

Aug. 5, 1941.

W. S. FREEBURG

2,251,609

PACKAGING MEANS FOR SMALL RESISTOR UNITS

Original Filed July 18, 1936

2 Sheets-Sheet 1

Fig. 1.

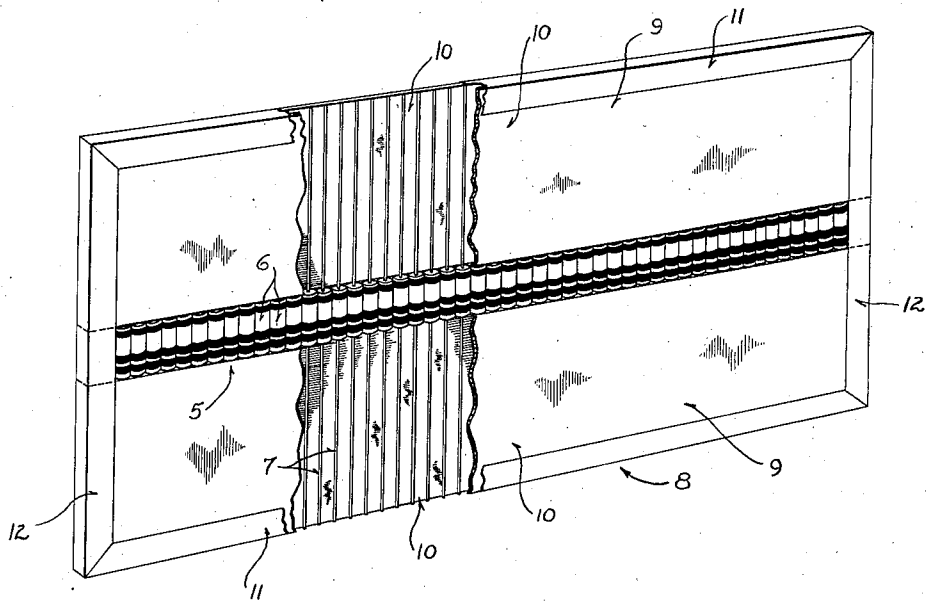
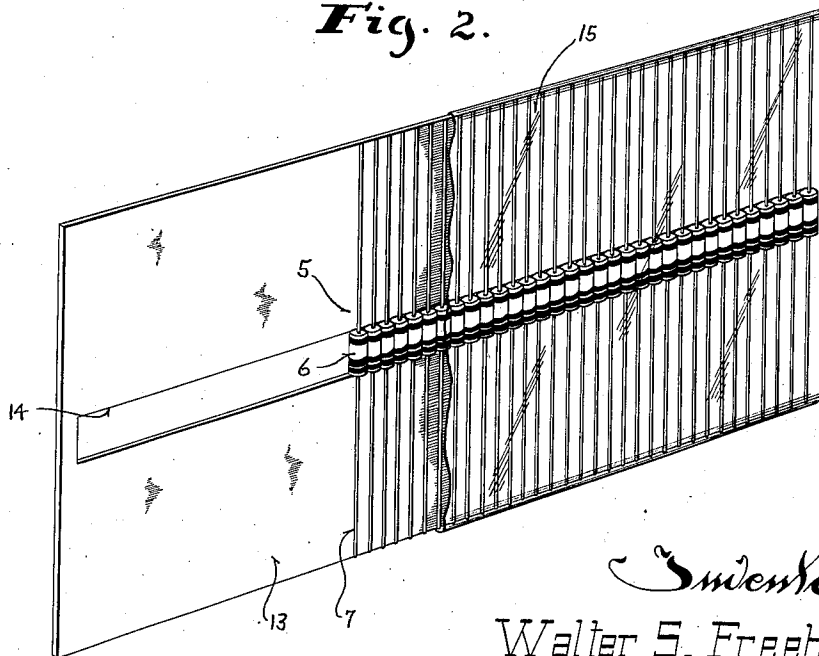


Fig. 2.



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2 Sheets-Sheet 2

Fig. 3.

