

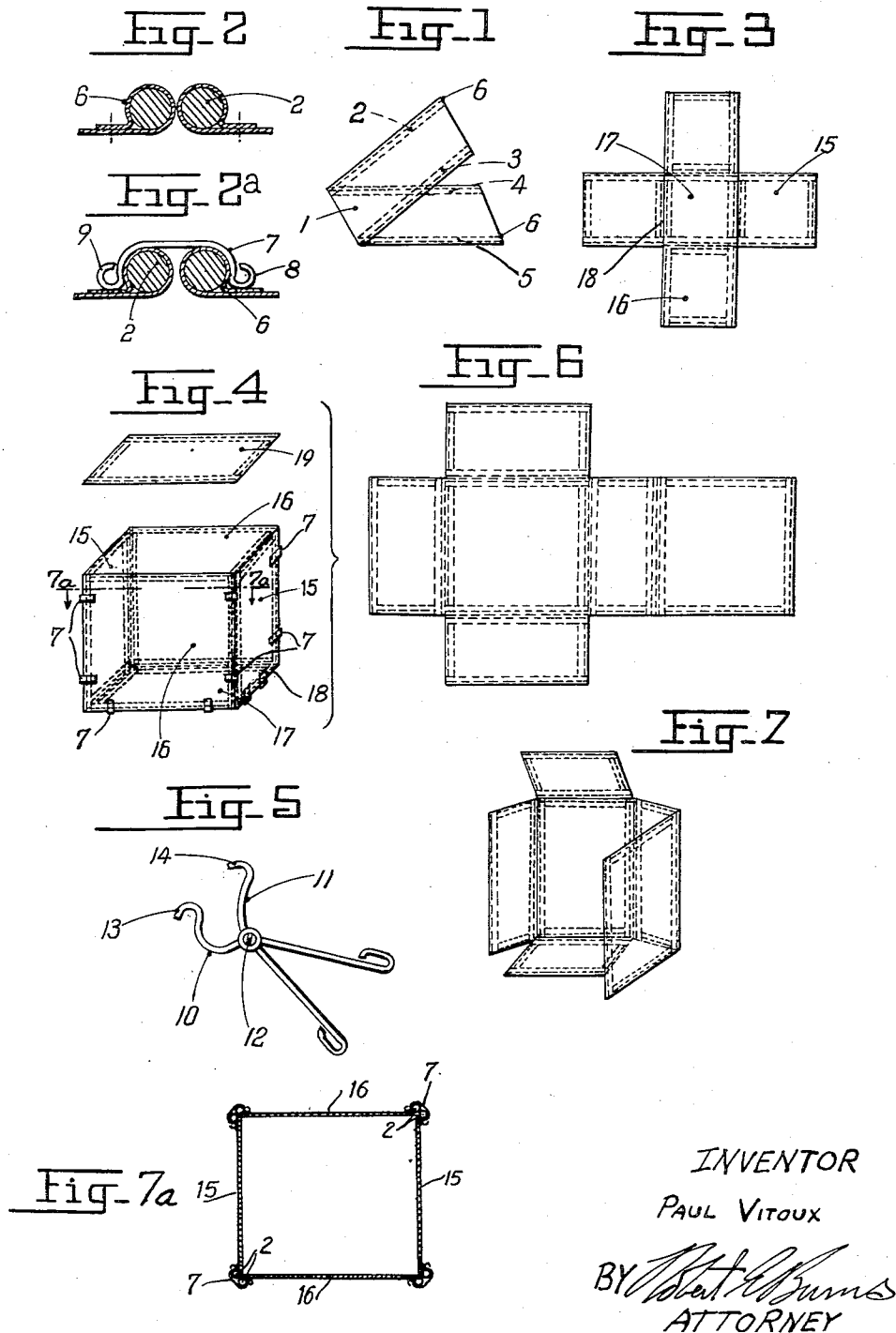
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P. VITOUX
PACKAGING DEVICES

