No. 662,190. Patented Nov. 20, 1900.

E. A. GALBRAITH.

PACKING CASE.

(Application filed Apr. 16, 1900.)

(No Model.)

FIG. 2.

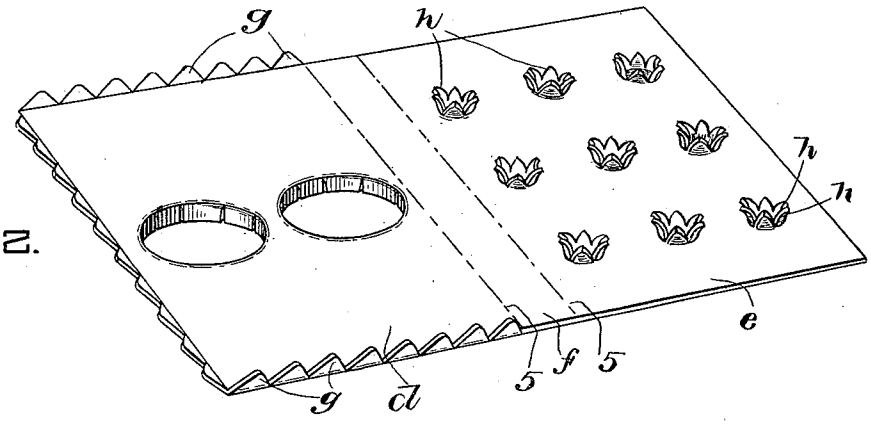


FIG. 3.

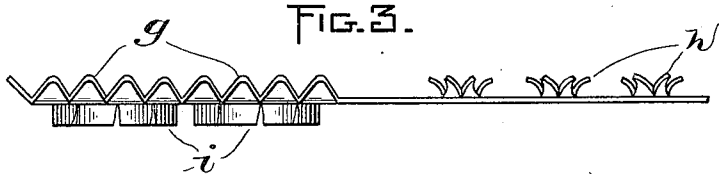


FIG. 1.

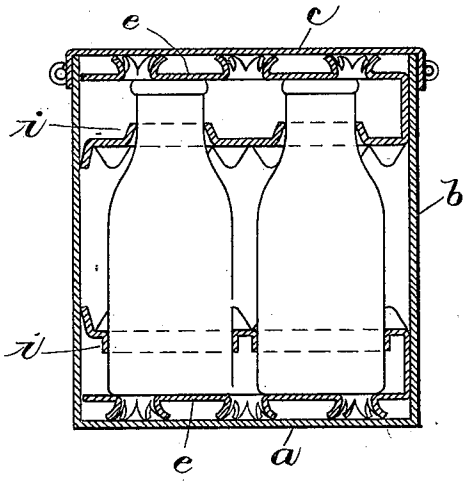
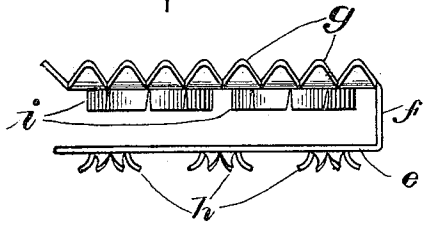


FIG. 4.



WITNESSES:

A. D. Harrison.

P. H. Pezzetti

INVENTOR:

Edward A. Galbraith

by Wright, Brown & Quinby

Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWARD A. GALBRAITH, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO HENRY W. BRAGG, OF SAME PLACE.

PACKING-CASE.

SPECIFICATION forming part of Letters Patent No. 662,190, dated November 20, 1900.

Application filed April 16, 1900. Serial No. 13,015. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. GALBRAITH, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Packing-Cases, of which the following is a specification.

This invention has relation to packing boxes or cases for bottles of the type illustrated in my Patent No. 362,375, dated May 3, 1887; and it consists in certain improvements therein, which are illustrated upon the drawings, described in the following specification, and particularized in the appended claims.

Referring to said drawings, Figure 1 illustrates a packing-case embodying one form of my invention. Fig. 2 illustrates detached one of the double diaphragms which extend across the packing-case and which is adapted to yieldingly hold the bottle or bottles against lateral or endwise jar. Fig. 3 represents an edge view of the same. Fig. 4 represents the diaphragm doubled upon itself as it is in a packing-case.

