Dec. 21, 1948. W. W. BROCKWAY 2,457,029

WALL RADIO

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Fig. 4

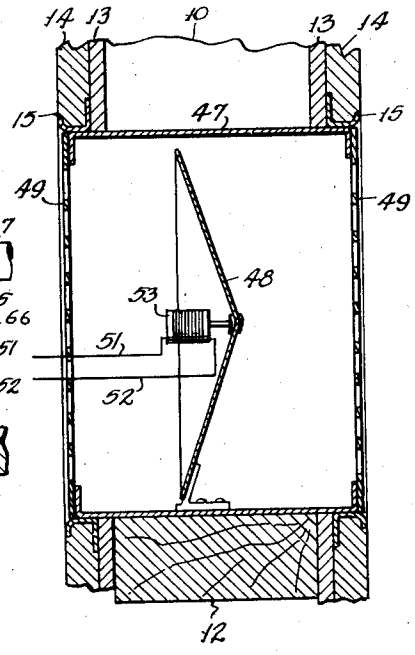


Fig. 2

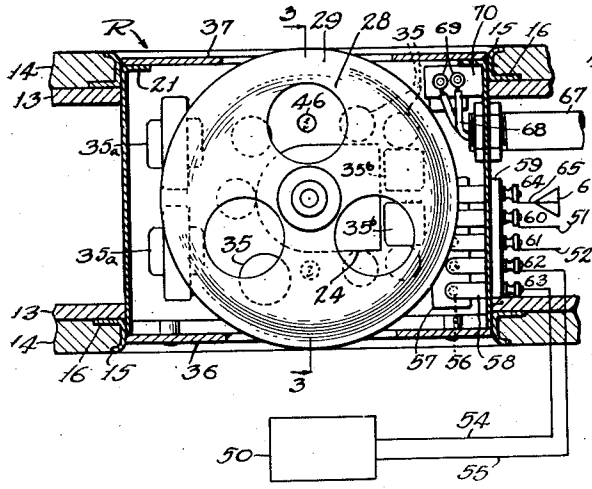


Fig. 3

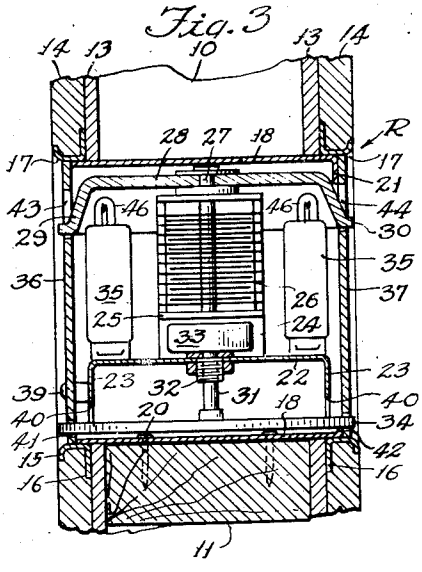
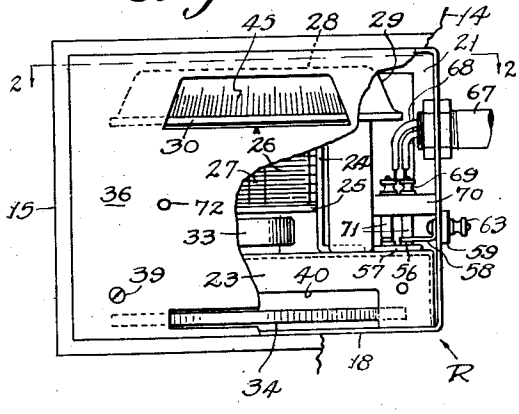


Fig. 1



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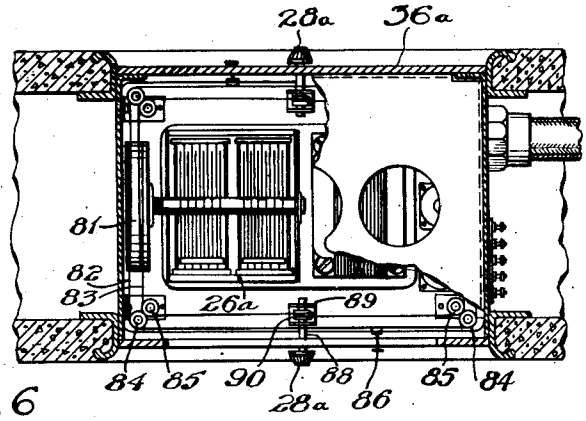


