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L. OXHANDLER

FLAT FOR CELLULAR FILLERS

Filed May 28, 1926

Fig. 1.

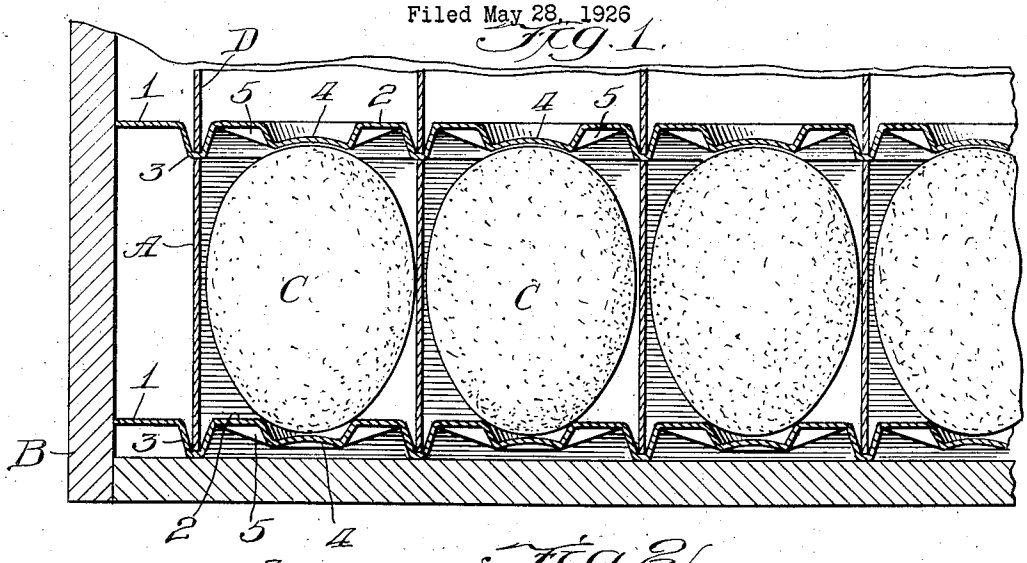
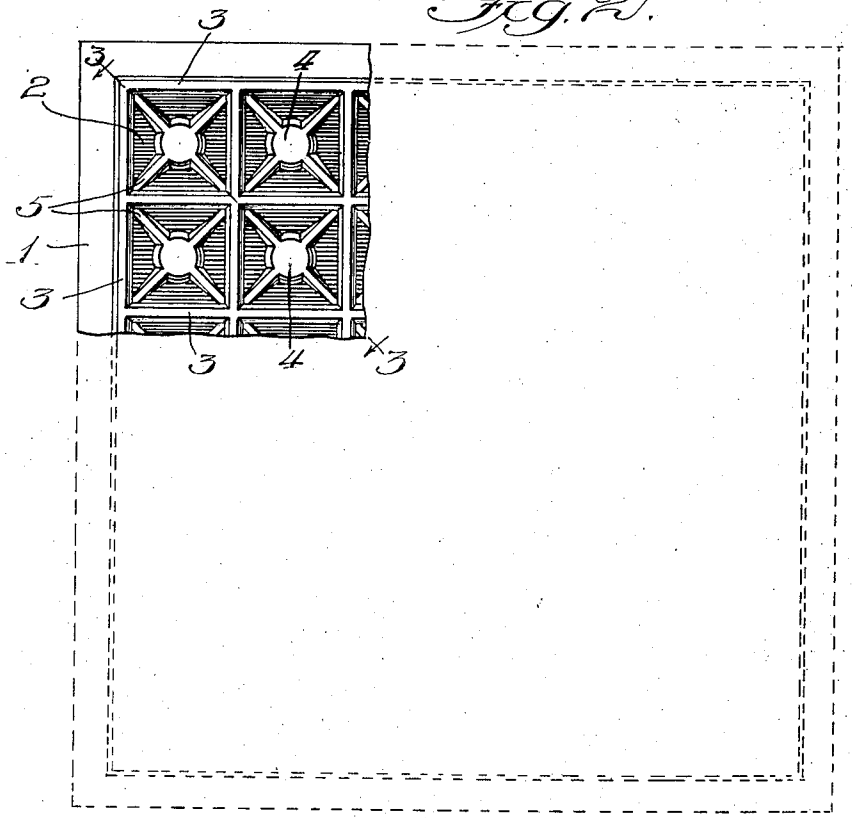


Fig. 2.



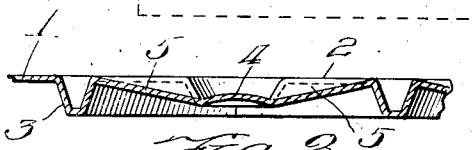


Fig. 3.

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UNITED STATES PATENT OFFICE.

LEOPOLD OXHANDLER, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO MEYER DRY, OF CHICAGO, ILLINOIS.

FLAT FOR CELLULAR FILLERS.

Application filed May 28, 1926. Serial No. 112,193.

The present invention has for its object to produce a simple and novel flat for co-operation with the top or bottom edges of a cellular filler, in the packing of eggs or other fragile things, forming cushioning supports for the eggs or other articles and at the same time firmly bracing the cellular structure.

A further object of the present invention is to produce a simple and novel flat, capable of interlocking with all of the edges at the top or bottom of a cellular filler, out of a single sheet or layer of paper or the like.

