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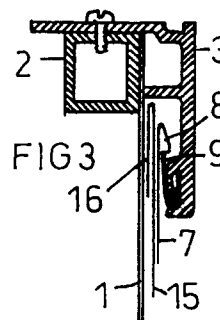
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**S-254 58 Helsingborg (SE)**(54) **Poster frame with extensible plastic film.**

(57) The present invention relates to ordinary poster boards, in particular those known as large poster boards.

The purpose of the invention is to simplify the changing of messages. It is also the intention to make it possible to convert existing large poster boards easily and cheaply into boards according to the invention.

The use of extensible plastic film over the board surface is known.

What chiefly characterises the invention is the design of the board frames where they are attached to the board so that they cover all the outer areas of the poster board surface, that each frame contains a rail (9, 12) one long edge (10, 13) of which is displaceable inward/outward to/from the board surface, that the plastic film (7) on one side has a strip (8) against which the long edge of the rail can act and press the strip against the surface of the board. When applying the film, the strip (8) is pressed towards the edge of the board with a tool (10) that gets support from the outer edge (23) of the frame.

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The present invention relates to ordinary poster boards, in particular those known as large poster boards.

The purpose of the invention is to simplify the changing of messages and to eliminate the use of adhesive. It is also the intention to make it possible to convert existing large poster boards easily and cheaply into boards according to the invention.

This is achieved mainly by fitting each boards with special frames outside the board surface and by using a plastic film covering the board surface, with a specially-designed edge strip.

The invention has the particular characteristics stated in the claims and will be explained further below with the aid of figures in which examples of the invention are shown in principle. For clarity, certain dimensions are shown exaggerated.

- Figure 1 shows a poster board with edge parts fitted.
- Figure 2 shows an area of the top and bottom part of the board, viewed in the direction of the board.
- Figure 3 shows the piece according to Figure 2, in section A-A.
- Figure 4 shows on a larger scale an edge strip attached at a plastic film.
- Figure 5 shows a variant of the bottom frame seen in section.
- Figure 6 shows a piece of the bottom frame with a tool mounted.
- Figure 7 shows the frame with the tool of Figure 5, seen in section B-B
- Figure 8 shows the frame with the tool of Figure 5, seen in section C-C
- Figure 9 shows the frame with the tool of Figure 5, seen in section D-D
- Figure 10 shows another variant of the bottom frame, seen in section

On the illustrations, 1 indicates the board itself, which may be made of aluminium sheet, bonded to square-section tubing 2. The board may consist, in the known manner, of several parts, eg four parts three metres high and one metre wide. Different embodiments for these parts and for their attachment to a wall or stand have long been known.

3 refers to the upper frame of the boards, with 4 its two side frames and 5 its lower frame. These parts may, but need not, be identical. The frame parts are shorter than the side to which they are attached. They may be attached directly to the board surface or can be attached to the outer edges of the board, as is clearly shown by Figure 3, where the frame covers the outer edge of the board. For reasons of appearance, there are at the corners of the board corner pieces, one of which has been drawn, and marked 6. It must be easy to fit and remove the corner pieces. The frames may conveniently be made from continuously-extruded

aluminium.

A transparent plastic film 7 is stretched over the flat surface of the board. Welded to the edges of the film are strips 8 by means of which the film can be placed under tension. Figures 3, 7, 8, 9 and 10 shows that a U-section rail 9 is inserted in the frame. The rail may be of rigid plastic and one of its long edges is inserted in a groove in the frame, whilst the other long edge 10 is free and can be bent against the other edge against spring force. The lower frame 5 in Figures 2 and 3 has a projecting edge strip 11.

Figure 4 shows on a larger scale the plastic film 7 welded to the edge strip 8.

Figure 5 shows a variant of a lower arm. Here, a rail 12 is screwed to the frame, which in turn is screwed directly to the board surface. The upper free edge 13 of the rail can be bent outwards against spring force. Normally it presses lightly against the surface of the board. In the frame there is a longitudinal edge 14.

Figure 10 shows a second variant of the lower frame. The main difference between this and the frame of Figure 3 is that this frame has a large area of contact with the large board surface (the board panel). The frame can be secured to the board panel by means of screws, pop rivets or only double-sided adhesive tape. Here, the inner upper edge 25 of the frame reaches further in towards the middle of the board than the outer upper edge 26 of the frame. The part of the frame that lies flat against the large board surface can also be regarded as part of the board surface and must be included in the term 'board surface'. It is against this surface that the rail 9 with its lower edge 10 presses in this case.