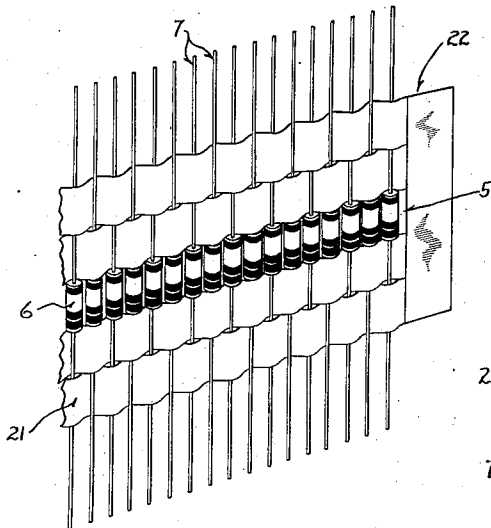


Fig. 4.

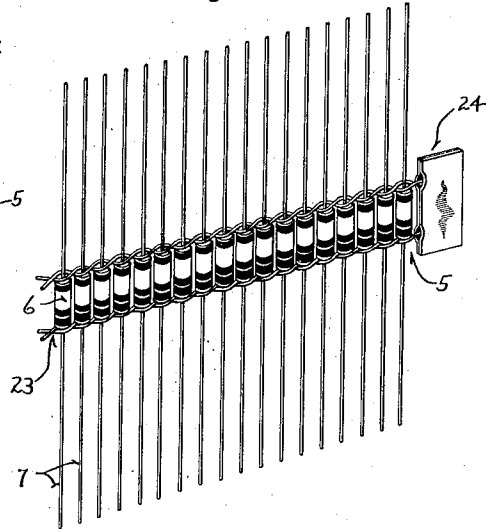


Fig. 5.

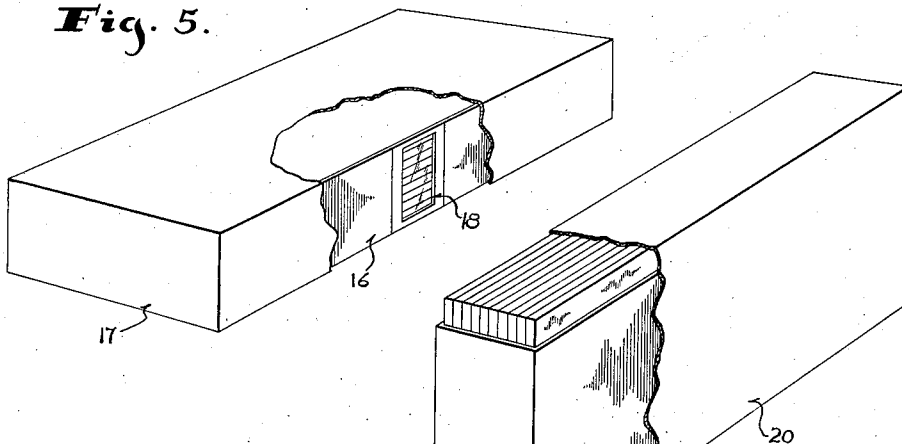
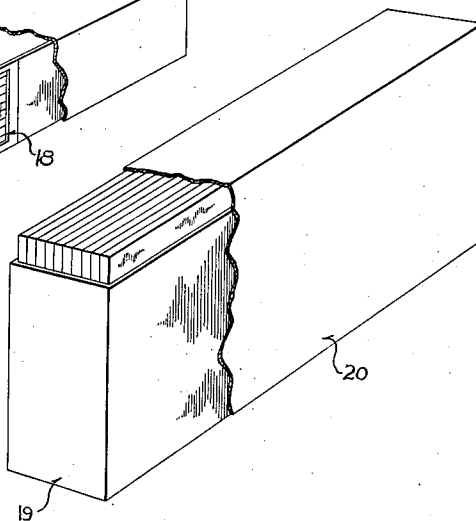


Fig. 6.



