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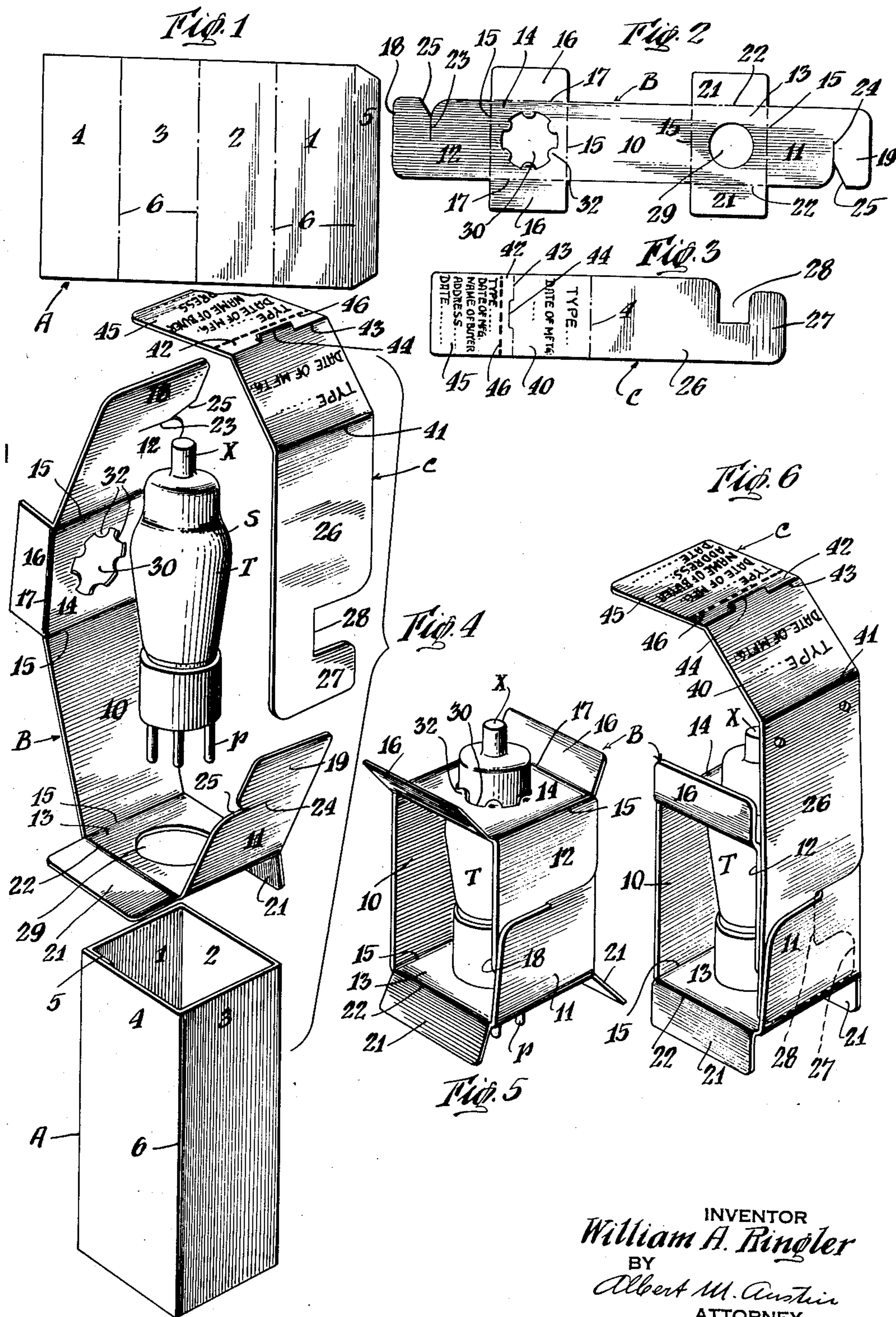
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2,125,313