15 is a poster sheet, the height of which is slightly less than the height of the board. The poster sheet may, for example, be one metre high and four sheets are needed for a large board with a width of four metres. The edges of the poster sheets may overlap. At the top the poster sheet is folded double inwards, as indicated by 16. This uppermost part is pressed between the surface of the board and the plastic film 7 by the rail 9. This tension holds the poster sheet and prevents it falling down. Figures 2 and 3 show the lower edge 17 of the poster sheet.

In Figure 6, a tool 18 has been placed on the frame from the end of the frame. The tool, which is shown only schematically, has a bent press-out part 19 of even thickness. The left part of this is shaped as a rod 20. In the press-out part are secured two supports 21, at the bottom ends of which two wheels 22 are mounted on bearings. These wheels run in groove 23 in the frame. Only the press-out part 19 together with its rod 20 and the strip 8 are shown, by dashed lines.

Figure 9 shows the film 7 with its lower strip 8 when the film is untensioned and before the tool has gripped the strip. Figure 8 shows the situation when the strip 8 has been pressed outwards a short distance by the press-out part 19 of the tool. The rail 9 is then bent gradually inwards towards its other long edge as the tool is moved to the right. Figure 7 shows the situation when the strip 8 has been pressed outwards slightly by the press-out part 19 and its rod 20. The upper surface 24 of the rod is positioned immediately under the edge 10 of the rail 9, so that the rail can spring back towards the board and press the film against the board. When the tool has been moved further to the right, so that the tool has passed a particular section of the strip, the strip moves up towards the long edge 10 of the rail.

To reduce the friction between the press-out part 19 and the strip 8, the surface of the press-out part that slides against the strip may be coated with Teflon or the press-out part may have rotating wheels which press out the strip. On pressing out of the strip, the strip and the film are pressed against the surface of the board.

It is quick and easy to apply the tool to the frame, since the strip need not enter any groove.

To remove the film from the frame, move the tool in the other direction.

When the entire film is to be applied to the board, another method may be used. For example, the upper edge of the film may be drawn into the frame from the end of the frame, in which case the rail only springs out the small distance that is equal to the thickness of the film.

For the side frames, the film can be applied to the left-hand frame by moving the tool, as shown on the drawing, from the top down. For the right-hand frame, the film is applied by moving the tool from the bottom up. Naturally, it is possible to use a tool on the right and a tool on the left, and thus apply the film in the desired direction.

On the lower frame as shown in Figures 2 and 3, there is an edge strip 11 for mounting an application tool for poster sheets. The edge strip can also be used for a tool for taking down posters. These tools are mounted temporarily when necessary on the lower frame by suspending them on the edge strip 11 or 14, as the case may be, and allowing the lower part of the tool to be supported by the lowest part of the frame. The frame can be secured firmly in the outer area of the board and the frame and board contribute rigidity to each other so that the tools for setting up and taking down poster sheets can be applied to the frame and used without the frame twisting or bowing.

When changing the message, the film is first released from the lower frame and possibly also from the lowest parts of the side frames. After this

a tool for taking down posters can be applied and the used sheets can be wound on to a cardboard tube. However, it is not necessary to remove the old poster sheets every time a new message is to be put up. The new sheets can be placed over the old ones. An application tool is placed on the frame, with the top of the tool preferably being provided with a broad support around which the double-folded upper part 16 of the sheet is placed, after which the sheet is applied between the poster board 1 and the plastic film 7. The top part of the poster sheet enters the space between the upper frame 3 and is held securely between the board and the plastic film by the rail 9. The top poster sheet 16 therefore remains in position when the tool with its support is pulled down.

It is easy to push the tool on the frame to one side in order to put up the adjacent poster sheet.

Poster sheets can be put up not only by a special application tool suspended on the frame but also with a simple tool in the form of a long slightly bent flexible shaft at the top of which there is a broad support in which the top part of the poster sheet is temporarily fixed, for instance by folding the uppermost part of the poster sheet around the support.

The message in the form of a sheet of paper can of course have been so compiled that its width is equal to the finished message.

Because the frame is located outside the board surface, the space between the board surface and the inner part of the frame is constant along the entire length of the frame.

Even if the main intention is that ordinary posters of paper shall be used as messages, the film itself may bear a painted message.

The board itself, which in most cases consists of sheet metal, may be of glass or rigid transparent plastic and back-lit, so that the sign becomes an illuminated sign.

