May 27, 1930. H. AMATEL 1,760,678

LOCKING CARTON

Filed July 20, 1927 4 Sheets-Sheet 1

FIG. 1.

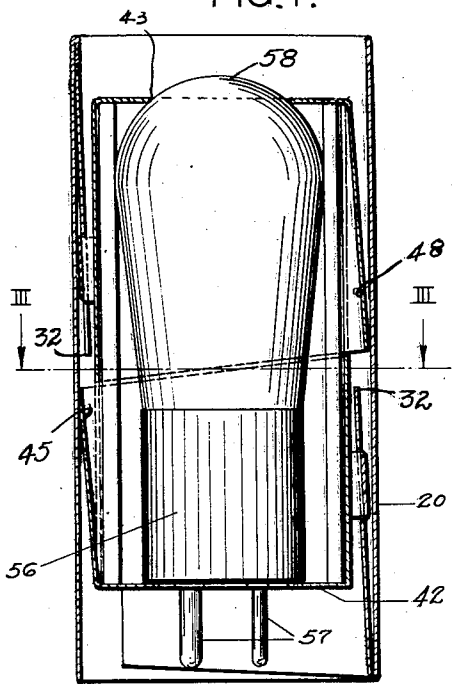


FIG. 2.

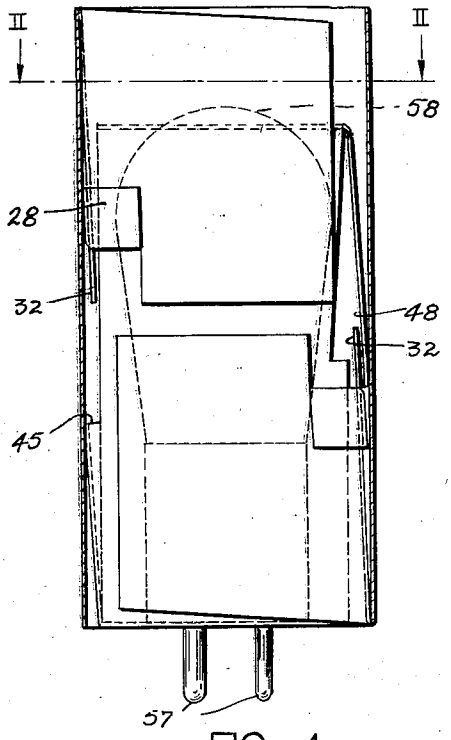


FIG. 3.

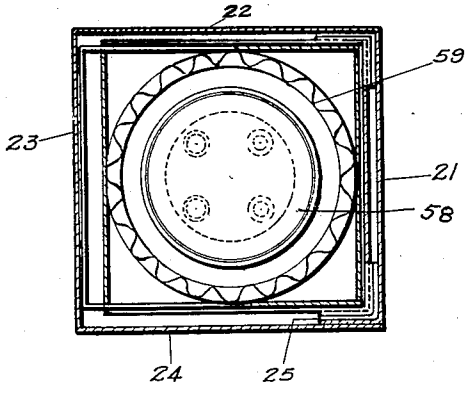
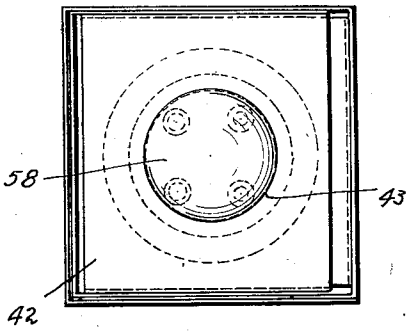


FIG. 4.



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May 27, 1930. H. AMATEL 1,760,678

LOCKING CARTON

Filed July 20, 1927 4 Sheets-Sheet 2

FIG.5.

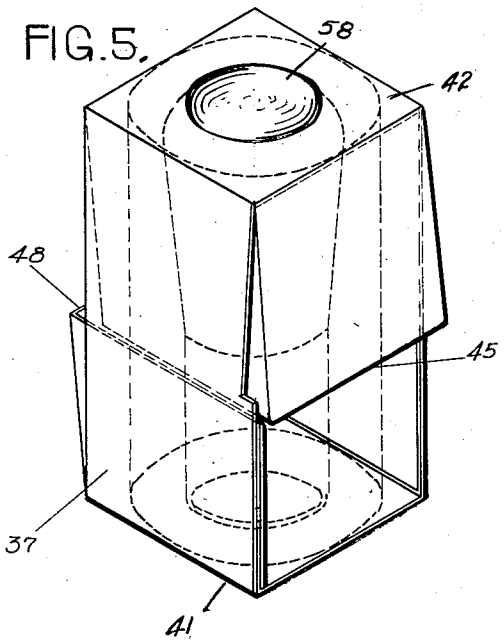


FIG.6.