Fig. 6

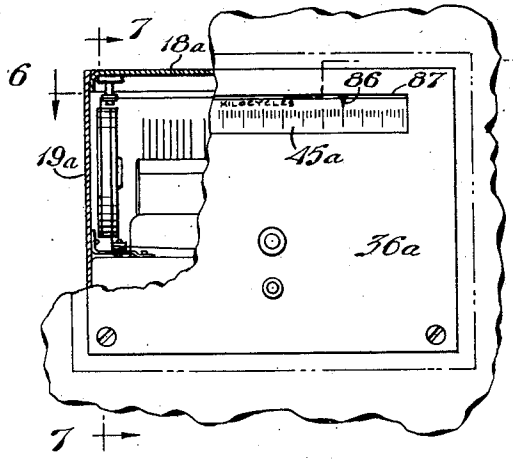


Fig. 5

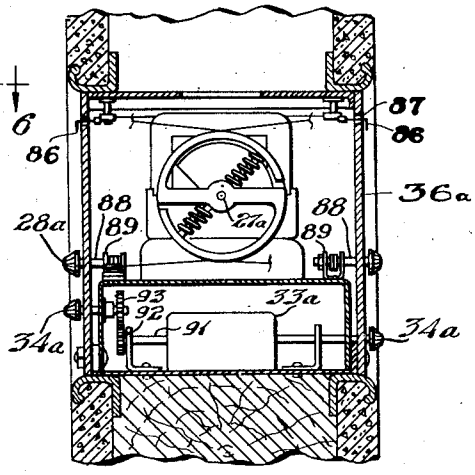


Fig. 7

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WALL RADIO

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12 Claims. (Cl. 250—16)

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This invention relates to a radio of a type that may be installed in the wall of a building. The broad concept of installing a radio in a building wall is not new, but the present invention utilizes this concept to obtain a number of new and beneficial advantages that have not hitherto been realized.

In many homes it is customary to have a number of radios disposed in different rooms. For example, there may be one for a living room, and another for a kitchen or breakfast room. Or there may be a radio for the living room and one for the den. In many cases, rooms in which it may be desirable to install several radios, are adjacent to each other and separated by a partition wall. The general object of my invention is to provide a radio which is adapted to serve both of two adjacent rooms. To this end, the invention contemplates the provision of a radio built into a partition wall and having loud speaker mechanism arranged to direct sound into both of the rooms.

Another object is to provide a radio adapted to be mounted in a partition wall and having station identifying dial mechanism that is visible from both sides of such wall.

Another object is to provide a wall radio unit in combination with a wall receptacle into which the radio unit can be inserted and from which the radio unit can be removed for repairs, servicing, etc. In this connection, the invention contemplates an arrangement in which the receptacle forms a permanent installation in, and a part of, the partition wall as well as a casing for the radio unit. The invention also aims to provide an arrangement in which the radio unit can be quickly and readily removed for servicing, etc.

Other objects will become apparent in the ensuing specification and appended drawings, in which:

Fig. 1 is a side elevation of a portion of a wall with my improved radio mechanism installed therein and with portions of the wall broken away to illustrate internal parts of the radio unit;

Fig. 2 is a horizontal sectional view of the same, taken on the line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view of the same, taken on the line 3—3 of Fig. 2;

Fig. 4 is a vertical sectional view of a section of the wall with the loud speaker unit of my radio installed therein;

Fig. 5 is an elevation of a section of a wall with a modified form of my radio unit installed therein;

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Fig. 6 is a horizontal sectional view taken on the line 6—6 of Fig. 5; and

Fig. 7 is a vertical sectional view taken on the line 7—7 of Fig. 5.