2,841,306

Filed March 30, 1954

2 Sheets-Sheet 1



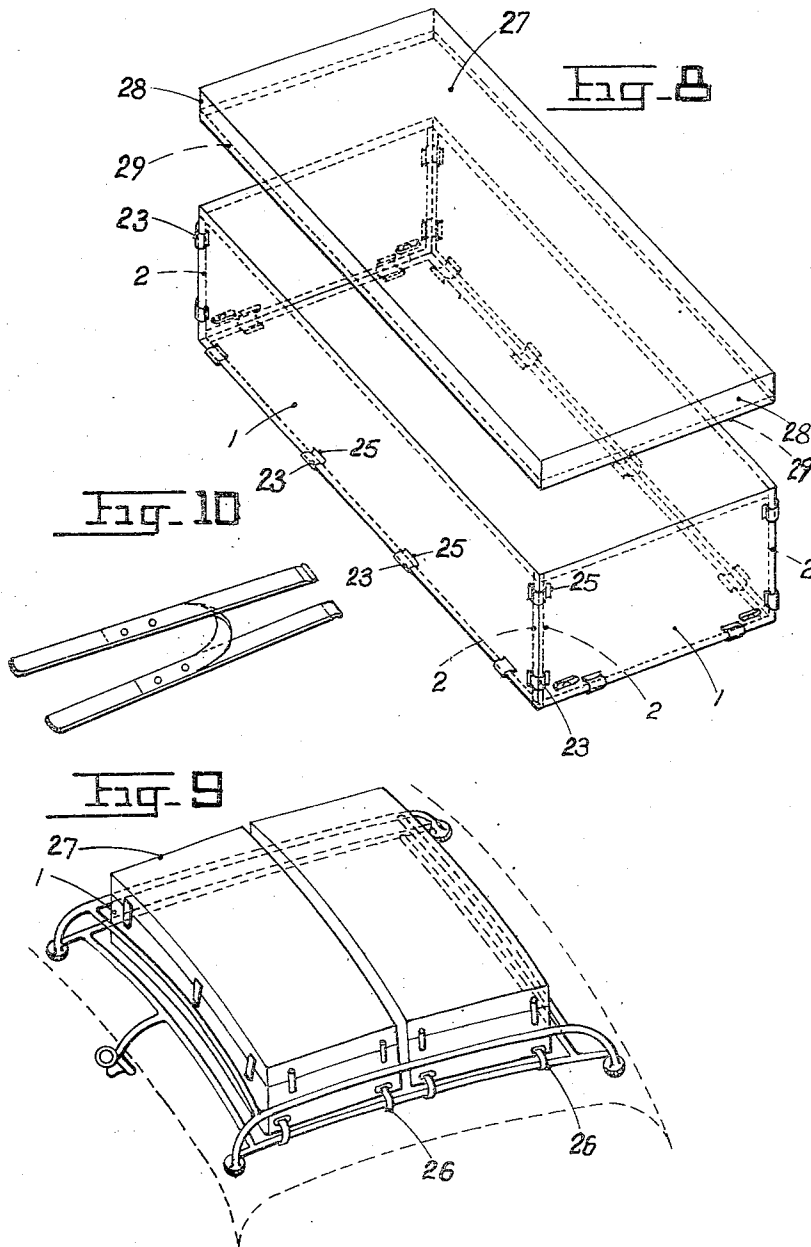
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1

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PACKAGING DEVICES

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Difficulties are often encountered in the transport of geometrically shaped articles or of pasty or solid goods, either because the materials have a regular shape which makes it impossible to fit them conveniently inside a package or because the goods tend to adhere to the sides of the packaging.

For these and other reasons, particularly the difficulty of extracting the transported material from its packaging, it was usual to transport such materials by means of rigid packaging such as wooden packing cases or metal drums, the cost of which was high in relation to the material transported, and which, moreover, were generally damaged during unloading or in transit and for this reason could not be re-used. Indeed, some materials could not be extracted from the packaging without destroying the latter.

The invention has as its object a method of constructing packagings, particularly flexible packagings made from cloth, canvas or the like, of vegetable or synthetic material, permitting a complete and immediate opening and reassembly without destroying any stitching or slitting any fabric, and also the folding up of the packaging enabling its return under a small volume.

According to the invention, the packaging consists of different panels of which the edges to be assembled are provided with rigid or flexible rods, the adjacent rods of two panels being pressed together for closing by means of movable clips or simply brought together by any means.

One of the important advantages of the invention is that when it is applied to the manufacture of bags it permits the construction of bags the cross-section of which may be of any shape, polygonal or round, according to the shape of the articles to be inserted, so as to use the maximum available space—a construction which was hitherto impossible or at least very difficult to achieve in an economic manner.

