

Aug. 2, 1938.

J. GOLISANO

2,125,716

CONTAINER

Filed June 26, 1936

3 Sheets-Sheet 1

Fig. 1

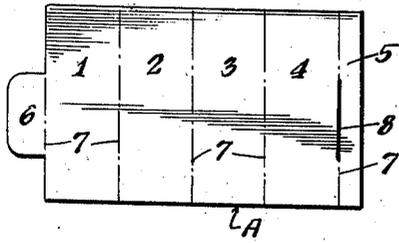


Fig. 2

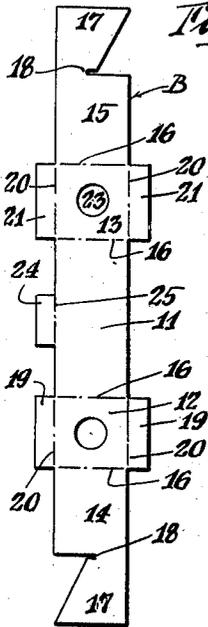


Fig. 3

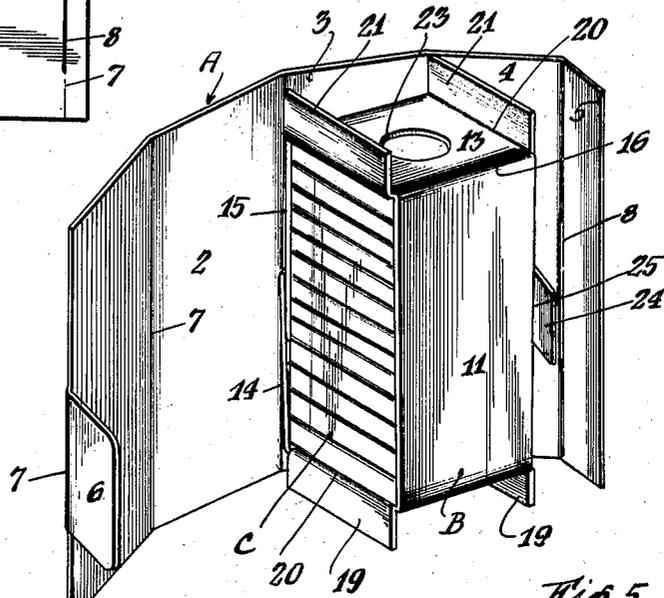


Fig. 4

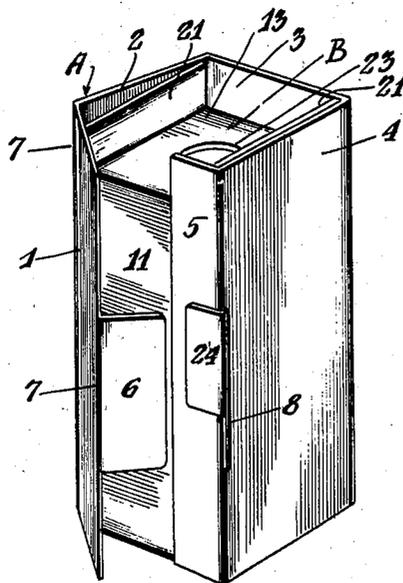
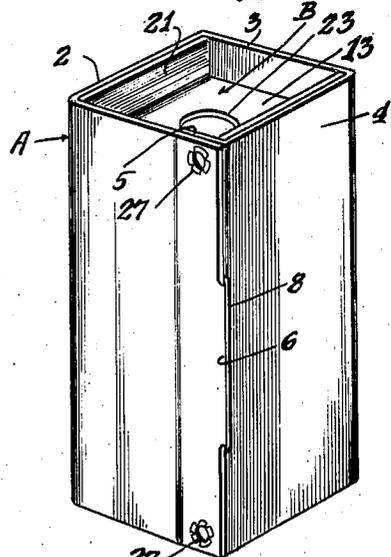


