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ATTORNEYS
PACKING OF FIBRE MASS OR OTHER RESILIENT MATERIAL FOR EGGS AND OTHER FRAGILE OBJECTS

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9 Claims

ABSTRACT OF THE DISCLOSURE

A packing of fibre mass or other resilient material for eggs or other fragile objects includes lower and upper portions both of which are provided with cavities or depressions for enclosing the lower and upper portions, respectively, of the objects, the upper and lower portions abutting against each other in the closed condition, a locking arrangement including a hook-shaped projection on the lower portion of the packing cooperating with a rib provided on the upper portion of the packing with the rib delimited by the edge of the upper portion and an aperture through which the locking projection protrudes, the upper portion of the packing being provided with a depending collar in front of and to both sides of said aperture, said collar constituting said rib, aligned upper projections in the upper and lower portions of the packing between each four neighboring pockets, each upright projection being steeply narrowed a small distance from the top of the projection thereby forming shoulders at the outwardly facing sides of said projection, such shoulders constituting steps at the packing when a number of packings is piled in open condition.

The invention relates to a packing of fibre mass or other resilient material for eggs or other fragile objects, comprising a lower portion and an upper portion, both of which are provided with at least one cavity or depression for enclosing the lower and the upper portions, respectively, of the objects, and with which their edges abut against one another in the closed condition of the packing, wherein the lower portion and the upper portion are releasably inter-connected by means of at least one locking arrangement, formed of a hook-shaped projection on the lower portion, cooperating with a rib provided on the upper portion, said rib being delimited by the edge of the upper portion and an aperture through which the projection protrudes.

Packings of this nature are known wherein the edges of the lower portion and the upper portion join one another along a plane face from which the hook-shaped projection protrudes upwardly. In order to obtain sufficient strength of the rib cooperating with the projection, the aforesaid aperture has been placed about half-way up the side wall of the upper portion. In order to be able to cooperate with the aperture, the locking projection must protrude upwardly through a corresponding distance, which meets with difficulties in the production process.

The packing according to the invention is distinguished from the said known construction in that the edge of the lower portion extends downwardly on either side of the projection and that correspondingly the upper portion is provided with a depending collar in front of and to both sides of the aperture. This collar constitutes the locking rib.

When the upper portion and the lower portion are formed as indicated in the foregoing in the area of the locking arrangement, it is possible to obtain a wide and strong locking rib without any necessity for the locking projection to protrude upwardly to any great extent. When the packing has been closed, the collar will conceal the irregular shape of the end edge of the lower portion. No difficulties will be encountered in giving the collar a suitable extent in downward direction so that it will form a long, plane guide for the projection when the upper portion is pressed downwardly toward the lower portion for the purpose of closing. When the packing is to be opened, the collar constitutes an easily accessible finger grip so that the packing can be closed and opened without difficulty.

According to the invention the depending collar may also be provided with a marginal flange gripping over the lowered edge of the lower portion. This will impart a particularly increased strength to the collar, and at the same time the collar can easily be taken hold of when the packing is to be opened. Furthermore, the collar will completely cover the end edge of the lower portion.

The distance through which the projection protrudes upwardly from the otherwise plane edge of the lower portion may, according to the invention, be approximately equal to the distance through which the depending collar of the upper portion with its marginal flange extends downwardly from the otherwise plane edge of the upper portion. As will be known, empty packings of the present nature can be piled by so-called nesting, the lower portions and the upper portions in open condition or beside one another and with the bottoms facing downwards being piled on top of each other. By the construction of the packing as indicated in the foregoing it is obtained that in all essentials the projection need only protrude upwardly as far as a part of the edge of the upper portion concerned, which is of importance for a regular piling of the packings above each other.

If, in known manner, the lower portion of the packing is designed with juxtaposed pockets for the individual objects, and the projection rises from the wedge-shaped space between two neighboring pockets, the continuation of the wall thereof, which behind the projection forms a roof-shaped part, an indentation may be provided, according to the invention, in the top portion of the roof-shaped part, by which means the locking projection obtains a particularly good, rearwardly directed resilience, although it is a short one.