## Claims

1. Rectangular sign of the kind that has a flat hard base surface (1) which forms a support for an advertising message and which board has an extensible plastic film (7) situated immediately outside the base surface, *characterised in that:*
  - on each of the edges of the board a frame (3, 4, 5) is attached so that it covers the outer edge area of the board,
  - on each frame there is attached a rail (9, 12) of approximately the same length as the frame, where the frame has a long edge (10, 13) acting against the board, the said long edge being displaceable in the direction inward/outward to/from the

board and

- the plastic film (7) along its edges on its outside has a strip (8) against which one long edge (10, 13) of the rail can act and press the strip in against the board surface. 5

2. Rectangular sign according to claim 1, *characterised in that* each frame is shorter than the side to which it is attached. 10
3. Rectangular frame according to any one of the former claims, *characterised in that* the rail (9) is fixed to the frame in such a way that the free long edge (10) of the rail moves away from the edge of the board at the same time as it moves towards the board. 15
4. Rectangular sign according to any one of the former claims, *characterised in that* the rail (12) is fixed to the frame in such a way that the free long edge (13) of the rail moves away from the edge of the board at the same time as it moves towards the board. 20
5. Rectangular sign according to any one of the former claims, *characterised in that* the upper frame (3) is so designed that a message in the form of a thin layer (15) can be inserted from below into a space under the film (7) attached to the frame (3) whereby the upper part (16) of the inserted message can be clamped between the film and the board by the free long edge of the rail. 25 30
6. Rectangular sign according to any one of the former claims, *characterised in that* its plastic film (7) can be applied and removed by a tool (18) which, with the aid of a push-out device (19) when moving along a frame can gradually move the plastic film out towards the edge of the board, while the tool is supported against the outside (23) of the frame. 35 40

