

Feb. 20, 1923.

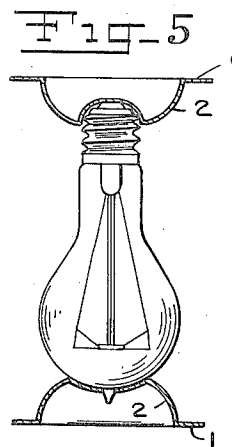
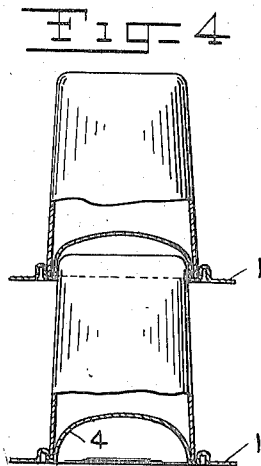
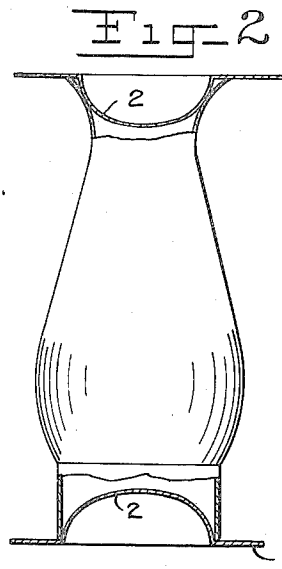
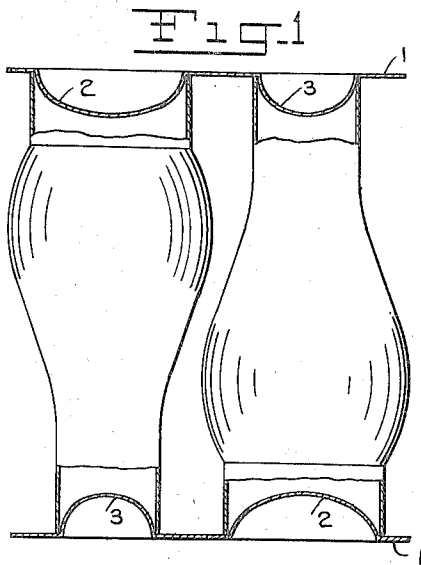
1,445,779.

L. MANN ET AL.

PACKING UNIT FOR AND METHOD OF PACKING FRAGILE ARTICLES.

FILED JULY 13, 1922.

2 SHEETS--SHEET 1.



Leon Mann Inventors
Morris Koppelman
By their Attorney S. J. Cox.

Feb. 20, 1923.

1,445,779.

L. MANN ET AL.

PACKING UNIT FOR AND METHOD OF PACKING FRAGILE ARTICLES.

FILED JULY 13, 1922.

2 SHEETS—SHEET 2.

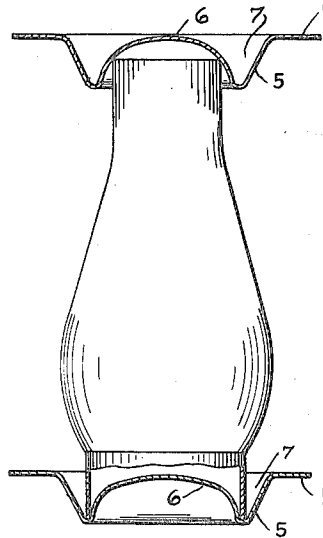


Fig-6

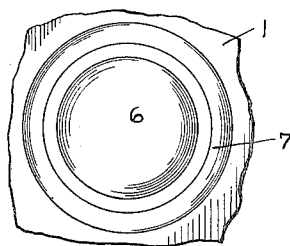


Fig-7

Inventors
Leon Mann
Morris Koppelman
By their Attorney
S. J. Cox

UNITED STATES PATENT OFFICE.

LEON MANN AND MORRIS KOPPELMAN, OF MOUNT VERNON AND BROOKLYN, NEW YORK.

PACKING UNIT FOR AND METHOD OF PACKING FRAGILE ARTICLES.

Application filed July 13, 1922. Serial No. 574,763.

