# A METHOD OF MANUFACTURING A DISPLAY PANEL, SAID DISPLAY PANEL BEING OPERABLE TO ENABLE CONTENT TO BE DISPLAYED ON A STEP OF AN ESCALATOR

## FIELD OF THE INVENTION

The present invention relates to a method of manufacturing a display panel, the display panel being operable to enable content to be displayed on a step of an escalator.

## BACKGROUND TO THE INVENTION

An escalator is a moving staircase – a conveyor transport device for carrying people between floors of a building. The device consists of a motor-driven chain of individual, linked steps that move up or down on tracks, allowing the step treads to remain horizontal. Modern escalators have single-piece aluminium or stainless steel steps that move on a system of tracks in a continuous loop.

It is to be appreciated that conventionally the steps of an escalator are solid, one piece, die-cast aluminium or steel. In most escalator models manufactured after 1950, both the riser and the tread of each step is cleated (given a ribbed appearance) with comb-like protrusions that mesh with the comb-plates on the top and bottom platforms and the

succeeding steps in the chain. Seeberger- or "step-type" escalators featured flat treads and smooth risers; other escalator models have cleated treads and smooth risers. The steps are linked by a continuous metal chain that forms a closed loop. The front and back edges of the steps are each connected to two wheels. The rear wheels are set further apart to fit into the back track and the front wheels have shorter axles to fit into the narrower front track. As such, it is to be appreciated that the cleated feature of the steps is essential for the proper functioning of the escalator.

It is further to be appreciated that the escalators are generally positioned so as to be easily seen and accessible by the general public. As such, escalators, and more particularly the steps of escalators, are prime positions on which to place advertising material as it is sure to be received by a wide audience.

However, due to the cleated design of the majority of the steps of escalators, the placing of advertising material on these steps is often regarded as an onerous and cumbersome process. The advertising material which is so placed should meet the further requirement of not interfering with the proper functioning of the escalator.

## OBJECT OF THE INVENTION

The object of this invention is to provide a method of enabling content to be displayed on a step of an escalator, which will at least partially alleviate the above problem and provide the advantage indicated above.

## SUMMARY OF THE INVENTION

According to a first aspect of the invention, there is provided a method of manufacturing a display panel, the display panel being operable to enable content to be displayed on a step of an escalator, the method comprising the steps of:

printing desired advertising content on a surface of a ~~generally~~ rigid plastic sheet;

manufacturing a vacuum formed sheet by vacuum forming the printed plastic sheet to fit a desired part of an escalator step profile;

trimming the vacuum formed sheet on all four sides; and

applying an adhesive substance to an operatively back surface of the vacuum formed sheet; and

applying a release paper to the adhesive substance.

The plastic sheet may be manufactured from a polyvinyl chloride (PVC), styrene or other rigid plastic material.

The plastic sheet may be approximately 500 microns in thickness. In a preferred embodiment of the invention, the plastic sheet may be less than 400 microns in thickness.

In an embodiment of the invention, the is provided a method of affixing a display panel according to the invention may further comprisinge the steps of:

identifying one or more steps on the escalator for placing the rigid plastic sheet;

switching off the escalator;

cleaning an operatively vertically displaced side of the one or more steps with a degreasing agent;

exposing the adhesive substance on the plastic sheet; and

positioning the plastic sheet over the vertically displaced side of the step and applying pressure by means of one or more rollers so as to ensure it is affixed thereto.

The method of exposing the adhesive substance on the plastic sheet may comprise removal of a release paper from the back surface of the plastic sheet.

**BRIEF DESCRIPTION OF THE DRAWINGS**

These and other features of this invention will become apparent from the following description of one example described with reference to the accompanying drawings in which:

**Figure 1** shows a method of manufacturing a display panel, said display panel being operable to enable content to be displayed on a step of an escalator, in accordance with embodiments of the invention; and

**Figure 2** shows a system including a display panel for the display of content on a step of an escalator, in accordance with embodiments of the implementation of the invention; and

**Figure 3** shows the system of Figure 2, in use on an escalator.

## DETAILED DESCRIPTION OF THE INVENTION

With reference to Figure 1, a method for enabling content to be displayed on a step of an escalator is generally indicated by reference numeral 100.

