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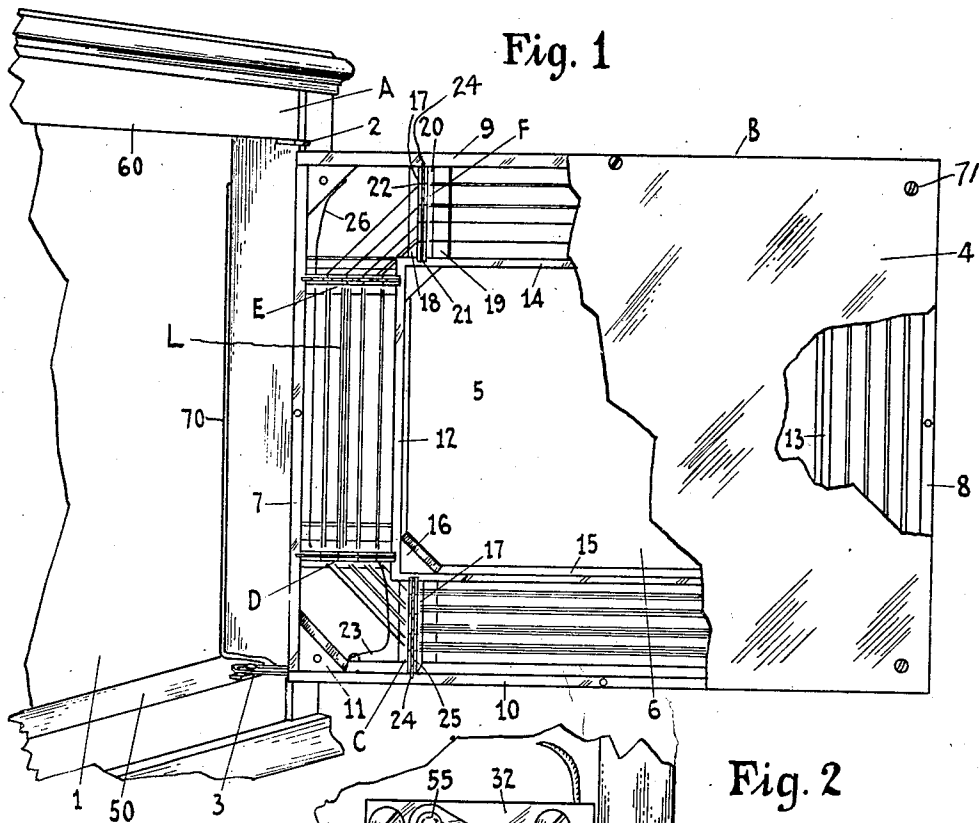
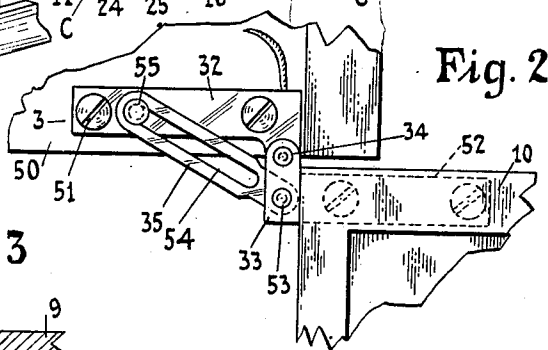
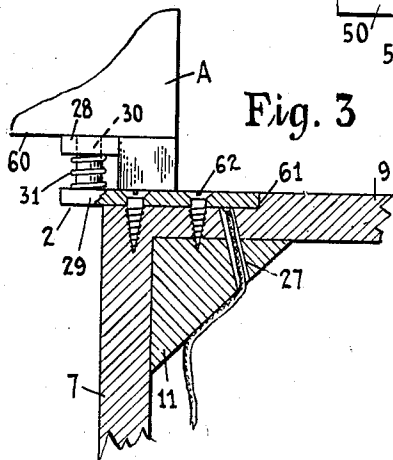
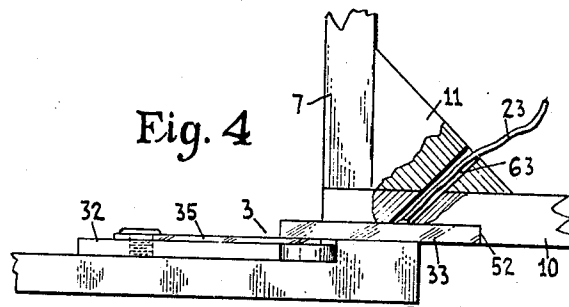
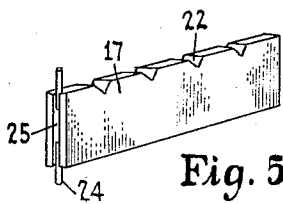
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RADIOCABINET WITH ADJUSTABLE LOOP