Fig. 5



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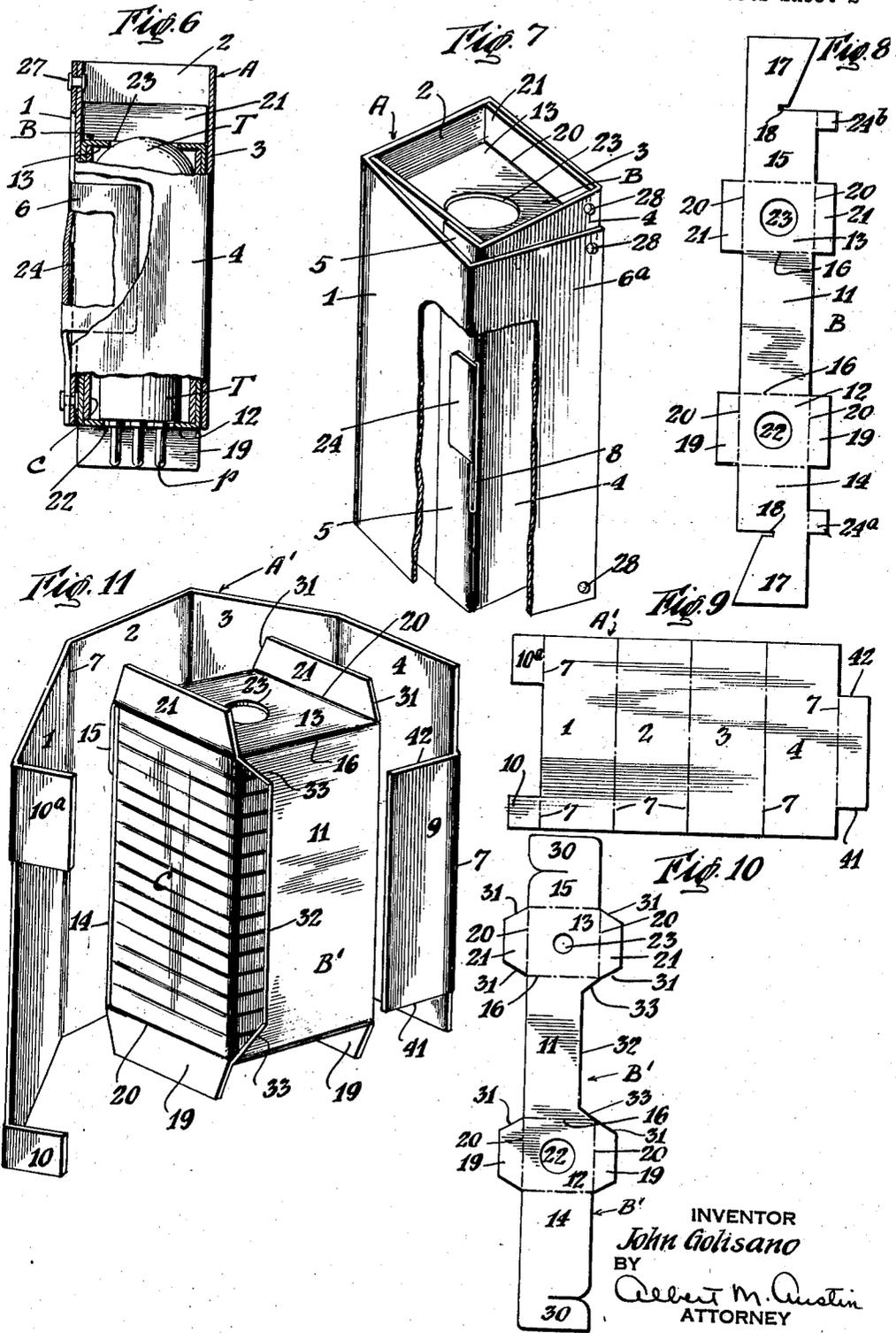
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3 Sheets-Sheet 2