CONTAINER FOR TUBES AND BULBS

Filed Dec. 4, 1936

2 Sheets-Sheet 1



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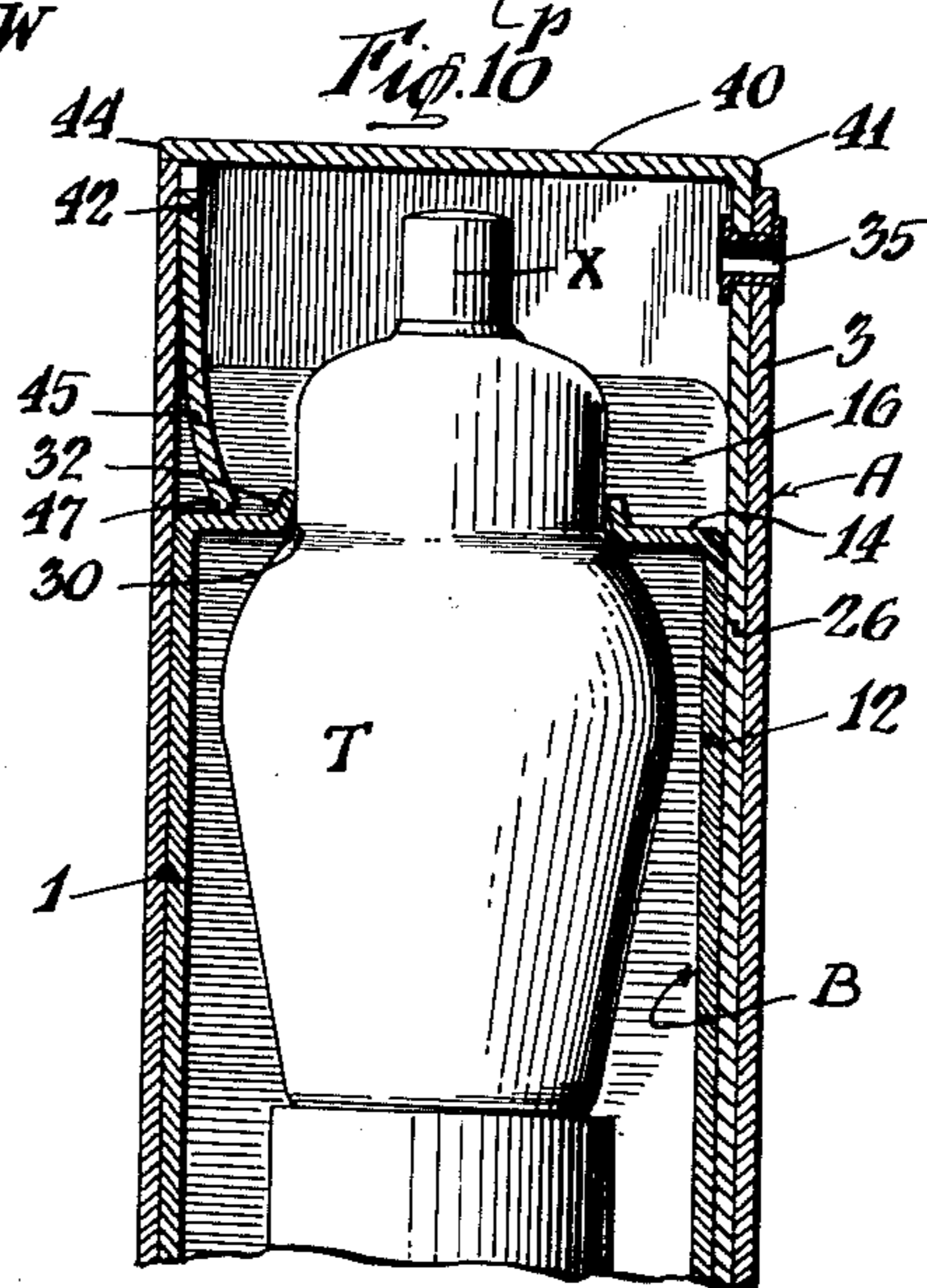
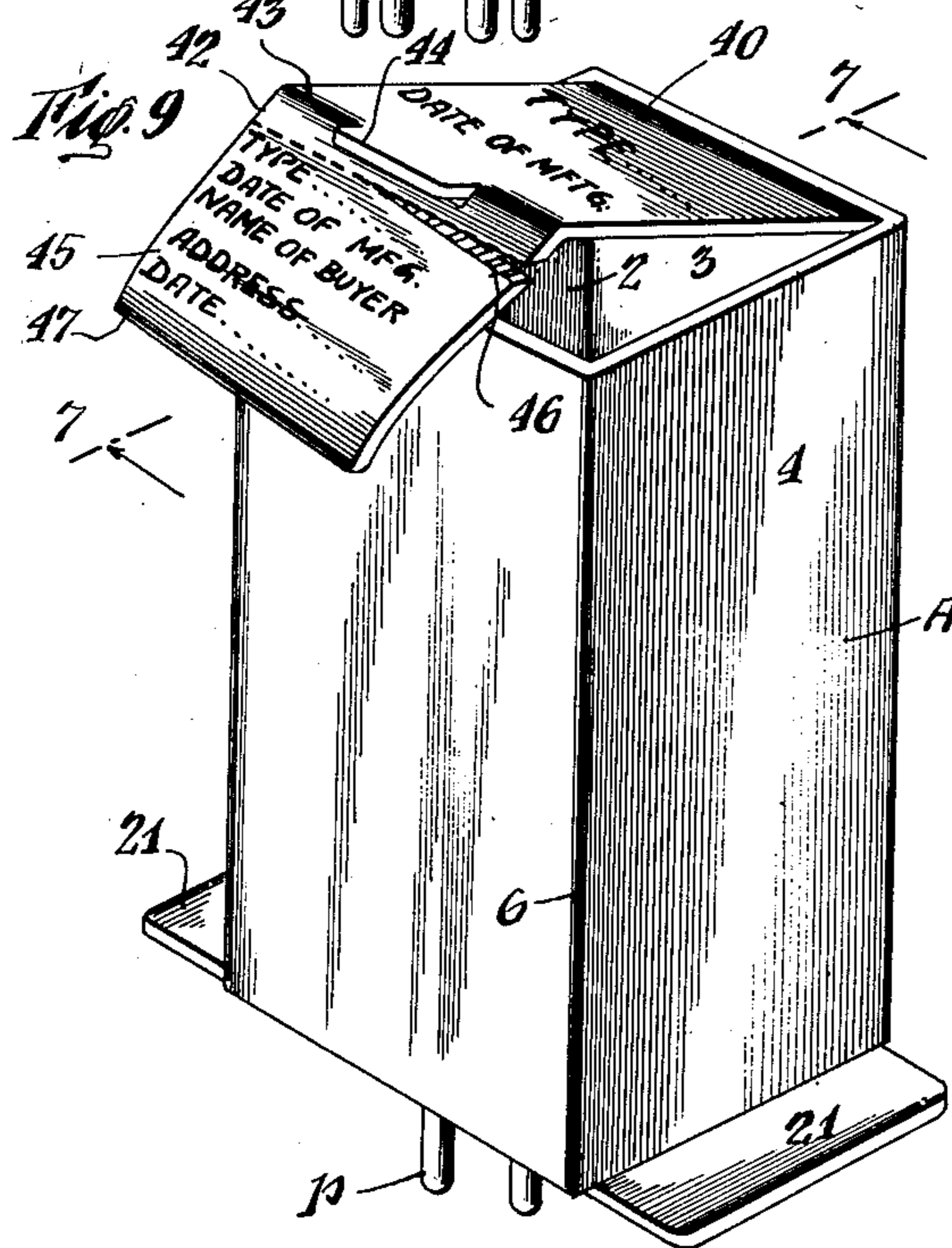
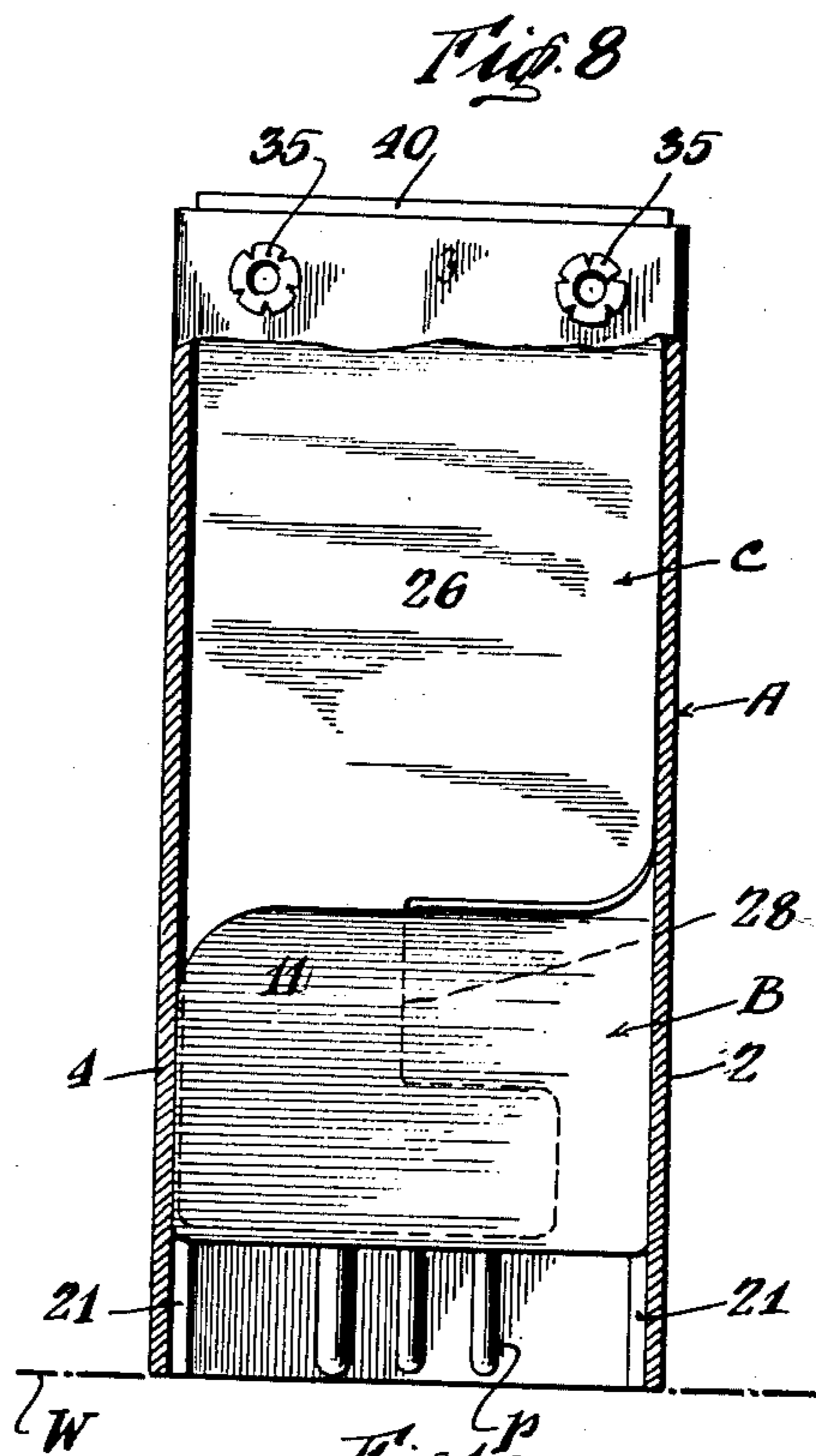
