Oct. 16, 1928. 1,687,630

R. J. McRAE

TRANSPORTING CRATE FOR LUMINOUS TUBES OR OTHER FRAGILE ARTICLES

Filed July 11, 1927

Fig. 1

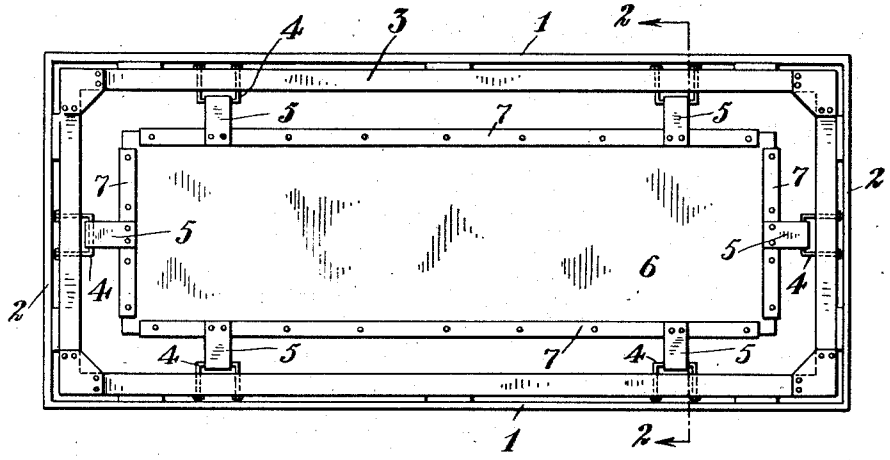


Fig. 2

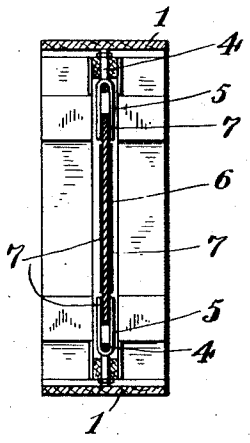
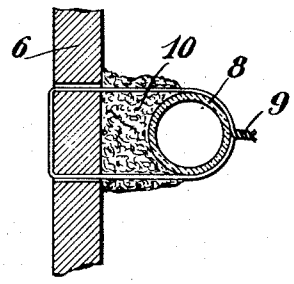


Fig. 3



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TRANSPORTING CRATE FOR LUMINOUS TUBES OR OTHER FRAGILE ARTICLES.

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My invention has been designed to provide an improved crate for the transportation of luminous tubes, but it may obviously be employed for shipping other fragile articles of the same character. The luminous tubes in question are long glass tubes usually employed for signs and bent into the form of letters or symbols. They contain a rarefied gas or vapor which becomes luminescent upon the passage of an electric current through the same. Since there is a substantial energy loss at the electrodes, in order to secure efficiency it is important to make the so-called luminous positive column of substantial length. Usually the tubes are about twelve feet long, more or less.

In manufacturing the luminous tubes it is important that they should be carefully processed, and their manufacture is, therefore, confined to plants of substantial size. It thus becomes necessary to ship the tubes sometimes for considerable distances, and owing to their fragile nature and their expensive character, it is important that the liability of accidental breakage should be reduced to the minimum. I have invented an improved crate which has been particularly designed for the shipment of these tubes and which has proved in practice to be very effective.

In order that the invention may be better understood, attention is directed to the accompanying drawing, forming part of this specification, in which

Figure 1 is a side elevation of my improved crate;

Figure 2 is a cross-sectional view on the line 2—2 of Figure 1; and

Figure 3 is a detail sectional view on an enlarged scale illustrating a luminous tube in position. In all of the above views corresponding parts are represented by the same numerals.

My improved crate comprises an outer structure composed of top and bottom members 1—1 and end members 2—2 made of boards of suitable thickness and of substantial width held together in any suitable way. Located within the outer structure is a rectangular frame 3 secured in place in any suitable way. This frame is provided with U-bolts 4—4, as shown, and extending through each of said U-bolts is a strap 5 secured to a supporting panel 6. Ordinarily, this panel is provided with metal stiffening portions 7—7 at its edges.

Panel 6 is made of any suitable light material, and I have successfully used, for the purpose, boards of so-called celotex, which I find to be admirably adapted for use. This material is strong, relatively rigid, and light.

The straps 5 are of leather, canvas, or other slightly elastic material, whereby the panel 6 will practically float within the frame 3 and be protected elastically from shocks in all directions. The panel 6 is of any suitable size, depending upon the article to be transported. Assuming that this article is a luminous tube shown in section in Figure 3 at 8, it is preferably secured by wires 9 at various points, an interposed elastic packing 10 being introduced between the tube and the panel 6 at the points where said wires are used. A very effective material for this purpose is ordinary sponge rubber.

By supporting a luminous tube upon numerous elastic pads of sponge rubber and carrying said tube upon an elastically supported panel I find that the extremely fragile and expensive tubes may be transported with entire safety under ordinary conditions. Preferably the crate is left open, although if desired it may be enclosed in a suitable covering material or end boards may be used to entirely enclose the outside casing.

It will be observed that should the crate be dropped or receive a sharp impact for any reason in handling, such an impact would not be directly transmitted to the panel 6 which carries the fragile luminous tube. Assume, for example, the whole crate were dropped or set down with considerable force on one corner, for instance, the right hand lower corner of Fig. 1. In this case the flexible straps 5 adjacent to that corner would tend to compress and not until the shock had traveled around the frame 3 for a considerable distance and had lost a large part of its energy would it have arrived at any of the members supporting the panel 6, and thus be capable of transmitting it to panel 6. In this way the improved crate completely guards against these accidental conditions.

Having now described my invention what I claim as new therein and desire to secure by Letters Patent is as follows:

1. An improved crate for transporting luminous signs or similar articles composed of glass tubing fashioned into words or symbols, comprising an outer casing, a frame mounted therein and of substantially less width than

the casing, a flat panel within the frame to which the luminous sign is secured, and a plurality of elastic straps connecting the panel to the frame so that the former will be elastically supported to thereby protect the sign carried by the panel from shocks applied to the outer casing.

2. An improved crate for transporting luminous signs or similar articles composed of glass tubing fashioned into words or symbols, comprising an outer casing, a frame mounted therein and of substantially less width than the casing, a panel within the frame, a plurality of elastic straps connecting the panel to the frame, a luminous sign removably secured to the panel, and interposed elastic pads or buffers between the sign and the panel.

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