

April 1, 1941.

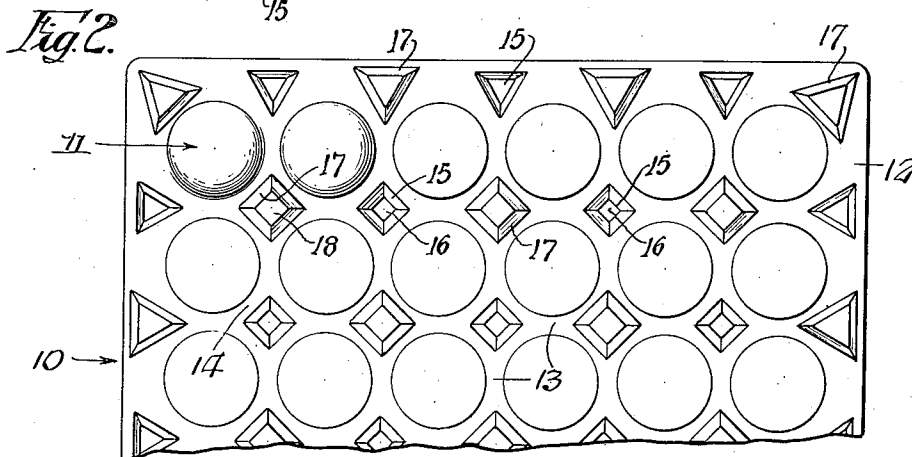
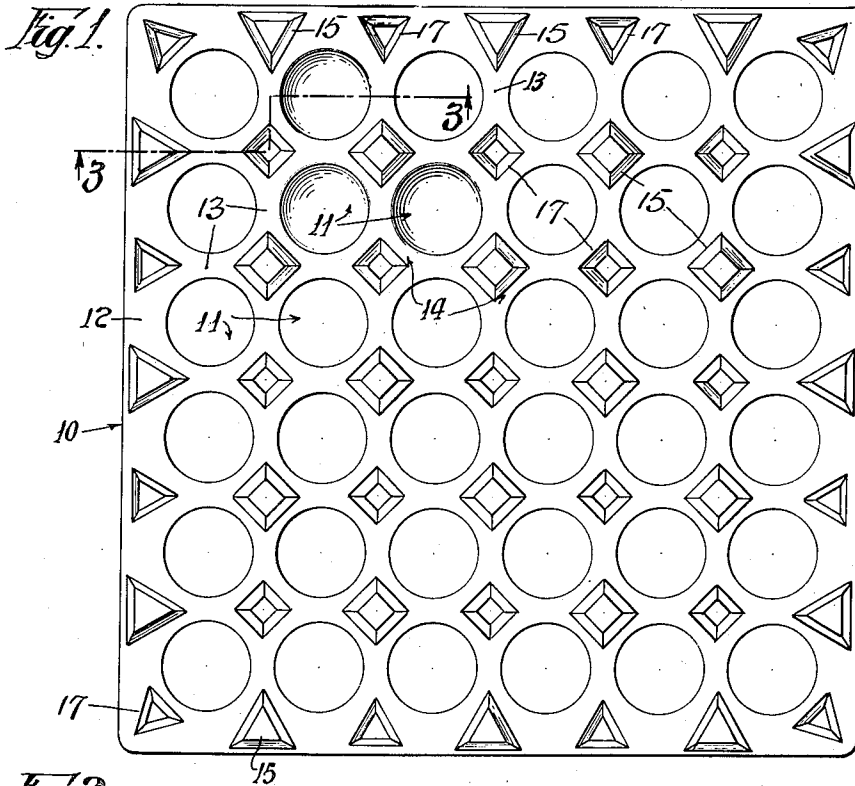
W. J. DE REAMER

2,236,675

PACKING MATERIAL

Filed April 21, 1938

2 Sheets-Sheet 1



Inventor:
William J. De Reamer,
By: *Arthur W. Nelson*
Attorney.

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2 Sheets-Sheet 2

Fig. 3.