As an example of one form in which my invention may be embodied, I have shown in Figs. 1 to 4 inclusive a radio receiving system including a receiver unit R (shown in Figs. 1, 2 and 3) and a loud speaker unit (shown in Fig. 4), both installed in a partition wall. Such partition wall may include vertical studding, indicated at 10, cross studs 11 and 12 forming bases for the mounting thereon of my improved receiver and loud speaker units, respectively, lath or plaster board 13, and coatings of plaster 14 adhering to the lath 13 on both sides of the wall.

In the lath 13 and plaster 14 there is provided a pair of horizontally registering openings that are defined by the edges of cut away areas of the lath 13 and by a pair of rectangular metal plaster molding frames 15 inset in the plaster. The frames 15 may be constructed from any suitable plaster molding strip, but are preferably of an L-shaped cross section having flanges 16 for attachment to the lath or plaster board 13. The frames 15 are secured to the frame structure of the wall before the plaster is applied, and during the plastering process the plaster is molded into the frames 15 in a conventional manner characteristic of the practice of plastering up to a corner or edge binding molding strip.

Into the registering openings 17 which are thus provided, the radio receiver unit R is adapted to be inserted. The receiver unit R includes a casing having horizontal walls 18 and end walls 19. The dimensions of the casing 18 are such that it will fit within the frames 15 with just sufficient clearance to permit it to be easily inserted therein.

The casing 18, 19 may be secured in place by driving nails 20 through suitably positioned openings in the bottom wall 18 and into the base stud 11. On its rear side, the casing 18, 19 has a marginal flange 21, while its opposite side is fully open to permit the radio receiver chassis to be inserted therethrough.

The receiver chassis includes a base of inverted box form having a horizontal wall 22 and a marginal flange 23, the lower edges of which rest upon a bottom wall 18 of the casing. A bracket 24 is secured to and projects upwardly from the base 22, 23 and carries a yoke 25 supporting a variable condenser unit 26. The movable plates of the condenser unit 26 are mounted upon a shaft 27 that is journaled in the yoke 25. Secured to

the shaft 27 above the yoke 25 is an inverted, dished tuning dial 28 having a frustoconical rim 29 terminating in a peripheral edge 30.

A shaft 31 is mounted in a bearing 32 in the base 22, 23, coaxially with the shaft 27, and to its upper end, above the base, is connected the volume control potentiometer or rheostat 33. To the lower end of the shaft 31, below the horizontal wall 22 of the base, is attached a volume control disc 34. Mounted upon the base 22, 23 and projecting (in some cases) upwardly into the space defined within the flange 29 of the tuning dial 28, are a plurality of electronic components and amplifier tubes 35, transformers 35*a*, and condensers 35*b* of the radio mechanism. The front and rear of the casing 18, 19 are closed by panels 36 and 37, respectively, the latter being secured to the flange 21 of the casing, and the former being secured (as by means of screws 39) to the flange 23 of the base 22, 23.

The flange 23 is cut away at both the front and the rear of the chassis to provide notches 40 through which opposite peripheral portions of the disc 34 project. The panels 36 and 37 are correspondingly provided with slots 41 and 42 through which these peripheral portions of the disc 34 project in order that a person may engage the disc to rotate it. The panels 36 and 37 are also provided with windows 43 and 44 through which opposite peripheral portions of the flange 29 and rim 30 of the tuning dial 28 project. The windows 43 and 44 give a view of portions of the station indicating dial face 45 which is imprinted upon the surface of the flange 29.

Suitably mounted on the chassis base 22, 23 and projecting upwardly into the space defined within the flange 29 of the tuning dial, are a pair of small electric light bulbs 46. The dial 28, or at least the rim 29 thereof, is of a translucent material (e. g., a plastic material) through which the light rays from the lamps 46 will illuminate the dial face 45.

In Fig. 4 is shown the loud speaker unit of my improved radio system, which is mounted in a casing 47 installed in the wall in a manner similar to the casing 18, 19. A loud speaker 48 is suitably mounted in the casing 47 with one side facing toward one side of the wall and the other side facing toward the other side of the wall. Grilles 49 are detachably secured to the casing at the respective sides of the wall, and the sound produced by the loud speaker 48 may pass through the grilles into both of the adjoining rooms.

