June 3, 1969 K. NESSE 3,447,716

TRANSPORT CASE OF AN EXPANDED ARTIFICIAL MATERIAL

Filed April 12, 1967. Sheet 1 of 2

Fig. 1.

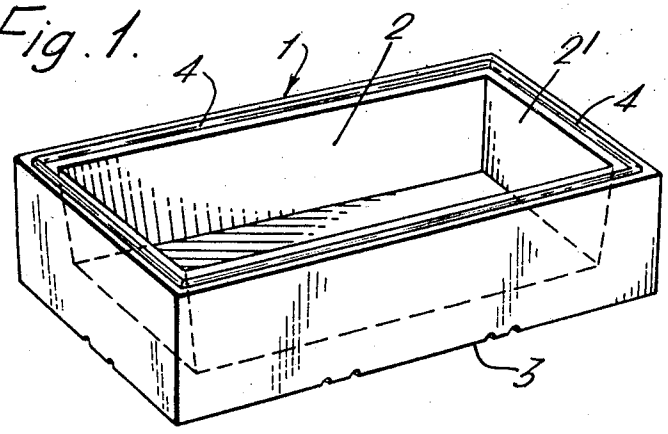

Fig. 2.

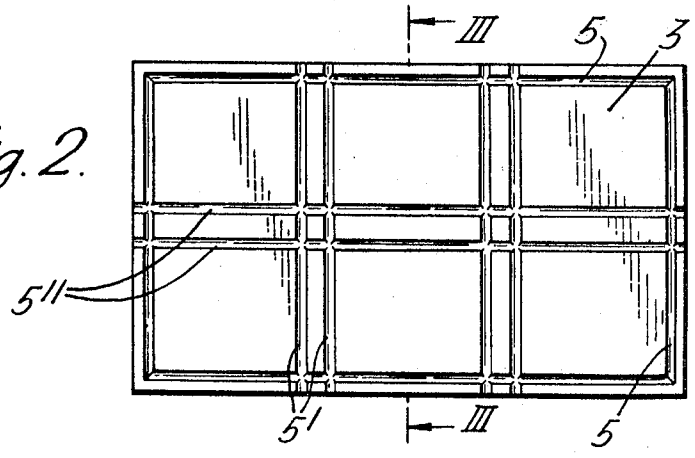

Fig. 3.

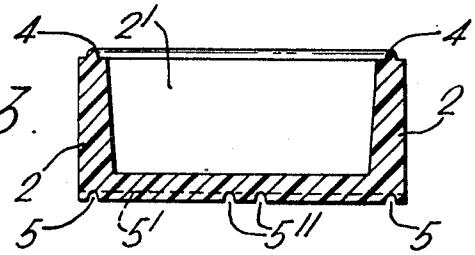

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Fig. 4.

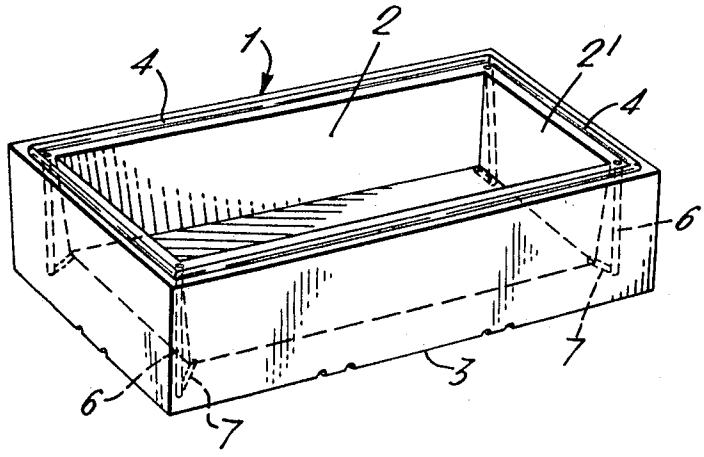
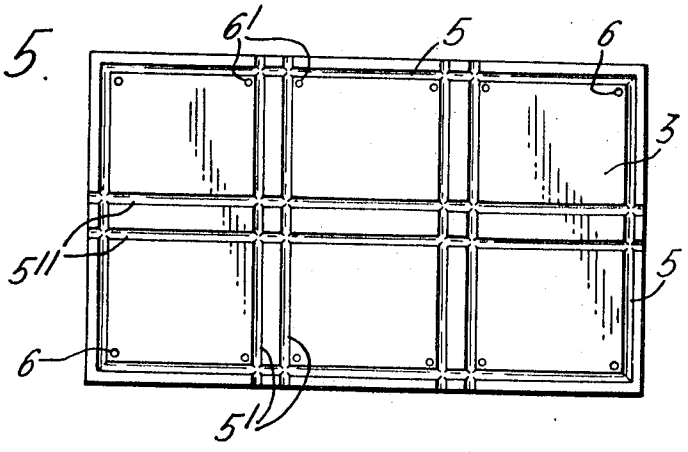


