MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A
Central Works,
The Square, Earls Barton,
Northamptonshire,
England.

hersby apply for the grant of a Patent for an invention entitled

"IMPROVEMENTS IN AND RELATING TO REFRIGERATED CONTAINERS"

which is described in the accompanying complete specification.

(Note: The following paragraph applies only to Convention applications)

This application is a Convention application based on the basic application(s) for a patent or similar protection identified by number, country, and filing date as follows:

27978/75
United Kingdom
3 July, 1975

Address for Service:

PHILLIPS ORMONDE AND FITZPATRICK
Patent and Trade Mark Attorneys
37-41 Queen Street
Melbourne, Australia

Dated as 22 June, 1976

PHILLIPS, ORMONDE & FITZPATRICK
Attorneys for:
SHADE ONE LIMITED
AUSTRALIA

DECLARATION FOR CONVENTION PATENT APPLICATION

(Note: (1) To be signed by the applicant(s), if individual(s). If applicant is a Company, to be signed by a person on its behalf. (2) This is a comprehensive form, and parts inappropriate to a particular application should be cancelled.)

COMMONWEALTH OF AUSTRALIA

Patents Act 1952-1969

DECLARATION IN SUPPORT OF A CONVENTION APPLICATION FOR A PATENT OR PATENT OF ADDITION

In support of the Convention application No. (a) made by (b) Shade One Limited

for a patent/patent of addition for an invention entitled (c).

Improvements in or relating to Refrigerator Containers

I/We (d) Ray Spencer, an authorised Officer of Shade One Limited

of (e) Central Works, The Square, Earls Barton, Northamptonshire, England

do solemnly and sincerely declare as follows:

1. I am/We are the applicant(s) for the patent/patent of addition
   (or, in the case of an application by a body corporate)

2. The basic application(s) as defined by Section 141 of the Act was/were made in the following country or countries on the following date(s) by the following applicant(s)

   (f) United Kingdom on (g) 3rd July 1975
   by (h) Shade One Limited

   (i) United Kingdom on (j) 3rd July 1975
   by (k) Shade One Limited

3. I am/We are the actual inventor(s) of the invention
   (or, where a person other than the inventor is the applicant)

   (l) Ray Spencer

of (m) the address of Shade One Limited above

Is/are the actual inventor(s) of the invention and the facts upon which the applicant(s) is/are entitled to make the application are as follows:

Declared at DERBY the 14th day of June 1976

To: The Commissioner of Patents,
CLAIM 1. A refrigerated container arrangement having a body member or shell defining an opening, and a shield comprising means connectible with the container such that the shield can be moved between an operative position wherein it extends across said opening and an inoperative position wherein it is retracted clear of the opening, and said shield comprising a laminate of a layer of plastics material and a layer of heat reflective material, the heat reflective material being disposed to the outside with respect to the container when the shield is in said operative position.
COMMONWEALTH OF AUSTRALIA

Patents Act

COMPLETE SPECIFICATION
(ORIGINAL)

Class

Int. Class

Application Number:
Lodged:

Complete Specification Lodged:
Accepted:
Published:

Priority:

Related Art:

APPLICANTS REF.: RFD/AW/1589

Name(s) of Applicant(s):
SHADE ONE LIMITED

Address(es) of Applicant(s):
Central Works,
The Square,
Earls Barton,
Northamptonshire, England.

Actual Inventor(s):
RAY SPENCER

Address for Service is:

PHILLIPS, ORMONDE & FITZPATRICK
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Complete Specification for the invention entitled:

"IMPROVEMENTS IN AND RELATING TO REFRIGERATED CONTAINERS"

The following statement is a full description of this invention, including the best method of performing it known to applicant(s):
The invention relates to refrigerated containers and especially to refrigerated containers in the nature of display cabinets or the like.

Commercially available refrigerated display cabinets are of open-topped or open-fronted construction and suffer from the disadvantage that considerable losses arise as a result of increase of temperature of the chilled air in the cabinet by contact with the relatively warm ambient air.

According to the invention there is provided a shield arrangement for use on a refrigerated container, said arrangement comprising means connectible with the container such that the shield can be moved between an operative position wherein it extends across an opening in the container and an inoperative position wherein it is retracted clear of the opening, and said device being defined on one face by a heat reflective material.

Preferably said means connectible with the container comprises a roller adapted to be mounted at one edge of said opening, the shield having the form of a roller blind connected to the roller.

The shield may be formed from vinyl laminated to a cotton sheeting which is coated with vinyl, the heat-reflective material being provided on one surface thereof.

According to the present invention there is also provided a refrigerated container which has an opening in at least one face, and which is provided with a shield arrangement as described in any of the three preceding paragraphs.

An embodiment of the invention will now be described by way of example only, with reference to the accompanying drawings, in which:
To: The Commissioner of Patents,

According to the invention there is provided a refrigerated container arrangement having a body member or shell defining an opening, and a shield comprising means connectible with the container such that the shield can be moved between an operative position wherein it extends across said opening and an inoperative position wherein it is retracted clear of the opening, and said shield comprising a laminate of a layer of plastics material and a layer of heat reflective material, the heat reflective material being disposed to the outside with respect to the container when the shield is in said operative position.

Preferably said means connectible with the container comprises a roller adapted to be mounted at one edge of said opening, the shield having the form of a roller blind connected to the roller.

The plastics material may comprise vinyl said material being laminated to a cotton sheeting which is coated with vinyl.

An embodiment of the invention will now be described by way of example only, with reference to the accompanying drawings, in which :-
Fig. 1 is a diagrammatic transverse cross-section through one form of refrigerated display cabinet constructed in accordance with the invention; and

Fig. 2 is a partial view of a roller blind.

