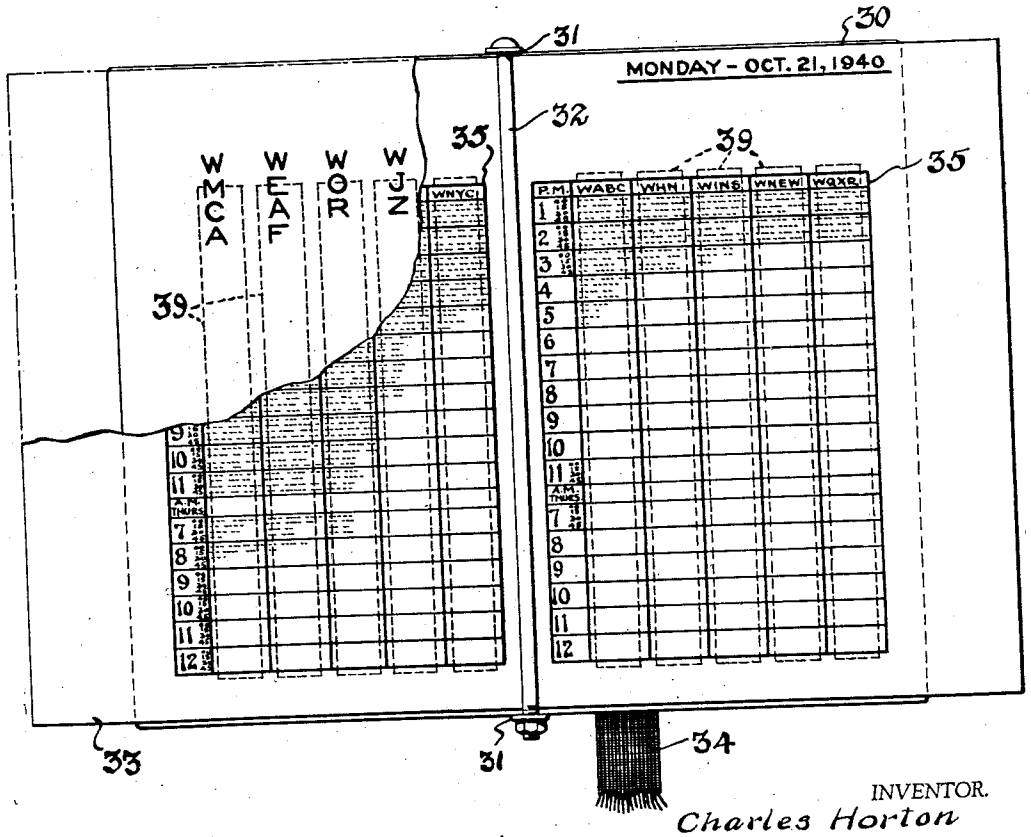


Fig. 4



INVENTOR.
Charles Horton
BY Darby & Darby
Atts.