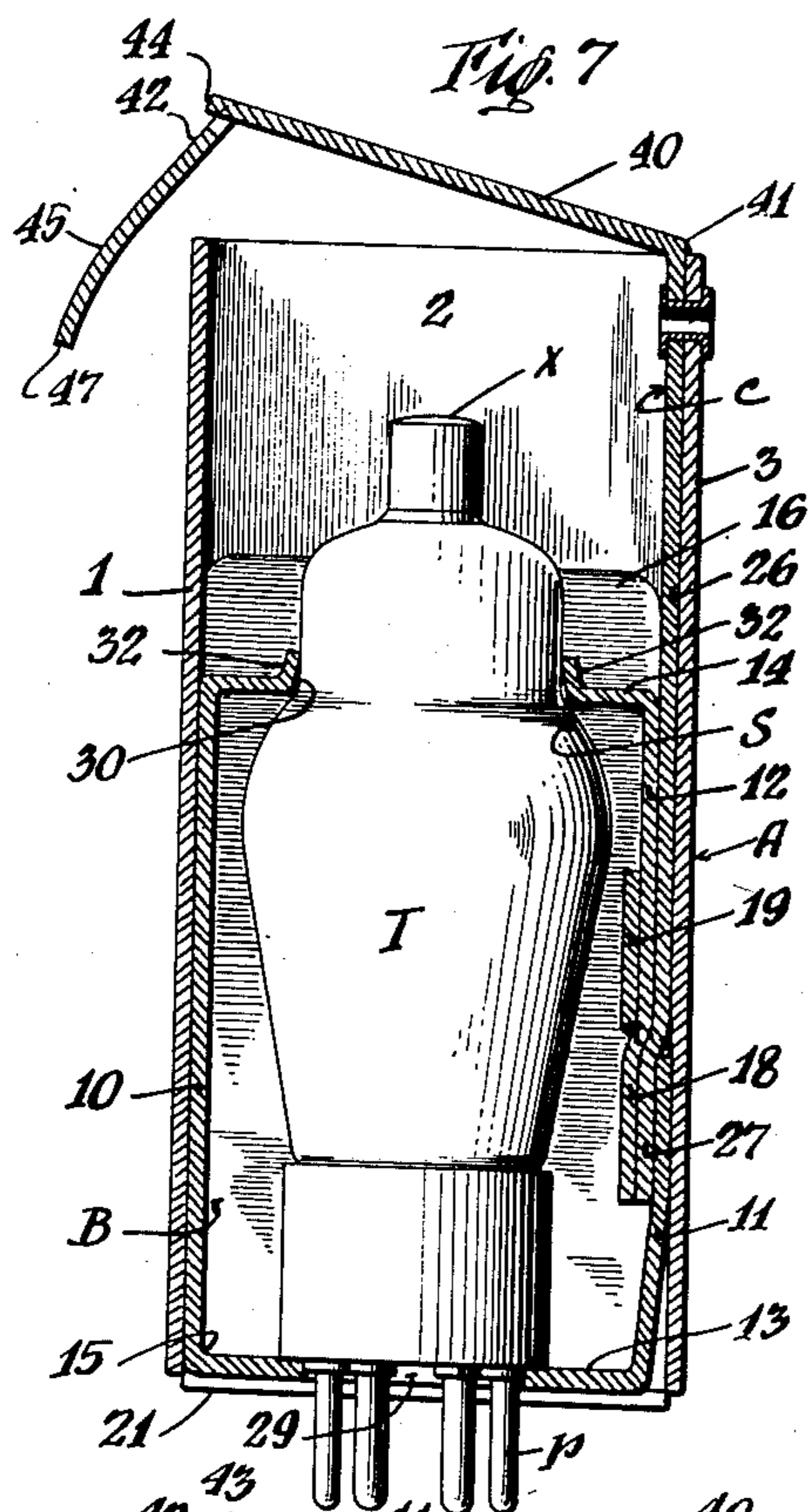
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CONTAINER FOR TUBES AND BULBS

