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F. D. SCHNOOR ET AL

2,487,601

RADIO RECEIVER CONSTRUCTION

Filed Dec. 17, 1947

2 Sheets-Sheet 1

Fig. 1.

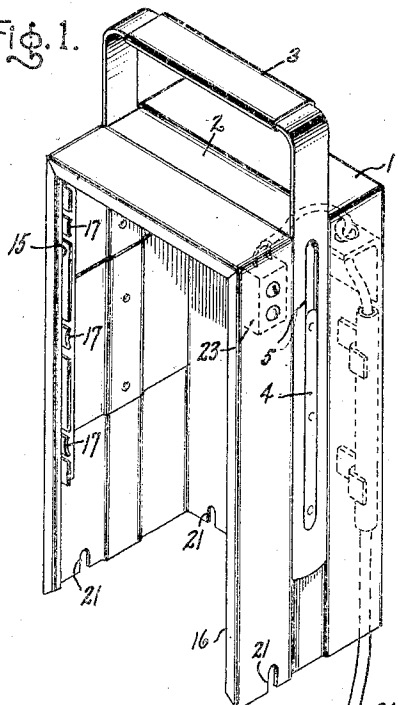


Fig. 2

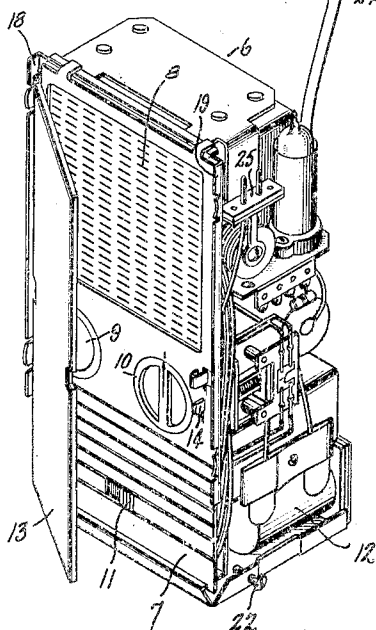
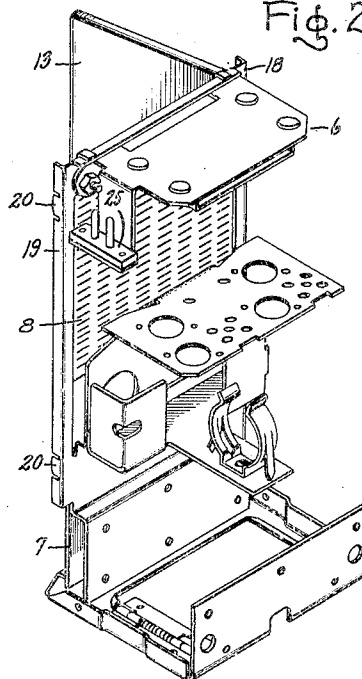
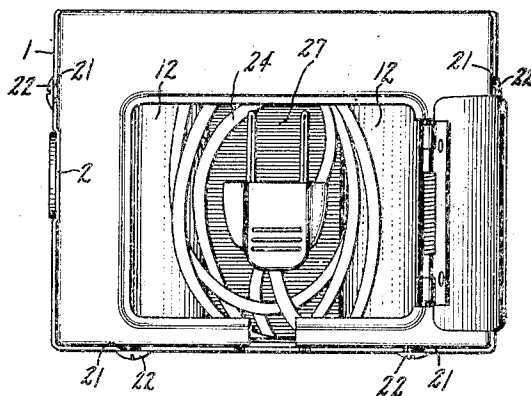


Fig. 4.