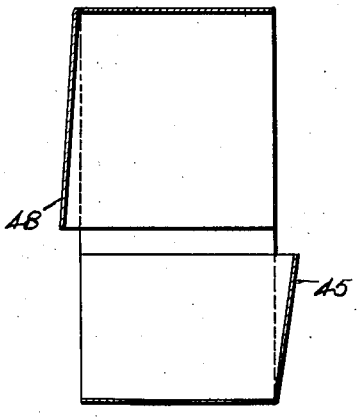


FIG.8.

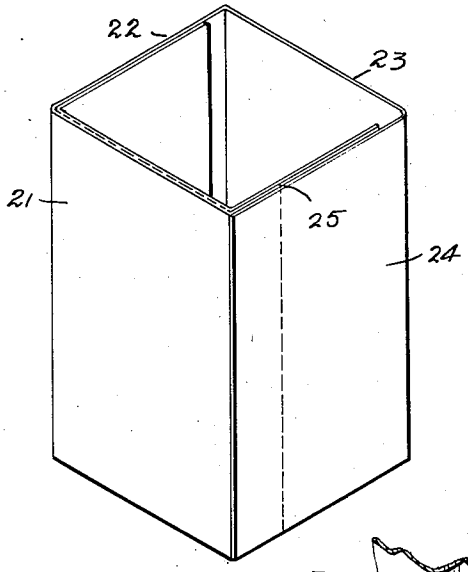
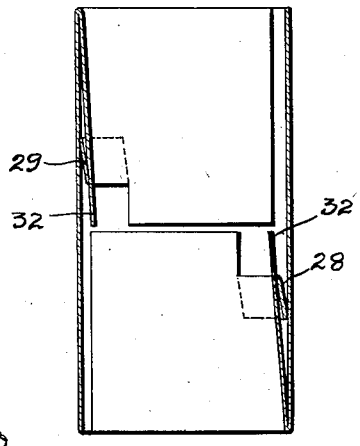


FIG.7.



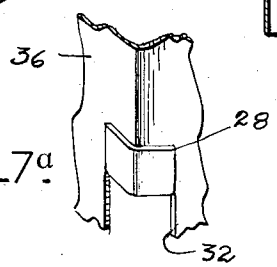


FIG.7a.

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May 27, 1930. H. AMATEL 1,760,678

LOCKING CARTON

Filed July 20, 1927 4 Sheets-Sheet 3

FIG. 9.