Figs. 1 and 4 are partially schematic, in that they illustrate, in outline form, the electrical connections between the radio unit R, the speaker 48, and a phonograph unit 50 which is shown schematically. The connections from the phonograph 50 to the radio amplifier and speaker 48 are such as to utilize the speaker 48 for producing sound from electrical current pulses originating in a conventional electronic pickup mechanism in the phonograph unit. The speaker 48 also serves to produce sound from electrical current pulses originating in the radio unit R. The connections between these circuits are made in the chassis of the radio unit R, through a series of contacts 56 mounted in a suitable insulating panel 57 attached to the base 22, 23 and a series of spring arm contacts 58 that are mounted on an insulating panel 59 secured to an end wall 19 of the radio unit casing. The respective contact arms 58 are attached to a series of terminals 60, 61, 62, 63, and 64, respectively, to which are connected the conductors 51, 52, 54, and 55, respectively, and a lead 65 to an antenna 66. The ground connection is made through the conduit 67. Connected to an end wall 19 of the radio unit is one end of a length of electrical conduit 67 forming part of the wiring system of the building. Through the conduit 67, the power leads 68 are brought into the radio unit casing and are connected to terminals 69 on an insulating block 70 secured to the casing. Also, connected to the terminal 69 are a pair of spring contact arms 71 which engage a pair of the contacts 56.

It will now be apparent that the radio unit casing 18, 19 constitutes a permanent installation in a building wall while the radio chassis may be immediately removed by simply sliding it out of the open side of the casing. This may be accomplished by hooking a suitable tool or tools through an opening or openings 72 in the panel 36 and pulling away from the wall. The panel 36, being secured to the base 22, 23, forms a part of the radio chassis unit, although functioning (when the unit is in place) as part of the casing (as does the panel 37 also).

The tuning dial 30 and volume control disc 34 are accessible from either side of the partition wall. Thus, a person in either of the adjoining rooms served by the radio may operate the controls of the radio. The dial face 45 is repeated in duplicate on diametrically opposite sides of the dial. The tuning dial and volume control disc are manipulated by pressing a thumb or finger against a periphery of those members and pushing circumferentially.

In Figs. 5, 6 and 7, I have shown a modified form of the invention in which a radio unit casing 18*a*, 19*a* is mounted in a wall opening in a manner similar to that shown in Figs. 1 to 4, but in which the tuning unit 26*a* is mounted on an axis extending longitudinally of the casing and the volume control unit 33*a* is mounted beneath the base 22*a*. To the shaft 27*a* of the tuning unit 26*a* is secured a drum 81. Cables 82 and 83 are wrapped around the drum 81 and are passed around sets of pulleys 84 and 85, respectively, at the four corners of the casing 18*a*, 19*a*. A pair of indicator pointers 86, slidable in slots 87 in the panel 36*a* and 37*a*, respectively, are secured to the cable 82 for movement in accordance with rotation of the drum 81 and cooperate with the dial face 45*a* to indicate the setting of the tuning unit 26*a*. Adjustment of the tuning unit 26*a* is effected by rotating either of two knobs 28*a*, each mounted upon a shaft 88 journaled in a bracket 89 on the base 22*a* and carrying a pulley 90 about which the cable 83 is wrapped. Such rotation of the knob 28*a* transmits rotation to the drum 81 through the cable 83, and the drum 81 in turn transmits movement to the cable 82 and thus to the pointers 86.

The volume control unit 33*a* is operated by either of two knobs 34*a*, one of which is directly connected to a shaft 91 on which the rotatable part of the unit 33 is secured, and the other of which is geared to the shaft 91 through gearing 92, 93.

The knobs 28*a* and 34*a* are arranged in pairs, one on one side of the partition wall, and the other on the other side of the partition wall, so as to give access to the radio controls from both of the adjoining rooms served by the radio.

