

**EUROPEAN PATENT APPLICATION**

Application number: **82304986.1**

Int. Cl.<sup>3</sup>: **B 44 C 1/16**

Date of filing: **22.09.82**

Priority: **28.09.81 GB 8129235**

Date of publication of application:  
**13.04.83 Bulletin 83/15**

Designated Contracting States:  
**DE FR GB IT SE**

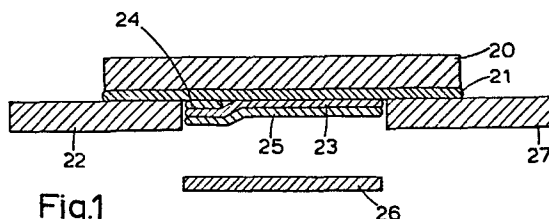
Applicant: **QMC Industrial Research Limited**  
**229 Mile End Road**  
**London E1 4AA(GB)**

Inventor: **Robertson, Penrose David**  
**43 Nassington Road**  
**London N.W.3(GB)**

Representative: **Boon, Graham Anthony et al,**  
**Elkington and Fife High Holborn House 52/54 High**  
**Holborn**  
**London, WC1V 6SH(GB)**

**System for transferring indicia to a surface.**

A system is disclosed for transferring indicia to a surface. The system comprises a layer of transparent film (23) secured on one face by a first adhesive layer (21) to a base layer (20) and provided on the opposite face with a second adhesive layer (25). The system has a first region where the layer of transparent film (23) is adhered less strongly to the base layer (20) than it is in a second region where it is adhered more strongly to the base layer (20). The difference in adherence can be provided by interposing a layer of relatively non-adherent material (24) between the film (23) and the first adhesive layer (21) in the first region, or by using a first adhesive layer (21) which varies in its thickness, tackiness, or area of application. A pulling force can be applied selectively to the base layer (20) adjacent the first or second region.



-1-

System for Transferring Indicia to a Surface

This invention relates to a method of transferring indicia to a surface, and to a means for carrying out the method.

Various systems are known for transferring indicia to a surface, for example that sold under the Trade Mark LETRASET. However, known systems are inflexible in that the only indicia which they will transfer are those with which the system is already provided, i.e. the user cannot choose with complete freedom the indicia which he wishes to transfer. Furthermore, known systems such as Letraset tend to give rise to difficulties in working with large numbers of small indicia, in that locating them is fiddly and time-consuming, and there is a tendency for indicia to break up if they are very small. Furthermore, once the indicia are in position on the artwork they need to be protected by spraying with a lacquer. It is an object of the present invention and embodiments thereof to obviate or reduce the disadvantages mentioned above.

The present invention provides a method of transferring indicia to a surface, which comprises imparting the indicia to a surface of a carrier member, bringing an adhesive surface of an adhesive member into close contact with the said surface so as to cause the said indicia to adhere more strongly to the adhesive surface than they do to the surface of the carrier member, removing the adhesive member bearing the indicia from the carrier member, and adhering the adhesive member bearing the indicia to the surface to which the indicia are to be transferred.

Preferably, the adhesive member is supported on

-2-

a base layer which is removed from the adhesive member after the adhesive member bearing the indicia has been adhered to the surface to which the indicia are to be transferred.

5           According to the present invention there also is provided a system for transferring indicia to a surface, which comprises a base layer, a layer of transparent film having first and second faces, a first adhesive layer adhering the first face of the film to the base  
10 layer, a second adhesive layer provided on the second face of the film, the system having a first region where the layer of film is adhered less strongly to the base layer than it is in a second region where it is adhered more strongly to the base layer, and  
15 means for enabling a pulling force to be applied selectively to the base layer adjacent the first region or adjacent the second region. Preferably, in order to avoid tackiness on the said surface after the indicia have been transferred thereto, the film should separate  
20 from the base layer in such a way that it leaves substantially all of the first adhesive layer secured to the base layer.