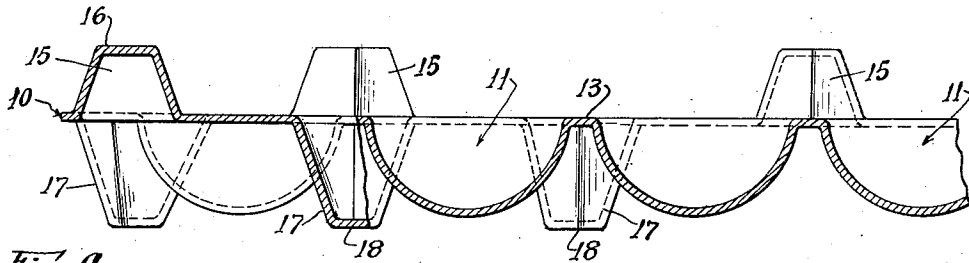
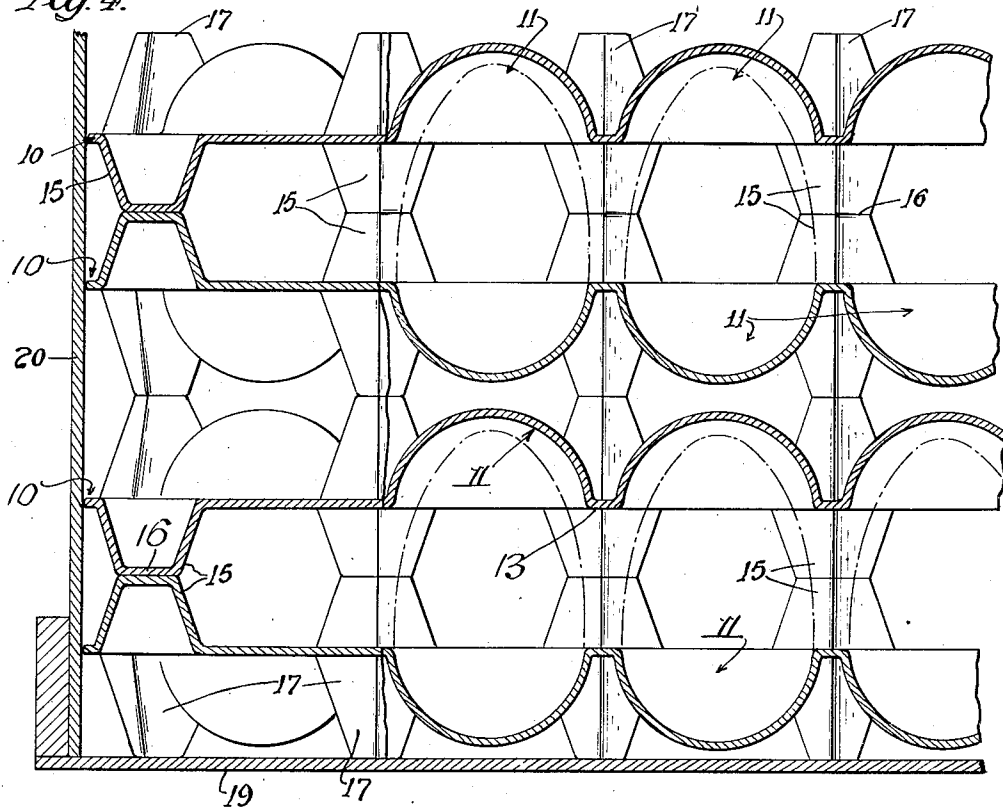


Fig. 4.



Inventor:
William J. DeReamer,
By: Arthur H. Nelson
Attorney.

UNITED STATES PATENT OFFICE

2,236,675

PACKING MATERIAL

William J. De Reamer, Crown Point, Ind., assignor to Mapes Consolidated Manufacturing Company, Griffith, Ind., a corporation of Delaware

Application April 21, 1938, Serial No. 203,334

2 Claims. (Cl. 217—26.5)

This invention relates to improvements in packing material and it consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The improved material is one especially adapted for use in packing eggs in the conventional case and it is so herein illustrated and described, but this is to be considered only in the illustrative sense because the improved material is readily adapted for use in packing other fragile articles that might readily become broken in shipment, if not packed to guard against the same.

The improved material is of the class known as "fillerless flats" or "egg carriers" used in packing eggs in a case for shipment, and eliminates the necessity of the so-called folding or other cellular fillers.

One of the objects of the present invention is to provide a packing material of this kind which may be made from molded pulp material in accordance with the conventional practice of making molded pulp articles.

Another object of the invention is to provide material of this kind in the form of sheets, used in pairs to hold eggs between them in a manner wherein the weight of the eggs and of the packing material itself is borne solely by the packing material so that the liability of the breakage of the eggs for this reason is eliminated.