Fig. 5.



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TRANSPORT CASE OF AN EXPANDED ARTIFICIAL MATERIAL

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Int. Cl. B65d 21/00
U.S. Cl. 220—97 2 Claims

ABSTRACT OF THE DISCLOSURE

Disposable transport case constructed of light expanded plastic material comprises bottom wall and upwardly extending side wall integrally connected at its lower portion to bottom wall. Grooves are provided in exterior surface of bottom wall and tongues extending upwardly from uppermost portion of side wall are arranged for mating engagement with grooves in bottom wall of similar case when series of such cases are stacked one above the other. Transport case has drainage system for draining single case or vertical stack of cases.

The present invention relates to a transport case of an expanded artificial material. The case according to the invention is especially designed for the transport of fish, but it can also advantageously be utilized for the transport of other articles.

Fish cases or the like of plastic have lately found extensive usage. Such cases are usually produced of a solid plastic material and are designed for repeated usage, that is, for a series of transports. Their durability is thus made as good as possible, but these cases are expensive and relatively heavy.

In order to avoid these disadvantages, it has been suggested to produce transport cases of the type in question of an expanded artificial material so as to achieve a transport case of substantially lesser weight, which again means a much more economic transport. Such transport cases of expanded plastic, however, must be produced with disproportionally thick walls, lest the walls should yield and buckle or be distorted otherwise, when such cases are stacked upon each other during their transport by car, ship or railway. On these occasions the stacked cases will also be subject to vibration and rolling forces.

The object of the present invention is to achieve a transport case of an expanded artificial material, preferably expanded polystyrene, which case in spite of the structure of its material may be manufactured with substantially thinner walls than has been possible until now. Such expanded plastic cases are designed to be used only once and to be thrown away after usage. It is thus of the greatest importance to render possible a production of such cases with a minimum of material consumed, that is, at the lowest possible production cost.

The improved transport case according to the present invention is characterized in that the top of its side edges and the underside of its bottom are provided with cooperating parts, e.g. in the shape of projections and recesses, which parts engage when several cases are stacked on top of each other, in order to secure the side walls against distortion.

In a preferred embodiment the said cooperating parts constitute tongues and grooves, and according to another feature of the invention these are preferably dimensioned in such a way that the width of the tongue is somewhat larger than that of the groove. Due to the elasticity of the material an engagement between tongue and groove is

thus achieved which secures the cases relative to each other and produces practically complete air tightness, which may at times be of the greatest importance to the transported articles, e.g. fish.

According to another feature of the invention the bottom of the transport case is so constructed that it is rendered possible to stack the cases in a suitable formation.

The invention also relates to a suitable drainage of the cases in question. For this purpose the side walls of the cases are provided with drain channels to drain off moisture from the bottom of the case as well as from a similar case stacked on top of it.

When the cases are constructed for stacking in formations, drain channels are provided both in the corners of the case for cooperation when the cases are stacked straight upon each other, and at one or several locations in the side walls of the case in order to provide drains for upper cases stacked in a formation.

The above mentioned as well as further features characterizing the invention will appear more clearly from the following description of some embodiments shown in the drawing.

FIG. 1 shows a perspective top plan view of a transport case according to the invention.