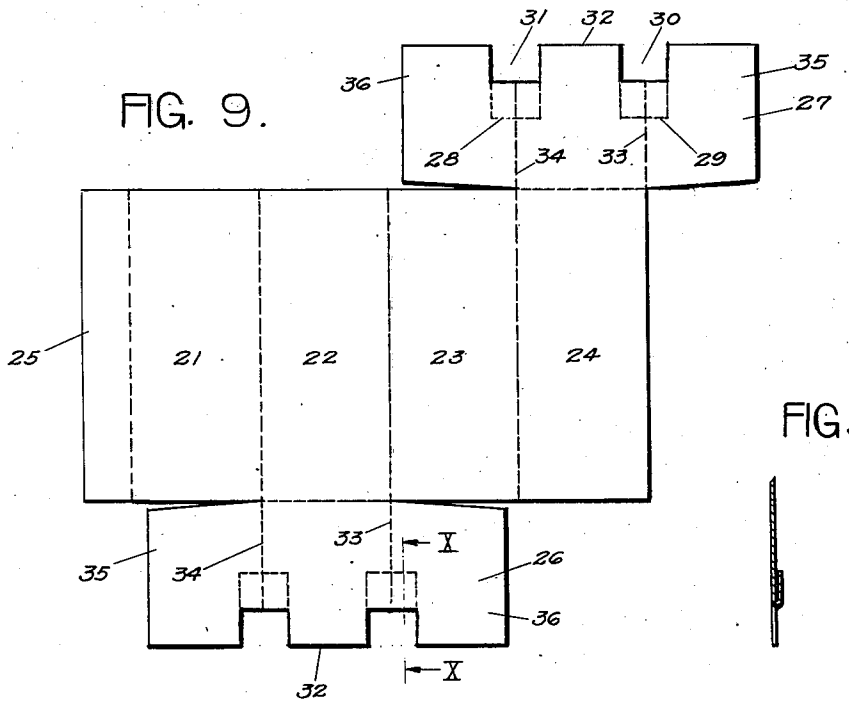
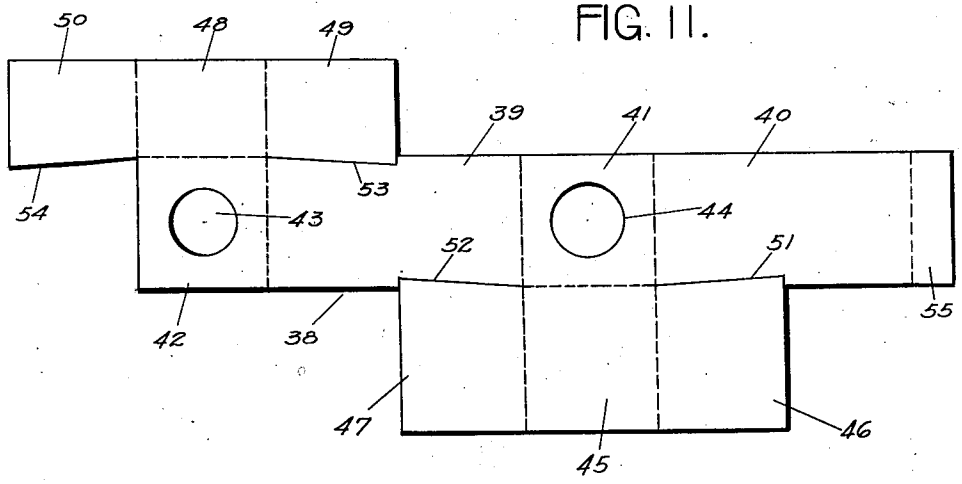


FIG. 10.

FIG. 11.



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May 27, 1930. H. AMATEL 1,760,678

LOCKING CARTON

Filed July 20, 1927 4 Sheets-Sheet 4

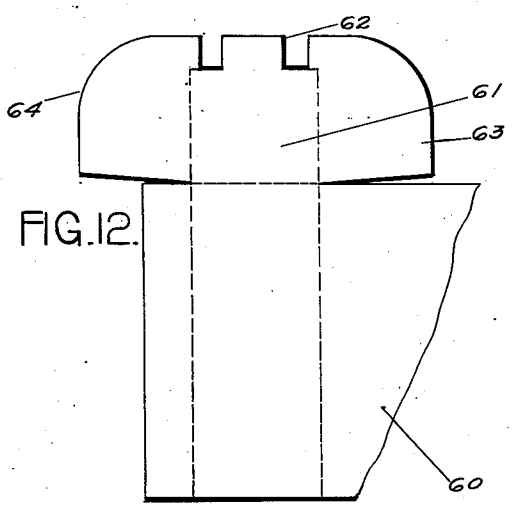


FIG. 12.

FIG. 13.

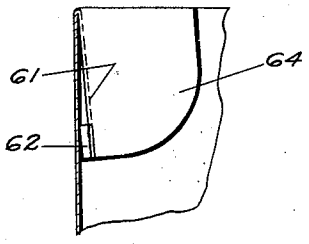


FIG. 14.

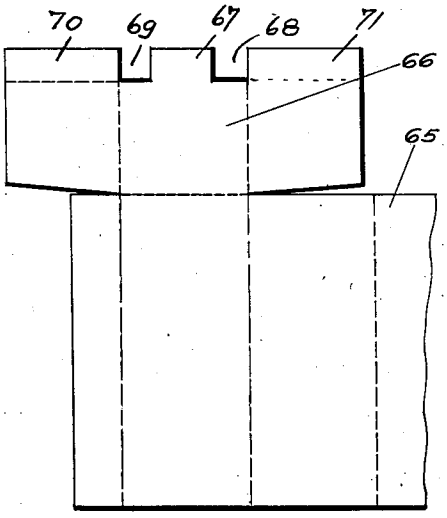
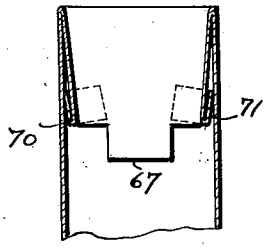


FIG. 15.



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Patented May 27, 1930

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UNITED STATES PATENT OFFICE

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LOCKING CARTON

Application filed July 20, 1927. Serial No. 207,089.