Figure 1 is a section, on an enlarged scale, through a first embodiment of the present invention;

25           Figure 2 is a similar section through a second embodiment of the present invention; and

Figure 3 shows the base layer of Figure 2 and the adhesive layer thereon; and

30           Figure 4 shows successive steps in using either of the illustrated embodiments.

The embodiment shown in Figure 1 comprises a sheet of film material 20 coated on one side with a layer 21 of pressure-sensitive adhesive. The sheet 20 may, for example, be in the form of an elongate strip,  
35 the length of the strip extending, in the drawing, into

-3-

the plane of the paper. Tabs 22 and 27 of paper or other material are provided at opposite edges of the sheet 20 for convenience of handling.

The central part of the layer 21 carries a  
5 polyester film 23, for example a film 2.5 microns thick of the type sold under the Trade Mark MYLAR. The polyester film 23 is not secured over its whole area directly to the layer 21, since at one edge there is an intervening layer 24 of a silicone material. The layer  
10 24 is shown as being of uniform thickness. However, if desired its thickness could decrease continuously from left to right, this being achieved by, for example, spraying on the silicone while moving a mask. The purpose of the intervening layer 24 is to render the  
15 polyester film less strongly adhered to the layer 21 at the lefthand end (where the silicone is provided) than it is at the righthand end. The reason for this will become apparent from the ensuing description of the way in which this embodiment is used. An alternative  
20 way of achieving the same result is for the adhesive layer 21 to decrease in thickness from right to left across the polyester film 23. It can be shown that the adhesiveness of such a film decreases with decreasing thickness. A third way of achieving differential  
25 adhesiveness is to diminish the quantity of resin tackifier in the adhesive composition from right to left across film 23. A fourth way of achieving differential adhesiveness is described below with reference to Figures 2 and 3. The tabs 22 and 27 are marked in such a way  
30 that the user knows at which edge easy release occurs.

The surface of the polyester film facing away from the layer 21 is coated with a layer of pressure-sensitive adhesive 25. When the system is not being used the layer 25 is covered with a backing strip 26 of  
35 siliconised material. In Figure 1 this layer is shown

-4-

removed from the adhesive layer 25, as it is when the system is used.

The embodiment shown in Figures 2 and 3 differs from that shown in Figure 1 in that differential ad-  
5 hesiveness is achieved by the layer of adhesive 21 being applied in a pattern such that the amount of adhesive decreases from right to left. Figure 3 shows one possible pattern which is a tooth-like pattern, though it will be appreciated that many alternative patterns are possible.  
10 The adhesive pattern is preferably applied by printing, for example, it may be applied as a pattern of fine dots by a silk screening printing process.

The way in which the embodiments described above are used is shown in Figure 4. Firstly, (step A) indicia  
15 (in this case the legend "Fig. 1") which it is desired to transfer to a surface are typed on a sheet 30 of suitable paper or other material using a conventional typewriter 31 with a carbon film ribbon. A system according to Figure 1 or Figures 2 and 3 is then taken, and, if it is in the  
20 form of an elongate strip, a suitable length is cut off (step B). The backing strip 26 is removed (step C) from this length which is then placed over the indicia (step D). A rubbing action is applied to the sheet of film 20 so as to cause the layer of adhesive 25 to adhere firmly  
25 to the sheet 30 carrying the indicia, and the system is burnished (also step D).

The tab 27 is then grasped and the system is pulled away (step E) from the sheet 30 on which the indicia were typed, the indicia adhering to the pressure-  
30 sensitive adhesive layer 25. The relative strengths of the adhesive layers 21 and 25 are such that separation occurs between the paper carrying the indicia and the adhesive 25, rather than between the polyester film layer 23 and the adhesive 21.

35 The system carrying the indicia on the adhesive

-5-

layer 25 is then placed on the surface to which the indicia are to be transferred, for example the surface of art work, subjected to a rubbing action and burnishing is applied (step F). Then the tab 22 is grasped and  
5 pulled (step G). The presence of the silicone layer 24 (or, in the case of Figures 2 and 3, the reduced amount of adhesive) means that adjacent the tab 22 the adherence of the film 23 to the adhesive layer 21 is less than the adherence of the film 23 to the adhesive layer 25, and  
10 is also less than the adherence of the adhesive layer 25 to the surface of the art work. Accordingly, what happens is that the sheet 20, the layer of adhesive 21 and the tabs 22 and 27 are peeled away leaving the polyester film secured by the adhesive layer 25 to the  
15 art work, with the indicia sandwiched between the adhesive layer 25 and the surface of the art work.