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2 Sheets-Sheet 2



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CONTAINER FOR TUBES AND BULBS

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9 Claims. (Cl. 229—6)

This invention relates to containers for tubes and bulbs and more particularly to containers for radio tubes, electric light bulbs and similar products which are generally examined after packaging and before being passed on to the user.

In accordance with this invention the radio tube, electric light bulb or similar fragile article is pocketed within an inner sleeve which has a limited sliding movement within an outer member. The inner sleeve is so constructed that it can be quickly wrapped longitudinally around the tube and quickly connected together by a simple hooking operation. The end walls of the inner sleeve receive the adjacent ends of the tube through a suitable aperture so arranged as to firmly hold the tube packaged therein against movement. Thus when the inner sleeve is telescoped within the outer tubular member the side walls of the tube are spaced a substantial distance from the surrounding side wall sections of the inner sleeve and outer tubular member, providing an air cushion which protects the tube from injury resulting from exterior shocks delivered to the container. With my improved construction an inner corrugated protective shell surrounding the tube may be eliminated, thus effecting a considerable saving in material and packaging costs.

A further feature of my invention is the provision of an end closure for the outer tubular member, which protects the end of the tube from dust and exterior blows. If desired both ends of the container may be provided with end closures. The end closure may be formed as a part of the outer tubular member. The end closure preferably comprises a closure flap extending over the end of the outer member, the closure flap having a tab extending therefrom. The tab may be so arranged when in closed position as to abut against the inner sliding sleeve and limit or prevent sliding movement of the inner sleeve member until the end closure flap is opened. The tab extension may be of such length as to space the adjacent end of the tube from the end closure flap so as to provide an air cushion therebetween so that blows and shocks directed to the end wall flap will not be transmitted to the fragile article within. Thus the container may be set up in storage or display on either end thereof without damage or injury to the contents.

A further feature of this invention comprises the provision of identification indicia which may be placed on the container and also on the tube package therein. Articles such as radio tubes,

deteriorate to a certain extent with age, and customers are generally desirous of obtaining freshly manufactured tubes. In accordance with my invention provision is made for the placement of the date of manufacture of the tube on the container, such data preferably being placed on the end wall closure or on the insert tab associated with the end wall closure flap. Provision is also made on this tab extension wherein the merchant may write in the name and address of the customer to whom the tube is sold, as well as the date of such sale. The tube is also tested in the customer's presence by inserting the test end thereof in a suitable test socket. This may be done without removing or otherwise disturbing the tube or its mounting within the container. Should the customer thereafter complain that the tube did not give good service in use, the merchant will be able to consult his records written on the tab extension which he had previously torn off from the container at the time the tube was sold. This tab record gives him the date of manufacture and date of sale, complained of and thus he is able to determine whether the tube sold possessed the expected longevity in service, so that if the complaint is justified proper amends can be made. Thus the merchant and the manufacturer are protected against unjustified complaints and in cases where the complaint is justified prompt amends to the customer can be made. Furthermore, a record of the complaint can be kept from the data accumulated from which the manufacturer may know of any inherent weaknesses in his product and be stimulated to further improvement of the same. Considerable saving can be realized if the tab extension upon which the date of manufacture and the customer data are imprinted is formed as a part of the hook device which is attached to the outer tubular member and engages the inner sleeve to limit the sliding movement thereof. The outer tubular member and the inner sleeve can thus be printed with the desired advertising data without regard to the special manufacturing data, and thus can be made up in large quantities. The tab extension having associated therewith the end closure flap and tab extension only need be printed with the special manufacturing and customer data at a relatively low cost. Considerable saving in manufacturing costs can thus be effected.

Various other features and advantages of the invention will be apparent from the following particular description and from an inspection of the accompanying drawings.

Although the novel features which are believed to be characteristic of this invention will be particularly pointed out in the claims appended hereto, the invention itself, as to its objects and advantages, and the manner in which it may be carried out, may be better understood by referring to the following description taken in connection with the accompanying drawings forming a part thereof, in which:

Fig. 1 is an extended view of a prepared blank from which the outer tubular member is formed;

Fig. 2 is an extended view of a prepared blank from which the inner sliding member is formed;

Fig. 3 is a plan view of the hook element which permanently secures the outer tubular member to the inner member and yet permits limited telescopic movement of the inner member sufficient to adequately eject the test end of the tube for test purposes, this hook element also having associated therewith a closure and a tear-off and identification tab device which assists in supporting the tube within the container;

Fig. 4 is an exploded perspective view of the inner member partially surrounding the tube, the hook element and the outer tubular member;

Fig. 5 is a perspective view of the inner member in assembled position around the tube;

Fig. 6 is a perspective view of the hook element attached to the inner member which surrounds the tube;

Fig. 7 is a vertical cross-sectional view through the completely assembled package, showing the test end of the tube ejected for purposes of test, this view being taken along line 7-7 of Fig. 9;

Fig. 8 is a side elevational view of the completed container showing the tube completely housed therein, certain parts being broken away to more clearly illustrate the construction;

Fig. 9 is a perspective view of the fully assembled container showing the test end of the tube in ejected position, this view particularly showing the nature of the closure flap and the tuck-in flap which may be torn off and preserved as a record by the merchant; and

Fig. 10 is a fragmentary perspective view of the upper portion of the container showing the hook element and insert tab cooperating to prevent further movement of the tube toward the closure flap end of the container, certain parts being broken away to illustrate the construction.

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

The container illustrated in Figs. 1 to 10, may comprise generally an outer member A of tubular form within which is telescoped an inner member or strip B which longitudinally surrounds the tube or bulb. The outer member A may be either polygonal or circular, but preferably rectangular, in cross-section. The outer tubular member A may be formed from a single blank of paperboard material as shown in Fig. 1, scored along score lines 6 to define side wall portions 1, 2, 3 and 4 and a glue flap 5, which flap may be fixed to the side wall portion 4 to retain the outer member in tubular form.

The inner member B may be formed from a strip of paperboard material as indicated in Fig. 2 comprising side wall portion 10 and side flap 11 hinged to the end wall portion 13 along the score lines 15. The test end of the tube may be inserted through an opening 29 in the end wall portion 13. Flaps 21, hinged to the end wall portion 13 along the score lines 22, provide leg portions operative to support the test end of the tube out

of contact with the surface *w* upon which the container is vertically supported, as illustrated in Fig. 8. Another end wall portion 14 is also hinged to the side wall portion 10 along the score line 15 and is provided with a side wall flap 12 hinged thereto along a score line 15. The side wall flap 12 is provided with a tongue portion 18 defined by a cut line 23 extending into the side wall flap 12. The side wall flap 11 is also provided with a tongue portion 19 defined by the cut line 24 extending into the flap. The tongue portions 18 and 19 are adapted to interlock when the inner member is assembled around the tube, as illustrated in Fig. 4. The cuts 23 and 24 extend from open mouths 25 shaped to facilitate interlocking connection between the tongue portions 18 and 19. Guide flaps 16 defined by the score lines 17 extend laterally from the end wall portion 14. The end wall portion 14 may also be provided with an opening 30 through which the upper end of the tube T extends, serving to center the tube within the inner member B.