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Fig. 12

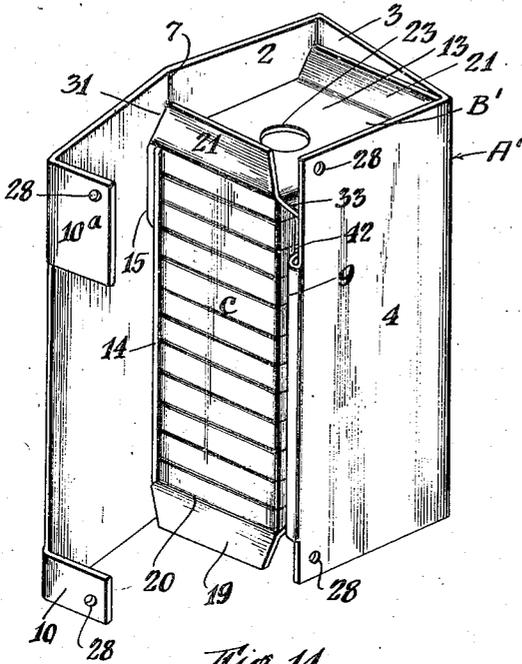


Fig. 13

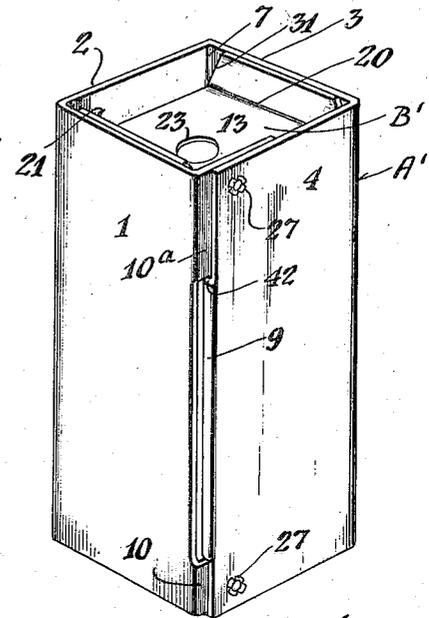


Fig. 14

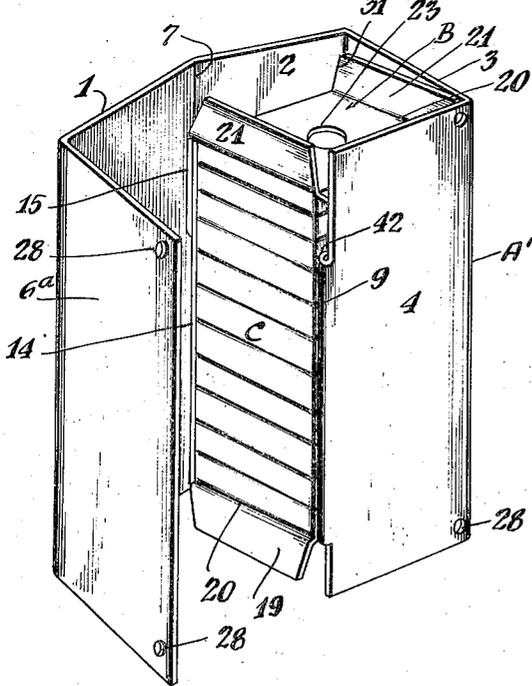
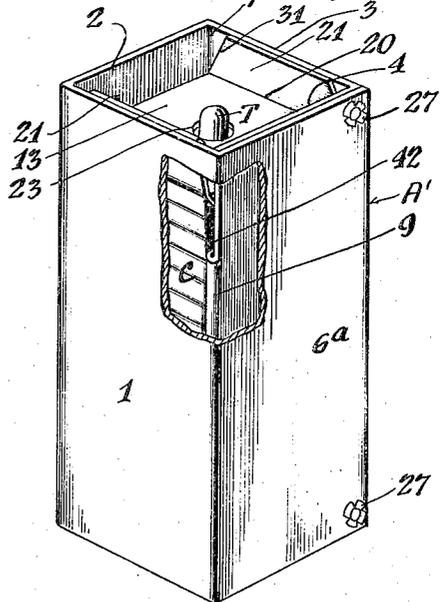


Fig. 15



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UNITED STATES PATENT OFFICE

2,125,716

CONTAINER

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Application June 26, 1936, Serial No. 87,335

9 Claims. (Cl. 229—6)

This invention relates to containers, and more particularly to containers for radio tubes, electric light bulbs and similar fragile articles which must be protected against injury and damage during shipment, storage and display, and yet permit test of the articles after packaging and before sale to the consumer and user without requiring removal thereof from the container.