Any suitable materials may be used for the various components of the system shown in Figure 1. By way of example, the sheet of film 20 with its adhesive  
20 21 may be constituted by a length of self-adhesive tape, for example that sold as SCOTCH "MAGIC" tape. The silicone layer 24 may, for example, be that sold by Dow Corning under the name "Releasil A". The pressure-sensitive adhesive used for the layers 21 and 25 may,  
25 for example, be Tivoli Kay T K 1036 pressure-sensitive adhesive diluted for the purpose of application in ratio 1:1 with toluene, or the adhesive sold under the name Revacryl 396.

In the embodiment shown in Figure 2 the base  
30 layer 20 and the tabs 22 and 27 may, for example, be a 75  $\mu$  polyester film key-coated for printing purposes, the layer 21 may be a pressure sensitive adhesive such as that sold by Sericol Group under the name Drystick Extra for silk screen printing, and the layer 25 may  
35 be that sold by BASF under the name Acronal 4D.

-6-

CLAIMS:

1. A system for transferring indicia to a surface, which comprises a base layer, a layer of transparent film having first and second faces, a first adhesive layer adhering the first face of the film to the base layer, a second adhesive layer provided on the second face of the film, the system having a first region where the layer of film is adhered less strongly to the base layer than it is in a second region where it is adhered more strongly to the base layer, and means for enabling a pulling force to be applied selectively to the base layer adjacent the first region or adjacent the second region.
2. A system according to claim 1, wherein the said first region is provided by the presence of a relatively non-adherent material between the film and the said first adhesive layer.
3. A system according to claim 2, wherein the said relatively non-adherent material is a silicone.
4. A system according to claim 1, wherein the said first and second regions are provided by the said first adhesive layer decreasing in thickness from the second region to the first region.
5. A system according to claim 1, wherein the said first and second regions are provided by the said first adhesive layer decreasing in tackiness from the second region to the first region.
6. A system according to claim 1, wherein the said first and second regions are provided by the said first adhesive layer forming a pattern in which the area of adhesive is less in the said first region than it is in the said second region.