The advantages of the invention will now be apparent. A single radio is adapted to serve either of two adjoining rooms, and provide for loud speaker delivery into both of the rooms and

access and control from either room. When it is desired to remove the radio unit for servicing or repair, it is simply slid out of the wall casing like a drawer, the contacts **56** sliding beneath the contact arms **58**. By just as simple a movement, in reverse, the radio unit may be slid back into the wall casing, the contacts **56** coming to rest in contact with their respective spring arms **58**, and thus connecting the radio to the power and loud speaker circuits.

I claim as my invention:

1. In a radio receiver apparatus, in combination with a partition wall separating two rooms of a building, said wall having a through opening, means framing said opening at each side of said wall, and a radio receiver mounted in said opening and having controls that are accessible from both of said rooms.

2. In a radio receiving apparatus, in combination with a partition wall separating two rooms of a building, a casing mounted in said wall and communicating with both of said rooms, and a radio chassis in said casing having controls that are exposed in both rooms.

3. In a radio receiver apparatus, in combination with a casing forming a permanent installation in a building wall and having panels communicating with rooms on both sides of said wall, a radio chassis insertible into said casing and having controls that are exposed to both of said rooms when it is in place in the casing.

4. In a radio receiving apparatus, in combination with a partition wall separating two rooms of a building, a casing built into said wall and communicating with both of said rooms, said casing having slots therein, and a radio receiver unit, mounted in said casing and having a control element of circular shape having a periphery of which diametrically opposed portions extend through said slots so as to be operable from both of said rooms.

5. In a radio receiving apparatus, in combination with a partition wall separating two rooms of a building, a casing built into said wall, said casing having on one side a panel communicating with one of said rooms and being open on its other side, a radio chassis mounted in said casing and having secured thereto a panel closing the open side of said casing and communicating with the other room, said panels having openings therein, and said radio chassis including control means, portions of which project through said openings so as to be operable from the respective rooms.

6. In a radio receiving apparatus, in combination with a partition wall separating two rooms of a building, a casing mounted in said wall and communicating with both rooms, a radio chassis mounted in said casing and having control means, portions of which are exposed in both rooms, said casing having an end wall, a plurality of terminals carried by said end wall and having contacts projecting therefrom into the casing, and a plurality of contacts on said chassis, adapted to engage said wall mounted contacts when the chassis is in place in the casing.

7. In a radio receiving apparatus, in combination with a partition wall separating two rooms of a building, a pair of plaster molding frames set into said wall and defining a pair of registering openings in the respective sides of the wall, a casing mounted in said frames and communicating with the respective rooms, and a radio chassis mounted in said casing and having control means, portions of which communicate with the respective rooms in order that the radio may be controlled from either room.

8. In a radio receiving apparatus, for use in combination with a partition wall separating two rooms and having a casing built thereinto and communicating with both rooms, a radio chassis including a base portion having a plurality of contacts for engagement with contacts carried by said casing, a plurality of operating elements extending upwardly from said base, and an inverted dished dial member for controlling one of said operating elements, positioned on a vertical axis disposed substantially centrally of said casing and having a downwardly extending flange embracing the upper portions of at least some of said operating elements, peripheral regions of said control member being projected through the casing into the respective rooms for engagement by an operator in either room.

9. In a radio receiving apparatus, in combination with a partition wall separating two rooms of a building and having two cavities therein, each communicating with both rooms, a radio receiver unit mounted in one of said cavities and having a control element accessible to each of said rooms, and a loud speaker mounted in the other of said cavities and communicating with both rooms.

10. In a radio receiving apparatus for use in connection with a partition wall separating two rooms of a building and having therein a cavity communicating with both rooms, a radio receiver comprising a support, an operating unit mounted on said support and having a rotatable part disposed on a horizontal axis and having a drum at one end thereof, a pair of control knobs arranged for communication with the respective rooms and each carrying a pulley, a cable connected to said pulley and to said drum and guide pulleys about which said cable is guided.

11. A radio receiver as defined in claim 10, wherein said radio receiver includes facing panels carrying station indicator dials and having slots adjacent said dials, pointers traveling in said slots, cables attached to said pointers and connected to said drum, and idler pulleys around which the latter mentioned cable is guided.

12. A radio receiver as defined in claim 11, wherein one of said panels is secured to said casing and the other of said panels is secured to said receiving unit.

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