(No Model.) 2 Sheets—Sheet 1.

N. G. SÖRENSEN.

PACKING BOX.

No. 602,276. Patented Apr. 12, 1898.

FIG:1.

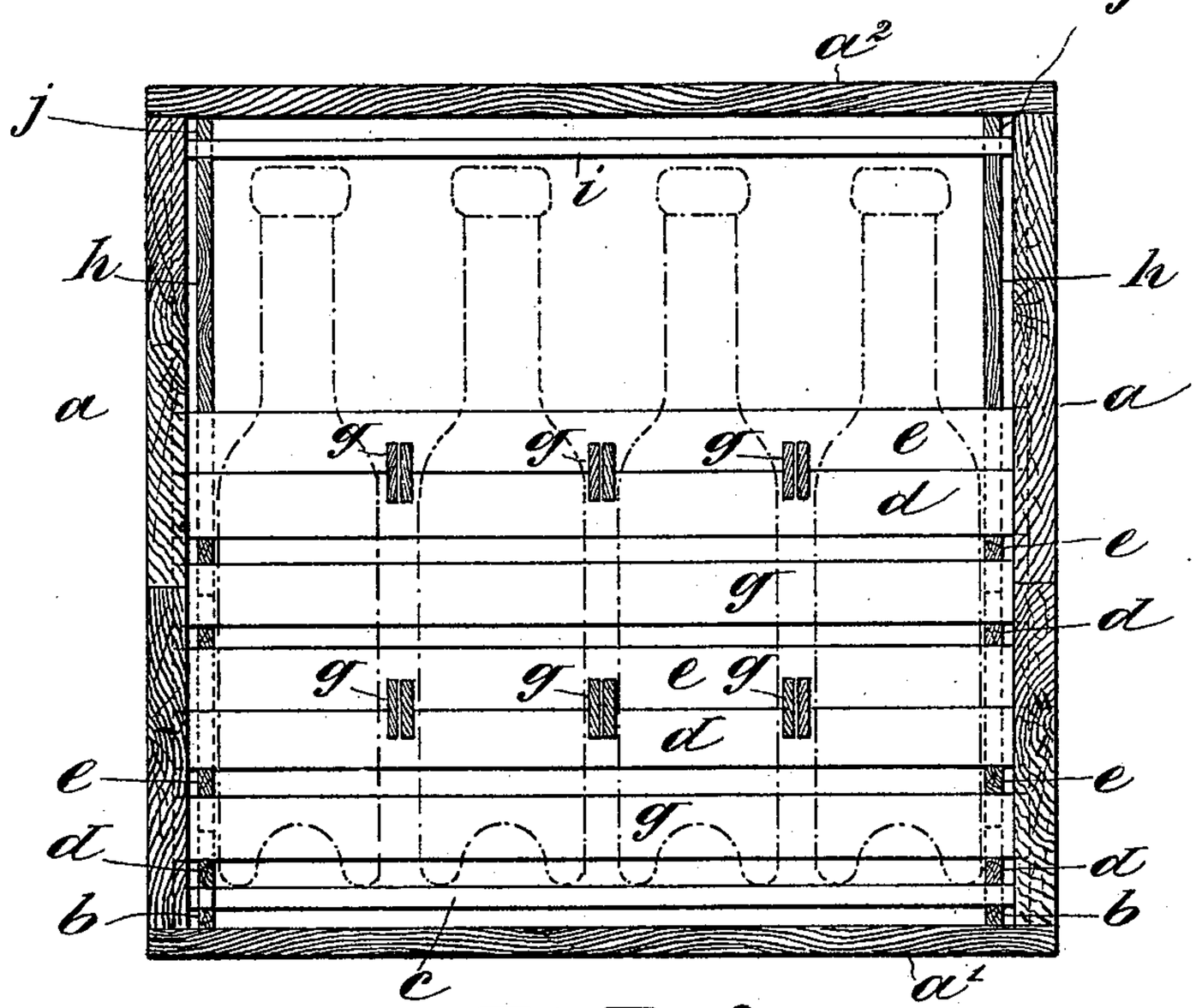
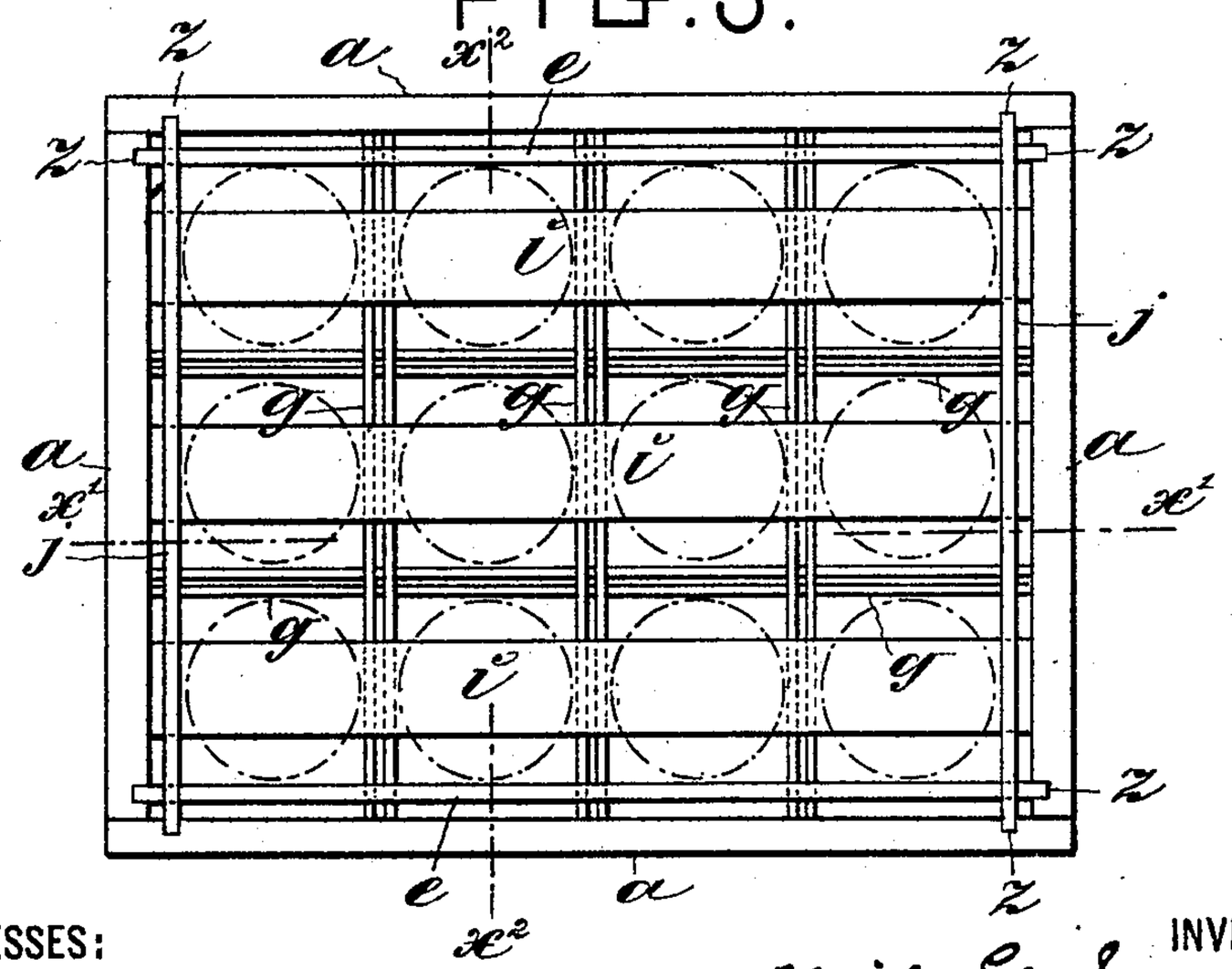