If the packing is so designed that the lower portion is constructed with juxtaposed pockets for the individual objects, an upright projection being provided between each four neighbouring objects, each projection may, according to the invention, suitably protrude above the edge of the lower portion, substantially to a height at a level with the uppermost part of the projection. The projections will in such case contribute to a plane piling of the lower portions. With a view to avoiding that the projections of a packing in a pile of packings are firmly and squeezingly engaged by the hollow projection of a part of a superimposed packing, the projections may be steeply narrowed a small distance from the top, so that at the side facing outwards shoulders are produced which constitute stops at the packings piled in open condition. Similar measures may be taken as regards the upper portion, if also the latter, in a manner known per se, has upright projections which in the closed condition of the packing abut against the projections of the lower portion and thus stiffen the upper portion.

The invention will now be explained in more detail, reference being had to the drawing wherein FIG. 1 shows an embodiment of a packing according
to the invention, comprising an upper portion and a lower portion which are hinged to one another, the packing being shown in open condition, FIG. 2 shows the same in closed condition, FIG. 3 is a side view of the same in closed condition, FIG. 4 shows the same in closed condition as seen from the left-side end in FIG. 2, FIG. 5 is a section of the line V—Y in FIG. 1 through the blank in the position in which it is deposited by the production machine, FIG. 6 is a section on the line VI—VI in FIG. 1, FIG. 7 is a section on the line VII—VII in FIG. 3, FIG. 8 is a section on the line VIII—VIII in FIG. 5, FIG. 9 is a perspective view of the packing according to FIG. 1—5 in nearly closed position, and FIG. 10 is a second embodiment of the packing.

The shown packing has been produced by precipitation of fibre mass by suction through a mould having reticulated or perforated surface, whereby substantially the same thickness of material has been imparted to the packing all over.

As will be seen from FIG. 1, the packing is designed to receive six eggs, and it is provided with a single locking arrangement. In the case of packings for a larger number of eggs it is expedient to use a plurality of locking arrangements.

The packing consists of a lower portion 10 and an upper portion 12 which are contiguous along a folding line 14 which operates as a kind of hinge at the closing of the packing. In the lower portion 10 there are provided a number of pockets 16 disposed in two rows at right angles to the folding line 14, with three pockets in each row. Each pocket is designed to receive one end of an egg. Between each two successive pockets 16 the material has been slightly recessed so that as seen from the upper side of the lower portion 10 depressions 18, see FIG. 1 and FIG. 5, and between four neighboring depressions an upright projection 20 are formed.

The upper portion 12 of the packing is bowl-shaped with a side wall 22 which extends slightly obliquely with a view to the manufacture of the packing. This side wall has a waved configuration, as it extends longitudinally of the rows as well as theretofrward along the outer sides of the eggs, not shown, and a small distance in between same, when the eggs are supported at their outwardly facing sides. The bottom 24 of the upper portion is planar. From the bottom 24 the upper portion 12 has inwardly protruding projections 26 supporting the eggs at their inner sides, when the packing has been closed. Furthermore, the projections may support the bottom 24 of the upper portion 12 against the lower portion 10, as in the closed condition of the packing the projections 26 abut against the projections 20 of the lower portion 10 and thereby stiffen the upper portion. The projections of the lower portion 10 can also be made so long that they extend entirely up to the bottom 24 of the upper portion, and this bottom may then be entirely flat.

In the closed condition the upper portion 12 is attached to the lower portion 10 by means of a locking arrangement which is formed of a hook-shaped projection 28 on the side of the lower portion 10 opposite the folding line 14, the projection being in this condition of the packing in engagement with an aperture 30 which is formed in the upper portion 12, the projection hooking on to a lower defining edge of the aperture.

The lower portion 10 has a plane edge 32 which extends downwardly at either side of the projection 28. In the shown embodiment this part of the edge, see FIGS. 1 and 34, starts at the end of the longitudinal sides of the lower portion facing the end side carrying the locking projection, see FIGS. 1, 3, 5, 7 and 9. The part 34 forms an angle α of about 15° with the plane part of the edge, see FIG. 5.