May 4, 1943. C. HORTON 2,318,312

RADIO PROGRAM SELECTING APPARATUS

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Fig. 5

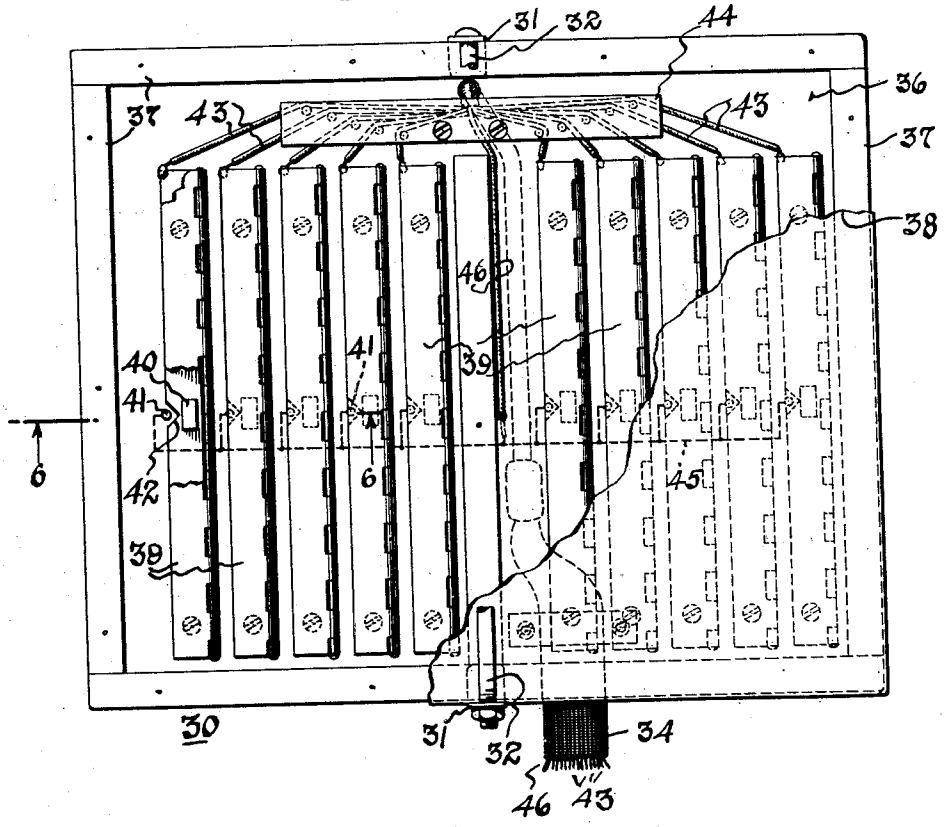
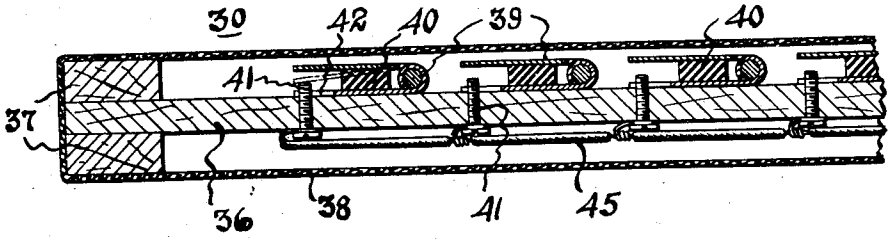


Fig. 6



INVENTOR.
Charles Horton

BY Darby & Darby
Atts.

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2,318,312

UNITED STATES PATENT OFFICE

2,318,312

RADIO PROGRAM SELECTING APPARATUS

Charles Horton, Ridgefield Park, N. J.

Application December 13, 1940, Serial No. 370,021

6 Claims. (Cl. 250—40)

This invention is concerned with improvements in apparatus by means of which adjustable apparatus, such as a radio receiving set, may be quickly and easily adjusted to any one of a number of possible settings.

An object of this invention is the provision of a combination including a radio set and a station program book by means of which a particular program for a particular hour of a particular day may be quickly and easily selected from the program book even though it may contain a very large number of possible selections.

A still further object of this invention is the provision of a similar combination operable at a point remote from the radio receiver for accomplishing the same objects.

The other objects of this invention will be apparent from the following detailed description of several embodiments thereof when taken in connection with the attached drawings.

This invention resides substantially in the combination, construction, arrangement and relative location of parts, all in accordance with this disclosure.

In the accompanying drawings,

Figure 1 is a perspective view of a combination in accordance with this invention;

Figure 2 is a plan view of a program book or pamphlet constructed in accordance with this invention and shown closed;

Figure 3 is a plan view of a modified form of program book or pamphlet in accordance with this invention shown open;

Figure 4 is a plan view of another form of the subject matter of this invention showning, in combination, a remote control board for a radio receiving set and a program book or pamphlet operatively associated therewith and shown open;

Figure 5 is a top plan view of the control board of Figure 4 with some portions thereof broken away; and

Figure 6 is an enlarged cross-sectional view taken on the line 6—6 of Figure 5.