It is generally customary to test radio tubes, electric light bulbs and like fragile articles immediately prior to the delivery of same to the customer or user, by the application of the test end of the article to a suitable plug or socket to determine whether the article is in first class operative condition. The container constructed in accordance with this invention permits such test to be quickly and readily performed without removing or disturbing the article from its sealed position within the container. The container is furthermore constructed to protect the delicate and fragile instrument from damage as a result of shock delivered to the container. The container is so constructed as to make it impossible to remove the article from the container without mutilating the container itself or otherwise leaving visible evidence of tampering.

One object of this invention is to provide a container especially adapted to house and contain a radio tube, electric light bulb, or similar fragile article, which fully protects the delicate instrument from injury as a result of external shock, which permits rapid ejection of the article for test purposes, and which when the article is ejected will permit the quick and ready insertion of the test end of the article into a test socket.

Another object of the invention is to provide a container for fragile articles which permits a limited telescopic movement of the article within the container to permit test thereof, which will effectively prevent removal of the article packed therein without leaving visible and tell-tale evidence of tampering, which is provided with means to support the article away from and out of contact with the supporting surface on which the container rests, and which insures delivery of the article to the customer as originally packed in the container and in first class condition.

Another object of this invention is to provide a container for fragile articles, which can be inexpensively manufactured, assembled and packed substantially entirely by automatic machinery and which may be made up in a variety of attractive designs and patterns.

Other objects of this invention will become apparent as the disclosure proceeds.

In order that a clearer understanding of my invention may be had, attention is hereby directed to the accompanying drawings, forming a part of this application and illustrating certain possible embodiments of my invention.

Referring to the drawings:

Fig. 1 is a face view of a blank which has been suitably cut and scored to form the outer sleeve of the container;

Fig. 2 is a face view of an extended blank suitably cut and scored to form the article-supporting member which slides within the outer sleeve;

Fig. 3 is a perspective view of the inner member surrounding and enclosing the article with the outer sleeve in position to be applied thereto;

Fig. 4 is a perspective view of the container showing the outer sleeve thereof in the process of being applied;

Fig. 5 is a perspective view of the container as it appears when completely assembled;

Fig. 6 is a side view of the assembled container showing a radio tube packed therein ejected in position for testing, certain parts being broken away to illustrate certain features of the construction;

Fig. 7 is a perspective view of a container having an outer enclosure sleeve of somewhat modified form;

Fig. 8 is a face view of a blank from which may be formed an article-supporting member of somewhat modified form;

Fig. 9 is a face view of a blank from which an outer sleeve of somewhat modified form may be assembled;

Fig. 10 is a face view of a blank from which an article-supporting member of further modified form may be assembled;

Fig. 11 is a perspective view of the article-supporting member formed from the blank shown in Fig. 10, applied to the article packed within the container, the outer sleeve formed from the blank shown in Fig. 9 being shown in position to be applied to the article-supporting member;

Fig. 12 is a perspective view of the container showing the outer sleeve thereof in the process of being applied to the inner article-supporting member;

Fig. 13 is a perspective view of the container formed from the blanks shown in Figs. 9 and 10 as it appears when fully assembled;

Fig. 14 is a perspective view of a container having an outer sleeve of further modified form

about to be applied to the assembled article-supporting member; and

Fig. 15 is a perspective view of the container shown in Fig. 14 as it appears when fully assembled, certain parts being broken away to illustrate certain features of the construction.

Similar reference characters refer to similar parts throughout the several views of the drawings and specification.