Another object of the invention is to provide material of this kind in the nature of sheets, having egg receiving portions and so formed that parts of the respective sheets, engage each other whereby each sheet supports the one above without transmitting pressure through the packed eggs.

The above mentioned objects of the invention, as well as others together with the advantages thereof will more fully appear as the specification proceeds.

In the drawings:

Fig. 1 is a plan view of a sheet of the improved packing material and shows that side of the same hereinafter referred to as the "obverse" side of the same.

Fig. 2 is a fragmentary view similar to Fig. 1 and shows that side of the material hereinafter referred to as the "reverse" side of the same.

Fig. 3 is an enlarged detail vertical sectional view through a part of a sheet of the improved packing material as taken on the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary view showing a part of a conventional egg case in which the improved packing material is employed.

Referring now in detail to that embodiment of the invention illustrated in the drawings, and especially to Figs. 1-2 and 3 thereof, the improved packing material is preferably made of a molded pulp material in the form of a rectangular sheet 10 of a size fitting one of the compartments of a conventional egg case.

The sheet 10 is formed to provide six rows of article receiving portions 11 with six of such portions in each row, said portions being spaced the same distance apart in any direction of the sheet, following the edges thereof. As shown herein each article receiving portion is in the form of a hemispherical pocket that opens through that side of the sheet hereinafter referred to as the "obverse" side of the sheet to distinguish it from the other side of the sheet, hereinafter referred to as the "reverse" side of the sheet.

The outermost rows of pockets in said sheet are spaced a suitable distance inwardly from the adjacent edge of the sheet to leave a margin 12 thereabout. With the arrangement of the pockets as above mentioned, it is apparent that those parts 13 of the sheet between adjacent pocket in any one row thereof constitute short trusses that function materially to increase the stiffness of the sheet. The parts 13 extend as rows in two directions of the sheet and said rows of parts intersect to provide rectangular junctions 14 (see Fig. 1) in the sheet, each bounded on four sides by a group of four pockets 11.

A plurality of upstanding truncated conical projections 15 are provided on the obverse side of the sheet, some at points arranged about the margin 12 of the sheet in line with the parts 13 and 14 thereof and others arranged within the boundary of the parts 14. Each upstanding projection which is substantially of a rectangular shape in plan, is hollow to open through the reverse side of the sheet and has a flat top 16 as best appears in Fig. 3. The projections 15 in the margins 12 of the sheet are of a three sided shape in plan. Those arranged in the junction parts 14 are of a four-sided shape in plan, on the order of a truncated pyramid.

The sides of each projection taper inwardly toward the flat top to provide that amount of draft necessary for an easy release from that part of the mold in which it is formed.

A plurality of depending projections 17 are provided on the reverse side of the sheet, some at points arranged about the margin 12 of the sheet and others arranged within the boundary of certain of the parts 14. Each depending projection which is also of a substantially rectangular shape

is hollow to open through the obverse side of the sheet and has a flat bottom 18. The projections 17 in the margin 12 of the sheet are of a three-sided shape in plan. Those arranged in the junction parts 14 are of a four-sided shape in plan, on the order of a truncated pyramid. The sides of each of said projections 17 taper inwardly toward the flat bottom to provide that amount of draft necessary for an easy release from that part of the mold in which it is formed. Preferably each projection 17 has an axial dimension somewhat greater than the depth of a pocket 11 and of the projections 15 on the obverse side of the sheet.

As before mentioned, the sheet is rectangular and preferably square. With the projections 15 arranged as described, when two of such sheets are disposed with their obverse sides face-to-face, the projections on the obverse side of one sheet will engage upon those of the other sheet in the manner of posts spacing said sheets apart. With the projections 17 arranged as described, when two of such sheets are disposed with their reverse sides face-to-face, the projections on the reverse side of one sheet will engage those on the reverse side of the other sheet in the manner of posts spacing said sheets apart. In the arrangement of the projections 15 and 17 on the obverse and reverse sides of the sheets, it is desired that at least some of the projections on one side of the sheet be arranged at the corners thereof. As best shown in Figs. 1 and 2, there is one of the projections 17 at each corner of the sheet on the reverse side thereof.

In Fig. 4 I have shown a fragmentary view of a part of a conventional egg case within which the improved packing material is employed. Thus 19 indicates the bottom of such a case and 20 indicates one of the upright walls thereof as for instance an end wall of the case.