According to one application which seems particularly advantageous, the invention is used for the construction of packagings for carrying articles on motor cars, and particularly with a view to being associated with the luggage carriers mounted on the roofs of the cars.

The characteristics and advantages of the invention will become clear on reading the following description of various embodiments, given by way of example, with reference to the accompanying drawing, in which:

Figure 1 shows an ordinary bag according to the invention, consisting of a single element;

Figure 2 is a view, in cross-section, of two rods brought together and

Figure 2a shows a section as in Figure 2 with an assembly clip disposed secured about the rods;

Figure 3 is a form of bag made by means of two crossed panels;

Figure 4 is a perspective view of the same bag with the panels assembled;

Figure 5 is a view of a pair of clip-pincers;

2

Figures 6 and 7 show another possible modification for making a package;

Fig. 7a is a sectional view taken approximately along the line 7a-7a of Fig. 4;

Figures 8 and 9 show packagings according to the invention adapted for the transport of articles on motor cars, and

Figure 10 shows a pair of pincers for operating the clips.

A package according to the invention, for example a cloth bag, is made by using panels, of which the sides to be assembled are provided with rods.

Thus a bag as shown in Figure 1 is formed from a rectangular element 1, folded along its minor axis to form two panels and of which the sides to be brought together, which would be sewn in the normal method of making, are provided with members 2, 3, 4, 5, inserted in hems 6 provided on the edges.

These members may consist of rods made of wood, metal, rubber or synthetic material and they may be solid or hollow, rigid or flexible.

According to the invention, these rods are held together in pairs by clips 7, made of curved strips, preferably metal and having a suitable elasticity.

These clips are shaped so as to permit them to hold the joints together; they may end in loops 8, 9, which reinforce their rigidity at these points and permit them to be handled easily and to be pressed into locking engagement by means of a pair of mounting and dismounting pincers as shown in Fig. 5. As a matter of fact, the clip should have a strong joining power and it may not be possible to work them by hand. It will be an advantage to use a pair of pincers as shown in Figure 5. These pincers consist of two arms 10, 11, pivoting about an axis 12 and ending at 13, 14 in hooks which are inserted in the closed loops of the clip. Simply by pressing and bringing the two arms together, the hooks will separate and undo the clips either for mounting or for removal; the length of the lever arms of the pincers depends on the effort to be applied.

Figure 1 shows one of the most simple shapes possible, which is that of the normal bag. It should, however, be understood that one of the advantages of the invention is to permit the making of packages, of cloth or flexible material, having any geometric shape.

Thus, by means of two crossed rectangular elements 15, 16 as shown in Figure 3, it is possible to form a bag in the form of a parallelepiped, as in Figure 4, the sides of which are assembled by means of rods and clips; the bottom 17, formed by two superimposed layers of cloth may also be reinforced, if desired, by providing rods 18 arranged along the line of superposition.

It would also be possible to form the bottom, either by starting with one panel, the sides of which are sewn to the corresponding sides of the panels forming the arms of the cross, or by sewing the strips one on top of the other as shown in Figure 3 where the parts are superimposed, or by using a detachable bottom comprising joints on the edges which would be fixed by clips to four panels forming the sides. A detachable lid 19 can be made in the same manner.

Any geometrical shape is possible for the base according to the invention. Thus it is possible to make bags with a square, rectangular, trapezoid, triangular or round cross-section, which permits the bag to be filled to its maximum capacity with articles of various shapes which could not be fitted exactly into a bag of the usual make. Similarly, the panels forming the sides may have any polygonal shape.

The bag, with detachable joints, could be made in the same manner by means of a lid of the same shape as the

bottom, the cover being completely detachable or being rigidly secured to one of the side panels.

Alternatively, the bottom panels and the lid may be formed in one as shown in Figures 6 and 7. In general it is possible to use all the shapes shown for making paper or card-board boxes. In this case, too, edges formed inside a panel may be reinforced with rods if desired.

The invention has been described with reference to the manufacture of bags of flexible material; paper, any textile, or a sheet of synthetic material or rubber, but it should be understood that the invention could be used to make packaging of rigid material such as wood or sheet metal or for securing a flexible member such as canvas to a rigid member; in this case, the rods would be nailed or stuck to the surface of the rigid panels.