Filed Jan. 7, 1925

2 Sheets-Sheet 1



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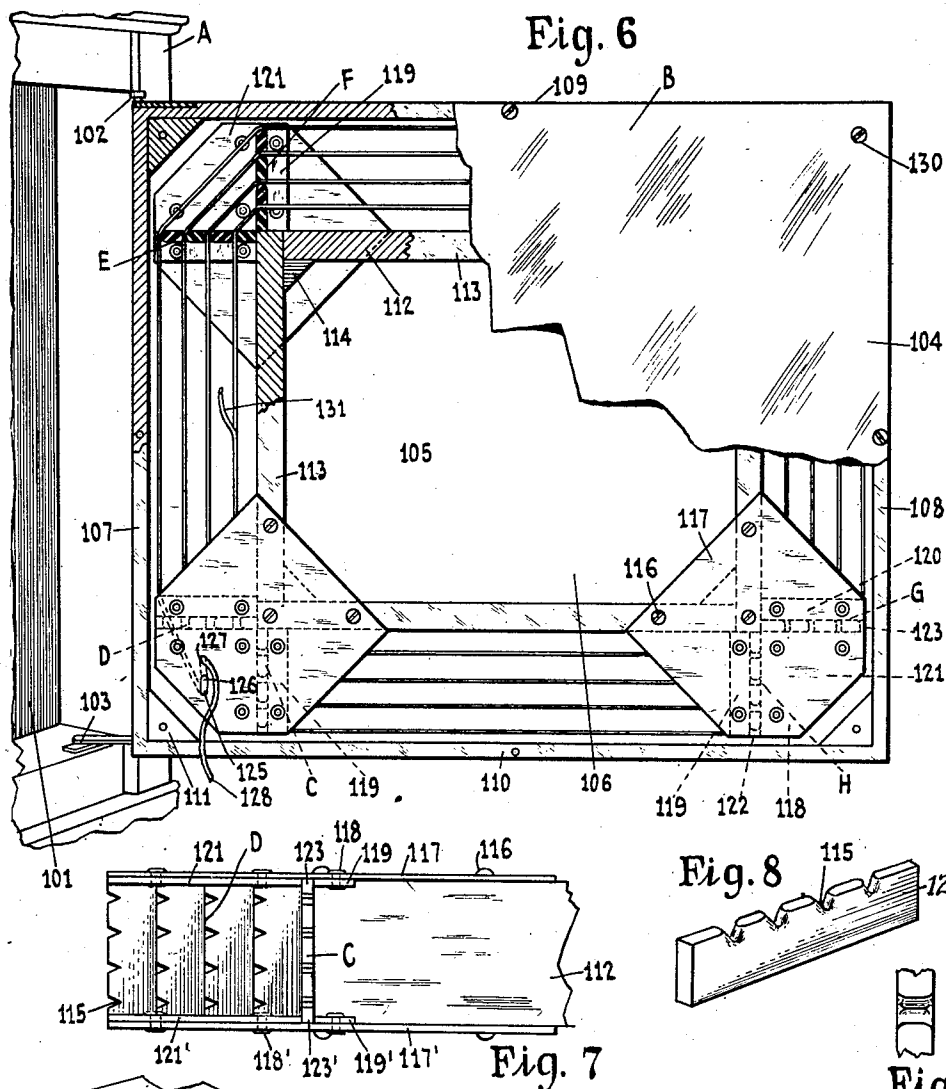
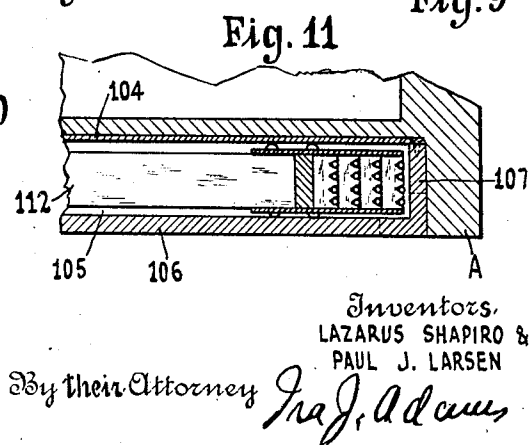
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UNITED STATES PATENT OFFICE

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RADIO CABINET WITH ADJUSTABLE LOOP

Application filed January 7, 1925. Serial No. 945.