FIG. 2 shows the case according to FIG. 1, seen from beneath.

FIG. 3 shows a section along the line III—III in FIG. 2.

FIG. 4 shows a modified transport case according to the invention in a view like FIG. 1.

FIG. 5 shows the case of FIG. 4 seen from beneath.

The case according to the shown examples is a parallelepipedic body of expanded polystyrene having upright side walls **2**, and end walls **2'**, as well as a bottom **3**. The side and end walls are preferably slightly oblique, that is, converging slightly upwards.

In the shown embodiment the top of the side and end walls is parallel with the case bottom but is provided with a bead or tongue **4** projecting upwards. This tongue runs along the entire periphery of the case, as will appear from FIG. 1.

The bottom of the case is provided with a corresponding recess or groove **5**. When a case is stacked on top of a corresponding case the tongue and groove will thus engage. In this way the side and end walls of the subjacent case will be effectively interlocked with the bottom of the upper case and will thus receive the desired support preventing the walls **2**, **2'** from buckling or being distorted due to the pressure or stress from the articles kept in the case.

In a preferred embodiment the bottom of the case, as shown in FIG. 2, is not only provided with a circumferencial groove **5**. Additionally it has intermediate grooves **5'**, **5''**. These intermediate grooves **5'**, **5''** are arranged so as to make it possible to stack the cases in question in a suitable formation, as will be understood from the drawing. The cases then either may be stacked with corners engaging, half sides, or half ends engaging or two thirds or one third respectively engaging, depending on the desired formation of the stacks.

It will be understood that embodiments of the cooperating parts of the case top edges and bottoms varying from the shown and described ones may be arranged within the scope of this invention. The tongue and groove means may thus be replaced by a suitable profiling of the case top edges and a corresponding arrangement of the bottom surfaces. The cooperating parts need not run continuously along the top edge or bottom surfaces respectively. A construction of the tongue-groove type, however, has proved to be the most suitable one in actual usage, the engagement achieved by this arrangement, as mentioned

above, securing an effective interlocking of the cases as well as a high degree of air tightness.

In additional to the said cases plane covers (not shown) may advantageously be manufactured to cover and stiffen the uppermost cases of a stack or a formation. The lower surfaces of these covers are provided with means corresponding to the subjacent case edges.

In order to achieve a drainage of said cases vertical drain channels **6** are provided in the side walls. The drain channels **6** run from the top edge of the case to its bottom **3**. There are also provided channels **7** running from the bottom to the vertical channel **6**. Cases stacked straight on top of each other thus have continuous, vertical drain channels in the corners with communicating drain channels **7** running from the case bottoms to the channels **6**. If the cases are to be stacked in formations, that is, if they are constructed as indicated in FIG. 5, they may additionally be provided with vertical channels **6'**, **6''** suitably located in the side walls in accordance with the desired kind of stack formation. The drain channels may if desired be provided as outside grooves in the case walls.

I claim:

1. A disposable transport case for fish and the like constructed of light expanded plastic material comprising a bottom wall and an upwardly extending side wall integrally connected at its lowermost portion to the bottom wall, an arrangement of grooves in the exterior surface of the bottom wall, tongues extending upwardly from the uppermost portion of the side wall constructed and arranged for mating engagement with the grooves in the bottom wall of a similar case when a series of such cases

are stacked one above the other, the tongues having a width slightly larger than the width of the grooves whereby a force fit is provided between the tongues on one case and the grooves in an adjacent case when the cases are stacked one above the other, and a drainage system comprising at least one open-ended drain channel in the side wall extending between the uppermost and lowermost portions of the side wall, and a branch line in the side wall adjacent the lowermost portion thereof connecting the interior of the case to the open-ended drain channel whereby liquid in the case flows through the branch line into the drain channel and out the lower open end of the channel.

2. A disposable transport case as in claim **1** wherein the drain channel is vertically disposed so that similar drain channels in a stack of similar cases are in vertical alignment with one another whereby liquid from the interior of each case in the stack flows into the branch lines and drain channels and out of the lower open end of the drain channel in the lowermost case of the stack.

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