In accordance with this invention, the radio tube, electric light bulb, or like fragile article T is preferably contained in a tubular inner shell C which may be formed of a corrugated paperboard or other material designed to protect the article against damage as a result of exterior shock. The inner shell C and the article T contained therein is supported by an inner supporting member B which may be formed from the blank shown in Fig. 2. The article T, shell C and supporting member B are encased and enclosed in an outer box or sleeve which may be formed from the blank A shown in Fig. 1. The blank A may comprise side wall panels 1, 2, 3 and 4 defined by the score lines 7 which score lines form the corners of the rectangular box. A tab or ear 6 hinged to the free edge of the side wall panel 1 along the score lines 7 is adapted to be inserted into a corresponding guide slit 8 positioned in line with the score lines 7 which define the securing section 5 from the side wall panel 4.

The article-supporting member formed from the blank B shown in Fig. 2 comprises a side wall portion 11 and end wall portions 12 and 13 hinged to the side wall 11 along the score lines 16. The test end of the article T may be positioned to rest upon the end wall portion 12, with the test portions or prongs p extending through a suitable opening 22 in the end wall portion 12. The end wall portion 13 is arranged to overlie the other end of the article and, if desired, an opening 23 may be provided therein to assist in centering the article within the supporting member B. Side wall portions 14 and 15 hinged to the opposite side edge of the end wall portions 12 and 13 respectively along the score lines 18 together form a second side wall for the article-supporting member B. The side wall portions 14 and 15 are each provided with a complementary hook portion 17 which may be interlocked together in the manner shown in Fig. 3. If desired, a slot 18 of limited extent may be provided at the base of each hook portion 17 to insure positive interlocking action. Preferably, the hook portions 17 are connected so as to lie against the inside face of the side wall-forming portions 14 and 15 so that the outside face of the end wall-forming portions 14 and 15 present a smooth and substantially uninterrupted outer surface. Flaps 19 oppositely arranged and hinged to the end wall portion 12 along the score lines 20 are bent outwardly to provide supporting legs at one end of the container. Similar oppositely arranged flaps 21 hinged to the end wall portion 13 along score lines 20 may also be bent outwardly as shown in Fig. 3 to provide article-supporting legs at the opposite end of the container.

The package is assembled by inserting the article T in the tubular inner protective sleeve C. The test portions p of the article are then inserted through the opening 22 provided in the end wall portion 12. The end wall portion 13 is then folded over to overlie and preferably engage the opposite end of the article, and finally the hook portions 17 associated with the side wall-forming portions 14 and 15 are interlocked to-

gether so as to enclose and retain the article T and the inner protective sleeve C therein. A guide ear 24 hinged to the side wall 11 along the score line 25 is then inserted into the guide slot or slit 8 provided in the outer sleeve forming blank A. The sleeve-forming blank A is preferably applied to the article-supporting member B in such a manner that the securing flap 5 thereof overlies the uncovered portion of the inner protective shell C, as clearly shown in Fig. 3. The outer sleeve-forming blank is then wrapped around the article-supporting member B, the overlapping flap 5 is bent to seat against the exposed face of the inner protective shell C, the guide tab 24 arranged to overlie and seat against the outside face of the securing flap 5 and, finally, the connecting ear 6 is inserted into the slot 8 so as to overlie and cover the guide tab 24, as shown in Figs. 4 and 5 of the drawings. The container is sealed by the application of the eyelets or rivets 27 which extend through the overlapping side panel 1 and the securing flap 5. The rivets or eyelets 27 are preferably secured adjacent the respective ends of the outer sleeve and are so made and constructed that they cannot be removed without cutting, mutilating or otherwise damaging the surrounding paperboard material so as to leave telltale evidence of tampering.

