

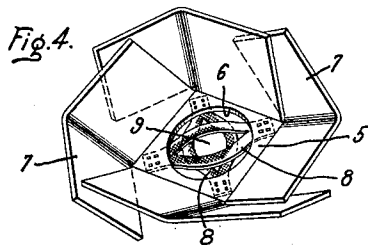
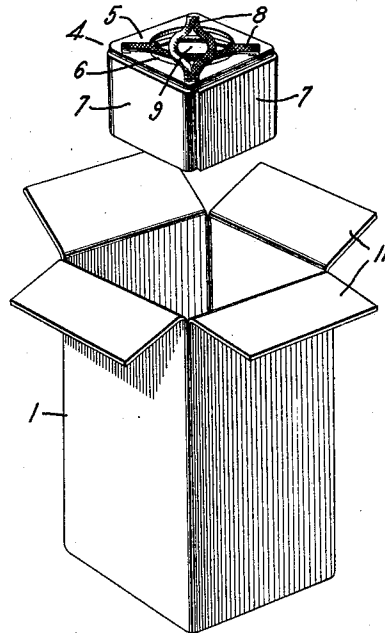
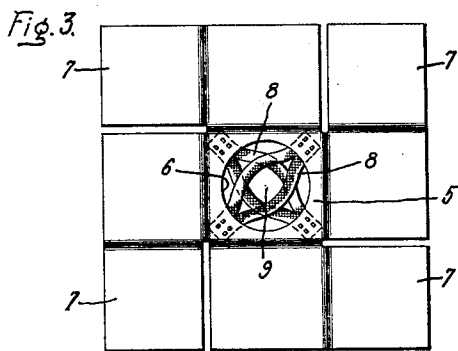
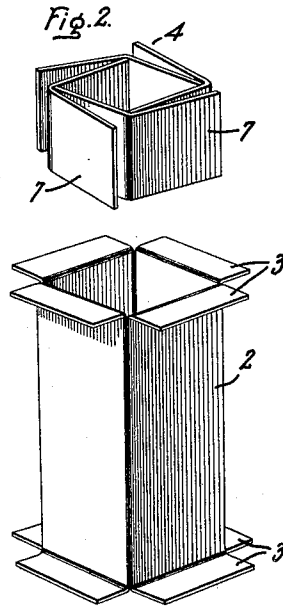
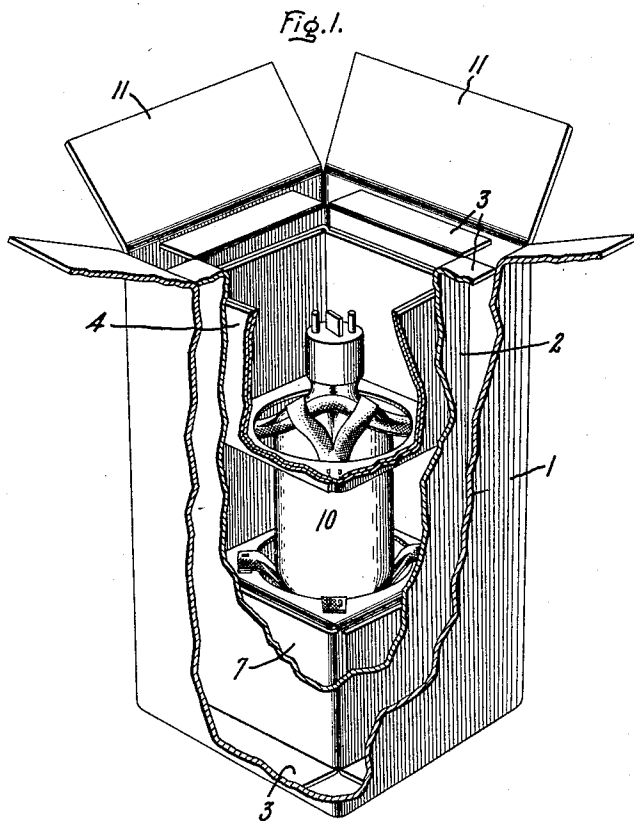
April 25, 1933.

J. F. HENDRY

1,905,708

PACKING CASE FOR FRAGILE ARTICLES

Filed Sept. 13, 1929



Inventor:
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UNITED STATES PATENT OFFICE

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PACKING CASE FOR FRAGILE ARTICLES

Application filed September 13, 1929. Serial No. 392,446.

The present invention comprises a new and improved packing case for fragile articles and the like, such, for example, as vacuum tubes, lamps, et cetera.

- 5 One object of my invention is to provide a packing case or carton which will be compact and light in weight and at the same time protect the tube therein from damage or breakage.
- 10 Another object of my invention is to provide a packing case which will absorb sudden shocks transmitted thereto or received in shipment, so that the tube therein will not be subjected to such shocks.
- 15 A further object of my invention is to provide a structure whereby a resilient and yielding mounting is provided for the tube while the latter is at the same time held substantially rigid in place.
- 20 It is well known that glass tubes such as vacuum tubes of various designs are very fragile and expensive. It has hence been necessary to exercise great care not only in manufacture but also in transportation of such devices. At the present time special packing cases often must be built especially for the larger tubes of this class for shipping purposes in order to insure against breakage in transportation. This requires time and labor and is expensive. Since also the spacing between electrodes is very critical in certain types of tubes, care must be taken when packing such tubes for shipment so that displacement of the electrodes in transit will be avoided.
- 30 In accordance with my invention I have constructed a packing case which will effectively protect the tube therein against breakage and shock during shipment. The packing case of my invention is easy to handle and ship and is constructed so that it can be shipped in "knocked down" form to the place where it is to be used in packing tubes.
- 45 Referring to the drawing forming part of

this application, there is illustrated an embodiment of my invention.