In accordance with the method 100, at block 102, the desired advertising content is printed onto a generally rigid plastic sheet (hereinafter interchangeably referred to as a "rigid plastic sheet") less than approximately 400 to about 500 microns in thickness. In accordance with embodiments of the invention, the plastic sheet may be provided in the form of a polyvinyl chloride (PVC), styrene or another similar, rigid plastic material.

At block 104, the plastic sheet is vacuum formed to fit the surface profile of at least one side of a step of the escalator. More particularly, the cleats (i.e. the ribbed appearance) of each of the steps, is emulated on the plastic sheet. It is to be appreciated that this enables the plastic board to take the shape of the cleats of an escalator step provided by a specific manufacturer.

At block 106, the sides of the plastic sheet are trimmed so as to ensure that the plastic sheet does not protrude beyond the operatively outer edges of the escalator step.

At block 108, an adhesive substance is applied to the operatively back surface of the plastic sheet so as to enable the plastic sheet to be adhered to the step.

At block 110, the plastic sheet is affixed to the escalator step. More particularly, the requisite steps are identified on the escalator on which the plastic sheet is to be placed, the escalator is switched off, the operatively vertically displaced side profile of the steps are cleaned with a degreasing agent, a release paper is removed from the back surface of the plastic sheet and the sheet is positioned over the cleaned area of the step.

Pressure is applied by means of one or more rollers so as to ensure that the sheet is affixed to the step.

With reference to Figure 2, a method which provides for the display of content on a step of an escalator is generally indicated by reference numeral 200.

A front profile of the plastic sheet is exemplified by reference numeral 202. The cleats 206 in the plastic sheet are clearly visible in the front profile view.

The side profile of the plastic sheet having a thickness of less than approximately 400 to about 500 microns is exemplified by reference numeral 204. Similarly the elevations 208 and grooves 210 which form these cleats 206 are clearly visible with the side profile view.

With reference to Figure 3, the method of Figure 2, in use on an escalator, is generally indicated by reference numeral 300.

The escalator 300 comprises a rigid vacuum formed plastic sheet 302 having a thickness of less than approximately 400 to about 500 microns affixed to the operatively front profile of an escalator step 306. In this regard, it is to be appreciated that not all of the steps 304 need be included.

It will be understood that various embodiments of the method of the invention are possible without departing from the scope hereof.

**CLAIMS:**

1. A method of manufacturing a display panel, the display panel being operable to enable content to be displayed on a step of an escalator, the method comprising the steps of:

   printing desired advertising content on a surface of a ~~generally~~ rigid plastic sheet;

   manufacturing a vacuum formed sheet by vacuum forming the printed plastic sheet to fit a desired part of an escalator step profile;

   trimming the vacuum formed sheet on all four sides; ~~and~~

   applying an adhesive substance to an operatively back surface of the vacuum formed sheet~~-~~; and

   applying a release paper to the adhesive substance.

2. A method of manufacturing a display panel as claimed in claim 1, wherein the plastic sheet is manufactured from a polyvinyl chloride (PVC), styrene or other rigid plastic material.

3. A method of manufacturing a display panel as claimed in claim 2, wherein the plastic sheet is approximately 500 microns in thickness.

4. A method of manufacturing a display panel as claimed in claim 2, wherein the plastic sheet is less than 400 microns in thickness.

5. A method of ~~manufacturing~~ affixing a display panel as claimed in any of the preceding claims to one or more escalator steps, wherein the method comprises the ~~further~~ steps of:

identifying one or more steps on the escalator for placing the rigid plastic sheet;

switching off ~~said~~ the escalator;

cleaning an operatively vertically displaced side of the one or more steps with a degreasing agent;

exposing ~~the~~ an adhesive substance on the plastic sheet by removal of a release paper from the back surface of the plastic sheet; and

positioning the plastic sheet over the vertically displaced side of the step and applying pressure by means of one or more rollers so as to ensure it is affixed thereto.