Our invention relates to cabinets which have radio apparatus incorporated therein and which are provided with adjustable loop receiving aerials and which may or may not have ordinary phonograph apparatus also incorporated therein.

An object of our invention is to provide a radio cabinet with an adjustable loop aerial built therein.

Another object of our invention is to provide a radio cabinet with a swinging hollow panel in which there is built a loop aerial.

A further object of the invention is to provide a radio cabinet having an adjustable loop mounted in a hollow panel in such manner that when the panel is closed, the appearance of the cabinet will be artistic and pleasing.

Other objects will be apparent from the following description and claims when considered with the accompanying drawings, in which

Fig. 1 shows a perspective view of the radio cabinet with its hollow panel and loop aerial, the cover of the panel being partially broken away to show the loop and panel construction.

Fig. 2 shows a detail of the lower hinge construction illustrating the manner in which the hollow panel is mounted on the body of the cabinet in order to allow it to swing 180°.

Fig. 3 is a further detail showing the upper hinge construction and the manner in which one side of the loop is connected to the hinge.

Fig. 4 is another view of the detail shown in Fig. 2, but showing also the manner in which the other side of the loop is connected to the hinge.

Fig. 5 shows in perspective one of the winding blocks.

Fig. 6 shows a cabinet provided with a hollow panel in which is mounted a detachable loop structure.

Fig. 7 is an end view of one corner of the loop frame.

Fig. 8 shows in perspective the form of winding block used with the detachable loop structure.

Fig. 9 is a plan view of one of the winding notches in the winding blocks.

Fig. 10 is a perspective of the side of the radio cabinet showing the hollow panel with the loop therein, the panel being in the closed position.

Fig. 11 is a fragmentary cross-section on line 11—11 of Fig. 10.

Referring to the modification shown in Figs. 1-5 inclusive, A denotes a cabinet body provided with a chamber 1 in the side thereof to accommodate the hollow panel B when the latter is in closed position. Mounted on the cabinet body A is the hollow panel B comprising panel body 5 and the cover 4 detachable therefrom by removing screws 71. The hollow panel B is mounted by means of hinge 2 and limit hinge 3.

The panel body 5 is composed of side members 7 and 8, top member 9 and bottom member 10, connected together to form a rectangular space as shown in Fig. 1. Fastened to the front side of these members is the front member 6. Side members 7 and 8, top member 9 and bottom member 10 are suitably reinforced at their corners by angle blocks 11. Fastened to the front member 6 are rectangularly arranged members 12, 13, 14 and 15, the corners of which are suitably reinforced by angle blocks 16. Within the winding space between the outer rectangularly arranged members 7, 8, 9 and 10 and the inner rectangularly arranged members 12, 13, 14 and 15 lies the loop winding denoted generally by L. The loop winding is held in place by means of winding blocks 17, two sets of which are provided at each corner of the hollow panel. Sets C, D, E, and F are shown in Fig. 1, it being not necessary to show the other four sets, as all sets are identical.

As these sets and manner of mounting are identical, only one set, F, need be described in detail. Fastened to the inner face of front 6 are two strips 18 and 19, forming the groove 20 therebetween. A groove 21 running from the front 6 to the back of the hollow panel B is formed in the member 14 near the end thereof. Mounted within the groove 21 and groove 20 is the first winding block 17 mounted

ed so that the notches 22 face away from the groove 21.

Each winding block 17 has a groove 25 in one end. After the first layer of winding 5 L is placed in the notches 22 of the first winding block of every set in the manner herein-after explained, a second winding block 17 is placed contiguous to the first winding block in the groove 20. A small wire pin 24 10 is forced in the grooves 25 of the first and second winding blocks 17 to help hold the second block in place. Then the second layer of winding L is placed in the notches 22 of the second winding block and the third 15 winding block is placed in position in a manner similar to the second winding block. Care should be exercised to keep adjacent pins 24 spaced from each other for the purpose eliminating all possible losses.

20 The process of placing winding blocks in position and then placing layers of winding in their notches continues till the last winding block of a set is reached. This is held in position by means of the groove 20 and the 25 pin 24 fitting in groove 25 of the last winding block and in co-extensive groove 24 in the top 9.

No winding is placed in the notches of the last winding block except the end 26 of winding L extending in the last winding blocks 30 of sets D and E, and ending at the upper hinge 2.

The upper hinge 2, see particularly Fig. 3, is composed of a stationary member 28 and a movable member 29 secured together by 35 pintle 30. The stationary member 28 is secured to the upper wall 60 of chamber 1 by any convenient means as by screws (not shown). The movable member 29 is secured 40 to top 9 of panel B in a recess 61 by means of screws 62. Surrounding the pintle 30 is a coil spring 31 resiliently urging the members 28 and 29 apart and, at the same time, urging members 32 and 33 of hinge 3 together to in- 45 sure good electrical contact between the movable and stationary parts of both hinges 2 and 3.

