PACKING CASE FOR SHARP AND OXIDIZABLE ARTICLES

Guido Peene, Zwedgelem, Belgium, assignor to Trefliries
Leop Bekaert, F.V.B.A., Zwedgelem, Belgium
Filed Jan. 26, 1968, Ser. No. 780,876
Claims priority, application France, Feb. 2, 1967, 93,436
Int. Cl. B65d 5/56

U.S. Cl. 229—14

3 Claims

ABSTRACT OF THE DISCLOSURE

A packing case for shipping small, sharp articles which are subject to oxidation when exposed to humid air; an outer case made of a sturdy, shock-resistant material, and air-tight second case with the sharp articles, and a third case made of a material which is tough and strong enough to withstand physical destruction which may be caused by the sharp small articles.

BACKGROUND OF THE INVENTION

This invention relates to packing means and particularly to packing cases for relatively small, substantially pointed and sharp articles which are subject to rapid deterioration under the influence of humid air. Packing of small cut-offs of thin steel wire has been a problem, because these small pieces have very sharp piercing or cutting edges which damage the packing material, and which are subject to rapid oxidation by humid air during shipping. For these reasons, the small parts have been packed and shipped in hermetically closed metallic drums, wherein dehumidifying substances, for example silica gel had been added for maintaining a dry atmosphere in the drum. Because these metal drums are expensive, they are used a number of times; but returning of the empty, bulky drums to the factory costs substantial freight charges, particularly in the case of shipping by sea-freight to far-away countries. Herefore, the use of cardboard boxes had been unsuccessful because it had been impossible to maintain a sufficiently low degree of humidity of the air in these boxes for preventing the small steel parts from oxidizing during the shipping time. Bags of plastic material have been tried, but the sharp points of the cut-off parts pierced and tore the bags. It is the intention of this invention to solve this problem.

SUMMARY

The invention consists in such novel features, construction arrangements, combinations of parts and improvements as may be shown and described in connection with the packing case herein disclosed by way of example only and as illustrative of a preferred embodiment. The purpose of the invention is to present a packing means which is relatively light, which resists the sharp points and which is sufficiently impermeable to air for preventing the small steel cut-offs from being oxidized by the humidity of the air. The invention provides a packing case for shipping small articles having sharp cutting and piercing areas or points which are subject to a relatively rapid oxidation by the influence of humidity and air, in which a plurality of containers fitted one within the other are provided at least the inner one containing the articles is capable of resisting physical damage by the articles, the intermediate container being capable of resisting said humidity and access of air to the articles, and being fitted air-tight around the inner container, and an outer container capable of resisting mechanical damage during shipping being fitted over the intermediate container.

Objects and advantages of the invention will be set forth in part hereafter and in part will be obvious herefrom or may be learned by practicing the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

It is an object of the invention to provide a packing means for sharp, pointed and oxidizable parts, consisting of an outer box made of a strong material, of at least one bag inside the box, which is impermeable to air, and of at least one inner box fitting in the airtight bag, which contains the oxidizable parts and which consists of a material which is not affected by the sharp, pointed parts.

Various further objects and advantages will clearly appear from the detailed description given below taken in connection with the accompanying drawings which form part of this specification and illustrate merely by way of example embodiments of the invention. In the following description and in the claims, parts will be identified by specific names for convenience, but such names are intended to be generic in their application to similar parts as the art will permit.

BRIEF DESCRIPTION OF THE DRAWING

Like reference characters denote like parts in the several figures of the drawing, in which:

FIG. 1 shows, according to the invention, in isometric projection, the assembly of a package with the intermediate bag partially out of the outer box and a corner of the box partly cut away in order to show the inner box;

FIG. 2 shows a vertical section of the package shown in FIG. 1;

FIG. 3 shows a vertical section of a package according to the invention with two inner boxes in one bag;

FIG. 4 shows a vertical section of a package according to the invention with two intermediate bags, each one containing two inner boxes.