The everyday operation of radio receiving sets, whether they be of the manually controlled type, the automatically or push-button controlled type, or combinations thereof, is burdensome, and in many cases unsatisfactory because of the difficulty of adjusting the receiver to receive a particular program at a particular time from the large number of programs available in a day or a week. This difficulty is added to by reason of the fact that it is not a simple matter to remember the wavelengths or frequencies of operation of the large number of stations available so as to be able to translate the published program data into usable form. The complexity of the situation is increased, of course, by the fact that each particular station broadcasts a large number of programs in any time period, as for example a day or week, and a particular station may transmit as many as four different programs in one hour at fifteen minute intervals. In the case of children and unskilled persons including, for example, those who do not read easily, it is particularly difficult for them to translate the published data with respect to station programs into the proper adjustment of a radio receiver so as to be able to enjoy a particular program. In the light of these facts, it may be stated to be an object of this invention to provide an apparatus by means of which anyone is greatly aided in the accurate adjustment of a radio receiver to a particular program at a particular time.

Another object of the invention is to so facilitate the proper adjustment of radio receivers as to render more effective the object of broadcasting, that is, the dissemination of knowledge, information and entertainment. At the present time it is a common practice for radio set owners to adjust them on a haphazard basis, with the idea in mind of seeing what they can get. There are available each day many worth while programs which are not enjoyed because of the difficulty of learning of them and securing the necessary information with respect thereto so as to be able to properly adjust a radio receiver. This difficulty is so great that these programs are either overlooked or tuned in more or less accidentally. It is believed, therefore, that the subject matter of this invention will be of considerable aid to the radio-listening public. There are other advantages and benefits created by this invention which will be referred to later.

In the embodiment of the invention illustrated in Figures 1 and 2 of the drawings, there is shown in a diagrammatic way for the purpose of general illustration a radio receiving set 1. This set is provided, as is usual with radio receivers, with a suitably graduated dial 2 provided with an indicator or hand 3, by the aid of which it is possible through the operation of proper controls to tune the radio receiver to the reception of a program of a particular wave-length. As illustrated in the drawings, the radio receiver includes a set of control knobs or handles 4, 5 and 6, which for purposes of illustration may be defined respectively as the "on" and "off" and volume control 4, the tuning control 5, and the pitch control 6. In addition, there is diagrammatically illustrated a plurality of selector controls 7 in the form of push-buttons, such as are commonly used today.

To the receiver shown in Figure 1 is applied a book or pamphlet 8 in a more or less looseleaf form, although not necessarily of this construction, so that the pages thereof may be readily turned, as in the case of a book or magazine. The pages of this book or pamphlet are hingedly

united together by any suitable form of binding, as for example the now frequently used wire coil 9. As illustrated in Figures 1 and 2, the pages of the book or pamphlet 8 are cut away, as indicated at 10, so as to provide an opening which is shaped like or substantially like the dial 2 of the receiver so that when the book or pamphlet is applied to the receiver as indicated in Figure 1 the dial is exposed to view through the opening 10. The receiver, of course, is constructed in any suitable manner so as to receive the book and support it in this position.

When opened, any pair of exposed pages contain the data with respect to the programs to be broadcast on a particular day at a particular hour or fraction thereof. Thus as illustrated in the drawings the book 8 is shown opened for the programs to be broadcast at 9 p. m. on October 23, 1940, which is a Wednesday. This data has been respectively indicated by the reference numerals 13, 14 and 15. These pages contain blocked-off areas 11, one for each of the principal stations whose data is to be recorded in the book. Each block is designated as indicated at 12 by the call letters of the particular stations. In these blocked-off areas there is intended to be printed the information with respect to the program for that station for that particular time.

The various blocked-off areas 11 are connected by symbols or leads 17 which extend to the opening 10 in the book at a point opposite the point on the dial 2 at which the pointer 3 will rest when the receiver is tuned to receive the programs of the stations of the connected areas. For example, as shown in Figure 1, the receiver is adjusted for the program of station WHN, as indicated by the pointer 3. The adjustment of the receiver to this position was, as will be apparent, greatly facilitated by reason of the invention herein disclosed with the book applied to the receiver as shown. It is possible to very quickly adjust the receiver to receive the program of station WHN by merely moving the pointer 3 opposite to the end of the symbol or leader 17 extending from the blocked area representative of station WHN to the edge of the opening 10. By observing the information in the blocked area of station WHN, a person may know exactly what program will be broadcast by that station at 9 p. m. on October 23, 1940. In the book or pamphlet there are provided similar pages for other hours and fractions thereof of the same day and for other days for a given period of time, as for example a week. These pamphlets, of course, may be profitably prepared and distributed at no cost by reason of the fact that they provide a very effective medium for advertising not only the programs themselves but the products of the sponsors of the programs.

