

May 11, 1926.

1,584,084

W. ELLIOTT
CONTAINER OR BOX FOR THERMIONIC VALVES,
INCANDESCENT ELECTRIC LAMPS, AND THE LIKE
Filed May 23, 1925 2 Sheets-Sheet 1

Fig. 1.

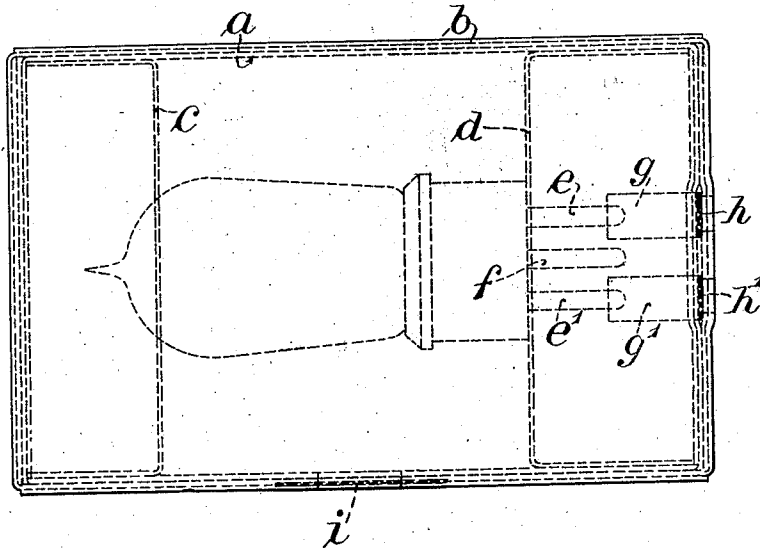
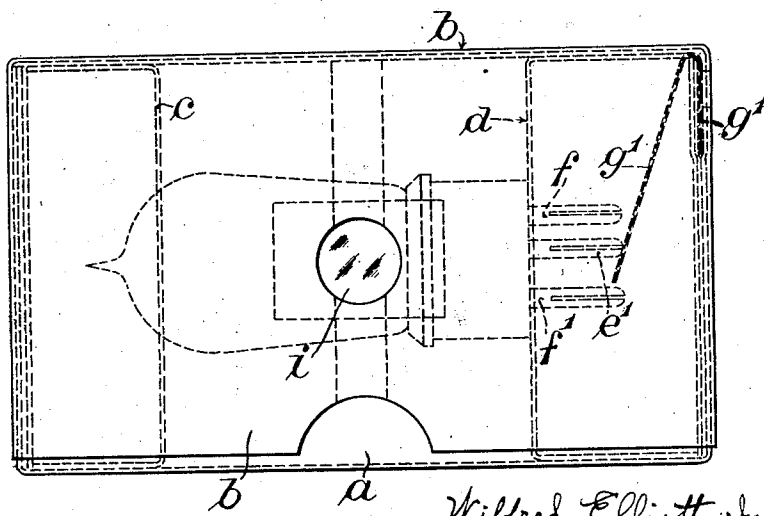


Fig. 2.



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Fig. 3.

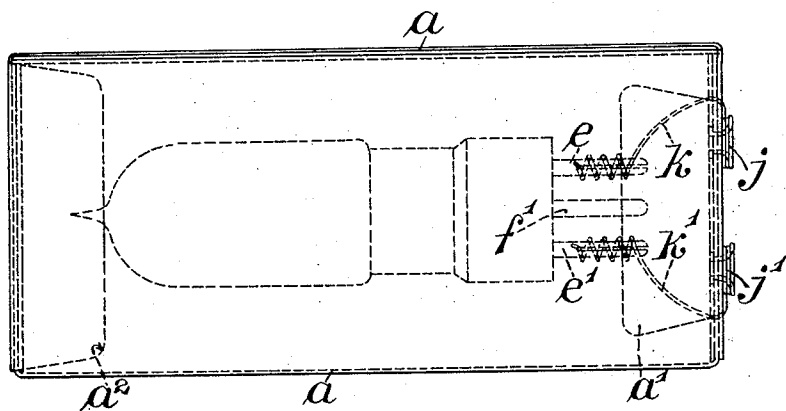
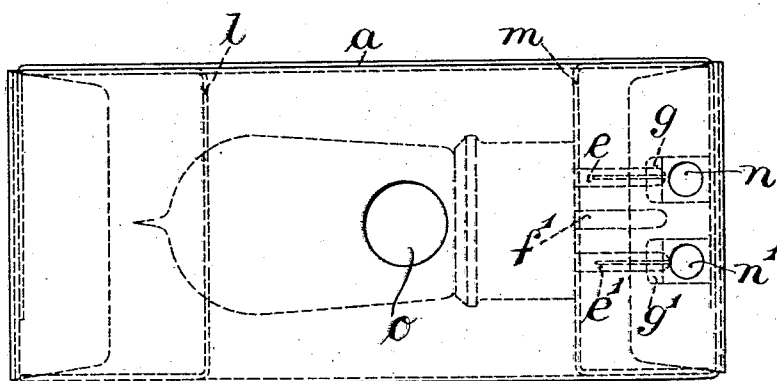