-7-

7. A system according to claim 6, wherein the said pattern of adhesive is a printed pattern.

8. A system according to any preceding claim, wherein the said film is of a polyester.

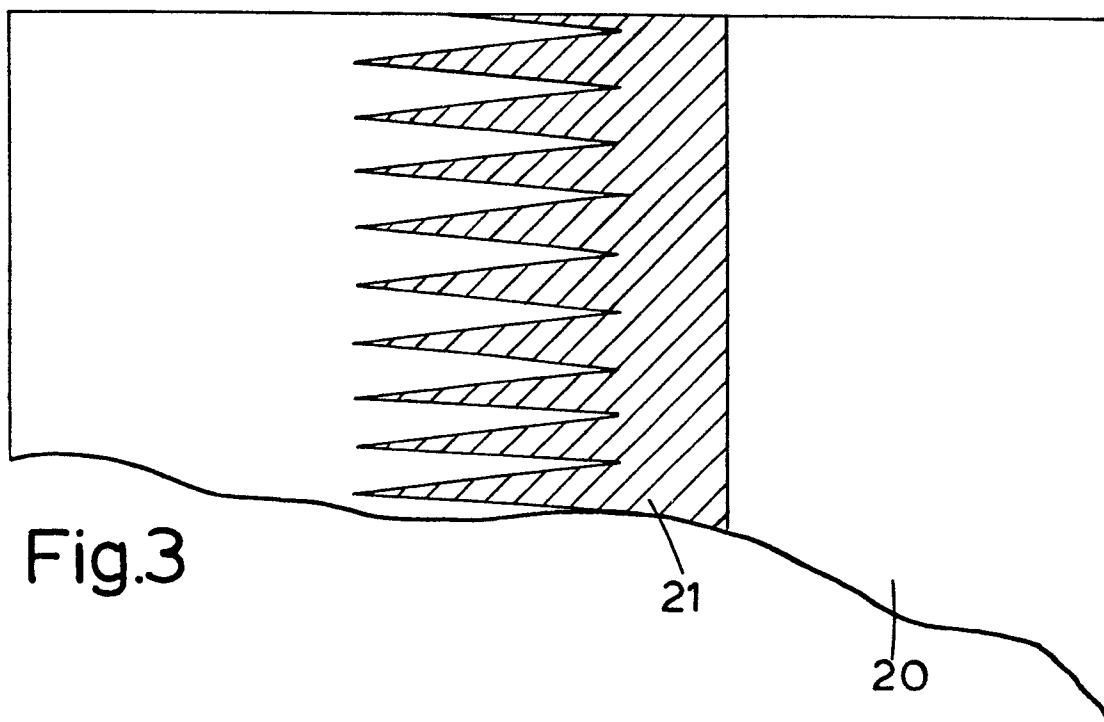
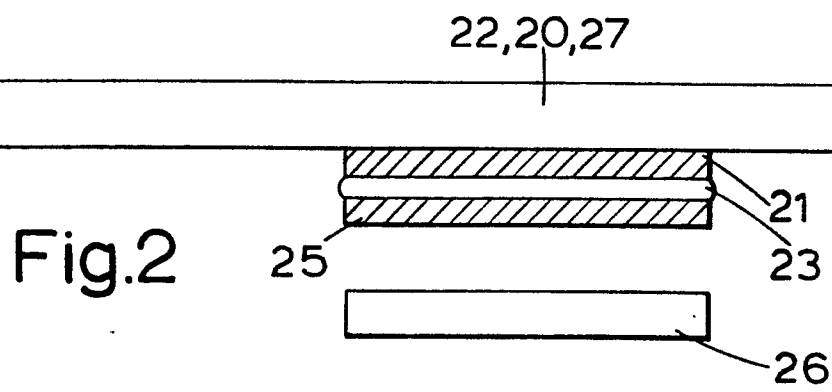
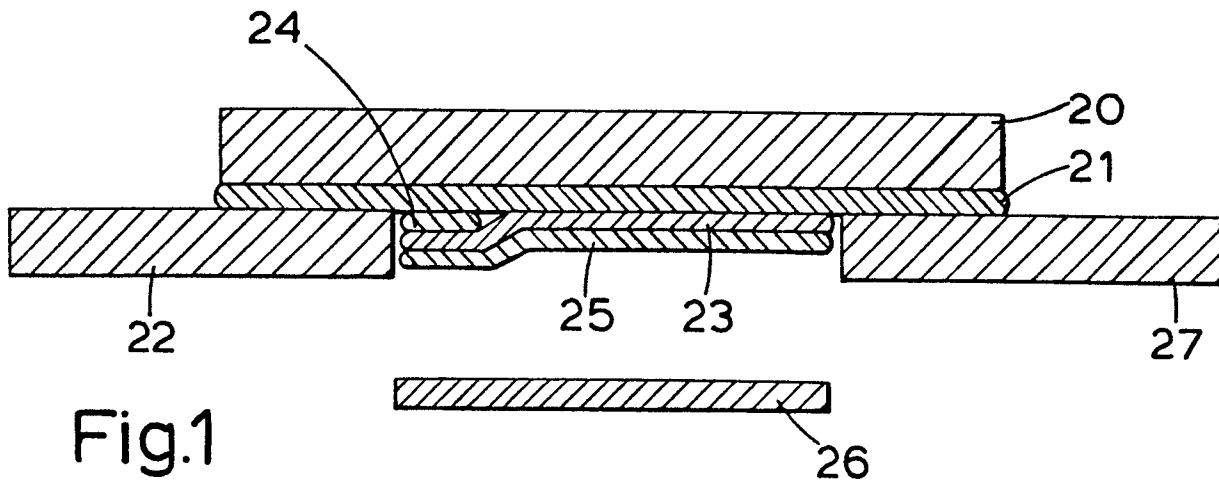
9. A system according to any preceding claim, wherein to enable the said pulling force to be applied two tabs are secured to the said first adhesive layer adjacent the said first and second regions respectively.