The various features of novelty whereby my invention is characterized will hereinafter be pointed out with particularity in the claims; but, for a full understanding of my invention and of its objects and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawing, wherein:

Figure 1 is a vertical section through an egg crate in which my improved flats are employed in packing eggs, only a fragment of the crate being shown; Fig. 2 is a plan view of one of the flats, the full lines illustrating one corner and the dotted lines the general outline; and Fig. 3 is a section taken on line 3—3 of Fig. 2, the scale being the same as in Fig. 1.

My improved flat consists of a sheet of pulp, heavy paper, cardboard, or the like, either molded in the process of formation or afterwards embossed, to produce a flat marginal portion 1 surrounding and enclosing a group of squares 2 separated from each other and from the flat marginal portions by grooves 3; these grooves consisting of two groups or series of parallel grooves extending at right angles to each other, one series being parallel with one edge of the flat, and the other series being parallel with an edge adjacent to the latter edge. Thus the raised squares form plateaus each supported on four side walls forming parts of the sides of the troughs. Viewed from one side or face, the flat has the appearance of a flat sheet containing two intersecting series of troughs or depressions. These troughs or depressions are so located that when an ordinary cellular filler, such as indicated at A in Fig. 1, is set up and placed on the flat, the lower marginal portion of each wall of each cell will extend into one of the grooves, so that one of the squares 2 extends into such cell and forms a head therefor. The grooves are preferably made wider at the top than at the bottom, so as to afford wide mouths into which the edges of the walls of the cellular structure may be entered without difficulty, and for the further purpose of permitting a stack of flats to be nested for shipment.

Each of the squares 2 preferably has a central depression 4 between which and the corners of the square extend diagonal grooves 5 that reinforce the squares and permit the flats to be made out of thinner or lighter material than would otherwise be practicable.

When my improved flats are employed in packaging eggs, for example, one of the flats is laid in the bottom of the crate B, as indicated in Fig. 1, with the open sides of the grooves 3 and 5 directed upwardly. One of the cellular fillers is then opened out and dropped into the crate, the lower marginal portions of all of the walls of the filler entering the grooves 3. Eggs C are then placed in the filler in the usual way. The depressions in the centers of the squares into which the flat is divided serve not only to center the lower ends of the eggs, but also to permit the lower ends of the eggs to extend down farther than the plane of the flat marginal portions of the flat.

After the first layer of eggs has been placed in position, a second flat is dropped into the crate, coming to rest on the filler. A second filler D is then applied and filled with eggs; this process of adding flat, filler and eggs being kept up until the desired number of layer of eggs has been packed. The eggs may or may not engage with the overlying flats. If two eggs, one above the other, both engage with the flat arranged between them, no harm will be done, because the flat will constitute an effective cushion.

Not only do the ribs reinforce the side walls on which the raised squares or plateaus are supported, and form cushions for particles resting on the squares or plateaus; but, since they lie below the plane of the squares or plateaus, they produce in the latter liquid retaining wells. In other words, if an egg should crack and some of the contents exude therefrom, it would be retained in the well or wells of the plateau or square underneath the egg and could not travel laterally far enough to smear other portions of the flat or eggs located adjacent to the cracked egg.

While I have illustrated my invention as embodied in a flat for packaging or crating

eggs, it will of course be understood that my invention is not limited to this particular use, but may be employed wherever it is desired to package fragile articles of any kind. It will furthermore be understood, that my improved flat may be formed by embossing a plain sheet or by molding suitable pulp, either in bulk form or after it has become a partially finished sheet.

While I have illustrated and described with particularity only a single preferred form of my invention, I do not desire to be limited to the exact structural details thus illustrated and described; but intend to cover all forms and arrangements which come within the definitions of my invention constituting the appended claims.

I claim:

1. A device of the character described comprising a sheet of approximately uniform thickness divided into sections by two intersecting sets of continuous parallel grooves, all of the grooves having their open sides on the same face of the sheet, each section having a central portion depressed to lie at a depth about equal to that of the aforesaid grooves, and there being grooves extending diagonally of each section from the central depressed portion, the bottom of each of the latter grooves lying in the vicinity of one of the said depressed portions at the inner end and gradually rising to meet the top of the sheet near a corner of the section in which it lies.

2. A flat of the character described comprising a sheet of approximately uniform thickness having parts displaced out of the plane thereof and dividing it into squares separated from each other by troughs, each square having diagonal reinforcing ribs in the form of troughs increasing in depth from the corners of the squares toward the center.

3. A device of the character described comprising a sheet of approximately uniform thickness throughout divided into sections by two intersecting sets of continuous deep parallel grooves all having their open sides on the same face of the sheet, each section having a central depressed portion and grooves extending diagonally from the latter into the vicinity of the corners of that section, the depressed portion and the inner ends of the latter grooves in each section lying at a depth about equal to the depth of the first-mentioned grooves, and said diagonal grooves decreasing in width and depth toward their outer ends.

4. A flat of the character described, comprising a sheet of approximately uniform thickness having parts displaced out of the plane thereof and dividing it into raised squares separated from each other by troughs open on one face of the sheet, the sides of the troughs constituting the supporting walls for the raised squares, the material of the squares being displaced to produce trough-shaped cushioning ribs lying below the plane of said squares to reinforce the supporting side walls for said squares and form liquid retaining wells.

In testimony whereof, I sign this specification.

LEOPOLD OXHANDLER.