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PUSH-BUTTON ARRANGEMENT

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Fig.1

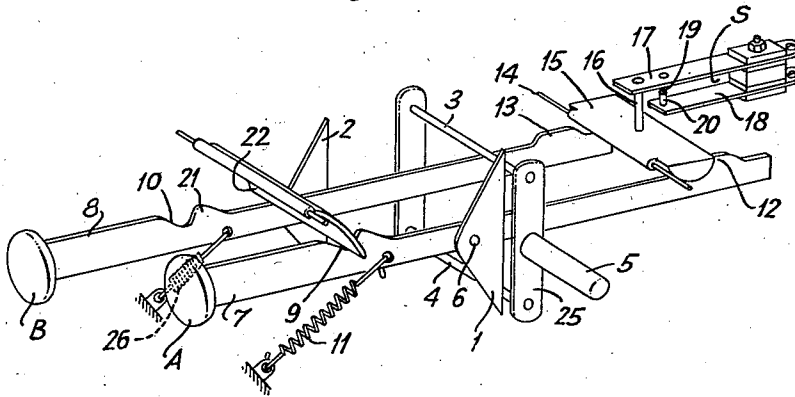
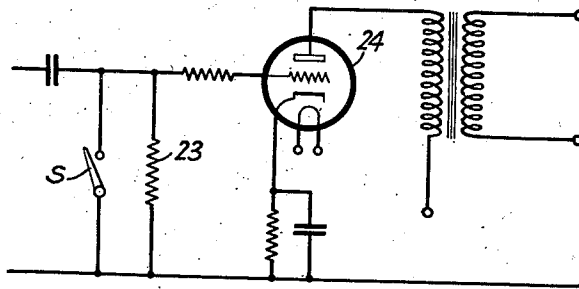


Fig. 2



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PUSH-BUTTON ARRANGEMENT

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4 Claims. (Cl. 250—20)

The novelty relates to an arrangement serving for setting the tuning organs of electric communication apparatus or similar apparatus with the use of push buttons acting upon the movable setting organs in a preferably mechanical fashion. When tuning to a transmitter, in radio apparatus by means of mechanical push buttons the drawback is often encountered that at choosing a transmitter a frequency band is traversed which contains individual stations which become audible during this operation. In order to eliminate this annoying condition, in the push button arrangement according to the present novelty a switch is provided which serves for the partial or complete shutting down of the apparatus during the actuation of the push buttons. In this way the apparatus operates only after the setting to the desired position has been completed. This is realized in that during the operating movement of the push buttons from one end position to the other one the switch will be closed or opened by the push buttons.

The switch which serves for shutting down the apparatus partially, or completely may effect for instance an additional negative grid biasing potential in a tube stage of the apparatus which potential is so high that it causes a blocking of the tube. However, by means of the switch, the loudspeaker may also be shut off and in like manner also other circuit elements of the apparatus may be affected. Thus, with the switch also the control grid of a tube, preferably of the end tube may be connected to the cathode which has the effect that amplification occurs no longer.

In the drawing accompanying the specification Figure 1 illustrates a portion of a push button tuning instrumentality incorporating the features of the present invention; and, Figure 2 illustrates a circuit diagram showing how the switch may be associated with a signalling circuit.

An example of construction according to the novel feature is shown in the drawing. In Fig. 1 two push buttons of a push button arrangement are schematically shown in a perspective view. The push buttons A and B are hereby equipped with plate-shaped parts 1 and 2. These parts press against the stop bolts 3 and 4 of a rocker 25. The rocker 25 is mounted on a shaft 5 which may at the same time carry tuning means, or which may be connected through any sort of intermediate organs with the shaft carrying the tuning means. The rocker may have for example an angle range of 90 degrees. The

setting of the rocker is realized in that the parts 1 and 2 which are turned about the center point 6 thereof at angles of different sizes, are forced against the rocker. It is obvious that in addition to the push buttons A and B any further desired number of push buttons may be employed.

The push buttons are connected to guide rods 7 and 8. These guide rods have notches at 9 and 10 in which a part 22 can engage for establishing positions of resting. The resting position of the buttons is assured by springs 11 and 26. The guide rods may be provided with projections 12 and 13 which actuate the switch S directly or across intermediate organs. In the example of construction shown the actuation of the switch is carried out by means of a part 15 rotatable about the shaft 14 and which is lifted by the projections 12 or 13. The effect is that across the intermediate member 16 the upper contact spring 17 of the switch S is lifted from the lower contact spring 18 so that the contacts 19 and 20 are separated from each other. In the end position in which the push key A happens to be, the part 15 is released again from the projection 12. Thus the switch will be closed again by the switch contacts 19 and 20. Now, if the key B is operated again, the projection 21 lifts the pawl 22 thereby releasing the key A which by the action of the spring 11 is returned into its position of rest. At the same time, at the operation of the button B the projection 13 lifts the part 15 and the switch S is opened.

It is only in the end position in which the pawl passes into its resting position in the notch 10, where the part 15 is released from the projection 13 and the switch contacts 19 and 20 close.

Figure 2 shows a tube stage of the apparatus in the circuit diagram. The grid leak resistance 23 of a tube 24 has placed in parallel thereto the switch S which serves for short circuiting the control grid and the cathode. This switch corresponds with the switch S shown in Fig. 1 except that in their positions of rest the switch contacts are opened, while at operation of the push buttons the switch closes.

I claim:

1. In tunable radio receiving apparatus provided with a plurality of selectively operable push buttons each acting upon displacement from a position of rest to a fully depressed position to tune the receiver to a predetermined frequency, and with means for latching any operated push button in a depressed position until a subsequent operation of another push button in which case the previously operated push button is released

and the newly operated push button is latched in a depressed position, normally ineffective muting means for said receiver, and means effective upon depression of any one of said push buttons from its released position until just prior to said push button reaching its latching position for rendering said muting means effective to mute the receiver.

2. In radio receiving apparatus, an adjustable tuning element, a plurality of selectively operable means acting upon selective operation thereof to effect the movement of said element to respectively different positions, each of said selectively operable means being arranged to be displaced from a position of rest to a tuning position, means for latching any displaced one of said selectively operable means in a displaced position until the subsequent displacement of another one thereof, an operable muting switch for said receiving apparatus, each of said selectively operable means including means to maintain said muting switch effective to mute the receiver during the time the push button is being displaced from its position of rest up to the position where it is latched whereby the muting means becomes ineffective while said push button is in its depressed position.

3. In a tuning instrumentality for a radio receiver, a plurality of station selector push buttons

each thereof being adapted to be displaced from a position of rest to a tuning position against a returning force, means for latching any displaced push button in a depressed position, said means also acting to release any previously depressed push button upon actuation of any other of said push buttons, an operable muting switch for said receiver each of said push buttons including means for rendering the muting switch effective from a time commencing with the start of movement of one of said push buttons from its released position until just prior to the time when the actuated push button reaches its tuning position.

4. In tunable signalling apparatus of the type provided with a plurality of selectively operable push button devices each acting upon operation to tune the receiver to a predetermined frequency, means for holding any operated push button in a depressed position until the subsequent operation of another one of the push buttons, muting means for the receiver and means associated with each of said push buttons for rendering the muting means effective upon depression of any one of said push buttons from the start of movement of the push button until just prior to said push button's reaching the position at which it is latched by said holding means.

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