Referring to the drawings, a refrigerated display cabinet (Fig. 1) comprises a body member or shell consisting of a base 5 and a canopy 6 interconnected by an upright back 7, and is open at the front and sides. The back 7 supports a series of shelves 8 on which products for display may be supported.

A roller 10 is rotatably supported in brackets 11 at the upper edge of the front opening of the cabinet. As shown in Fig. 2, one of the brackets 11 has two slots, a vertically extending slot 11a and a horizontally extending slot 11b. A screen or blind 12 of heat-reflective material is attached at one edge to the roller 10 and has a rail 12a at its other edge. The roller incorporates a torsion spring (not shown) serving to wind the blind 12 on to the roller 10 so that the assembly acts in the manner of a roller blind which may be drawn down to an operative position, as illustrated in Fig. 1 of the drawings, in which the blind 12 extends across the front opening of the cabinet, or released and retracted into an inoperative position in which it is wound.
around the roller 10. The roller 10 is provided with an automatic gravity ratchet locking device (not shown) which is made inoperative when, as shown in Fig. 2, a flat pin 13 at one end of the roller 10 is engaged in the slot 11b, but is operative when the pin 13 is engaged in the slot 11a.

With the ratchet device operative, the blind 12 may be locked in any intermediate position as well as the fully lowered position.

With the ratchet device inoperative, a stud 14 on a strap 15 on the rail 12a of the blind 12 can be fastened on a member (not shown) provided on the cabinet at the lower edge of the front opening so as to lock the blind 12 in position.

The blind 12 is preferably made from vinyl laminated to a cotton sheeting which is also coated with vinyl, this structure then being provided on one surface with a heat-reflective material such as aluminium alloy, the latter being coated with a non-absorbant lacquer. The outer metallic surface is thus protected without its emissivity being increased while the inner vinyl surface is hygenic and easily cleaned.

When the cabinet is in use for display purposes, the blind 12 is left in its inoperative position so that products stored within the cabinet may be viewed and removed as appropriate. When the cabinet is not
in use, for example at nights, weekends or the like, the blind 12 is drawn down to its operative position, thereby forming a screen between the cold air circulating in the cabinet and the relatively warm air outside. In this way a reduction in heat loss is achieved thereby reducing the power required to maintain the desired low temperature within the cabinet. In tests savings of up to 45% in running costs have been achieved. A handle 16 is provided on the rail 12a to facilitate movement of the blind.

Various modifications may be made without departing from the invention. For example the invention could be applied to cabinets of various different constructions including open-topped cabinets. In the case of cabinets having open sides, as illustrated in the drawing, similar screens could be arranged to close off the side openings if desired. Moreover various different materials may be used in the construction of the screen. In the case of deep freeze cabinets which are fitted with a pressure de-frost system, the material can be of perforated form. This prevents contamination of top layer foods and also reduces the risk of heavy condensation.

Where a roller blind is not practical, a blind can be provided which is, for example, fitted
by means of press studs or hooks and held under
tension, and which in its inoperative position is
located, for example, at the lower edge of a front
opening cabinet.
The claims defining the invention are as follows:
1. A refrigerated container arrangement having a body member or shell defining an opening, and a shield comprising means connectible with the container such that the shield can be moved between an operative position wherein it extends across said opening and an inoperative position wherein it is retracted clear of the opening, and said shield comprising a laminate of a layer of plastics material and a layer of heat reflective material, the heat reflective material being disposed to the outside with respect to the container when the shield is in said operative position.
The claims defining the invention are as follows:

1. A shield arrangement for use on a refrigerated container, said arrangement comprising means connectible with the container such that the shield can be moved between an operative position wherein it extends across an opening in the container and an inoperative position wherein it is retracted clear of the opening, and said shield includes a plastics laminate provided on one surface with a layer of heat reflective material, the heat reflective material being disposed to the outside with respect to the container when the shield is in said operative position.

2. An arrangement according to claim 1, wherein said means connectible with the container comprises a roller adapted to be mounted at one edge of said opening, the shield having the form of a roller blind connected to the roller.

3. An arrangement according to claim 2, wherein spring means is provided on the roller for retaining the blind in a wound-up condition on the roller.

4. An arrangement according to claim 2 or 3, wherein the roller has ratchet locking means for locking the blind in the operative position.

5. An arrangement according to claim 4, wherein said opening is at a side face of the container, and the ratchet locking means is an automatic gravity locking device.

6. An arrangement according to claim 4 or 5, wherein the roller is adapted to be mounted on the container by means of brackets and can be mounted on the brackets so as to selectively render the ratchet locking means operative or inoperative.

7. An arrangement according to any of claims 2 to 6,
wherein a locking stud is provided on the blind for engagement with a member on the container when the blind is in its operative position.

8. An arrangement according to claim 1, wherein the shield is adapted at one edge to be mounted on the container, and locking members are provided on the shield for engagement with the container to lock the shield in its operative position.

9. An arrangement according to claim 8, wherein said locking members are in the form of press studs.

10. An arrangement according to claim 8, wherein said locking members are in the form of hooks.

11. An arrangement according to any of the preceding claims, wherein said plastics laminate comprises vinyl laminated to a cotton sheeting which is coated with vinyl.

12. An arrangement according to any of the preceding claims, wherein the heat reflective material is aluminium alloy coated with a non-absorbant lacquer.

13. A refrigerated container which has an opening in at least one face and to which is connected a shield arrangement according to any of the preceding claims.

13. A refrigerated container substantially as hereinbefore described with reference to the accompanying drawing.


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