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(54) PACKAGING MATERIAL

(71) We, CARL EDELMANN GMBH, a German company, of Paradiesstrasse 20, 7920 Heidenheim/Brenz, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement: —

This invention relates to packaging material, particularly, although not exclusively, for packaging fats and oils, or fatty and oily substances.

It is common knowledge that paper and cardboard materials, unless specially treated, display so-called "grease spots" if they come into contact with oily or fatty substances. These grease spots are caused by a change in the material, and they cause the packaging material to become unsightly and the package unusable.

Up to now, cardboard-based packaging materials for oily or fatty substances have usually comprised cellulose supporting material covered by a metal foil, such as aluminium foil, by means of which the above-mentioned disadvantageous effects of the change in the cellulose material can be avoided. Paper or cardboard sheets lined with metal foil are at present already being used, though on a relatively limited scale for reasons of price, for packing fats, oils or similar substances, and lubricated objects. The conventional packagings for these substances or objects are made of thick-walled plastics foils, or are glass, tin or plastics containers, mostly in the form of cans or bottles. All such packaging has the drawback that the cost is relatively high. Even cardboard or paper lined with metal foil is sometimes still too expensive.

To achieve the required covering of the cellulose material and to avoid permeation of the packaging substance, an extremely thin metal layer would actually be sufficient, but cannot economically be produced: aluminium foils generally have a thickness of about 7μ, which corresponds to a weight per square metre of about 21g. This material is therefore restricted from the point of view of costs.

According to the present invention there is provided packaging material comprising cardboard which is provided on at least one surface with a coating containing flakes of opaque material, the flakes overlapping one another to render the coating optically impermeable.

The coating may comprise two, and if necessary even three layers each containing the overlapping opaque flakes. As a rule, a double-layered coating is sufficient to fully satisfy the requirements.

Where the coating is on the outside of a carton formed from the packaging material of the present invention, fat, oil or suchlike which has been in contact with the inside of the carton makes no visible trace on the outside of the carton. Even if the cardboard is completely saturated with oil and this is leaking out at certain points onto the outside of the package, this has no permanent effect on the appearance of the packaging material.

Where the coating comprises a single layer of aluminium flakes in a suitable bonding agent, the coating may have a weight per square metre of only about 3 g; the bonding agent accounts for about 1.8 g and the aluminium flakes for about 1.2 g. If the coating comprises two layers, the weight of the aluminium scales only amounts to about 2 1/2 g/m_2, compared with approximately 21 g/m_2 for aluminium foil. This results in a significant saving of costs.

It has been shown to be particularly advantageous if the outer layer of the coating is covered with a varnish layer providing mechanical protection. The varnish layer may be clear or coloured

The flakes may be metal, such as aluminium, or they may comprise graphite or other substances.

For a better understanding of the present invention, and to show how it may be carried into effect, reference will now be made, by way of example to the accompanying drawings, in which:

Figure 1 is a perspective view of a folded carton;

Figure 2 shows diagrammatically packaging material for the carton of Figure 1;

Figure 3 shows another form of packaging material for the carton of Figure 1; and

Figure 4 illustrates in more detail a coating of the packing material of Figures 2 and 3.

The folding carton of Figure 1 comprises a lined container of conventional construction, in which the liner holding the product in question is made of any suitable material and surrounded by a casing constructed from packaging material as will be described below.

As Figure 2 shows, the outer casing of the carton of Figure 1 may consist of a cardboard layer 11 provided on its external surface with a coating comprising two layers 12 and 13 containing metal, such as aluminimum, flakes. The outer layer 13 is covered with a coat of clear or coloured varnish 14.

The material of Figure 3 has a different structure. The carboard layer 21 is provided on both surfaces with a coating 22 and 23, each containing aluminium flakes. The coating 23 on tthe external surface is covered with clear or coloured varnish 24.

The layers 12, 13, 22 and 23 of the coating may comprise aluminium paint, which is applied to the cardboard 11 by, for example, printing or brushing in such a thickness as to guaranfee that the metal flakes 32 (Figure 4), fixed by a bonding agent 31, overlap one another sufficiently so that the cardboard 11 is optically shielded.