FIG:3.



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(No Model.) 2 Sheets—Sheet 2.

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PACKING BOX.

No. 602,276. Patented Apr. 12, 1898.

FIG: 2.

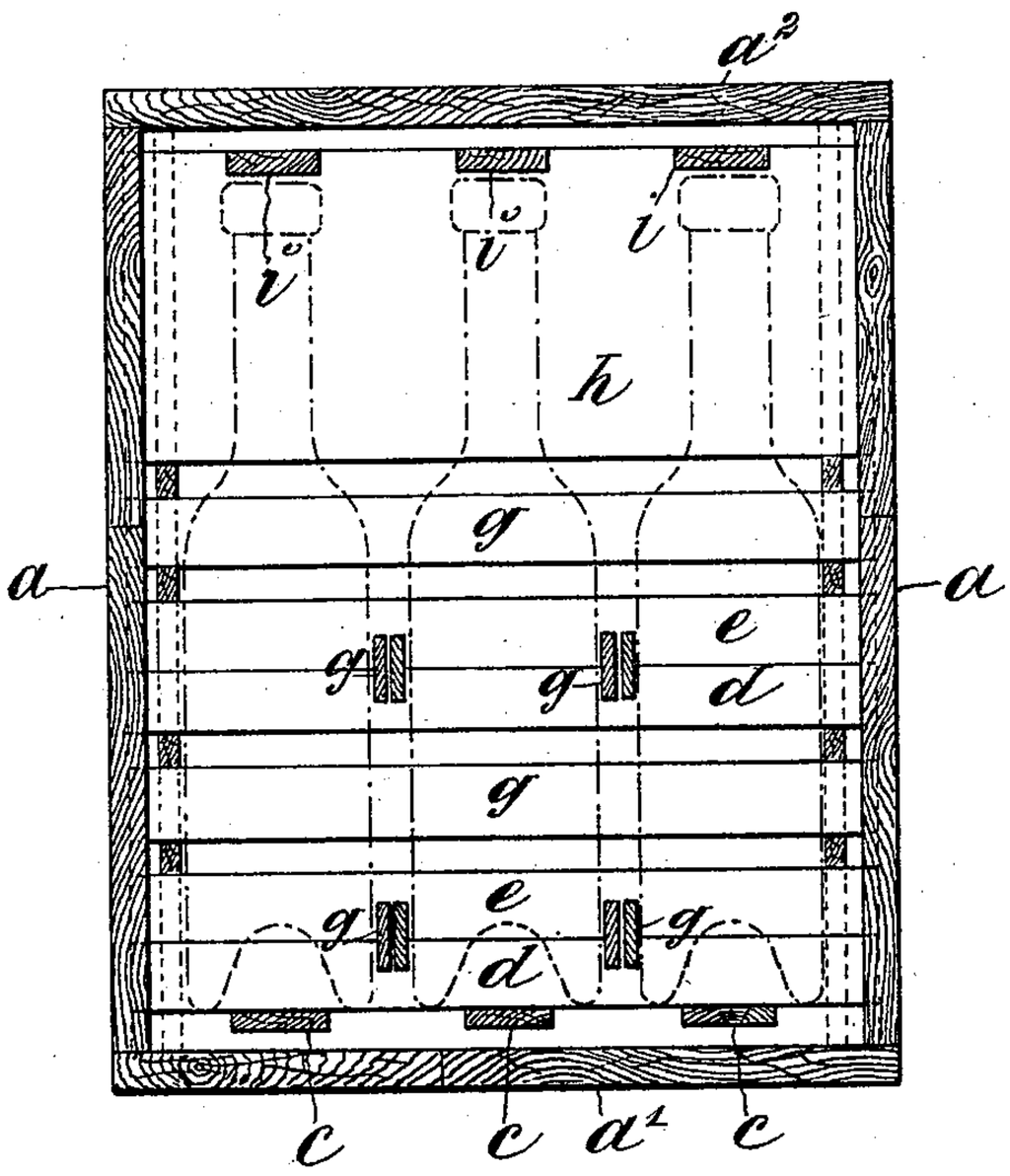
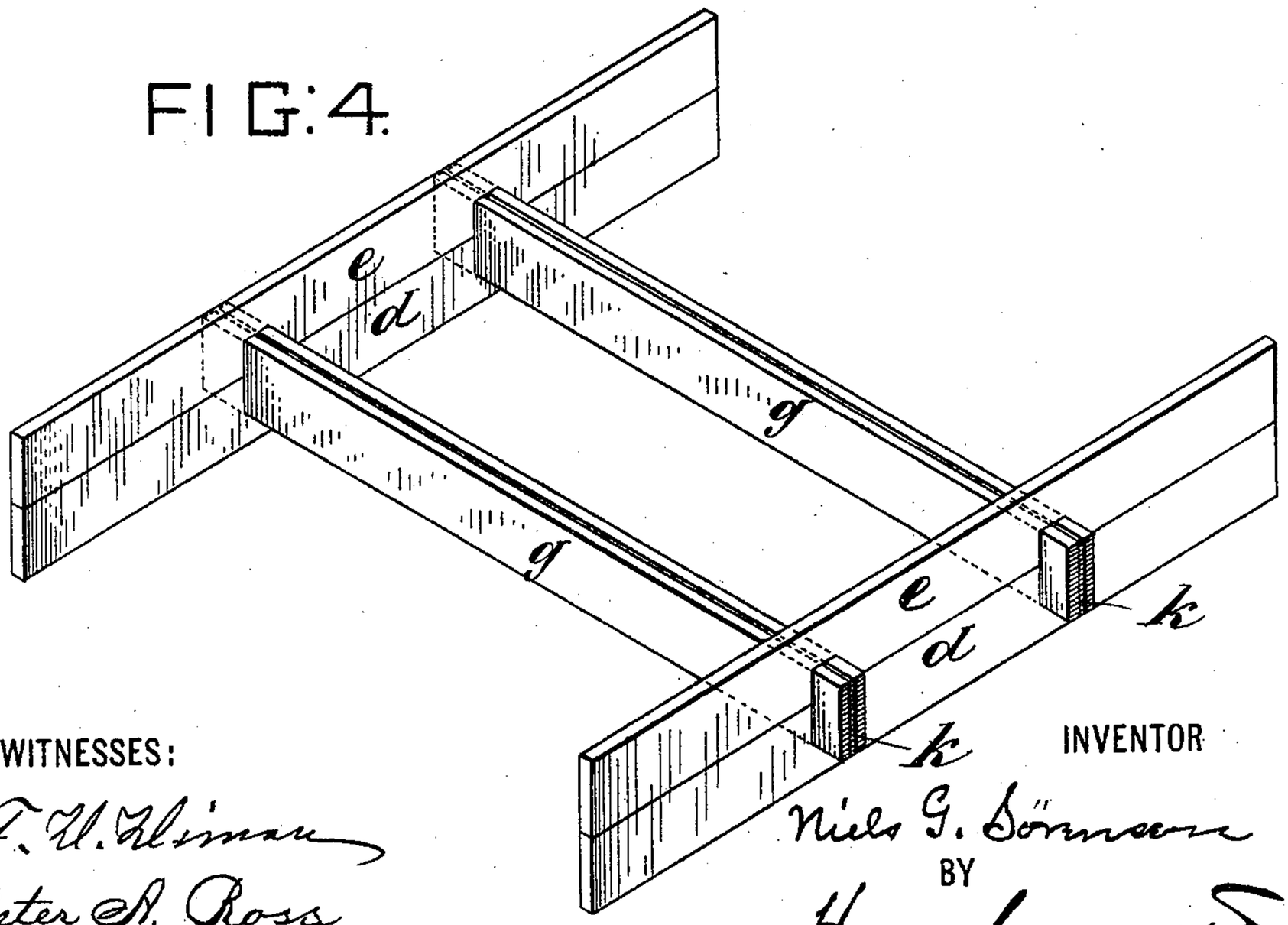