The lower hinge 3, see particularly Figs. 2 and 4, is composed of stationary member 32 and movable member 33 connected together 50 by pintle 34. Stationary member 32 is secured to the lower wall 50 of chamber 1 in any convenient manner, as by means of screws 51. The movable member 33 is sim- 55 ilarly secured to a recessed portion 52 of bottom 10. Pivoted to member 33 by means of pivot 53 is limit member 35 having a slot 54 cooperating with post 55 on member 32. The limit hinge 3 allows a 180 degree swing of 60 panel B.

To wind the loop, the end 23 of the wire thereof is started at hinge 3 by having it make electrical contact with member 33, by clamping it between member 33 and the bot- 65 tom 10. The wire 23 then passes out thru a

passage 63 and is led in a clockwise direction by first having it engage the notch 22 adjacent the front 6 of the first winding block 17 of the set D. The wire is then led to suc- 70 cessively engage the notch occupying the same position of the other sets of winding blocks till this particular notch position in the first block of each set is filled. Then the wire is led to the next notch of the first winding block of set D and this notch posi- 75 tion is filled in each of the sets, and so on till all the notches of the first winding blocks 17 of all the sets are filled.

The second winding block of each set is now placed in position as explained above. 80 The wire is then led to the notch furthest removed from front 6 of the second winding block of set D, and the second layer of loop L is wound in a similar manner to the first 85 layer.

The third layer is begun at the notch near- 90 est the front 6 of the third winding block of set D, and so on till the number of layers desired is completed. Four layers are shown in the drawing. The end 26 of winding L 95 is led from the notch furthest removed from front 6 of the fourth block in notches of the fifth or last winding blocks to a passage 27 extending to member 29 of hinge 2. The end 26 of the wire is clamped between member 29 100 and top 9 to obtain a good conductive relation.

A wire 70 extending from stationary member 32 of hinge 3 and a similar wire (not 100 shown) extending from the stationary member 28 of hinge 2 provide electrical connection to radio apparatus (not shown) within the cabinet body A.

Figs. 6 to 11 inclusive show a preferred em- 105 bodiment. It consists of a cabinet body A having a chamber 101 in one side thereof for the reception of a hollow panel B. The hollow panel comprises a panel body 105 and a cover 104, detachable therefrom by removing screws 130. The panel body 105 is constructed 110 of rectangularly arranged members 107, 108, 109 and 110 reinforced at the corners by blocks 111. The front 106 of the panel body 105 is fastened to these rectangular members at their front sides. The panel B is swing- 115 ingly mounted on cabinet body A by means of hinges 102 and 103 identical with hinges 2 and 3 in the first modification. The construction thus far is similar to the construction shown in Fig. 1. 120

Instead of having the loop winding built in the hollow panel directly, a preferred em- 125 bodiment provides a structure in which the loop is first wound on a frame 112, which is detachable from the hollow panel body 106, by removing the cover 104.

The frame 112 is composed of four rec- 130 tangularly arranged members 113 strengthened at the corners by blocks 114. At each corner of the frame 112 are mounted two sets

of winding blocks 124 shown in detail in Figs. 8 and 9. Each of these winding blocks is provided with a plurality of V-shape grooves 115 whose edges are suitably rounded to prevent abrasion of the insulation on the wire of the loop. The sets of winding blocks shown are designated C, D, E, F, G and H, the sets hidden by the fragment of cover 104 being of identical construction and mounting as the other sets. As the mounting of the sets of these winding blocks at each corner of the frame 112 is identical, the mounting at but one corner will be described in detail.

Fastened by means of screws 116 to the front and back sides of the rectangularly arranged members 113 at each corner are plates 117 and 117'. Fastened to each plate 117 by means of hollow rivets 118 are plates 119, 120 and 121 to provide grooves 122 and 123. Similarly fastened to each plate 117' by means of hollow rivets 118' are plates 119', 120', and 121' to provide grooves 122' and 123' co-acting with grooves 122 and 123 respectively to receive the winding blocks 124. It will easily be seen that when the frame is out of the hollow panel, these winding blocks 124 can easily be slipped into place in the pairs of grooves 122, 122' and 123, 123'.