In packaging, the contact end of the article T comprising, for example, the prongs *p* in the case of a radio tube, is inserted through the opening 29 in the wall portion 13. It will be noted by referring particularly to Fig. 7 that the opening 29 is cut to size so as to snugly receive the test end or prongs *p*, so that the lower end of the tube is fixedly secured in position against lateral movement. The side wall 10 is then positioned along one side of the tube and the upper end of the tube is inserted through the opening 30 of the end wall portion 14. It will be noted that the opening 30 has a fringe or scalloped portion 32, which is bendable upwardly as the upper end of the tube is inserted in the opening 30, so as to frictionally grip the upper end of the tube and prevent lateral movement thereof. As thus arranged it will be noted that the end wall portion 14 rests upon the shoulder *s* of the tube, and the upper end of the tube is tightly held against lateral movement. The side flaps 11 and 12 are then wrapped around the article T longitudinally thereof and the tongue portions 18 and 19 are interlocked to retain the inner member in position. It will be noted by referring particularly to Figs. 4 and 7, that when assembled in the manner above described, the side wall portion 10 and the side flaps 11 and 12 are spaced away from the body of the tube and that the openings 29 and 30 in the respective end wall portions 13 and 14 are of such size as to snugly grip the respective ends of the tube so as to prevent lateral movement thereof.

Means are provided to limit the telescoping movement of the inner member within the outer member. The means here referred to may take the form of a hook element as illustrated in Fig. 3, comprising a strip 26 of strong, tough paperboard having a notch or slot 28 cut therein and terminating in a hook or attaching portion 27. As illustrated more particularly in Figs. 6 to 8, inclusive, the hook portion 27 may be inserted beneath the tongue portion 18 of the side wall flap 12 so that the tongue 18 extends through the elongated notch or slot 28. When the inner member with its contents has been inserted into the outer tubular member A and the hook device 26 is permanently secured to the tubular member A by means of a rivet or staple 35, the inner member B, however, is permitted to telescope or slide within the outer tubular member a limited distance which is measured by the length of the slot 28. When the inner member and test

end of the tube are completely housed within the outer member, as shown in Fig. 8, the tongue portion 18 will abut against the upper end of the slot 28 and when the test end of the tube is fully ejected, as illustrated in Fig. 7, the tongue portion 27 will engage the lower end of the slot 28. Thus the tube and surrounding inner member B may be slidably telescoped within the outer member a limited distance only, sufficient to eject the test end of the tube beyond the end of the outer member so as to permit ready insertion thereof into a test socket.

The leg portions 21 extending from the end wall portion 13 are of slightly greater length than the projecting end *p*, so that when the container is supported in vertical position as illustrated in Fig. 8, the leg portion 21 will rest upon the surface *w* and support the test end of the tube spaced therefrom. When the test end of the tube is ejected as shown in Figs. 7 and 9, the leg portions 21 may be swung outwardly and thus freely permit insertion of the test end *p* into a test socket.

The upper end of the container may be closed by means of a closure flap 40 which is hinged to the hook element 26 along the score line 41. The closure flap 40 is provided with a tuck-in flap or portion 42 hinged to the flap 40 along the score line 43. The tuck-in flap 42 is provided with an extension portion 45 defined from the tuck-in portion 42 by a line of perforations 46. The portion 45 can be separated from tuck-in flap 42 along the line of perforations 46, the portion 45 thereafter serving as a record of identification ticket. A lip portion 44 is preferably cut out of the tuck-in flap 42 at the hinge line 43, the cut-out portion 44 being of such dimensions as to rest upon the adjacent side wall 1 of the outer member and support the closure flap 40 in position.

It will be noted that the tuck-in flap 42 and its associated extension 45 are of such length that when the tube T is completely housed within the container, the lower edge 47 of the portion 45 will seat against the end wall portion 14 of the inner member. Thus it will be noted that the inner member is firmly held along opposite sides from further telescoping movement towards the end closure 40. In other words, the hook element 26 definitely limits the telescoping movement of the inner member along one side edge, and the extension or leg portion 45 definitely limits movement of the inner portion along the opposite side edge, so that it is impossible for the extremity *x* of the tube to contact the closure flap 40 or the surface upon which the container might be supported if stood up in an upside-down position.