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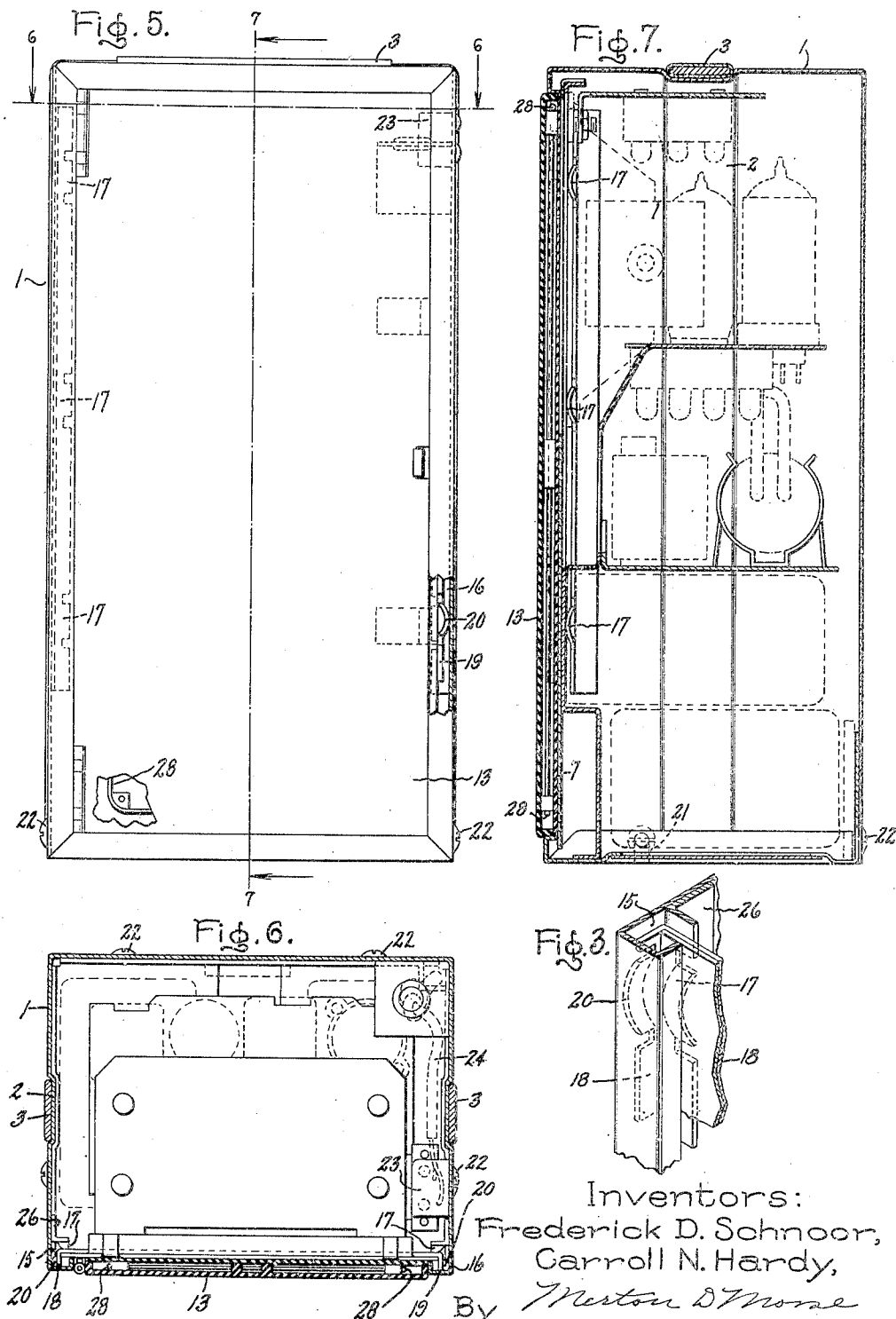
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RADIO RECEIVER CONSTRUCTION

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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RADIO RECEIVER CONSTRUCTION

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2 Claims. (Cl. 250—14)

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Our invention relates to portable radio receivers, and more particularly to such receivers of the type adapted to be operated alternatively from a self-contained unidirectional power source or from an external alternating or unidirectional power source. It is a primary object of our invention to provide an improved construction for such receivers.

It is advantageous, in certain commercial applications, to provide portable radio receivers of the personal or miniature type. Such receivers require a small and compact construction in order to obtain the full commercial benefits. In addition, it is desirable to employ a construction which facilitates the replacement or repair of component parts. To this end, it is a particular object of our invention to provide a compact construction for a miniature portable receiver wherein the chassis may be readily removed from the cabinet.