At the corresponding side, provided with the aperture 30, the upper portion is provided with a collar 36 which

in the closed condition of the packing protrudes downwardly, confer FIGS. 3, 4, 6 and 9. As is the case with the edge 34 of the lower portion, the collar starts at the end of the longitudinal sides of the upper portion which faces the end side of the upper portion provided with the locking aperture 28, see especially FIGS. 2 and 3. In the closed condition of the packing the collar forms a locking rib for the hook-shaped projection 28, which grips over the upper edge of the collar so that the upper portion 12 is held down against the lower portion 10, see FIGS. 2—4 and 7.

Particularly FIGS. 3 and 4 show that the upper edge of the collar 36 extends in the same plane as the edge 38 of the upper portion 12. This means that the lower limitation of the locking aperture 30 is at a level with the edge 38, with which in the closed condition of the packing the upper portion abuts against the edge 32 of the lower portion. The collar 36 now forms a strong locking rib which offers a good guiding surface for the locking projection when the packing is closed by applying pressure to the upper portion 12 to force it into locking engagement with the lower portion 10. During such closing the collar 36 will be resiliently flexible.

In the shown embodiment the outer edge 40 of the collar 36 forms an angle β=15° with the edge 38, see FIG. 5.

The collar 36 is provided with a marginal flange 42 which reinforces the collar and grips over the lowered edge 34 of the lower portion 10, see FIGS. 2 and 3. The irregularly shaped end edge of the lower portion 10 will then be completely covered by the collar 36 and the marginal flange 42, see also FIG. 4. In the shown embodiment the outer edge 40 of the marginal flange 42 forms an angle of γ=23° with the edge 38, see FIG. 5.

As appears from FIG. 3 the projection 28 protrudes from the edge 32 of the lower portion 10 through a distance which is substantially equal to the distance through which the collar 36 of the upper portion with its marginal flange 42 protrudes from the edge 38 of the upper portion. This is advantageous when a number of packings in the position shown in FIG. 5 are to be piled by being nested into each other.

At the front edge of the lower portion 10 there is provided an indentation 46 in the part 34 of the edge. This indentation is in alignment with the depression 18 between the two foremost pockets 16 of the lower portion 10. A wall 48 starting from the bottom of the indentation 46 and having substantially V-shaped cross section extends upwardly and is transformed at the top into a domed head 50 which partly adjoins the wall 48, partly protrudes from the wall 48 above the indentation 46 as a hook, the downwardly facing plane surface of which is parallel with the edge 32. In the shown embodiment the head 50 has increased thickness of material, being reinforced with an internal rib 56, see FIG. 8. As especially appears from FIGS. 2 and 4, the head 50 has a suitable width corresponding to the strength demanded of the locking arrangement. It will be understood that the aperture 30 is correspondingly dimensioned so that the head may grip through some unobstructedly when the packing is to be locked, confer especially FIGS. 2 and 4.

The locked packing is opened by producing in the horizontal direction a relative movement between the head 50 and the collar 36 forming the locking rib so that the head may move clear of the locking engagement with the collar. As appears from FIG. 1 the wall 48 of the locking projection rises from the V-shaped space between two neighbouring edges of the edge 32 and forms a continuation of said wall which behind the projection forms a roof-shaped part 52 which constitutes the limitation for the depression 18. With a view to increasing the rearwardly directed resilience of the locking projection there is provided a transverse indentation 54 in the top of said roof-shaped part, see FIGS. 1, 5 and 6. By means of this indentation the rearwardly directed spring effect of the
locking projection can be increased to such an extent that for the purpose of flexibility it is no longer necessary to resort also to a certain resilience of the locking projection itself. Said projection being provided with at least one corresponding cavity for receiving the upper portion of the objects, said lower portion being provided with at least one corresponding cavity for receiving the upper portion of said objects, said lower portion of the packing having marginal flanges abutting each other when the packing is in the closed condition, locking means being provided on said lower portion and said upper portion of the packing being provided with a depending collar constituting said rib located in front of and to both sides of said aperture.