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CONTAINER OR BOX FOR THERMIONIC VALVES, INCANDESCENT ELECTRIC LAMPS, AND THE LIKE.

Application filed May 23, 1925. Serial No. 32,376.

This invention relates to containers or the like for packing thermionic valves, incandescent electric lamps, or similar electrically energized articles such as vacuum tubes for emitting Röntgen rays.

Valves, lamps or the like of the type above referred to are usually packed in carton boxes from which it is usual for a salesman to remove them in order that they can be applied to electric conductors to energize the filament or conducting element and thereby ascertain whether the valves or the like are in good order before being sold. Such removal of valves, lamps or the like from their containers entails time and even liability to accidental breakage.

Apart from this, it is an advantage if the packages or containers, in which the valves or the like are sold, can be sealed by the makers in order to guard against possibility of a partly used or exhausted valve being substituted for, and passed off to a purchaser as, a new one.

The object of this invention is, therefore, to provide improved means whereby a valve, lamp or the like can be quickly tested without any necessity for breaking the seal of the container, thereby enabling a salesman to demonstrate the condition of the valve or the like to a purchaser and at the same time enabling the purchaser to be sure that no substitution has taken place.

The object of the invention is attained by providing contacts externally of, or accessible from, the exterior of the container, and by providing means whereby such contacts are connected with the filament terminals of the valve or the like when the latter is positioned within the container. By bringing the contact pieces referred to into contact with the terminals of a suitable source of electric supply, a circuit is set up including the filament of the valve or the like, and indication as to whether or not the filament is intact, and thus closing the circuit, can be given either by providing an inspection window in the wall of the container or by including a suitable lamp bulb in the circuit externally of the container.

In the accompanying drawings,

Figure 1 is a plan view of a box or con-

tainer embodying the improvements, showing a thermionic valve therein.

Fig. 2 is a side elevation of the device shown in Fig. 1.

Figs. 3 and 4 are side elevations of other boxes or containers illustrating modifications.

Referring firstly to the arrangement shown in Figs. 1 and 2, *a* and *b* represent respectively a container, and a removable lid or cover therefor, of cardboard or the like, *c* a support for the end of the bulb, and *d* a support for the neck end of the valve, the support *d* having perforations or openings through which the filament terminals *e*, *e'*, and the high tension terminals *f*, *f'* may pass, to retain thereby the valve in the desired position and prevent it from rotating in the container.

At that end of the container, adjacent the terminals of the valve or the like, there are provided two metal contact pieces *g*, *g'* which are so disposed and shaped that when the valve or the like, and its supports *c* and *d*, are inserted into the container the filament terminals *e*, *e'* will make contact with said contact pieces.

Openings *h*, *h'* in the end of the container and similar coincident openings in the lid or cover, expose portions of the contact pieces *g*, *g'* and enable the terminals of the testing circuit to be applied, and placed in circuit with the filament terminals, without it being necessary to break any seal by which the lid or cover may be secured. The contact pieces may be held in position, as shown, by being clipped between the end folds of the container. The container may have an inspection opening, preferably closed by a transparent plate, opposite the filament, and the lid or cover have an opening *i* coincident therewith, so as to enable it to be ascertained whether or not the filament is caused to glow properly when the testing contacts are applied. Alternatively, as before mentioned, the indication may be obtained by including a separate suitable lamp bulb in the testing circuit.