Cartons manufactured using the packaging material described offer considerable advantages not only for the manufacturer, the trade and the consumer, but also for the places responsible for refuse disposal.

On the one hand, the packaging material and cartons made from it may be considerably cheaper than comparable conventional materials or packages, and on the other hand they can easily be reduced to a relatively small volume after use, this being a characteristic of folding cartons, so that they do not take up much room in refuse bins as do conventional plastics or metal containers. Moreover, the packaging material in question is easy to dispose of, particularly by burning, which causes very little damage to the enviroment because the proportion of plastics in the material is very small indeed.

The packaging material described is particularly suited, as experiments have shown, to the manufacture of cardboard cartons for liquids, and especially oils. Such substances have hitherto normally been packed and distributed in cardboard cartons, but have been packed in foil bags, which are disadvantageous from a mechanical point of view, or tin, glass or plastics containers in the form of cans and bottles. All these packaging means have the disadvantage, however, that their costs are comparatively high. The packaging material described makes it possible to produce satisfactory cartons at far lower prices For the liquids mentioned, lined packages of a construction known in itself are suitable, which also permit a space-saving packing of any desired size.

Cartons made from the packaging material described are unaffected in appearance by leakage and escape of the packed substance. Substances such as oils which have leaked due to unsound packaging would normally damage or impair the external appearance of conventional cardboard based material. The packaging material described also prevents the impairment of the carton and its appearance by outside influences. If a package or pile of packages should become covered with a coat of oil on the outside, it is sufficient to wipe off the oil, and the package shows no trace at all of the oil layer which had beenn present on it.

The packaging material described furthermore offers the possibilty of using cardboard cartons and especially lined packages for substances and items for which previously only tin and plastic or similar packagings were suitable. This permits a considerable extension of the field of application of cardboard cartons, so that the costs of packaging and of refuse disposal can be significantly reduced.

WHAT WE CLAIM IS:

1. Packaging material comrprising cardboard which is provided on at least one surface with a coating containing flakes of opaque material, the flakes overlapping one another to render the coating optically impermeable.

2. Packaging material as claimed in claim 1, in which the coating comprises two layers each of which contains the said overlapping opaque flakes.

3. Packaging material as claimed in claim 1, in which the coating comprises three layers, each of which contains the said overlapping opaque flakes.

4. Packaging material as claimed in any one of claims 1 to 3, in which the flakes are metal flakes.

5. Packaging material as claimed in claim 4, in which the flakes are aluminium flakes.

6. Packaging material as claimed in any one of claims 1 to 3, in which the flakes are graphite flakes.

7. Packaging material as claimed in any one of the preceding claims, in which varnish is applied to the external surface of the coating.

8. Packaging material as claimed in claim 7, in which the varnish is coloured.

9. Packaging material as claimed in claim 7 or 8, in which the varnish is clear.

10. Packaging material substantially as described herein with reference to the accompanying drawings.

11. A carton formed from packaging material as claimed in any one of the preceding claims, in which the coating is on the external surface of the carton.

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1589749 COMPLETE SPECIFICATION

1 SHEET *This drawing is a reproduction of the Original on a reduced scale*

Fig.1

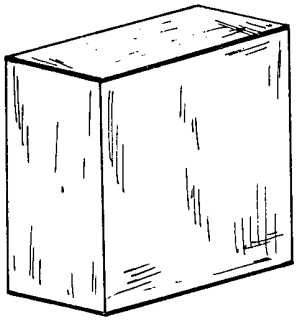

Fig.2

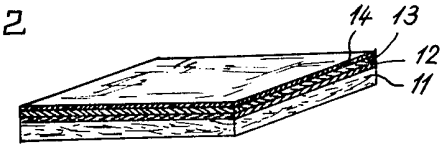

Fig.3

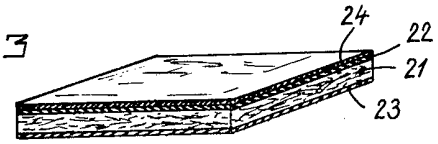

Fig.4