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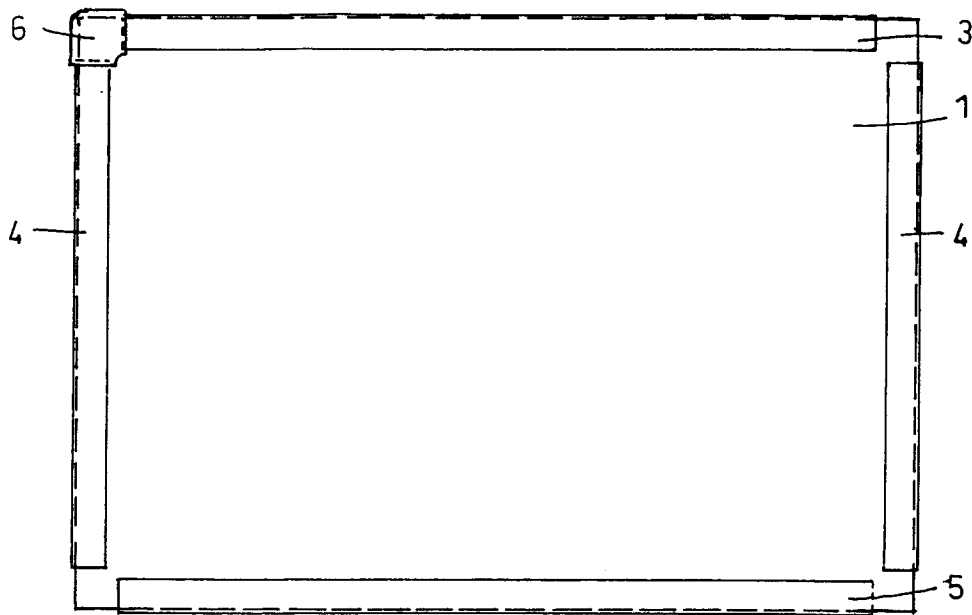
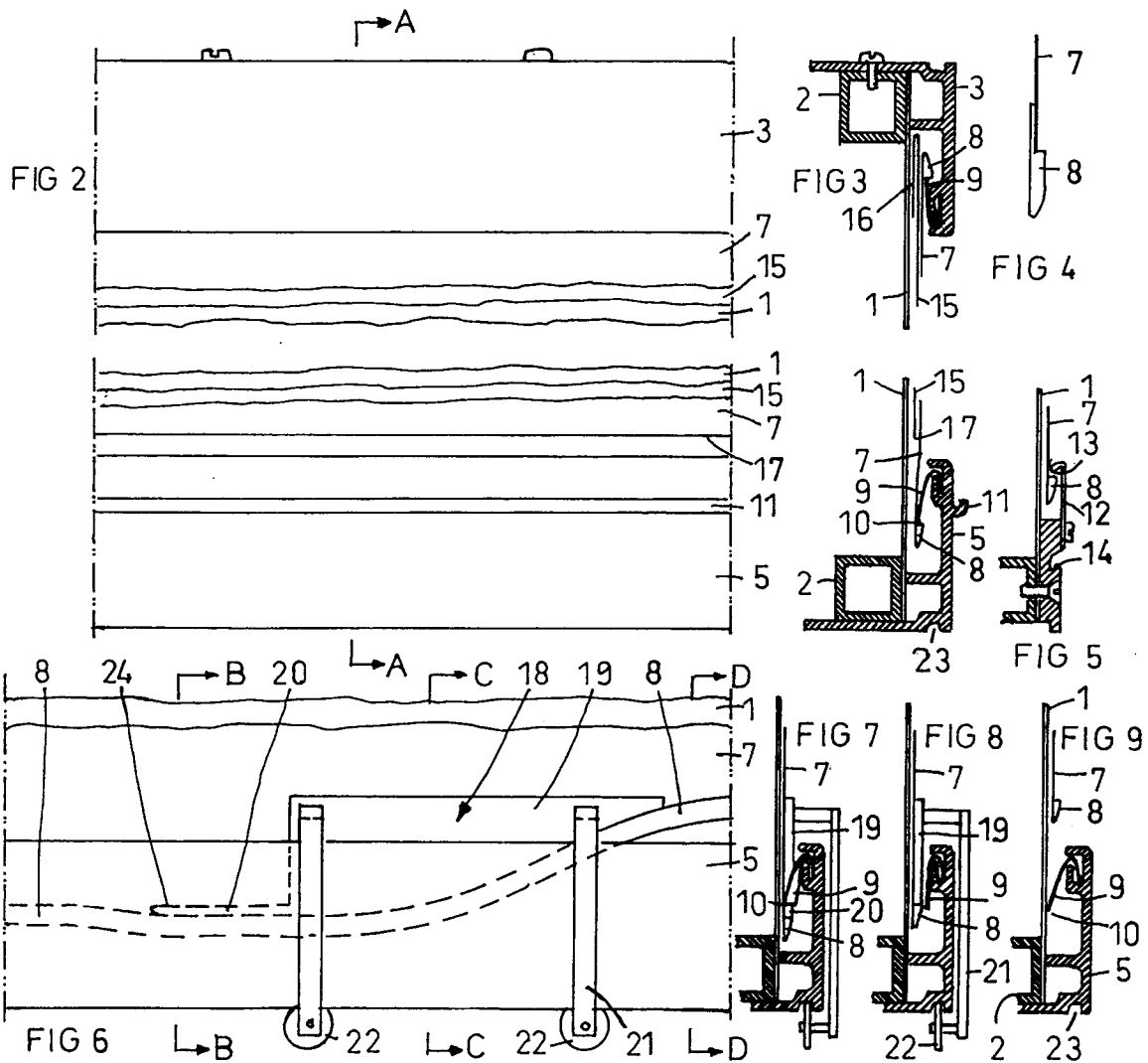
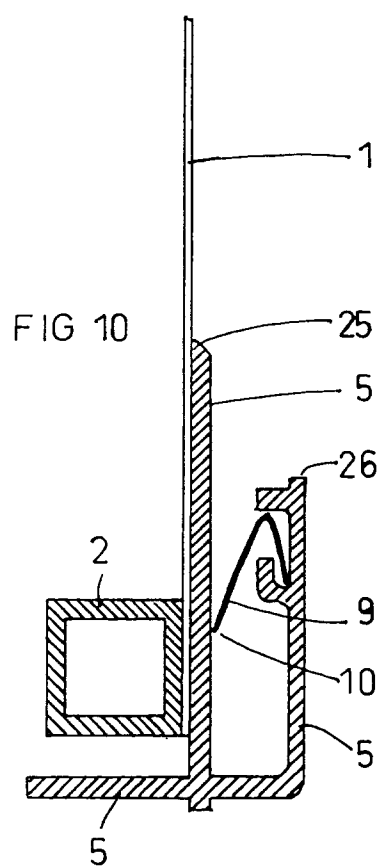


FIGURE 1







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## EUROPEAN SEARCH REPORT

Application Number  
EP 95 85 0060.5  
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.6)
A	FR, A1, 2 456 985 (GAILLIARD, HENRI), 12 December 1980 (12.12.80) * figure 3 *	1	G09F 15/00
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A	EP, A1, 0015747 (THOMAS, DAVID DREYFUS), 17 September 1980 (17.09.80) * figure 1 *	1	
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A	EP, A1, 0352379 (GRAPHIC FORMING LTD.), 31 January 1990 (31.01.90) * figure 3 *	1,4	
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.6)
			G09F
Place of search		Date of completion of the search	Examiner
STOCKHOLM		4 July 1995	LEIF TÖRN
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