FIG. 5 shows a vertical section of a package according to the invention with two intermediate bags, each one containing two inner boxes.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now in more detail to the drawing illustrating preferred embodiments by which the invention may be realized, there is disclosed in FIGS. 1 and 2 an inner box 11 for sharp, cutting parts, which are subject to oxidation by exposure to air. Box 11 having overlapping portions or seams 11a consists of cardboard, fiberboard or of such other suitable material which cannot be pierced or torn by the sharply pointed parts. Box 11 having overlapping portions 11a is placed in a bag or container 12 consisting of a material which is impermeable to the humidity of the air. This may be a suitable plastic material or the like. Bag 12 is hermetically closed by sealing the overlapping portions or seams 13 by any suitable process, so that no air may penetrate therein. In order to keep the humidity inside box 11 or in bag 12 as low as possible, a small amount of a strong hygroscopic material such as silicagel may be placed within either box 11 or bag 12. Bag 12 eventually is fitted into an outer box or case 14 which is made of a strong material such as hard cardboard or fiberboard or any other material which is shock resistant and which can endure the wear and tear of shipping. Box 14 has overlapping attached portions or seams 14a. Box 14 thus will be able to protect bag 12 against damage.
A modification of the packing device according to the invention is shown in FIG. 3 wherein two inner boxes 15 and 16 similar to box 11 are placed in a sealed plastic bag 17, similar to bag 12, the hermetically sealed portions being indicated by the reference numeral 17a. Bag 17 in turn is enclosed in outer box 18, similar to box 14.

Another modification is shown in FIG. 4. Each one of boxes 19 and 20 is sealed in its own plastic bag 21 and 22, respectively, having the hermetically sealed overlapping portions 21a and 22a, respectively. These are together enclosed in box 23.

In a third modification, shown in FIG. 5, four boxes 24, 25, 26 and 27 are enclosed in pairs in sealed bags 28 and 29, hermetically sealed at 28a and 29a, respectively, which are packed in box 30.

While the invention has been described and illustrated with respect to certain preferred examples which gives satisfactory results, it will be understood by those skilled in the art after understanding the principle of the invention, that various other changes and modifications may be made without departing from the spirit and scope of the invention.

What is claimed is:

1. A packing case for shipping relatively small articles having substantially sharp, cutting and piercing points and subject to rapid oxidation by the influence of humidity and air, comprising a plurality of rectangular-shaped containers fitted one into the other, at least the inner container of said plurality of containers which contains said articles resisting penetration by said articles, at least an intermediate one of said plurality of containers being of plastics and resisting said humidity and access of air to said articles and being of cardboard substance, said intermediate one of said containers fitting airtightly around said inner container with the exterior walls of said inner container substantially in contact with the inner walls of said intermediate container, and the outer container of said plurality of containers being of cardboard substance and resisting mechanical damage thereto during shipping, said inner and intermediate containers fitting in said outer container so that the outer wall surface of said rectangular intermediate container is substantially in contact with the inner wall surface of said outer rectangular container.

2. A packing case according to claim 1, and a plurality of said inner containers sealed in said intermediate container.

3. A packing case according to claim 1, there being four of said inner containers, an intermediate one of said containers fitting airtightly around two of said inner containers and another intermediate one of said containers fitting airtightly around the other two of said inner containers, said inner and intermediate containers fitting in said outer container.

References Cited

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Patent Number</th>
<th>Date</th>
<th>Inventor</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>710,513</td>
<td>10/1902</td>
<td>Reynolds</td>
<td>229—14</td>
</tr>
<tr>
<td>2,564,948</td>
<td>8/1951</td>
<td>Beck et al.</td>
<td>229—14 X</td>
</tr>
<tr>
<td>2,729,384</td>
<td>1/1953</td>
<td>George et al.</td>
<td>229—14 X</td>
</tr>
<tr>
<td>2,866,584</td>
<td>12/1958</td>
<td>Long</td>
<td>229—14</td>
</tr>
<tr>
<td>3,257,063</td>
<td>6/1966</td>
<td>Oliver</td>
<td>229—14</td>
</tr>
<tr>
<td>3,270,876</td>
<td>9/1966</td>
<td>Rausings</td>
<td>229—87 X</td>
</tr>
</tbody>
</table>

FOREIGN PATENTS

1,364,148       5/1964 France.

DAVIS T. MOORHEAD, Primary Examiner