It will be noted that when the container is thus assembled the article-supporting member B is permitted to freely slide within the outer sleeve a limited distance defined by the length of the slit 8 and the length of the guide ear 24 inserted therein. The cooperating guide ear 24 and slit 8 should be so dimensioned as to permit the article-supporting member to be moved from one extreme position wherein the article will be supported by the supporting legs 19 and 21 when the container is positioned to rest on either end thereof, and at the other extreme position to permit full ejection of the test portions p of the article and permit the supporting legs 19 to swing outwardly so as not to interfere with the efficient and effective testing of the article. When the securing hooks 17 are so interlocked as to lie against the inside face of the side wall-forming portions 14 and 15, the outer surface of the side wall-forming portions 14 and 15 present a smooth and substantially uninterrupted surface which permits free, unhindered and unobstructed sliding movement of the inner supporting member B within the sleeve A. It will also be noted that when the inner article-supporting member B is arranged relative to the outer sleeve A, as shown in Figs. 3, 4 and 5, the eyelets or rivets 27 may be applied by automatic machinery in common use without interference from the article-supporting legs 19 and 21. The article can be packed in the container quickly and efficiently either by hand or partly or substantially entirely by machine operation. The blanks A and B can be cut and scored by automatic machinery in an economical manner and substantially without waste resulting.

There is shown in Fig. 7 a container having an outer sleeve member of somewhat modified construction. In this construction the sleeve is provided with a full-size side wall panel 6a in place of the tuck-in flap 6, the side wall panel 6a overlying the side wall panel 4. Aligned holes 28 may be punched at convenient points through the end portions of the side wall panels 4 and 6a to receive the eyelets or grommets 27. It will be noted that the guide tab 24 is then closely seated between the securing flap 5 and the inside face of the side

5 wall panel 1 so that it is impossible to insert any instrument therebetween to force the guide tab 24 inwardly through the slot 8 so as to permit removal of the supporting member B and article T contained therein. If the guide tab 24 is deliberately cut off or mutilated, this fact is made clearly evident by reason of the fact that the tube and inner supporting member B can be freely removed from the outer sleeve. A pilfer-proof construction is presented by the container shown in Figs. 5 and 7.

10 There is shown in Fig. 8 a somewhat modified inner supporting member B which is similar to the supporting member shown in Fig. 2 except that the guide ear 24 is formed of two parts 24a and 24b which laterally project from the side wall-forming portions 14 and 15 respectively. When the side wall-forming portions 14 and 15 are connected together by the hook portions 17, the guide ear portions 24a and 24b will substantially abut, and when the tube-supporting member B is inserted within the outer sleeve A the guide portions 24a and 24b are inserted through the guide slot 8 in the manner hereinbefore described in connection with the guide ear 24. This modified construction has considerable merit, for the reason that even though a sharp instrument, such as a knife, were inserted in the sealed package and one of the hooks 17 cut off at the neck portion so as to separate the side wall portions 14 and 15, the article packed therein still could not be removed by reason of the fact that the side wall portions 14 and 15 would be held in assembled position within the sleeve by reason of the fact that the guide ear portions 24a and 24b would still engage the outer sleeve A.

15 There is shown in Figs. 9 to 13 inclusive a pilfer-proof container for fragile articles, of somewhat modified construction. As shown in Fig. 9, the outer sleeve A' is provided with a tongue portion 9 hinged to the free edge of the side wall panel 4 along the score lines 7, and spaced ear portions 10 and 10a extending from the free edge of the side wall panel 1 and hinged thereto along the score lines 7. The overall length of the flap 9 is such as to fit between the spaced ears 10 and 10a when the blank A' is assembled in tubular form. The ear portion 10a is preferably somewhat longer in length than the ear portion 10 for a purpose hereinafter described.

20 For the purpose of illustrating the various forms of inner supporting members that may be used, there is shown in Fig. 10 an inner supporting member B' having hook portions 30 at the ends of the side wall-forming portions 14 and 15, of somewhat modified shape. The hook portions here shown are easy to attach together and require a minimum of paperboard to form same. The leg portions 19 and 21 may, if desired, be provided with tapered side edges 31 to avoid the possibility of the legs gripping the adjacent side wall panels forming the outer sleeve and thus obstruct the free sliding movement of the inner article-supporting member within the outer sleeve.