To wind the loop, end 131 of the winding is started at the corner between sets E and F and is anchored to the rear plates 117 and 121 by means (not shown) similar to the means used to anchor the other end 128 in rear plates 117 and 128 explained below more in detail. The first winding block 114 is placed in each pair of grooves 122, 122' and 123, 123' and the wire is then wound around in a counter clockwise direction in the notches in the first set of blocks in a manner similar to that explained in regard to Fig. 1. When the first layer of the winding is completed, another set of blocks is slipped into the pairs of grooves, 122, 122' and 123, 123' and a second layer of loop completed. This is continued until all the blocks are in position, and the last layer is wound. The winding is led from the last turn of the last layer through openings 125, 126 and 127 in the plates 117 and 121 between sets C and D to securely anchor it there. The winding is lead out thru hole 125, back thru 126 and then out again thru hole 127. The ends 128 and 131 of the loop winding are led to the hinges in a manner similar to the construction shown in Fig. 1.

It will easily be seen from the drawings, particularly Fig. 10, that when the hollow panel B is closed, the cabinet will present a pleasing appearance similar in all respects to a similar cabinet having no loop but an ordinary fixed panel in the position of the swinging panel. The adjustability of the hollow panel allows the loop to be placed in plane most advantageous for receiving from a given station.

Altho we have described several specific embodiments of our invention we realize that many other embodiments may also be built according to its teachings. We therefore are entitled to all embodiments and modifications of our invention as fall fairly within the spirit and scope of the following claims:

1. In a loop aerial construction, the combination of a recessed panel member, a hinged mounting for one edge of said panel member whereby said panel is adapted to swing through an arc of 180°, a plurality of sets of blocks each formed in a multiple layer and disposed in said recessed portion and about the periphery of said panel member, and a multiple layer loop winding secured in said recessed panel by said blocks.

2. In a loop aerial construction, the combination of a recessed panel member, a hinged mounting for one edge of said panel member whereby said panel is adapted to swing through an arc of 180°, a plurality of blocks positioned at right angles to each other in each corner of said panel member in said recessed portion, and a loop winding secured in the recessed portion of said panel member by means of said blocks.

3. A loop aerial comprising, a winding, a plurality of blocks mounted one upon the other for supporting said winding in a multi-layer combination, supporting means for said winding blocks, and means whereby said multi-layer winding holds said winding blocks in position on said supporting means.

4. A loop aerial comprising a frame having rectangular arranged members, a plurality of sets of winding blocks, means for mounting said sets on said frame, there being a set of blocks substantially at the end of each member, and a multiple layer winding supported by said blocks, said winding having its individual layers spaced by said blocks.

5. In a radio cabinet, a hollow panel body, a loop aerial in said body, said loop aerial comprising, a plurality of spaced layers of winding, winding blocks between said layers, and means for mounting said blocks in said body.

6. A loop aerial comprising frame members, plates at the ends of said members for securing them together, winding blocks, said plates being provided with means for holding winding blocks, and a winding mounted on said winding blocks.

7. A loop aerial comprising frame members arranged to form a polygon, a pair of plates at the junction of every two adjacent sides of said polygon, said plates having means for providing block-receiving recesses, winding blocks in said recesses, and a winding supported by said winding blocks.

8. In a loop construction, the combination of a recessed panel member, a hinged mounting for one edge of said panel member where-

by said panel is adapted to swing through an arc of 180° , a plurality of blocks mounted in the recessed portion of said panel member and about the periphery thereof, a winding supported by said blocks and adapted to form a multiple layer loop, and a connection between the free ends of said winding and said hinged mounting, whereby said hinged mounting forms a point of connection to said spaced multiple layer loop.

9. In a loop aerial construction, the combination of a recessed panel member forming a support, a plurality of blocks mounted in the corners of said panel member, a plurality of notches in each of said blocks, a second set of blocks of like characteristics to said first named blocks adjacent each of said first named blocks, and a winding extending through the notches of all of said blocks and adapted to form a spaced multiple layer loop.

10. In a loop aerial construction, the combination of a recessed panel member, a plurality of blocks mounted in said recess and about the periphery of said panel member, each of said blocks being provided with notches, and a winding extending through the notches of each of said blocks and about the periphery of said recess panel member and adapted to form when passed through the notches of all of said blocks a spaced multiple layer loop construction.

11. In a loop aerial construction, the combination of a recessed panel member forming a support, a plurality of blocks mounted about the periphery of said support and in the recessed portion thereof, means provided in each of said blocks for securing the winding of a plurality of turns, a second block of like characteristics to each of said first named blocks positioned adjacent each to said first named blocks, a continuation of said first named winding extending in spaced relationship from said first winding over each of said last named blocks and adapted to form a spaced multiple layer loop, and a cover plate mounted on said support member for holding said blocks in fixed position with respect to each other.

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