

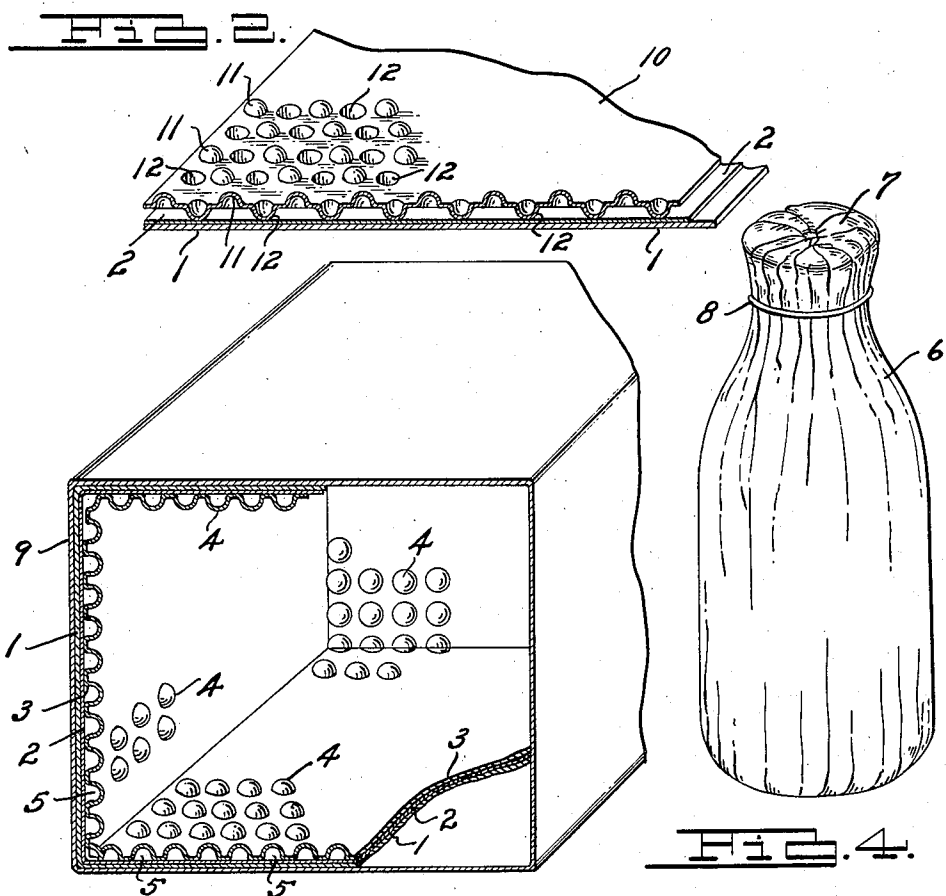
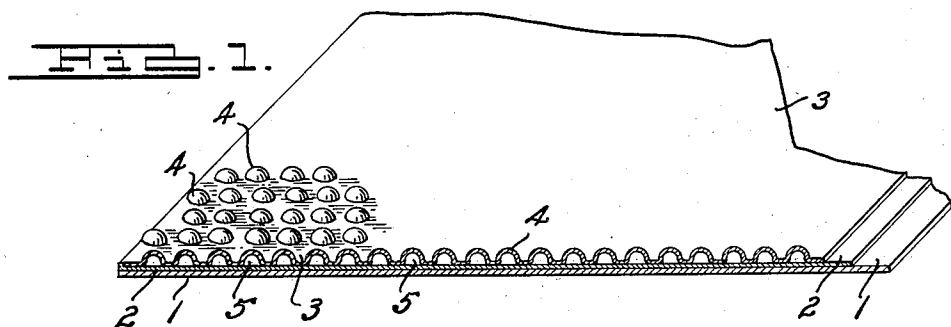
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FABRICATED INSULATION

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FABRICATED INSULATION

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4 Claims. (Cl. 154-45)

This invention relates to a fabricated insula-
tion sheet, the object being to provide an insula-
tion that is flexible and useable as a wrapper for
objects it is desired to insulate, not only to shield
the article from heat or cold but to also prevent
loss of heat or cold of an article or material en-
closed by the sheet and to also provide an insula-
tion sheet that may not only be used as a wrapper
but may be shaped to form a bag for the carrying
of material desired to be insulated and thus act
as a container for such material or useable as a
lining for a box-like structure or shaped to pro-
vide a casing that may be introduced over an ob-
ject as, for instance, a milk bottle.