In packing an egg case, using the improved packing material as described herein, one of the sheets 10 is placed in the bottom of the case with its obverse side facing upwardly and with its reverse side facing toward the bottom of the case and with its projections 17 engaged upon the same. This spaces the bottom of the pockets a slight distance above the bottom of the case. Eggs of the bottommost tier in the case are placed each with one end engaged in each pocket. A second sheet 10 is then placed in the case with its obverse side facing downwardly and its reverse side facing upwardly, the flat ends of the projections 15 thereon engaging the flat ends of the like projection on the obverse side of the first sheet and with the pockets in the second sheet enclosing the top ends of the eggs. As the pockets 11 of the first sheet do not engage the bottom wall of the case, the said pockets may yield as required to function as cushions for the eggs. With the eggs of the bottom tier arranged as described, it is apparent that the mid portions of the eggs are in no way enclosed but on the contrary are exposed in the space between the first and second sheets so that a circulation of air is possible between the eggs in this tier.

A third sheet 10 is then placed in the case with its obverse side facing upwardly and with its reverse side facing downwardly so that the flat ends of the projections 17 thereof engage those on the second sheet to function as posts spacing the second and third sheets apart, in a manner wherein the pockets of the third and second sheets are out of engagement with each other.

The pockets 11 in the third sheet, of course, face upwardly and one end of an egg is placed in each

pocket after which a fourth sheet is applied with its obverse side facing the like side of the third sheet at which time the flat ends of the projections 15 of the fourth sheet engage upon the like ends of the projections of the third sheet.

In the completing of the packing of the case, the operation is as before. It is to be noted from the above that the weight in no one tier of eggs is imposed upon the tier of eggs below because such weight is transferred from one sheet to the other through the projections 15 and 17.

With the projections arranged as described, no particular care need be exercised in placing each sheet in the case to bring the parts into proper position so long as the proper side of one sheet faces toward the proper side of the adjacent sheet, either above or below. Thus, no especial skill is required in packing a case of eggs when the improved material is used so that the packing is at least as rapid as when the conventional flats and fillers are used.

A sheet of the improved packing material nests with others so that they may be quickly packed in suitable size packages for shipment.

The improved material eliminates the conventional flat and filler and this at a considerable saving not only in initial cost but in weight and packing, and the use of the improved material in no way requires a change in the packing cases now in use.

While in describing the invention I have referred in detail to the form, arrangement and construction of the parts of the sheet, as well as the manner of the use thereof, the same is to be considered only in the illustrative sense so that I do not wish to be limited thereto except as may be specifically pointed out in the appended claims.

I claim as my invention:

1. A packing for fragile articles comprising a plurality of rectangular sheets having obverse and reverse sides, means providing projections on the obverse and on the reverse sides of said sheets, symmetrically arranged in intersecting rows extending parallel with two right angled edges of the sheet, the projections on the obverse side of the sheets being positioned in the same row as the projections on the reverse side of the sheets and alternately arranged with respect thereto, means providing article receiving pockets in each sheet and which pockets open through the obverse side thereof and are arranged in intersecting rows of six pockets each extending parallel with but in planes between those of said projections, said sheets being arranged in pairs, with the obverse sides thereof facing each other and with the pockets thereof opposing each other for receiving top and bottom portions of the article packed between them, said projections on the obverse sides of the sheets in each pair holding said sheets in spaced relation and said projections on the reverse sides of the adjacent sheets of adjacent pairs holding said sheets in spaced relation.

2. A packing for fragile articles comprising a plurality of rectangular sheets having obverse and reverse sides, means providing projections on the obverse and on the reverse sides of said sheets, symmetrically arranged in intersecting rows extending parallel with two right angled edges of the sheet, the projections on the obverse side of the sheets being positioned in the same row as the projections on the reverse side of the sheet and alternately arranged with respect thereto, means providing article receiving pockets in each sheet and which pockets open through

the obverse side thereof, and are arranged in intersecting rows of six pockets each extending parallel with but in planes between those of said projections, said sheets being arranged in pairs, with the obverse sides thereof facing each other 5 and with the pockets thereof opposing each other for receiving top and bottom portions of the article packed between them, the projections on

the obverse sides of the sheets in each pair engaging each other for holding said sheets in spaced relation and said projections on the reverse sides of the adjacent sheets of adjacent pairs being engaged with each other for holding said sheets of adjacent pairs in spaced relation.

WILLIAM J. DE REAMER.