This invention relates to a carton or supporting container for fragile articles such as radio tubes and the like.

An object of the invention is to provide a container of simple construction for resiliently supporting an article and for locking the article therein against removal.

Another object of the invention is to provide a simple and effective carton in which an article may be enclosed and locked against removal without visible evidence appearing on the carton.

A further object of the invention is to provide a carton having closures adapted to be locked to prevent removal of the article without a destruction of the locking means.

Other objects and advantages of the invention will be apparent from the following description.

In the manufacture of radio tubes, it has been found that when such tubes are placed in a carton and sold, it often happens that unscrupulous intermediate selling agents will remove the article and substitute therefor one of inferior or defective character.

It has been proposed to provide a carton which might be sealed by an adhesive covering but it is desirable to be able to test the article, as for example, a radio tube, without removing the same from the container. Furthermore, it is an advantage to be able to have visible indication of the operativeness of the article as by the light emitted from the filament when the device is tested without making it necessary to remove the article from the packing.

In addition to the above, a carton containing an article such as a radio tube must be so constructed as to resiliently support the tube to prevent breakage during impacts in the general handling or distribution.

The present invention provides a carton composed of an inner and outer member, the inner member being constructed to receive and support a tube and adapted for insertion into the outer member. When a tube is positioned in the inner member, the same may be inserted in the outer member and means associated with both members operate to lock the inner member from removal but permit the same to have relative movement within the outer member. By reason of this construction, a tube may be placed in a carton and wholly enclosed by the outer member or casing and may be moved longitudinally thereof so as to expose the contact members of the tube to permit the same to be applied to a socket for the passage of electrical current through the device. The construction is so arranged that the upper portion of the tube is also exposed so that a visible indication may be had as to the lighting of the filament.

Radio tubes enclosed in containers constructed in accordance with the present invention, although capable of being tested, are locked against removal since upon insertion of the inner member into the outer member, suitable projections or obstructions on both members become automatically engaged and prevent a removal of the article without a destruction of the container.

The invention will be more fully understood by reference to the accompanying drawings in which:

Fig. 1 is a vertical cross-section view of a carton made in accordance with the present invention in which a radio tube is positioned and showing the said tube with the contact portions thereof within the enclosure of the outer portion of the carton;

Fig. 2 is a sectional view of the carton shown in Fig. 1 but only partly in section and shows a radio tube with the contact pins projected;

Fig. 3 is a view taken on line III—III in Fig. 1;

Fig. 4 is a top view of the carton;

Fig. 5 is a perspective view of the inner casing for receiving an article for insertion into an outer casing;

Fig. 6 is a vertical cross-sectional view of the inner casing;

Fig. 7 is a vertical cross-sectional view of the outer casing;

Fig. 7—A is a fragmentary perspective view showing a separator member for holding a locking member away from the wall of the carton;

Fig. 8 is a perspective view of the outer casing;

Fig. 9 shows a blank from which the outer casing is formed;

Fig. 10 is a section taken on line X—X in Fig. 9;

Fig. 11 shows a blank from which the inner casing is formed;

Fig. 12 shows a modified construction of the locking means for the outer casing;

Fig. 13 is a sectional detail view of the locking means shown in Fig. 12;

Fig. 14 is another modification of the locking means; and

Fig. 15 is a cross-sectional detailed view of a carton showing the locking means illustrated in Fig. 14.

A selected embodiment of the invention may include an outer casing 20 which as shown in Fig. 3 is of tubular form and includes side walls 21, 22, 23 and 24; the wall 21 having an extension 25 glued to the inner side of the wall 24. The walls 22 and 24 as shown in Fig. 9 are provided with portions 26 and 27 respectively; each of these portions is provided with members 28 and 29 which are folded so as to leave apertures 30 and 31, thereby leaving a projection 32. This projection as will be later described, serves to engage with a member on the inner casing which slidably supports a bulb.

Portions 26 and 27 are each provided with scorings 33 and 34 so that when the blank is formed, the members 28 and 29 will be creased centrally and form support member disposed in the corners of the carton to hold the projection 32 away from the wall thereof. It will thus be seen that when the carton is set up the portions 26 and 27 which are scored at 33 and 34 will be provided with flaps 35 and 36 which will be disposed adjacent to the inner walls of the carton, i. e., the flap 35 will be disposed against the wall 21 while the flap 36 will be disposed against the wall 23. When the outer casing of the carton is, therefore, assembled and the extension 25 is glued to the edge of the wall 24, the portions 26 and 27 will be so positioned as to provide the projection 32 disposed in opposite relation and spaced away from the wall thereof.