In the said drawing, Fig. 1 is a perspective view, partly broken away so as to more clearly illustrate the invention, of a preferred form of packing case embodying the features of my invention and showing a transmitting tube in place.

Fig. 2 is an exploded view of the embodiment of my invention so as to clearly illustrate the various parts which make up the packing case.

Fig. 3 is a developed plan view of the retaining member of my invention.

Fig. 4 is a partially developed perspective view of the same retaining member.

The packing case consists in general of an outer enclosing casing 1, formed of any suitable material such for example as corrugated or multi-cellular cardboard and an inner containing member 2 fitting within the outer casing. The inner containing member 2 is open at both ends, each end being provided with flanges or flaps 3 which extend outwardly from said member. Within and slidably engaging the inner surface of the containing member 2 are retaining members 4 one at each end of the member 2 so as to constitute end-closures therefor. Each retaining member 4 is composed of an integral piece of suitable material, such as cardboard, and is constituted of a base member 5 provided with an opening 6 therein, and side walls 7 formed so as to present yielding contacting surfaces with the inner surface of the member 2 against which they snugly fit when in position.

The retaining members 4 are inserted from each end of the member 2 with the base portions 5 in juxtaposition and facing each other, and are of such length as is necessary depending on the size of the tube packed. Across the opening 6 in the base portion of the retaining member 4 are a plurality of strips of a flexible material 8, such as can-

vas, which cross at about right angles to each other at the center of the opening and are suitably fixed at their edges to the base portion 5. In the drawing two such strips are shown, but obviously, any desired number may be used.

Each of the strips 8 is slit along a portion of its length so that where they cross an opening 9 is presented to receive a portion of the tube packed in the casing. Instead of using a plurality of strips as shown the opening 6 may be entirely covered by a section of flexible material which has an opening therein to receive a portion of the tube in contact therewith.

In order to pack a tube such as tube 10 shown in Fig. 1 of the drawing, the containing member 2 is first placed within the outer casing 1, the flange portions 3 of the adjacent end resting on the bottom thereof. A retaining member 4 is then placed within the containing member 2 so that its base portion is uppermost and so that it rests on the bottom of the casing 1 while it is yieldingly held in contact with the inner walls of the container 2 by the side walls 7. The tube 10 is then inserted so that one end thereof passes through the opening 9 so that a portion thereof rests against the yieldable strips 8. Another retaining member 4 is now inserted with its base portion facing downwardly, that is, facing the base portion of the first retaining member inserted. This last retaining member is inserted so that the other end of the tube is received within the opening 9 presented by the flexible strips 8 which are caused to abut the body portion adjacent to this end of the tube. The flaps 11 of the outer casing 1 may then be closed and sealed and the packing case is ready for shipment.

A packing case made in accordance with my invention is highly desirable because of the presence therein of the specially constructed retaining member 4. The construction of this member and its co-operation with the member 2 and the tube packed therein is such that greater resiliency of support and increased cushioning is obtained. As will be evident from an inspection of the construction, the retaining member 4 while being snugly held within the container 2 is nevertheless free to move with respect thereto in a piston-like fashion. This feature, in cases where the packing case is subjected to any shock which would disturb the contents thereof, together with the combined action of the strips 8, produces a cushioning effect and thus prevents damage or breakage in transit of the tube. It will also be seen that this construction is very simple in its nature, easy to manufacture and easy to handle, and can be produced at a comparatively low cost.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. A packing case for fragile articles com-

prising an outer casing, a unitary inner containing member, and retaining members within said inner containing member, said retaining members being snugly and yieldingly held within said containing member when in position, each of said retaining members being provided with an opening and yieldable means across said opening, said retaining members being adapted to receive a fragile article therebetween and in contact with said yieldable means.

2. A packing case for glass tubes and the like comprising an outer casing, a unitary inner containing member and retaining members within said inner containing member, a tube within said inner containing member, one of said retaining members being snugly and yieldingly held within said containing member when in position, said retaining members each being provided with an opening and yieldable means across said opening receiving a portion of said tube.

3. A packing case for fragile articles comprising an outer casing and an inner containing member, said inner containing member having therewithin a plurality of juxtaposed retaining members, each retaining member being provided with side wall cushioning means whereby it is snugly and yieldingly held against the inner surface of the containing member, each of said retaining members being also provided with a base portion having an opening therein and provided with yieldable strips across said opening, said retaining members being adapted to receive therebetween a fragile article and to hold the same between and in contact with said yieldable strips.

4. A packing case for glass tubes and the like, comprising an outer casing and an inner containing member, a tube within said inner containing member, said inner containing member having therewithin a plurality of juxtaposed retaining members, each retaining member being provided with side wall cushioning means whereby it is snugly and yieldingly held against the inner surface of the containing member, each of said retaining members being also provided with a base portion having an opening therein and provided with yieldable strips across said opening, said tube being received and held between the pair of retaining members and in contact with said yieldable strips.

5. In a packing case for glass tubes and the like, an outer casing, a unitary inner containing member, and retaining members snugly and yieldingly held within said inner containing member when in position, a tube within said inner containing member, and means for cushioning said tube within said inner containing member, said cushioning means forming part of said retaining members.

6. A packing case for tubes and the like

including an outer casing and a unitary inner
containing member, a plurality of means
within said inner containing member for
receiving and holding a tube therebetween,
5 each of said means being snugly and yield-
ingly held within said inner containing mem-
ber when in position and being provided with
cushioning means forming an integral part
thereof and adapted to cushion said tube
10 against shocks transmitted thereto.

In witness whereof, I have hereunto set
my hand this 12th day of September 1929.

JOHNSON F. HENDRY.

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