In accordance with our invention, a runner-and-channel arrangement is provided for assembling the chassis to the cabinet. Included on both runners and channels are flared portions forming anti-rattling spring members or nubbins which provide frictional but slidable engagement between cabinet and chassis. By these means, a compact construction is provided, and removal of the chassis from the cabinet is facilitated.

The features of our invention which we believe to be novel are set forth with particularity in the appended claims. Our invention itself, however, together with further objects and advantages thereof, may best be understood by reference to the following description taken in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view of a miniature portable radio receiver which suitably embodies our invention,

Fig. 2 is a perspective view of the chassis portion of the receiver,

Fig. 3 is a fragmentary detailed view in perspective of the runner-and-channel arrangement embodied as a feature of our invention,

Fig. 4 is a bottom view of the cabinet and chassis assembly,

Fig. 5 is a front view of the receiver of Fig. 1, Fig. 6 is a view taken along section 6—6 of Fig. 5, and

Fig. 7 is a view taken along section 7—7 of Fig. 5.

In the drawings, like reference numerals signify like elements.

Referring to Fig. 1, there is shown a perspec-

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tive view of a portable radio receiver of the personal type which is constructed according to our invention. There is provided a cabinet 1 which may be constructed of sheet metal or other suitable sturdy ornamental material. A dimple or recess 2 is provided about the outer surface of cabinet 1, in which an adjustable handle 3 is mounted by means of a pair of rails 4 provided in recess 2 on each side of cabinet 1. The handle 3 is provided with longitudinal slots 5 which respectively engage rails 4. In this manner handle 3 may be raised to the position shown for carrying purposes, or it may be lowered against the cabinet when the receiver is not being carried.

A chassis member 6 is provided for compactly mounting the component parts. Associated with chassis 6 is an eschutcheon 7 which comprises a baffle 8 for the loudspeaker, (not shown) and on which are mounted the customary receiver controls 9 and 10. A switch 11 is provided for determining whether the receiver is to be operated from enclosed batteries 12 or from an external alternating or unidirectional power source. Hinged to the chassis 6 is a door 13 which contains the receiver antenna, not shown. A power switch 14 of the spring-actuated type is provided; switch 14 is closed by opening door 13 and is opened by closing door 13.

In order to provide a compact assembly of chassis 6 and cabinet 1, a runner-and-channel arrangement is employed. Cabinet 1 is provided with a pair of longitudinal rectangular channels 15 and 16 along which are disposed a number of anti-rattling spring members 17. These spring members may be formed by inwardly flaring portions of the channel wall, or by any other suitable means. Chassis 6 is provided with a pair of L-shaped runners 18 and 19 adapted to engage channels 15 and 16 of cabinet 1. Runners 18 and 19 are also provided with anti-rattling spring members or nubbins 20 similar to those employed in the channels 15 and 16. When the chassis 6 is inserted in the cabinet 1, runners 18 and 19 engage channels 15 and 16 in a frictional but slidable manner, so that a compact, tight assembly is provided.

In order that the removal of the chassis 6 from the cabinet 1 may be further facilitated, the cabinet is provided with a plurality of slots 21, and the chassis 6 is provided with a plurality of correspondingly located mounting screws 22. In this manner, mounting screws 22 need never be removed, but only loosened, in disassembling the chassis from the cabinet.

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As an added feature, it is desirable that the external alternating or unidirectional power circuits be automatically opened when the chassis is disassembled from the cabinet. This is accomplished by means of a plug-and-jack arrangement introduced in series with the power line. The jack or receptacle 23 is mounted inside cabinet 1, and respective terminals are connected to the conductors of the power cord 24. The plug 25 is mounted on the chassis 6 in such a position that it engages receptacle 23 only when the receiver is fully assembled. By these means, it is insured that the chassis may not be withdrawn from the cabinet without disconnecting the receiver from the alternating power source.

