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 Packings for Eggs and Other Fragile Articles, of which the following is a specification.

The improvements relate to the packing of fragile articles, such as eggs, electric light bulbs, and similar articles, and their primary objects are the production of a packing unit adapted to be used with the standard or other cell-forming "fillers", and to secure and hold the packing units as well as the articles therein and protect the latter from injury.

We have found that the cracking and breaking of eggs and like articles, when packed in cases or other containers employed for transportation and storage, is due chiefly to two causes, viz.: the movement of the articles in the packing, and to the movement of the packing elements relating to each other thereby subjecting the said articles to cracking or breaking shocks or strains. Various means have been devised for protecting the articles, but for many reasons the standard filler or cell-forming element and flats interposed between the layers of fillers are almost universally used.

The present improvements are adapted to be used with the standard flats and fillers, or with flats or fillers of other character, and not only holding the articles themselves but secure or "lock" them in their proper positions relative to each other.

The improvements are illustrated in the accompanying drawings, in which Figure 1 is a transverse vertical section, through the egg-holding and filler locking projections showing two flats and interposed filler members, and Fig. 2 is a plan of the same construction.

In carrying out the present improvements the flats 1 are provided with a series of knobs or studs 2, so disposed and distributed that one is located in each corner of each egg-receiving compartment of the filler 4, when the filler is in place. These are preferably conical in form, as shown, and made integral with the flat, which we prefer to make of felted wood pulp or other fibres, the form and arrangement of these projections, however, may be varied within certain limits without departing from the scope of the present improvements, and they may be made in any satisfactory manner and of any suitable material. The flat with the conical projections is made up as a packing unit, usually called the flat, and the projections are spaced so that the bases of the four located in each cell will be a sufficient distance apart to permit the egg 5 or other article to be inserted between them and to come in contact therewith and be supported slightly above the bottom or flat portion thereof. So far as the filler locking function of the projections is concerned however it is not essential that the article shall be supported by the projections, and the former may therefore be arranged so that the said article does not normally rest thereon. It is desirable nevertheless in most cases to have them so formed and positioned that they will form cushions or stops in the corners of the cells.

The filler 4 may be of standard form and may consist of the usual straw-board strips intersecting one another at right angles, but the usefulness of the present improvements is not limited to this particular form. The lower edges of the filler or cell-forming strips fit in between the rows of projections and rest upon the narrow strip 6 of the flat or bottom portion, and in the illustration shown are held against movement parallel or at right angles to the said strips, and also against diagonal movement to any material extent thereby. It is therefore advisable to so locate the projections that they occupy the corners formed by the intersection of the strips.

In use a flat is first placed in the bottom of a case or other container in the position shown, and the eggs or other globular articles placed thereon, so that the lower portion of the egg is positioned between them and in contact with their inner side surfaces 3 and 8, while the medial portion 9 of the said article extends beyond the said surfaces, above them, and in proximity to the walls of the cell. The filler may then be placed in position, its lower edges being guided to the bottom of the narrow space between the projections by the inclined sides 7 thereof. If desired,
however, the filler may be placed in position first and the articles dropped or placed therein. Dotted lines in Fig. 2 indicate the position of the lower portion and the medial portion respectively of the article when in position. Another flat is then placed on the filler, covering the cells, and the operation repeated until the desired number of layers have been packed.

One of the advantages of the present form is that a flat may first be placed in the bottom of the case in inverted position or in normal position with a sheet of strawboard or other material interposed between it and the first holding flat, and the same thing may be done at the top of the container, to form an extra cushion. It will also be apparent that the flats at the top of the fillers may be inverted, so that each filler will have four of the knobs or projections at both top and bottom. This locks the fillers at top and bottom and also provides holders for the articles in the cells at both ends. It has been found however that with most articles the location of the projections in the bottom only is sufficient for all ordinary purposes.

In order to enable those skilled in the art to fully realize the advantages of the improvements it is pointed out that two projections may be used instead of four, as shown at the center of Fig. 2, these being arranged in diagonally opposed corners of the rectangles formed by the filler members.

In this manner the fillers and flats may be effectively locked, and if desired, other means may be employed for holding and supporting the article. On the other hand the number of projections may be increased, and each group or set may consist of a cluster of more than four, or the groups may be in effect double rows. Various other modifications within the scope of the improvements will suggest themselves to those skilled in the art.

What we claim is:

1. In a packing of the type including flats and collapsible cell-forming fillers, a flat comprising a sheet having bulged areas formed therein, said bulged areas being so disposed as to prevent lateral movement of the cell walls of the engaged filler.

2. In a packing of the type including flats and collapsible cell-forming fillers, a flat comprising a sheet having protuberances formed therein without severing the material, said rounded protuberances being so disposed as to prevent lateral movement of the cell walls of the engaged filler.

3. A packing of the character described, comprising a sheet of material provided with spaced projections and upright members placed thereon to form compartments for receiving the articles to be packed, having their lower portions between said projections, a plurality of said projections being located in each compartment at one end thereof and adjacent to the said members and having locking relation therewith, the said projections being spaced apart and constructed and arranged to receive the lower part of the article to be packed and to hold and support the same.

4. The combination of a sheet of material provided with spaced projections thereon, the said projections being arranged in groups or sets of two or more, and the groups being spaced apart a sufficient distance to permit the article to be packed to be inserted therebetween, upright members extending laterally on lines angular to each other, forming compartments and extending between members of said groups, separating them and being held thereby against lateral movement in all directions.

5. The combination of a sheet of material provided, with spaced conical projections thereon, the said projections being arranged in groups or sets of two or more, and the groups being spaced apart a sufficient distance to permit the article to be packed to be inserted therebetween, upright members extending laterally on lines angular to each other, forming compartments and extending between members of said groups, separating them and being held thereby against lateral movement in all directions.

6. In a packing of the type including flats and collapsible cell-forming fillers, a flat comprising a sheet having rounded protuberances formed therein, said rounded protuberances being so disposed as to prevent lateral collapse of the cell walls of the engaged filler, and said rounded protuberances being adapted to support a packed article out of contact with the walls of the containing cell.

Witness our hands this 17th day of July, 1922, at the city of New York, in the county and State of New York.

LEON MANN.
MORRIS KOPPELMAN.
DISCLAIMER

1,445,780.—Leon Mann, Mount Vernon, and Morris Koppelman, Brooklyn, N. Y.


Hereby enters this disclaimer to claims 1, 2, and 6 of said specification.

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