It will be noted from Figure 1 that each blocked area 11 contains a symbol in the form of circles 7 which are so positioned that each circle is over one of the push-button controls of the receiver. Thus, after turning on the set, if a person wishes to receive the program of, say, station WJZ, he need only apply pressure to the book or pamphlet within the area of the circle 7 corresponding to WJZ in order to cause automatic tuning of the receiver to the wavelength of that station. It is, of course, apparent that the book or pamphlet should not have stiff covers but they should be soft and flexible so that the pressure applied at any one point will not cause the operation of the push-buttons for other stations.

The same general idea is illustrated in Figure 3, wherein in this case the book 20 is shown as provided with a rectangular opening 24 shaped to fit radio receivers of a type having an elongated dial over which the indicating pointer moves laterally in a straight line, back and forth. The book or pamphlet is composed of pages hingedly connected by the spring binding 21 and is provided with a series of blocked areas 22 in which the program data for the different stations for a particular hour of a particular day may be recorded. This book or pamphlet would be applied to a radio receiver of a shape to accommodate it, and the operation would be similar to that previously described. This construction is likewise of the type that can be applied to a push-button control radio of which there are now a number commonly in use where the push-buttons are arranged in a bank. The leaders or pointers 23 extending from the various blocked areas would lie opposite the corresponding push-buttons, thereby indicating which one thereof is to be operated to get a program of the station, the data with respect to which is printed in the blocked area associated with that particular leader.

In Figures 4, 5 and 6 there is illustrated an application of the novel subject matter of this invention to a control board 30 by means of which a radio receiver can be remotely controlled in accordance with well known constructions of this type. This application of the novel idea of the invention is of more practicability than those previously described in that the remote control unit could be applied to all types of radio receivers, regardless of their physical construction. It is, of course, well known that radio receivers widely vary in physical construction so that it would be extremely difficult to provide a book or pamphlet in practical form which would fit this wide variety of receivers.

In accordance with the construction of Figures 4 to 6, inclusive, however, the control board, which could be purchased either with a receiver or as an adjunct thereto, would be uniform in construction and, therefore, at relatively small expense, the novel subject matter of the invention could be made available for use with all radio receivers of the automatic type. The control unit, in accordance with this invention, consists of a board or support 36 having framing members 37 attached to both sides thereof around the edges so as to provide, when enclosed within a flexible covering 38, a housing for the control switches. Mounted on the board 36 are a plurality of switches 39 which have been illustrated in the form of metal hinges which are entirely suitable for the purpose, although there are many equivalents thereof which could be used. One leaf of each hinge is secured to the board 36 by means of screws, as indicated, and the other leaf is left free but is held in raised position, as clearly shown in Figure 6, by a compressible insulating block 40, made, for example, of sponge rubber, which would permit of the downward movement of the upper leaves, as indicated in Figure 6, when pressure is applied thereover to the flexible cover 38. The lower leaf of each hinge is notched, as indicated at 42, to provide a space in which lies a fixed contact 41 when mounted on the board 36 as clearly shown in Figure 6. All of the contacts 41 are connected together to a wire 45, which is provided with a lead 46 which becomes part of a cable 34, as clearly shown in Figure 5. Each hinge is pro-

vided with a lead 43 which is connected thereto and which extends into and forms part of the cable 34. The leads 43 are preferably anchored by some suitable form of mounting, such as the clamping plate 44 as indicated in Figure 5. The lead 46 forms a common lead for all the switches while the leads 43 comprise the individual leads for each switch. These leads would be connected to the control apparatus of the automatic radio receiver preferably situated at a point remote with respect to the control board so as to effect the proper operation thereof, all in accordance with well known principles of radio construction and operation.