3. A packing as claimed in claim 1 in which the dependence collar on said upper portion of the packing is provided with a marginal flange gripping over the lowered edge of said lower portion of the packing when the packing is closed.

4. A packing as claimed in claim 1 in which said projection protrudes upwardly from the otherwise plane edge of said upper portion of the packing.

5. A packing of resilient material for fragile objects comprising a lower portion and an upper portion said lower portion being provided with juxtaposed pockets for the lower portions of the individual objects, and said upper portion having a cavity for receiving the upper portion of said objects, said lower and said upper portion of the packing having marginal flanges abutting each other when the packing is in the closed condition, locking means being provided on said lower portion and said upper portion of the packing for releasably interconnecting the said portions when the packing is closed, said locking means comprising a hook-shaped projection on said lower portion of the packing, said hook-shaped projection extending upwardly from the wedge-shaped space between two neighboring pockets and constituting upward continuations of the adjacent walls of these pockets, the said walls defining a cavity for receiving the upper portion of the packing of said roof-shaped part an indentation in the top portion of said roof-shaped part for increasing the rearwardly directed resilience of the projection said locking means further comprising a rib on said upper portion of the packing, said rib being delimited by the edge of said upper portion of the packing and by an edge of an aperture through which the projection protrudes when the packing is closed, the edge of said lower portion of the packing extending downwardly on either side of the projection and said upper portion of the packing being provided with a depending collar constituting said rib located in front of and to both sides of said aperture.

6. A packing of resilient material for fragile objects comprising a lower portion and an upper portion, said lower portion being provided with juxtaposed pockets for the lower portions of the individual objects and said upper portion having a cavity for receiving the upper portion of said objects, said lower and said upper portion of the packing having marginal flanges abutting each other when the packing is in the closed condition, locking means being provided on said lower portion and said upper portion of the packing for releasably interconnecting the said portions when the packing is closed, said locking means further comprising a rib on said upper portion of the packing, said rib being delimited by the edge of said upper portion of the packing and by an edge of an aperture through which the projection protrudes when the packing is closed, the edge of said lower portion of the packing extending downwardly on either side of the projection and said upper portion of the packing being provided with a depending collar constituting said rib located in front of and to both sides of said aperture.
the said portions when the packing is closed, said locking means comprises a hook-shaped projection on said lower portion and extending upwardly therefrom, and a rib on said upper portion, said rib being delimited by the edge of said upper portion and an edge of an aperture through which the projection protrudes when the packing is closed, the edge of said lower portion extending downwardly on either side of the projection, and said upper portion being provided with a depending collar in front of and to both sides of said aperture said collar constituting said rib.

8. A packing resilient material for fragile objects comprising a lower portion and an upper portion at least one of said portions being provided with juxtaposed pockets for the individual objects, said pockets being disposed in at least two rows, said lower and said upper portion of the packing having marginal flanges abutting each other when the packing is in closed condition said lower and said upper portion being interconnected by a hinge extending parallel with said rows at least one group of locking means being provided on said lower and said upper portion of the packing at a side thereof parallel with said rows and opposite to said hinge for releasably interconnecting the said portions when the packing is closed, each said groups of locking means comprising a hook-shaped projection on said lower portion and extending upwardly therefrom, and a rib on said upper portion said rib being delimited by the edge of said upper portion and an edge of an aperture through which the projection protrudes when the packing is closed, the edge of said lower portion extending downwardly on either side of the projection and said upper portion being provided with a depending collar in front of and to both sides of said aperture said collar constituting said rib.

9. A packing of resilient material for fragile objects comprising a lower portion and an upper portion, said lower portion being provided with juxtaposed pockets for the lower portions of the individual objects and said upper portion having a cavity for receiving the upper portion of said objects, said lower and said upper portion of the packing having marginal flanges abutting each other when the packing is in the closed condition, locking means being provided at one end side of the packing.

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