A further object of the invention is to provide
an insulation sheet of a flexible character which
includes a sheet of bright metal foil on a surface
of which is secured a sheet of transparent ma-
terial such as Cellophane, a trade name for a pa-
per-like material manufactured by E. I. Dupont
de Nemours Company, of Wilmington, Delaware.
This sheet of Cellophane is embossed to provide
a substantially uniform series of projections upon
one side of the sheet and cup-shaped depressions
on the opposite side, the said opposite side being
secured to the metal foil and thereby providing
dead air spaces and the projections being on the
inside of the sheet serve to space the metal foil
from the material enclosed within the sheet.

It is a further object of the invention to pro-
vide an insulation sheet which comprises an out-
er sheet of paper-like material, a sheet of bright
metal foil, such as an aluminum foil, secured to
the said paper and an embossed Cellophane sheet
upon the face of the metal foil, the embossing
being of a character to provide dead air spaces
between the Cellophane and the metal foil, and
in an alternative form of such structure to pro-
vide a transparent sheet of material such as
Cellophane embossed to provide a series of pro-
jections on opposite faces of the Cellophane as is
hereinafter more specifically described.

A further object and feature of the invention is
to provide a very cheap insulation sheet enabling
the same to be used once and then discarded if
desired, and thus providing an insulating ma-
terial to be used for many purposes and in a man-
ner not heretofore possible with previously
known insulating materials which include a met-
al foil as a heat reflecting surface.

These and other objects and the several novel
features of the invention are hereinafter more
fully described and claimed, and the preferred
form of construction of an insulating sheet em-

bodimenting my invention is shown in the accom-
panying drawing in which—

Fig. 1 is a sectional perspective view showing
one form of my improved insulation sheet.

Fig. 2 is a similar view showing an alternative
form of construction.

Fig. 3 is a sectional perspective view of a box-
like container in which my improved insulation
sheet is used as a lining.

Fig. 4 is an illustration of the manner of use
of my improved insulation sheet as a wrapper for
a bottle.

In the preferred form of construction of my
improved insulating sheet, I provide a sheet of
preferably paper-like material 1 of any approved
form and dimension which is flexible in char-
acter such, for instance, as an ordinary wrap-
ping paper. Upon one face of this sheet 1 is se-
cured a bright metallic foil 2 which may be an
aluminum foil and to the outer face of the foil
sheet is secured, as by pasting thereto, a sheet
of transparent paper-like material 3. Preferably,
this sheet is formed of the well known Cellophane
heretofore mentioned, which is impervious to air
flow and to a very considerable degree impervious
to moisture.

An essential character of insulation utilizing
a bright metal foil as a heat or cold reflecting
surface is that the reflecting surface should be
spaced from the material insulated. I accom-
plish this by embossing the sheet 3 to form a
multiplicity of knob-like projections 4 preferably
spaced uniformly over the sheet. The size of
these projections is not material and may vary,
depending upon the particular use to be made of
the insulation.

For general use as a wrapping paper, the knobs
of the embossed sheet are comparatively small
and project from one side of the sheet only as will
be understood from Fig. 1. This sheet being glued
or pasted to the face of the foil, there is provided
a series of dead air cells 5 provided at the face
of the foil sheet and thus preventing a flow of
air thereacross. The surface of the foil sheet is
thus shielded from an accumulation of dust or
dirt and therefore tends to prevent the reflecting
surface of the sheet from becoming tarnished.