25 In assembling this construction the flap portion 9 is inserted between the side wall 11 of the article-supporting member B' and the inner protective sleeve C, as shown more particularly in Fig. 12. The side panel 4 of the outer sleeve is then positioned to overlie the side wall 11 of the inner member, the side panel 2 to overlie the side wall-forming portions 14 and 15 of the inner member, and the side panels 1 and 3 to overlie the exposed faces of the inner protective shell C. The ears 10 and 10a are inserted between the side wall

panel 4 and the side wall 11 of the inner supporting member, as shown more particularly in Fig. 13. Aligned openings 28 in the end portions of the side wall panel 4 and the ear portions 10 and 10a may be provided to receive the securing eyelets or gimlets 27. As thus arranged the eyelets 27 do not interfere with free sliding movement of the leg portions 19 and 21 of the inner member.

30 It will be noted that the overall length of the guide flap 9, as shown in Fig. 12, is less than the distance between the end wall portions 12 and 13 of the inner member, so as to permit a predetermined sliding movement of the inner member within the outer sleeve. This predetermined movement should be such that when the leg portions 19 rest upon the container-supporting surface, the inside face of the end wall portion 12 will substantially abut the adjacent lower edge 41 of the guide flap 9, and in the other extreme position the inside face of the end wall portion 13 will substantially abut the adjacent top edge 42 of the guide flap 9, in which latter position the test portions p of the article will be fully ejected for test purposes and the leg portions 19 will be positioned to freely swing outwardly over the ends of the adjacent side wall panels 1 and 3. To obtain this result the guide flap 9 is desirably positioned somewhat nearer the test end than the opposite end of the container. The ear portions 10 and 10a should be of sufficient length to substantially abut the respective ends 41 and 42 of guide flap 9 so as to prevent the entry of foreign material or objects into the container. By referring more particularly to Fig. 9, it will be noted that the blanks A' provided with a guide flap 9 at one end thereof and securing ears 10 and 10a at the other end thereof, may be cut from large blanks or sheets of paperboard substantially without waste of material.

35 It may be preferable in certain instances to depress the edge 32 of the side wall 11, as shown more particularly in Figs. 10, 11 and 12, so that the guide flap 9 may be readily inserted between the side wall 11 and the inner protective sleeve C, thus obviating the possibility that the inturned portion of the guide flap 9 adjacent the side wall panel 4 will bulge outwardly beyond the normal corner of the container. The depressed edge 32 of the side wall 11 may be provided with inclined edge portion 33 so that the inner member is not weakened along the score lines 20 by reason of the depressed edge 32.

40 There is shown in Figs. 14 and 15 a container for fragile articles, which may be provided with an inner article-supporting member similar to the article-supporting member shown in Figs. 11 and 12. In the construction here disclosed, however, the securing ears 10 and 10a are eliminated and in place thereof a side panel 6a is substituted, which is adapted to overlie the side panel 4 and completely seal and enclose all portions of the guide flap 9. Aligned openings 28 may be provided adjacent the ends of the side wall panels 4 and 6a through which the eyelets, gimlets, or rivets 27 may be inserted to securely lock the outer sleeve in permanent tubular form. The securing elements 27 may be applied by automatic machinery without interference from the supporting legs 19 and 21.

45 The containers herein described are admirably adapted for the packaging and merchandising of radio tubes, electric light bulbs and like fragile articles which require testing before delivery to the customer. A slight pressure exerted on the top end of the tube will immediately eject the

test portions *p* into exposed position outside of the container so that the same may be quickly inserted into a test socket. The side walls 11 and the side wall-forming portions 14 and 15 of the inner member present substantially smooth outside surfaces so that the same will freely slide a limited predetermined distance only within the outer sleeve. A guide flap or tab for limiting the sliding movement of the inner member may be provided either on the inner member or on the outer member, the guide slot or opening which receives the guide flap or tab being accordingly associated with or provided in or on the other member. The particular arrangement of the inner member and outer member permits the application of the sealing rivets 27 by automatic machinery and without obstruction from the supporting legs 19 and 21 or other parts of the container. The container is so constructed as to permit only a limited sliding movement of the inner member within the outer member, sufficient to permit quick and effective testing of the article, at the same time retaining the article sealed within the container so that it cannot be removed without leaving telltale evidence of tampering. Both the manufacturer and the customer are thus assured that the article originally packed in the container is delivered for use in good condition.