To all whom it may concern:

Be it known that we, LEON MANN and MORRIS KOPPELMAN, citizens of the United States, and residents, respectively, of the city of Mount Vernon, in the county of Westchester, State of New York, and the borough of Brooklyn, in the county of Kings, city and State of New York, have invented certain new and useful Improvements in Packing Units for and Methods of Packing Fragile Articles, of which the following is a specification.

The improvements relate to the packing of fragile articles, such as glass chimneys, drinking glasses, and electric light bulbs, and may be utilized in the packing of any fragile articles to which they may be adaptable. The objects of the improvements, among others, are to provide a method and means for packing fragile articles, for shipping, storage, and other purposes, so as to prevent breakage, and, where more than one of such articles is packed in a single box or other receptacle so that they will not come in contact with one another, and will be held securely in place and protected against shocks and jars in all cases. A further object is to provide an efficient packing unit of simple and inexpensive construction, which may be used for various articles and will permit such articles to be securely packed in a relatively small space and without necessitating the use of straw, excelsior, soft paper or other similar material.

The improvements are illustrated in the accompanying drawings, in which Figure 1 is an elevation of two glass chimneys, and a portion of the packing units shown in vertical section embodying the improvements; Fig. 2 is a view similar to Fig. 1 of a chimney of different form and portions of packing units positioned therewith; Fig. 3 is a plan of a portion of one of the packing units; Fig. 4 is an elevation partly in vertical section of two drinking glasses and the packing; Fig. 5 is a view similar to Fig. 4 of an electric light bulb positioned in the packing; Fig. 6 is a view similar to Fig. 1 of a chimney and a modified form of packing unit; Fig. 7 is a plan of a portion of the modified unit.

The packing units consist essentially of a flat sheet 1 with dome-like projections formed therein, adapted to receive, cushion, and hold the ends of the article to be

packed. These projections may be all in the form shown at 2, and, when chimneys are to be packed, they may be placed in position by having their lower edges passed over the domes 2 and their upper edges pressed into similar domes so as to form holding grooves, as indicated in Fig. 4 in connection with the glasses, or alternate large domes or projections 2 and smaller ones 3 may be provided of a size to permit the lower and upper edges respectively, to pass over them and be held against lateral movement thereby, the said edges being in contact with the flat sheet 1 at the base of the dome in each case. In the case of a chimney of the kind shown in Fig. 2 packing elements consisting of sheets having projections of equal size throughout may be employed, and the chimneys placed between the sheets and positioned on the domes without deforming the latter.

This is also the case where a single tier of drinking glasses or tumblers is packed, but in this instance the bottom of the tumbler will be held in the concave side of the dome, which involves merely a reversal of one of the sheets of the packing unit. If desired, however, the dome-like projections may be made greater in diameter than the mouth of the glass, as shown at Fig. 4, and the edges of the glass may be pressed into the projection to form holding grooves.

Where superposed tiers of glasses are packed the glasses of the upper tier may be pressed into the convex sides of the dome, and the packing element with these glasses thereon then placed on the lower tier so that the bottoms of the inverted glasses will be received in the concave sides of the domes. It will be seen therefore that a packing sheet with domes formed thereon having a basic diameter approximately equal to the diameter of the largest mouth of the tumblers, chimneys, or the like to be placed thereon, will serve to hold and support articles having mouth openings of the same or any smaller size, whether the same are packed in a single tier or in superposed tiers.

The sheets 1 are of any desired size, and the projections formed thereon are preferably arranged in regular order, as in parallel rows, and the entire element consisting of the sheet and its projections is formed of relatively rigid material, such as pulp board

which may be made in the desired form according to the process of the co-pending application No. 553,139, filed April 15, 1922. Material of this character has the advantage of being strong, while at the same time it lends itself to the uses herein described.

When electric light bulbs are packed they may first be pressed into the domes of the lower sheet and then have an upper sheet pressed thereon until each butt makes a depression in the dome above it, and is held as in a socket, or this operation may be reversed. This results in a packing such as that shown in Fig. 5, and provides for the packing of one or any desired number greater than one in a single box or other container. In each case the upper and lower packing unit sheets will be in contact with the container or otherwise held between the top and bottom thereof so that vertical movement cannot take place. The sheets should also be made so as to be co-extensive laterally with the container.