In the case of a collapsible container or carton in which the valve, instead of being held in position by end supports as in Figs.

1 and 2, is simply wrapped around with some suitable soft protective material, the arrangement shown in Fig. 3 may be employed. In this case, the end flap of the container or carton is provided with contacts j, j' in the form of button heads of metal clinched to the flap. The filament terminals e, e' of the valve have connected to them, prior to insertion of the valve into the carton, short lengths of wire k, k' , the ends of which are brought to the outside, around the edges of the tuck-in flap a' , and wrapped about the respective contacts. The tuck-in flap a' and the corresponding flap a'' at the other end of the carton being duly sealed, removal of the lamp is impossible but the connection of the contacts j, j' to the filament terminals by the connections k, k' enable the filament to be included in a testing circuit. It will be seen that in this instance the wires k, k' simply replace the contact pieces g, g' of Figs. 1 and 2. It will be apparent that, with this method of packing, the indication of the continuity of the filament will be obtained by means of a lamp bulb in the testing circuit, since the protective wrapping of the lamp prevents a direct visual inspection of the filament.

Another arrangement which may be employed with a collapsible carton or container is shown in Fig. 4. In this instance a cup-shaped support l is inserted in one end of the carton and provided with a central opening to receive and support the end of the bulb, and a similar cup shaped support m is inserted in the other end of the carton, such support m having perforations in its base through which the filament terminals and high tension terminals may pass. Metal contact pieces g, g' to make connection with the filament terminals are clipped to the edge of the support m in exactly the same way as to the edge of the container in Figs. 1 and 2, and openings n, n' are formed in the container wall opposite the bent over portions of these contact pieces so that a current can be passed through the filament from an external circuit. Since the valve is supported within and clear of the walls of the container, an inspection window o may be provided to afford a direct visual inspection of the filament, or the window may be dispensed with and a separate lamp bulb be provided in the external circuit to give the indication of the continuity or unbroken condition of the filament.

The particular methods which I have described and shown of providing the contacts externally of or accessible from the exterior of a container and of connecting such contacts to or enabling them to contact with the filament terminals of the valve, are only given by way of illustration and I do not limit myself thereto, since other and equivalent alternatives will suggest themselves to

those skilled in the art whereby the object of the invention may be attained.

Having thus described my invention,

What I claim as new and desire to secure by Letters Patent is:—

1. A container for an article adapted to be electrically energized, said container being adapted to be sealed after receiving the article therein, and contact members carried by said container adapted to have electrical connections with the conducting elements of said article and accessible from the exterior of the container for conveniently connecting the article in an electrical circuit without opening the container.

2. A container for an article adapted to be electrically energized, said container being adapted to be sealed after receiving the article, and contact members carried by said container having portions extending within the container and adapted for electrical connection with the conducting elements of said article, and having portions exposed at the exterior of the container for conveniently connecting the article in an electrical circuit without opening the container.

3. The combination of a container adapted to be sealed, an article within the container having a conducting element to be electrically energized and terminal portions for said element, and contact members carried by the container independently of said article and connected with said terminal portions, said members being accessible from the exterior of the container for conveniently connecting the article in an electrical circuit without opening the container.

4. The combination of a container adapted to be sealed, an article within said container and having a conducting element to be electrically energized and terminal portions for said element, and contact members carried by said container and having portions extending within the container and contacting with said terminal portions, said contact members having portions exposed at the exterior of the container for conveniently connecting the article in an electrical circuit without opening the container.

5. A container adapted to be sealed, means within the container for holding an article adapted to be electrically energized in a definite position within the container, and contact members carried by the container adapted to be electrically connected with the conducting elements of said article, and accessible from the exterior of the container for conveniently connecting the article in an electrical circuit without opening the container.

6. The combination of a thermionic valve, a container within which said valve is sealed, contact members carried by the container and accessible from the exterior thereof, and connections between said contact

members and the filament terminals of said valve, for conveniently connecting said filament in an electrical circuit without opening the container.

- 5 7. The combination of a thermionic valve, a container within which said valve is sealed, and contact members detachably con-

nected to the filament terminals of said valve and extending to the exterior of the container, for enabling said filament to be connected in an electrical circuit without opening the container. 10

In testimony whereof I affix my signature.

WILFRED ELLIOTT.