The purpose of the knobs is therefore two-
fold. It will be readily seen that the knobs
being on the inner face of the sheet will main-
tain the article or the material enclosed there-
within out of contact with the foil and thus
space the reflecting surface from the article be-
ing shielded and also provides the dead air cells.
The sheet of material may be formed to provide

a bag similar to the ordinary paper bags in use and for the carrying of a material which it is desired to prevent a loss of heat or cold as, for instance, hot bread rolls or wrapped ice cream etc. It may also be used for a simple wrapper as an ordinary paper is used or it may be shaped to provide an insulation cover for a milk bottle such as is indicated at 6 in Fig. 4. This wrapper may be made up in the form of an open ended tube of the necessary size, slipped over the bottle from the top and the opposite ends turned over the bottle end as indicated at 7. A rubber band may be applied about the neck of the bottle if desired to hold the insulation sheet from displacement. The insulation sheet may also be utilized as a liner for a box as is indicated in Fig. 3 wherein it will be seen that the knob elements 4 project inwardly and space the material in the box from the foil sheet 3. In this case, if desired, the paper sheet 1 may be pasted to the interior surface of the wall 9 of the box.

The invention is not confined to the use of Cellophane as the inner embossed sheet of material as most any more or less transparent paper-like material can be used but Cellophane is considered the better material due to the fact that it does not deteriorate in transparency through long periods of time and is more transparent than the usual waxed papers although in many cases waxed or other character of paper may be utilized without departing from the spirit and scope of the invention as defined by the appended claims.

An alternative form of the invention is shown in Fig. 2. In this case I provide the same base sheet 1 and foil sheet 2 and to this is secured a transparent sheet such as a Cellophane sheet 10. This sheet is embossed to provide knobs 11 on one side alternating with knobs 12 on the opposite side. While this form does not provide dead air cells at the surface of the foil, it serves the purpose of spacing the foil sheet a greater distance from the material enclosed by the sheet and if used as a wrapper and the edges thereof crimped or turned as is suggested at 7 in Fig. 4, air flow is prevented to a material degree across the face of the foil. With the usual corrugated strawboard on which a foil sheet might be positioned, the spaces between the ribs forming the corrugations provide air channels causing a loss of heat or cold from the material enclosed by such form and further such commonly known corrugated strawboard is entirely too stiff to provide the desired flexibility which is secured

by the arrangement of the sheet 3 or 10 with the projections and depressions which provide a sheet of material that is flexible in all directions.

With my improved device, the pliability of the sheet is a desired feature enabling it to be used as a wrapper and readily cut and bent to any desired form as, for instance, to provide a lining for a box as in Fig. 3 in which, subsequent to placing, the flexibility of the sheet is no longer a factor as it is sustained by the walls of the body to which it is preferably secured.

It is believed evident from the foregoing description, that the insulation sheet is inexpensive in character enabling it to be used in a multiplicity of instances as a wrapper or as a container for a material to be shielded, and that the features and objects of the invention are attained by the structure described.

Having thus fully described my invention, its utility and mode of operation, what I claim and desire to secure by Letters Patent of the United States is—

1. An insulation means comprising a sheet of paper, a bright metal foil secured to the surface thereof, and a sheet of Cellophane having a series of projections upon one face and a series of recesses opening through the other face, said other face being secured to the foil thereby closing the recesses and providing a series of dead air spaces.

2. An insulation means comprising a sheet of pliable paper, a sheet of metal foil secured to the surface thereof, and a sheet of Cellophane glued to the foil surface, said Cellophane sheet having portions projecting from one side and providing recesses closed by the foil.

3. A pliable sheet of insulation comprising a Cellophane sheet embossed to provide a series of separate spaced projections on one face and recesses opening through the other face, and a metal foil secured to the last named face of the embossed sheet and sealing the recesses to atmosphere.

4. An insulating means comprising a pliable sheet of material, an aluminum foil on one face thereof, and an embossed sheet of Cellophane secured to the foil, the embossing providing a series of spaced projections extending from one face of the sheet, and an equal number of projections alternating therewith projecting from the other face of the sheet and the whole forming a pliable insulating sheet.

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