In the modified form of Figs. 6 and 7 the projections are in the form of cone frustums 5 with a depressed interior portion 6 in the central aperture, and the edges of the chimney or other article are received in the annular recess 7 of the reverse side of the cone between it and the depressed middle portion, or received in the said depressed portion. This form may also be employed in the manner illustrated in Fig. 4, if desired.

The dome-like projections of the packing unit sheets may have any form suitable for the purpose for which the packing is to be used, and the units may be made of any satisfactory material, without departing from the scope of the invention, which embraces a packing unit having certain characteristics and the method of packing articles by the use of such a unit as set forth in the following claims.

Other packing elements may be used in connection with the means and method herein described, if desired, but the units herein described when used in the manner set forth will render the use of other packing unnecessary in most instances.

What we claim is:

1. A packing unit for hollow fragile articles, comprising a flat sheet having thereon dome-like projections of concavo-convex form, forming prominences on one side of the sheet and concavities on the other, of a size to receive the edges of the mouth of an article to be placed thereon and permit it to be pressed down into proximity with the flat sheet.

2. A packing unit for hollow fragile articles, comprising a flat sheet having thereon dome-like projections of concavo-convex form, forming prominences on one side of the sheet and concavities on the other, of a

size to receive the edges of the mouth of an article to be placed thereon and permit it to be pressed down into proximity with the flat sheet, said sheet being constructed and arranged to be placed in contact with said articles in normal or reversed position.

3. The process of packing hollow fragile articles having an open end with relatively sharp edges, which consists in providing a flat sheet with concavo-convex portions approximating in size the diameter of an article at its open end, placing one of said sheets below and one above said articles with the said concavo-convex portions opposite their ends, and pressing the said articles against the said portions so as to engage the same.

4. The process of packing hollow fragile articles, which consists in providing a flat sheet with concavo-convex portions approximating in size the diameter of an article at its end, placing one of said sheets below said articles with the said concavo-convex portions opposite their ends, and pressing the said articles against the said portions so as to engage the same.

5. The process of packing hollow fragile articles, which consists in providing a flat sheet with concavo-convex portions approximating in size the diameter of an article at its end, placing one of said sheets below said articles with the said concavo-convex portions opposite their ends, and pressing the said article against the said portions so as to engage the same, and forming depressions therein conforming to the said ends of the articles.

6. The process of packing hollow fragile articles having an open end with relatively sharp edges, which consists in providing a flat sheet with concavo-convex portions approximating in size the diameter of an article at its open end, placing one of said sheets below and one above said articles with the said concavo-convex portions opposite their ends, and pressing the said article against the said portions so as to engage the same and form therein a recess to receive and hold the said edges.

7. The process of packing hollow fragile articles, which consists in providing a flat sheet with concavo-convex portions approximating in size the diameter of an article at its end, placing one of said sheets below said articles with the said concavo-convex portions opposite their ends, and pressing the said article against the said portions so as to engage the same and cause the said portion to enter the said article and frictionally engage its interior surfaces.

8. The process of packing hollow fragile articles having an open end with relatively sharp edges, which consists in providing a flat sheet with concavo-convex portions approximating in size the diameter of an ar-

5 ticle at its open end, placing one of said sheets below and one above said articles with the said concavo-convex portions opposite their ends, and pressing the said article against the said portions so as to engage the same, then placing other similar articles over the first named articles with the edges of their end openings engaging the opposite side of the portions which extend
10 over the top of the first named articles.

9. A packing comprising a plurality of flat sheets having concavo-convex portions formed therein and plane connecting portions therebetween, said sheets being con-

structed and arranged to receive both open 15 ends of a hollow article of sheet material on the said concavo-convex portions, and said portions being formed so as to enter the said open ends and engage the inner surfaces of the article and also to receive one or both 20 of the ends of the article in the concave side of said portions.

Witness our hands this 23rd day of June, 1922, at the city of New York, in the county and State of New York.

LEON MANN.
MORRIS KOPPELMAN.