Thus, it is seen that the tube is completely surrounded with what might be termed a cushion of air, so that external blows delivered to the outer container cannot be transmitted to the fragile tube T. As above pointed out, the openings 29 and 30 are of such limited size as to rigidly retain the tube T in fixed position and against lateral shifting, and the tube is spaced from the outer containing walls 1, 2, 3 and 4 by an air cushion which surrounds the tube. My improved construction permits elimination of a corrugated enclosure or protective shell within which the tube is first encased. Thus, my improved construction permits a considerable saving in material, labor and packaging costs, and at the same time fully protects the tube against damage through shocks transmitted to the container from without. It will also be noted that the inner member B is definitely limited in its sliding movement

toward the end closure 40 by the hook element 26 and the tab portion 45, which serve as supporting legs for the tube T and inner member B should the carton be stood up in upside-down position. It will also be noted that the tab extension 45 is of such width as to frictionally engage the inside faces of the flap 16 of the inner member, thus frictionally retaining the closure flap 40 in closed position. The extension 45 is of such length that when the closure flap 40 is pushed down into seating position, as shown in Fig. 10, the free end of the extension 45 will curl inwardly to a slight extent so as to firmly brace itself and seat against the end wall portion 14 of the inner member, so that when the container stands in upright position and the tube is supported by the legs 21 resting on the horizontal supporting surface *w* the tube is definitely held in fixed position within the container and will not rattle or shake therein.

The container above described may be quickly assembled and packed with few operations. In assembling the package, the test end *p* of the tube T is inserted through the opening 29 of the end wall portion 13, the side wall portion 10 positioned lengthwise of the tube and the upper end of the tube inserted through the opening 30 so that the end wall portion 14 will rest upon the shoulder *s* of the tube and the scalloped portion 32 will frictionally engage the tube. The tongues 18 and 19 associated with the side wall portions 11 and 12 are then interlocked together so as to retain the tube enclosed within the inner member. The hook device shown in Fig. 3 is then hooked under the tongue portion 18, as shown in Fig. 6, and finally the inner member with its contents is telescoped within the outer member A. A rivet 35, staple or other permanent securing means, which cannot be detached without leaving visible evidence of tampering, is finally fixed to the tongue device 26 and the adjacent side wall of the outer member, as illustrated in Figs. 7 and 8. The rivet 35 grips and clamps the adjacent paperboard material in such a manner that the rivet cannot be removed from the package without actually tearing or destroying parts of the container or otherwise leaving visible evidence of tampering.

If a staple is used as a securing means, it is preferable to provide a staple formed from a metal which is brittle to the extent that if an attempt is made to rebend the prongs (associated with the staple and which grip the paperboard) so as to permit removal of the staple, the prongs will break off so that the staple cannot be replaced. The staple preferably carries the manufacturer's insignia or mark, so that another staple cannot be substituted without clearly indicating that the previous staple has been removed and the package tampered with. The test end of the tube can, however, be freely ejected as often as desired without weakening or breaking the operating parts of the container. After the tube is in position within the outer container, the tuck-in tab 42 and its associated extension 45 is inserted into the outer member and the edge 46 of extension 45 brought into seating contact with the end wall portion 14.

It has been found highly desirable to provide some record whereby the merchant who sells the tube will know the name and address of the person to whom it is delivered, the date of manufacture of the tube, and also the date of sale. Radio tubes deteriorate to a certain extent with age. If the tube has been in storage for a long

period of time, it is possible that it is not as efficient in operation as a freshly manufactured tube. Customers, therefore, often desire to know when the tube was actually manufactured and shipped to the merchant, and the merchant likewise desires to know the date of sale of the tube to the customer so that if the merchant later receives a complaint from the customer concerning the tube, he will be able to make a fair determination of whether the tube has lasted its usual expected life under ordinary conditions of use by the customer. Customers occasionally demand a new tube, free of charge, complaining that the tube previously purchased was defective and did not last in use its normal expected life. The merchant as well as the manufacturer must have some yardstick to determine whether the complaint has a reasonable basis, so that all justified complaints can be honestly and fairly adjusted in a manner to protect the customer as well as the merchant and manufacturer.

I have solved the above difficult problem by providing on the tab extension 45 certain printed information which can be further filled out by the merchant, and which permits tearing off of the extension 45 along the perforated line 46 so that the extension 45 provides a ticket which the merchants can keep as a permanent record. Briefly, each tube T has stamped or printed thereon a code number which identifies the type or tube and other information with regard to its manufacture. The extension 45 also has printed thereon the date of manufacture of the tube which, if desired, may also be printed upon the closure flap 40 and, if desired, also upon the tube T in an appropriate location. The extension 45 also has a legend wherein the merchant may write in the name and address of the customer and also the date of sale of the tube to the customer. This information can be written on the extension 45 immediately before or immediately after it is torn off from the insert tab 42, which information is preferably noted on the ticket 45 at the time of sale. The merchant then retains the ticket 45 as a part of his permanent record. Should a complaint from the customer regarding the life or quality of the tube be later received, the merchant as well as the manufacturer will know the type of tube sold, the date of its manufacture, the customer's name and address, and the date of sale to the customer. With this information the merchant as well as the manufacturer can determine whether the complaint is legitimate and justified. Through this information the manufacturer will also know the lasting qualities of the tube in use and can actually spot such defects or weaknesses in the product so that he will readily know in what respects the tube should be improved upon, if such improvement is necessary or desirable. Thus, means is provided by which complaints can be promptly taken care of and adjusted in accordance with their merit to the mutual protection and satisfaction of the customer, the merchant and the manufacturer alike.