FIG: 4.



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NIELS GEORG SÖRENSEN, OF STOCKHOLM, SWEDEN.

PACKING-BOX.

SPECIFICATION forming part of Letters Patent No. 602,276, dated April 12, 1898.

Application filed June 23, 1897. Serial No. 641,865. (No model.)

To all whom it may concern:

Be it known that I, NIELS GEORG SÖRENSEN, a subject of the King of Sweden and Norway, and a resident of Stockholm, in the Kingdom of Sweden, have invented certain new and useful Improvements in Packing-Boxes, of which the following is a specification.

This invention relates to a packing case or box suitable for bottles and similar fragile vessels and for substances which must not be jarred or jolted, in which box the articles will be efficiently protected from the effects of blows or shocks no matter on which side of the box these may be received. The internal arrangement of the box is so contrived that the articles will be placed in cells separated from one another and from the sides, bottom, and cover of the box by elastic wooden ribs or laths attached to the sides, bottom, and cover of the box.

In the accompanying drawings, which illustrate an embodiment of the invention, Figure 1 is a longitudinal section of the packing-case, substantially in the plane indicated by line x' in Fig. 3; and Fig. 2 is a similar transverse section on the line x^2 in Fig. 3. Fig. 3 is a plan of the case, the cover being omitted. Fig. 4 is a perspective view illustrating the construction.