As clearly shown in Figure 4, the board is provided with a pair of upstanding brackets 31 in which a rod 32 is mounted. This rod serves as a means for holding, on the top surface of the control board 30, a data sheet, pamphlet or newspaper having printed on the pages thereof, as illustrated in Figure 4 at 35, the data with respect to the various programs and program times for a particular day. The illustration in Figure 4 of the set-up of program data is taken from a widely distributed daily newspaper. When the newspaper is applied to the control board it will be seen that the vertical columns of program data which are provided respectively for the important broadcasting stations for that area are directly above the various switches 39. The leftmost column of each area provides the different hourly and hour fraction designations for the period from 1 p. m. to midnight. Thus it will be seen at once that it is possible, for example, to tune the radio receiver to which the control board 30 is connected by simply applying pressure to the area containing the data of the desired program at a point opposite the particular hour when that program is to be broadcast. At that time it will be seen that the desired program will be immediately tuned in without the necessity on the part of the operator of knowing anything about the wavelength of transmission for that station or about the radio receiver and its adjustment in order to get that program. The application of pressure as mentioned above simply closes the upper leaf of the associated hinge 39 on the associated contact 41, completing the control circuit for the receiver so as to cause it to become adjusted to the corresponding wavelength.

From the above description it will be apparent to those skilled in the art that the principles of this invention may be embodied in many physical forms. I do not, therefore, desire to be strictly limited to the particular embodiments thereof, selected for the purpose of illustrating these principles, but rather to the scope of the claims granted me.

What I claim is:

1. In an apparatus of the type described, the combination with a radio receiver having a tuning mechanism and a plurality of manual controls for operating said tuning mechanism to any one of a number of adjustments corresponding respectively to said manuals, of an index sheet removably positioned on said manuals and having station designating areas, one for each manual, whereby when pressure is applied to the respective areas the associated manuals are actuated to operate the tuning mechanism to the corresponding wavelengths.

2. In an apparatus of the type described, the combination with a radio receiver having an automatic tuning mechanism and a plurality of manual controls for operating said tuning mechanism to any one of a number of adjustments corresponding respectively to said manuals, of a replaceable program index sheet applied to said receiver so as to overlie said manuals having transmitting station program indicia impressed on the face thereof and associated respectively with said manuals whereby when a particular manual is operated the tuning mechanism will be adjusted to the transmitting wavelength of the station designated by the particular associated areas.

3. In an apparatus as disclosed, the combination with a flexible container having a support therein, a plurality of switches mounted on said support, one contact of each of said switches having a common lead and the other contact of each of said switches having an individual lead whereby when pressure is applied at the proper point in the flexible container a particular switch will be operated, of a radio transmitting station index sheet overlying said flexible container and having indicia areas impressed thereon containing the program data for a plurality of transmitting stations positioned over said switches respectively, and indicia for indicating the hours when the particular programs will be broadcast, whereby when pressure is applied at the proper hour to the area representing a particular station the switch will be closed.

4. In an apparatus as described, the combination with a radio receiver having an automatic tuning mechanism, of a remote control device therefor having a plurality of switches, control circuit wires connecting said switches with said automatic tuning device whereby it may be adjusted to any one of a number of predetermined settings by the respective operation of said switches, and a transmitting station program index sheet associated with said control device having spatially organized station transmitting program data impressed thereon in position so as to be associated respectively with said switches, and time indicia whereby the application of pressure to a particular program area at the proper time will close the associated switch to cause the tuning mechanism to adjust the radio receiver to the wavelength of the corresponding transmitting station.

5. The combination with radio signalling apparatus having a multi-manual station selector for adjusting the apparatus to any one of a desired number of stations, of a prepared readily replaceable station indicating chart juxtaposed to said station selector so that designated portions of said chart are superimposed upon the related manuals of said control device, whereby station selection is facilitated.

6. The combination with a mechanism of the type described having a multi-manual selector for adjusting the mechanism to any one of a desired number of settings, of a prepared readily replaceable setting indicating chart juxtaopposed to said selector so that designated portions of said chart are superimposed upon the related manuals of said selector, whereby setting selection is facilitated.

CHARLES HORTON.