It will be understood that one of the essential advantages of the invention is to avoid having to extract the goods from the packaging, but to permit the removal of the packaging without having to handle the articles or goods contained therein, and in the case of goods adhering to the sides, to permit the removal of the goods without damaging the packaging since, in order to overcome the adhesion, it is then possible to apply a separate traction to each of the panels forming the packaging which is a simple operation.

It will likewise be understood that another essential advantage of the invention is to enable the various panels to be folded up upon each other so that the packaging, when emptied, can be returned under a small volume.

According to one rather special application of the invention, which seems most advantageous, a trunk is made of independent flexible panels as has been described, with a view to transporting articles in a motor vehicle and particularly on the roof of the vehicle. Its dimensions may be adapted, if necessary, to fit the size of the luggage rack used.

Such a packaging or trunk easily conforms to the curve of the luggage rack or roof in both directions of the roof of the vehicle, longitudinal and transverse, and it can be rolled up when not in use, thereby reducing the space that it takes up and finally it can be used for other purposes if necessary.

A trunk of this kind is illustrated in Figure 8 on the accompanying drawing, while Figure 9 shows two such trunks arranged side by side on the luggage rack of a car. It is obvious that a single trunk could have been provided entirely covering the available space on the luggage rack.

This trunk consists of separate panels 1 made of canvas, edged with flexible rods 2, the latter being joined together along the edges of the trunk by clips 23. These clips are easily placed in position or removed by means of pincers as shown in Figure 10 consisting of two arms articulated on one another, the ends of which can be inserted in the edges 25 of the clips. Because of the flexibility of the materials, rods and canvas, the trunk automatically adapts itself to any shape of luggage rack or roof; it can contain all the luggage required, either loose or packed in suitcases, it can be secured very quickly, preferably using the lower rail of the luggage rack, by means of a strap 26 of any kind, which, when tightened, imparts the curve of the whole assembly to the actual suitcases.

The lid of the trunk may also consist of a panel with rods, either as shown as a panel 27 having edges 28 reinforced with laths of flexible wood 29 so as to provide a cover; in this case, the lid is fixed to the trunk by fastenings in the usual manner; or one of the sides of

the lid may be secured to the trunk by clips 23 so as to form a kind of hinge.

I claim:

1. A cubic packing case adapted to be collapsed without complete disassembly and to be disassembled when not in use, comprising a plurality of square panels each forming one wall of the case, each panel being formed from a sheet of flexible material provided with hems defining elongated substantially rectilinear pockets along each edge thereof, elongated flexible rod-like filler elements disposed in said pockets and extending substantially the length of each pocket, and detachable U-shaped clips engaging over portions of the pockets and the contained filler elements in the pockets of adjacent panels when said panels are placed in edge to edge relationship with one another.

2. A packing case adapted to be collapsed without complete disassembly and to be disassembled when not in use, comprising a plurality of panels each of polygonal form and each forming one wall of the case, each polygonal panel being formed from a sheet of flexible material provided with hems along each of its sides to define elongated substantially rectilinear pockets along each of said sides, elongated filler elements disposed in said pockets and extending substantially the length of each pocket, and detachable clips engaging over portions of said pockets of adjoining panels and the contained filler elements in said pockets when said panels are placed in angularly-disposed edge to edge relationship with one another.

3. A packing case adapted to be collapsed without complete disassembly and to be disassembled when not in use, comprising a plurality of panels each of polygonal form and each forming one wall of the case, each polygonal panel being formed from a sheet of flexible material provided with hems along each of its sides to define elongated substantially rectilinear pockets along each of said sides, elongated flexible filler elements disposed in said pockets and extending substantially the length of each pocket, and detachable clips engaging over portions of said pockets of adjoining panels and the contained filler elements in said pockets when said panels are placed in angularly-disposed edge to edge relationship with one another.

4. A packing case adapted to be collapsed without complete disassembly and to be disassembled when not in use, comprising a plurality of panels each of rectangular form and each forming one wall of the case, each rectangular panel being formed from a sheet of flexible material provided with hems along each of its sides to define elongated substantially rectilinear pockets along each of said sides, elongated filler elements disposed in said pockets and extending substantially the length of each pocket and detachable clips engaging over portions of said pockets of adjoining panels and the contained filler elements in said pockets when said panels are placed in angularly-disposed edge to edge relationship with one another.

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