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UNITED STATES PATENT OFFICE

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PACKAGING MEANS FOR SMALL RESISTOR
UNITS

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Original application July 18, 1936, Serial No.
91,313. Divided and this application December
11, 1939, Serial No. 308,635

6 Claims. (Cl. 206—65)

This invention relates to packaging means and containers for handling large quantities of fixed resistor units and other small articles of like nature; and is a division of the copending application, Serial No. 91,313, filed July 18, 1936 which has matured into Patent No. 2,214,230, dated Sept. 10, 1940.

Fixed resistor units, particularly the type employed in modern radio receivers, are comparatively small, some of them being but three-eighths of an inch long and one-eighth of an inch in diameter, with one and one-half inch wire leads.

The handling of units as small as this in the large quantities necessitated by present manufacturing methods introduces serious problems. In a radio receiver several resistance units of the same physical characteristics, but of different resistance values, may be required, and as the resistance value of the unit is usually indicated by a code marking on the body of the unit, the need for some practical manner of expediting the handling of the units in large quantities becomes apparent.

It is particularly difficult to pick up individual units in rapid order as is necessary in production methods of manufacture; and if the units are but haphazardly handled in bulk, their wire leads are apt to become bent which further prevents efficient handling of the units in the assembly of radio receivers.

With a view toward overcoming the disadvantages of haphazard handling of resistor units, this invention has, as an object, the provision of means whereby large numbers of such small resistor units may be handled in orderly fashion and without danger of having their lead wires bent.

Another object of this invention is to provide means for holding the units in definite rows in such a manner that their code markings are at all times visible, and so that removal of individual units is facilitated.

Another object of this invention is to provide means for grouping definite numbers of resistor units or similar articles which means is so designed that a plurality of such groups may be readily packaged for bulk handling.

With the above and other objects in view, which will appear as the description proceeds, this invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention

may be made as come within the scope of the claims.

The accompanying drawings illustrate several complete examples of the physical embodiment of the invention constructed according to the best modes so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a perspective view of a resistor unit package illustrating one embodiment of this invention;

Figure 2 is a perspective view showing a modified embodiment of the invention;

Figure 3 is a perspective view showing another manner of packaging the resistor units;

Figure 4 is a perspective view showing another manner of grouping the resistor units;

Figure 5 is a perspective view of a container for a number of groups of units having means allowing for visually ascertaining the number of groups in the container when the cover is removed; and

Figure 6 is a perspective view illustrating another manner of packaging a plurality of holders.

Referring now particularly to the accompanying drawings, in which like numerals indicate like parts, the numeral 5 designates a resistor unit of the type to which this invention is directed. It comprises a body 6 having code markings painted or otherwise delineated thereon and wire leads 7 extending axially from the ends thereof.

In the embodiment of the invention illustrated in Figure 1, a plurality of these units is held in a neat row by means of a holder designated generally by the numeral 8. This holder comprises two flat walled pockets 9 held in definite relationship with their open edges facing each other and spaced apart a distance substantially equal to the length of the resistor bodies.

The two pockets are alike and are formed of two flat sheets of cardboard 10 of a width substantially equal to the length of the lead wires and of a length determined by the number of units intended to be grouped. These two sheets of cardboard are held in superimposed relationship spaced apart just sufficiently to receive the lead wires therebetween, by edging strips 11 glued over the longitudinal edges of the pockets and similar edging strips 12 glued over the ends of the pockets. The strips 12 also serve to join the two pockets and hold them properly assembled.

Obviously, in assembling the package, the resistor units are first inserted in one of the pockets and then the other pocket is applied over the

exposed lead wires. Thereafter, the edging strips 12 are glued in place and the two pockets are held against separation. In the final assembly, the bodies of the units are visible from both sides of the holder.

In Figure 2, a construction similar to that shown in Figure 1 is illustrated. In this embodiment there are, however, no definite pockets, but merely a single flat sheet of cardboard 13 provided with a central longitudinal opening 14, the width of which is slightly greater than the length of the units. The units are laid on one face of the card with their bodies arranged in a row in the opening 14 and their lead wires extending out over the surface of the card. While the units are held in this position on the card, a sheet of transparent material 15 of any suitable type, preferably the cellulose product "Cellophane," is wrapped or applied about the entire assemblage to hold the units in place on the card without concealing them from view.