The flap closure 40 also protects the tube from dust and contamination and prevents shocks being delivered to the upper end thereof which projects through the end wall portion 14. The end wall portions 13 and 14 and the openings therein are so formed and constructed as to rigidly support the tube within the inner sliding member at all times in spaced position with reference to the side walls 1, 2, 3 and 4 of the outer tubular member. Thus the tube is fully protected against

damage through external shocks. Further, a saving is effected through the elimination of the corrugated protective shell which heretofore has been used to surround the tube positioned within the inner sliding member. It will be here noted that the cost of the inner corrugated shell as well as the additional cost in labor of assembling the corrugated shell around the tube is saved. The container is made of few parts which can be quickly assembled substantially entirely by automatic machinery with a minimum of paperboard material and a minimum of waste. The hook elements c can be cut out from previously printed sheets of paperboard. Since all the information and data is printed directly on the hook element c, the inner sliding member and the outer tubular member can be made up and imprinted in large quantities, only the hook member c requiring special printing with reference to the type number and date of manufacture. This permits economical and efficient production.

The container may be easily and quickly manipulated by the customer or storekeeper to test the tube or bulb at any time without removal thereof. The closure flap 40 is opened and slight pressure is exerted at the upper end of the tube, which pressure immediately ejects the test end p thereof, making same immediately available for insertion into the test socket. The test end of the tube may be ejected as many times as desired without damage to the container. It is impossible to eject the inner tube containing member further than that required to effect proper testing of the article, since the inner member is firmly secured within the outer member so that the tube cannot be removed without leaving visible evidence of tampering.

The container herein presented is especially designed for the merchandising of radio tubes, electric light bulbs, gas mantles and other objects which are generally tested to determine their condition prior to sale. The bootlegging of inferior products and the unauthorized packing of such products in containers originally used or designed for the packaging of another product is thus thwarted and prevented.

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.

What is claimed is:

1. A carton for radio tubes and the like including, an outer member, an inner tube-enclosing member telescoping within the outer member, means slidably connecting said outer member and said inner member to limit the telescoping movement of said inner member, and an end closure flap hinged to said connecting means for closing the open end of said outer member.

2. Carton for radio tubes and the like including, an outer tubular member comprising enclosing side wall sections, an inner member telescoping within the outer member, said inner member having end wall sections and side wall sections connecting said end wall sections, said end wall sections having openings therein through which the adjacent end portions of the tube project, means associated with said end wall sections rigidly retaining the tube in fixed spaced relationship from the side wall sections of said inner member and outer member, and means associated with said inner member and said outer member for limiting the telescoping movement of said

inner member, said limiting means having an end closure flap hinged thereto for closing the open end of said outer member.

3. A carton for radio tubes and the like including, an outer tubular member comprising enclosing side wall sections, an inner member telescoping within the outer member, said inner member having end wall sections and side wall sections connecting said end wall sections, said end wall sections having openings therein through which the adjacent end portions of the tube project, means associated with said end wall sections rigidly retaining the tube in fixed spaced relationship from the side wall sections of said inner and outer members, means for limiting the telescoping of said inner member, and a closure for the open end of said outer member hinged to said limiting means.

4. A carton for radio tubes and the like including, an outer member comprising enclosing side wall sections, an inner tube enclosing member telescoping within the outer member, a hook device for limiting the telescoping movement of said inner member, and an end closure hinged to said hooked device for closing the open end of said outer member.

5. A carton for radio tubes and the like including, an outer member comprising enclosing side wall sections, an inner tube enclosing member telescoping within the outer member, means slidably connecting said outer member and said inner member and limiting the telescoping movement of said inner member, a closure flap hinged to said connecting means for covering the open end of said outer member, and a tab extending from said closure flap adapted to brace against said inner sliding member when said flap is in closed position.

6. A carton for radio tubes and the like including, an outer member comprising enclosing side wall sections, an inner member telescoping within the outer member and enclosing the tube, a hook device fixed to said outer member and slidably engaging said inner member to limit the telescoping movement thereof, a closure flap hinged to said hook device covering the open end of said outer member, and a tab extending

from said closure flap adapted to brace against the inner sliding member when said flap is in closed position thereby retaining the adjacent end of the tube in spaced relationship to said closure flap.

7. A carton for radio tubes and the like including, an outer member, an inner tube enclosing member telescoping within the outer member, means for limiting the telescoping movement of said inner member, an end closure for said outer member hinged to said limiting means, said end closure having a severable portion associated therewith, said severable portion carrying the date of manufacture of the tube contained in the carton and customer data, said portion being retained by the merchant at the time of sale for purposes of record.

8. A carton for radio tubes and the like including, an outer member, an inner tube enclosing member telescoping within the outer member, an element fixed to said outer member and slidably engaging said inner member to limit the telescoping movement of said inner member, a closure flap hinged to said element covering the open end of said outer member, said closure flap having a severable portion retained by the merchant at the time of sale for purposes of record.

9. A carton for radio tubes and the like including, an outer member, an inner tube enclosing member telescoping within the outer member, a hook device fixed to said outer member and slidably engaging said inner member to limit the telescoping movement of said inner member, a closure flap hinged to said hook device covering the open end of said outer member, a tab extending from said closure flap adapted to be braced against said inner member to further support said inner member when said closure flap is in closed position, said tab carrying the date of manufacture of the tube contained in the carton and customer data, and means for severing said tab from said flap for retention by the merchant at the time of sale for purposes of record.

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