An inner casing 37 is provided in which a bulb is disposed for insertion into the outer casing. This casing is formed from a blank 38 shown in Fig. 11; the blank is so constructed as to provide a housing composed of side walls 39 and 40 and upper and lower platforms 41 and 42 respectively. The lower platform is provided with an aperture 43 through which the contact members of the radio tube may project. The platform 41 is provided with an aperture 44 to receive the upper portion of a bulb which projects slightly through the platform to be retained thereby.

The platform 41 is provided with an extension 45 having brace-members 46 and 47 integral therewith. The platform 42 is provided with an extension 48 having brace-members 49 and 50 integral therewith. The brace-members 46 and 47 are formed so as to have inclined edges 51 and 52 and the brace-members 49 and 50 are formed with inclined edges 53 and 54.

When the blank for forming the inner casing is set up, it is folded along the scored portions indicated in dotted lines so that when a housing is provided by folding, it may be secured by gluing a flap 55 to an edge of the side wall 40. The brace-members may then be folded inwardly and by reason of the inclined edges thereof, the portions 45 and 48 will project outwardly from the side walls of the housing (see Fig. 5).

An article such as a radio tube, indicated by reference numeral 56 may be positioned in the housing 37 so that the contact members 57 of the tube will project from the platform 42 of the housing and the upper end 58 of the bulb will be disposed in the aperture 44 of the platform 41.

If desirable, an intermediate packing 59 may be employed in the form of a corrugated cylinder as shown in Fig. 3 or if desirable, the corrugated packing medium may be a tube of rectangular transverse cross-sectional form so as to fit the inner housing.

It will be evident that when the inner casing 37 is formed, a radio tube or like article may be readily inserted therein. This casing is then inserted into the outer casing and moved until the extensions 45 and 48 pass over the projections 32. These projections being held outwardly by members 28 and 29 serve to engage the extensions 45 and 48 if the inner case is moved for removal from the outer casing. Thus the inner casing is locked in position but at the same time, is movable a limited distance.

Normally, the inner casing is so disposed with respect to the outer casing that a radio tube will be fully protected by the outer casing as during transportation. When it is desirable, however, to test a tube without moving it from the package, the inner casing may be moved so that the contact pins of the article or radio tube will project from the outer casing, leaving the contact pins free for insertion into a socket for the passage of electrical current through the tube.

It will, therefore, be evident that although the article is securely locked against removal, it may readily be tested without interference from the packing and by reason of the exposed upper end, the tube may be inspected for the passage of current through the filament, as when testing a radio tube.

The foregoing description serves to illustrate a practical embodiment of the invention, but other modifications may be made therein, as for example, a blank may be employed such as shown in Figs. 12 and 13

comprising a sheet of material 60 adapted to constitute the walls of an outer casing. This sheet may be provided with a projection 61 provided with a separator flap 62 and side members 63 and 64. When folded into operative position as shown in Fig. 13, the members 63 and 64 will lie along sides of opposite walls of the casing. The separator member 62 will be bent inwardly so as to separate the projection 61 from a side wall. This provides another form of lock for the same purpose as that shown in Fig. 1.

Another form of locking means which will operate with the inner casing is shown in Figs. 14 and 15 in which a blank 65 may be used for the walls of the casing and a projection 66 may be integral therewith.

The projection 66 may have an extension 67 disposed between two cut outs or slots 68 and 69 to provide extensions 70 and 71. When the projection 66 is bent inwardly as shown in Fig. 15, the extensions 70 and 71 may be bent to hold the extension 67 away from the inner wall of the carton and thus provide a locking member for engagement with one of the members 45 or 48 on the bulb holder or inner casing.

Although a preferred embodiment of the invention is shown and described herein, it is to be understood that modifications may be made therein without departing from the spirit and scope of the invention as set forth in the appended claims.

What is claimed is:

1. A radio tube carton comprising resilient supporting means movable longitudinally thereof for holding a tube within the carton, means for limiting the degree of movement of said supporting means within said carton, and means for locking said supporting means to prevent removal of said tube.

2. A radio tube carton comprising an outer casing, an inner casing disposed within and movable longitudinally of said outer casing, means carried by said inner casing for supporting a radio tube and means for limiting the degree of movement between said casings.

In testimony whereof, I have hereunto subscribed my name this 19th day of July, 1927.

HAROLD AMATEL.