The embodiments of the invention illustrated in Figures 1 and 2 may be packaged in any suitable box, or they may be merely wrapped into packets containing a definite number of groups of units; or box-like containers shown in Figures 5 and 6 may be provided.

The container shown in Figure 5 consists of a box 16 and its cover 17. The holders are placed flatwise in the box and to permit visual indication of the number of holders in the box when its cover is removed, one side wall of the box has a window or sight opening 18 formed therein through which the number of superimposed holders is readily visible.

In the box shown in Figure 6, the retainers or carriers are positioned edgewise in the body 19 of the box, the height of which is less than the width of the holders so that when the cover 20 is removed, the number of groups of units in the box is at once apparent.

In Figures 3 and 4, two additional methods of grouping the units are illustrated. In Figure 3, the units have strips of paper 21 woven or interlaced through their lead wires. Preferably, there are two such strips of paper at each end of the resistor bodies and the ends of these strips are connected as at 22. In Figure 4, the individual units are held in a group by weaving or lacing threads or cords 23 through the rows of lead wires and joining the ends of the threads or cords as at 24.

The groups of units held together in the manner shown in Figures 3 and 4, may be rolled up into bundles to facilitate the packaging thereof or they may be left flat and placed in containers, such as shown in Figure 5.

From the foregoing description taken in connection with the accompanying drawings, it will be readily apparent to those skilled in the art that this invention provides novel and simple means for facilitating the handling of large numbers of small resistor units and like articles for sale and use.

What I claim as my invention is:

1. A resistance unit package comprising: a plurality of small resistance units all having like code marked bodies and wire leads projecting from the ends thereof; two parallel spaced holder members; means connecting said members at their ends and holding them spaced apart slightly more than the length of the units, said units being arranged in a row with their bodies side by

side and extending across the space between said holder members with the holder members engaging the wire leads of the units; and means also engaging the wire leads and holding the units assembled with the holder members.

2. A resistance unit package comprising: a plurality of small resistance units all having like code marked bodies and wire leads projecting therefrom; a card having an elongated parallel edged opening of substantially the same width as the length of the resistor bodies and adapted to receive the resistor bodies in side by side relation with the wire leads thereof extending out over the surface of the card and the bodies extending across the width of the opening so that their code markings are clearly visible on both sides of the card; and means for holding the resistance units in position on the card.

3. A retainer for a plurality of resistor units all having like bodies and lead wires projecting therefrom, which comprises: a card having an elongated parallel edged opening having substantially the same width as the length of a resistor body and adapted to receive said resistor bodies in side by side relation, the wire leads thereof lying flat on the surface of the card and the bodies with code markings thereon projecting through the opening to be visible on both sides of the card; and transparent means held to the card and extending over the units to hold the same on the card.

4. A resistance unit package comprising: a plurality of small resistance units all having like code marked bodies and wire leads projecting longitudinally from the ends thereof; two edgewise spaced cardboard panels; means connecting said panels and holding them with their adjacent edges substantially parallel and spaced apart slightly more than the length of the resistor bodies, the resistance units being arranged in a row with their bodies side by side in the space between the panels and with their wire leads extending out over one surface of the panels so that their code markings are clearly visible from either side of the assembly; and means engaging the wire leads of the resistance units for holding them in position on said connected panels.

5. A resistance unit package comprising: a plurality of small resistance units all having like code marked bodies and wire leads projecting longitudinally from the ends thereof; two edgewise spaced flat pockets, each composed of superimposed panels of substantially stiff material; means connecting said pockets and holding them with their open edges parallel and spaced apart a distance slightly greater than the length of the resistor bodies; and said resistance units being arranged in a row with their bodies side by side and spanning the distance between the open edges of the pockets and with their wire leads received in the pockets so that the leads are protected while the code markings on the bodies are visible from both sides of the package.

6. A resistance unit package comprising: a plurality of small resistor units all having like code marked bodies and wire leads projecting longitudinally from the ends thereof; a pair of flexible holding elements oppositely interwoven with the wire leads at each end of the resistor units; and means connecting the ends of all of said flexible holding elements.

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