30 While certain novel features of the invention have been understood and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes may be made by those skilled in the art without departing from the spirit of the invention.

35 What is claimed is:

1. A container for a radio tube and the like including, an outer tubular sleeve, an inner tube-supporting member telescoping within said outer sleeve, said sleeve having a slit therein cooperating with a tab extending from said inner supporting member to limit the telescoping movement of said inner member within the outer sleeve, said cooperating means being so arranged as to be inaccessible from outside the container.

40 2. A container for radio tubes and the like including, an outer tubular member, and an inner tube-supporting member adapted to telescope within said outer member, said inner member having end wall portions and side wall portions connecting said end wall portions, said outer member and inner member having a cooperating guide means associated therewith permitting limited telescopic movement of said inner member within the outer member which means cannot be removed or detached to effectuate removal of the tube without leaving telltale evidence of tampering, said guide means including a cooperating flap and aperture associated with said outer tubular member and inner tube supporting member, said flap projecting laterally from one of said members.

55 3. A container for a radio tube and the like including, an outer tubular member, an inner tube-supporting member telescoping within said outer member, a guide slit in said tubular sleeve, a guide tab projecting from said tube-supporting member and extending through said guide slit permitting limited telescopic movement of said inner member within the outer member, and means associated with said outer member cover-

ing and concealing said guide tab so as to prevent unauthorized access thereto.

4. A container for radio tubes and the like including, an outer tubular member having side wall panels forming a container of generally rectangular form, and an inner tube-supporting member adapted to telescope within said outer member, said inner member having end wall portions and side wall portions connecting said end wall portions, said outer sleeve having a tab portion extending from a side wall panel thereof adapted to interlockingly engage with a side wall portion of said inner member to permit limited telescoping movement thereof, and means for sealing said outer member in fixed tubular position which cannot be detached without leaving visible evidence of tampering.

5. A container for radio tubes and the like including, an outer tubular member having side wall-forming panels, and an inner tube-supporting member adapted to telescope within said outer member, said outer member having an integral laterally projecting flap portion adapted to be inserted into an opening in said inner member so as to permit limited telescoping movement only of said inner member within the outer member, and means for permanently sealing said outer member in fixed tubular position.

6. A container for radio tubes and the like including, a tubular outer member, an inner member adapted to contain a tube telescoping within said outer member, a guide ear extending laterally from said inner member projecting through an elongated guide slot in said outer member so as to permit limited telescoping movement of said inner member within the outer member, said outer member having a side wall panel adapted to overlie said guide ear so as to prevent unauthorized release of said guide ear from said guide slot without leaving visible evidence of tampering.

7. A container for radio tubes and the like including, a protective sleeve, an article-supporting member enclosing said protective sleeve, and an outer tubular member enclosing said article-supporting member, said article-supporting member including end wall portions and a side wall portion connecting said end wall portions, said outer tubular member having a guide flap folded around an edge of said article-supporting member and inserted between said inner protective sleeve and said side wall portion cooperating to limit the sliding movement of said inner member in said outer tubular member.

8. A package for radio tubes and the like including, an inner protective shell enclosing the tube, an inner member surrounding said protective shell, and an outer member enclosing said inner member, said outer member having a laterally projecting guide flap integral therewith and engaging said inner member to limit and define the sliding movement thereof.

9. A package for radio tubes and the like including, an inner protective shell enclosing the tube, an inner member surrounding said protective shell, and an outer member enclosing said inner member, said outer member having a laterally projecting guide flap extending from one edge thereof and inserted within and engaging said inner member to limit and define the sliding movement thereof.