Referring to the drawings it will be seen that in Fig. 1 I have illustrated a box or casing having a bottom *a*, four side walls *b*, and a hinged top or cover *c*. Within said box or receptacle are placed two double diaphragms, each serving the function of yieldingly holding the bottle or jar packed in the case against sidewise and endwise vibration. The receptacle itself may be made of wood or any other suitable substance; but the diaphragms are constructed, preferably, of pasteboard, cardboard, or other suitable comparatively "springy" or resilient material. Each diaphragm is stamped or died out in elongated form, as shown in Fig. 2, adapted to be bent on the lines indicated at 5 5, Fig. 2, to provide two sections *d* and *e*, connected by the bridge *f*. When the diaphragm is bent upon itself, the sections *d* and *e* lie parallel to each other, as shown. The edges of the section *e* and of the bridge *f* are smooth; but the section *d* of each diaphragm is provided with tongue-like pieces *g*, extending entirely around its edges and being adapted for yielding engagement with the inner side walls of the receptacle or casing. The tongues or tongue-like pieces *g* are bent up at an inclination to the body of the section *d*, as shown upon the drawings, so as to permit the entire section to yield bodily to a slight degree relatively to the receptacle.

The body of the section *e* of each diaphragm is provided with a plurality of series or groups of tongues *h*, integral with the body, each series being arranged substantially in a circle surrounding an orifice formed by the displacement of the tongues, said tongues being bent outward from one of the faces of the body and being curved or inclined backwardly so as to overhang the portions of the body surrounding the orifice and form springs adapted to yieldingly engage the bottom wall *a* or the hinged cover *c* of the receptacle, according to the location of the diaphragm. These tongues or fingers act as annular spring-cushions, and they maintain the section *e* at some little distance from the adjacent parallel wall of the packing case or box and absorb shocks or jars tending to force the bottle or jar against the adjacent wall.

The section *d* of each diaphragm is provided with one or more apertures adapted to receive a bottle or jar, and around each aperture is a plurality of tongues *i*, adapted to yieldingly engage the sides of the bottle or jar. The tongues *i* project oppositely to the tongues *h* prior to the packing-sheet or double diaphragm being folded upon itself.

The diaphragms or packing-sheets are arranged in the packing case or receptacle in position to engage the upper and lower portions respectively of the bottles or jars to be packed therein, and each of the diaphragms is provided, as said, with a section apertured to receive the bottle, and with another parallel section against which the end of the bottle is engaged.

By reference to Fig. 1 it will be seen that when the packing-sheets are placed in the receptacle and the cover *c* of the box closed the bottles or jars are held yieldingly against undue or longitudinal movement relatively to each other. The sections *e* are of such size that they fit snugly in the box, and after they are once put in place and the hinged lid or cover closed they cannot become displaced, while the sections *d* of the sheets or casings are held parallel to the sections *e* by the fric-

tional engagement of the tongues *g* with the inner faces of the side walls *b* of the receptacle.

The bridges *f f* of the two packing-sheets act as spacing devices to maintain the sections separated to the proper extent, and they also prevent the dislocation of the sections *d d*, which might occur if said sections were not connected by said bridges with the sections *e*.

Having thus explained the nature of the invention and described a way of constructing and using the same, although without having attempted to set forth all of the forms in which it may be made or all of the modes of its use, I declare that what I claim is—

1. The combination with a packing-receptacle adapted for the reception of bottles or jars, of packing-sheets or diaphragms each being doubled upon itself to have one section extending across the ends of the bottles or jars and having another section apertured to receive said bottles or jars, the first-mentioned section being provided with a plurality of annular groups of spring-tongues bent outwardly from one side of the section, and backwardly to overhang portions of the section, their outer ends being adapted to bear against the inner face of the top and bottom of the receptacle, to hold the bottles or jars yieldingly against longitudinal movement.

2. A packing-sheet for use in receptacles adapted for the reception of bottles or jars, said sheet being adapted to be bent upon itself to provide two parallel sections, one of which is apertured to receive a bottle or bottles, and the other of which is provided with cushioning devices for engaging the top or bottom of the said receptacle.

3. The combination with a packing-receptacle adapted for the reception of bottles or jars, of layers of packing-sheets arranged in parallelism and adapted to yieldingly maintain the said bottles or jars in said receptacle out of contact with each other and with the walls of the receptacle, one of said layers being apertured to receive said bottles or jars and having integral spring-tongues around said apertures, and the other extending across the ends of said bottles or jars and having cushioning devices to separate it from the adjacent parallel wall of the receptacle.

4. A packing-sheet of relatively springy or resilient material, having a plurality of annular groups of tongues integral with the body of the sheet, the tongues of each group surrounding an orifice formed by the displacement of the tongues, said tongues being normally bent or inclined backwardly from the said orifice to form springs which overhang the portions of the sheet surrounding the orifice, each group of tongues constituting an annular cushion exposed to end thrust against the tongues.

In testimony whereof I have affixed my signature in presence of two witnesses.

EDWARD A. GALBRAITH.

Witnesses:
A. D. HARRISON,
C. F. BROWN.