In carrying out my invention I take an ordinary wooden box, as shown in the drawings, of which *a a a a* are the four sides, (or sides and ends,) a' the bottom, and a^2 the cover. To construct cells in the interior of the box, grooves *z* are formed in the sides *a* near the respective corners, as seen in Fig. 3, these grooves extending down the sides from top to bottom and parallel with the ends of the sides in which they are cut. The grooves are wide enough to receive relatively thin and springy wooden strips or laths, which are slipped down edgewise in the grooves, the laths being made to fit snugly therein. In order to form the cells in the box, a base is made consisting of narrow laths *b*, placed in the grooves *z* and extending transversely or across the narrow way of the box by preference. The laths *b* rest on the bottom of the box and on these are placed the thin laths *c*, forming the cell-bottoms, the laths *c* being gained or notched into the transverse laths *b*, as seen in Fig. 2, to keep the former, which rest flatwise, from shifting. On this base are mounted the several tiers of the cell structure, each tier consisting of like elements or members. Each such tier comprises two like laths *d* and *e*, inserted edgewise in the grooves *z*, one resting on the other, and each gained at proper points to receive partition-laths *g*. The tiers are alike except that in alternate tiers the members extend in opposite directions or at right angles to those of adjacent tiers. In the construction shown there are four such tiers superposed in the box and extending up to the base of the neck of the bottles in the box, said bottles being herein indicated by dotted lines. Above these cell-tiers (one of which is seen in perspective, detached, in Fig. 4) and resting on the topmost tier are two relatively broader laths *h*, placed edgewise in the grooves *z*, so as to cross the members *d e* of the topmost tier, said laths *h* extending a little above the tops of the bottles and having in their upper edges and at proper distances apart gains to receive top laths *i*, placed flatwise over the rows of bottles and corresponding to the respective bottom laths *c*, on which the bottles rest. Between the top laths *i* and the box-cover are placed laths *j*, resting on the laths *h* and occupying the same grooves.

It will be obvious that the laths *b* and *c* may be secured to the bottom of the box and the laths *j* and *i* to the cover thereof; but this is not essential.

As herein shown, the partition laths or members *g* are represented as each formed of two thin laths with a block *k* between their ends to keep them slightly separated; but this feature, while it imparts more springiness and forms a better cushion than a single lath, is not absolutely essential to the invention. Where two separated laths are used in this manner, a blow from one bottle or article is not communicated at all to that next adjacent.

It will be obvious that the cell structure described is very simple and inexpensive, and as it has its supports in the box sides the lateral movement of one article in its cell cannot in any way be transmitted to another article.

The bottles may be placed either end up in the box by simply inverting the cell structure.

One feature of the cell structure described is that the partition members *g* of adjacent tiers cross each other, but are not interlocked at the crossings, so that their yielding or cushion features are preserved.

As shown, the cells are adapted for bottles or flasks; but they may be employed for packing for transportation anything liable to be injured by shocks, for explosives, and the like.

Having thus described my invention, I claim—

1. The combination with a packing-box having grooves *z*, of a cushion base for the articles, and a cushion structure to rest on the articles, of tiers of cell structure, set in said grooves *z*, each of said tiers comprising end members *d* and *e*, the ends of which engage the grooves *z*, and partition members *g*, arranged at right angles to the members *d* and *e* and secured at their ends in the last-named members, said tiers being superposed in the grooves in the box and arranged with the members of alternate tiers crossed, substantially as set forth.

2. In a packing-box having an interior cell structure substantially as described, the superposed tiers each composed of members *d* and *e*, with their ends engaging grooves in the box, and partition members *g*, secured at their respective ends in the last-named members, said partition members being each composed of two strips or laths placed side by side, but separated by blocks or pieces *k*, substantially as set forth.

3. The combination with the box having grooves *z* in its sides parallel with the ends thereof, of the base in the box consisting of the laths *b*, and the bottom laths *c*, supported in gains or notches in the laths *b*, a series of tiers, composed each of members *d* and *e*, engaging the grooves and partition members *g*, supported at their ends in gains or notches in the members *d* and *e*, said tiers being arranged so that the members of alternate tiers are at right angles.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

NIELS GEORG SÖRENSEN.

Witnesses:

ERNST SVANGVIST,

E. HERMANSSON.