Referring to Fig. 2, there is shown a perspective view, from the rear, of the blank chassis 6, in order to show further the constructional features. It will be seen that provision is made for mounting only four electron tubes; the customary rectifier tube is replaced by a dry-plate selenium rectifier in order to conserve space.

Fig. 3 is a fragmentary detailed view of the runner-and-channel arrangement mentioned in connection with Fig. 1. The rectangular channel 15 may be constructed by welding or otherwise fastening an angle portion 26 which comprises nubbins 17 to the inner wall of the cabinet. It will be seen that nubbins 17 on channel 15 press outwardly on the runner 18, and the nubbins 20 on the runner similarly press outwardly upon the inner wall of the channel 15. In this manner a slidable engagement of runners and channels is provided, and at the same time, rattling or loose fit is precluded.

Referring to Fig. 4, a bottom view of the receiver of Fig. 1 is shown revealing a compartment 27 in which the batteries 12 are stored and in which the power cord 24 may be coiled when not in use.

Fig. 5 is a front view of the assembled receiver of Fig. 1 partially cut away to show the engagement of channels 15 and 16 and runners 18 and 19, as described in detail in connection with Fig. 3. Also shown is a portion of the receiver loop antenna 28 which is mounted within door 13.

Figs. 6 and 7 are sectional views taken respectively at 6-6 and 7-7 in Fig. 5, and are included to show further the action of nubbins 17 and 20 in providing frictional but slidable engagement between the cabinet channels 15 and 16 and the chassis runners 18 and 19, as heretofore explained in connection with Fig. 3.

While we have shown and described a particular embodiment of our invention, it will be understood that various modifications may be made. For example, nubbins 17 and 20 have been shown as flared portions of the walls of the channels 15 and 16 and the runners 18 and 19. However, the anti-rattling action may be provided in numerous other ways, such as by using separate spring members in place of the nubbins. We contemplate, in the appended claims, to cover all such modifications as fall within the true spirit and scope of our invention.

What we claim as new and desire to secure by Letters Patent of the United States is:

1. A portable radio receiver of the type adapted to be operated alternatively from a self-containing unidirectional power source or from an external alternating current source comprising a metallic enclosing housing having contiguous rectangular openings in two adjacent sides there-

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of, a pair of integral channels formed respectively along parallel edges of one of said openings, sliders positioned along the open sides of said channels, a chassis comprising an L-shaped metallic member of a size sufficient to close said openings, one of the legs of said member being slidable between said sliders and said channels, said one leg having upturned outer edges adapted to fit within said channel, said sliders having a plurality of longitudinally spaced resilient portions for causing each of said edges slidably to engage the web of the channel associated therewith, said housing having a first electrical contact connected to an alternating current source and insulatingly positioned on the inner surface of the wall opposing the other of said sides, said chassis including another electrical contact adapted to engage said first contact when said member is positioned to close said opening to supply alternating current to said chassis, and a door hinged to said one leg adjacent one of said upturned edges, said door in its closed position providing a smooth surface between said channels, and operating controls for said receiver positioned on said one leg.

2. A portable radio receiver of the type adapted to be operated alternatively from a self-contained unidirectional source or from an external alternating source comprising a cabinet having a pair of longitudinal channels, a chassis having a pair of rectangularly shaped runners adapted to engage said channels, a plurality of anti-rattling spring members longitudinally disposed along said channels along the open side thereof to bring said channels and said runners into frictional slidable engagement, a jack fastened to an inner wall of said cabinet having a lead adapted to be connected to an alternating current source, a plug fastened to said chassis, said plug being adapted to engage said jack to connect said lead to said chassis when said runners are moved along said channels to the inner extremity thereof, a normally closed power switch mounted upon said chassis, a door hinged to said chassis, said door in its closed position being arranged to open said power switch, a unidirectional power source mounted upon said chassis, said chassis including switching means for selectively connecting to said unidirectional source or to said lead, said chassis including an additional compartment adapted to receive said lead when said receiver is to be operated from said unidirectional source.

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