10. A system according to any one of claims 1 to 8, wherein to enable the said pulling force to be applied the base layer extends beyond the film and the layers of adhesive adjacent the said first and second regions.

11. A method of transferring indicia to a surface, which comprises imparting the indicia to a surface of a carrier member, bringing an adhesive surface of an adhesive member into close contact with the said surface so as to cause the said indicia to adhere more strongly to the adhesive surface than they do to the surface of the carrier member, removing the adhesive member bearing the indicia from the carrier member, and adhering the adhesive member bearing the indicia to the surface to which the indicia are to be transferred.

12. A method according to claim 11, wherein the adhesive member is supported on a base layer which is removed from the adhesive member after the adhesive member bearing the indicia has been adhered to the surface to which the indicia are to be transferred.





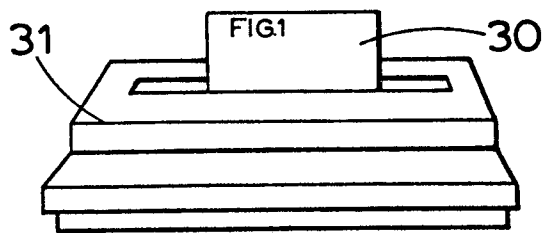


Fig.4A

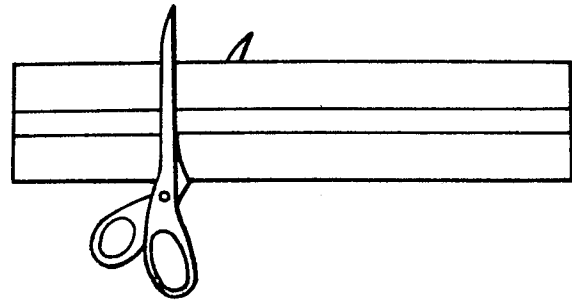


Fig.4B

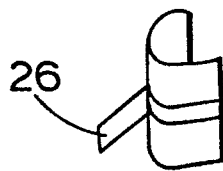


Fig.4C

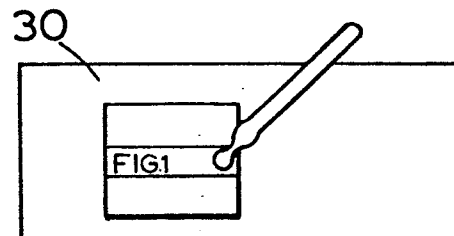


Fig.4D

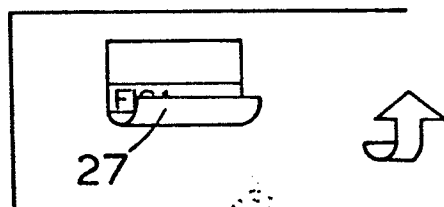


Fig.4E

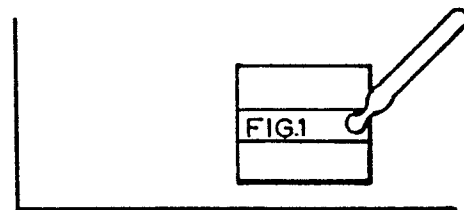


Fig.4F

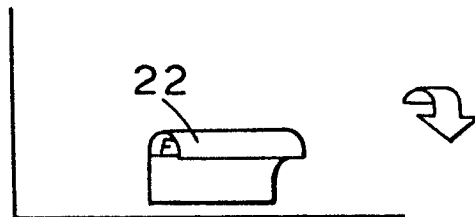


Fig.4G

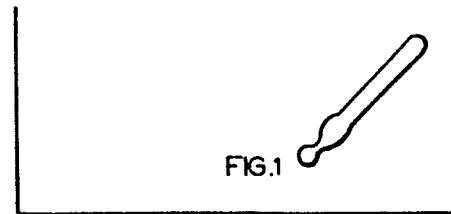


Fig.4H



European Patent  
Office

## EUROPEAN SEARCH REPORT

**0076593**

Application number

EP 82 30 4986

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. <sup>3</sup> )
A	--- NL-A-7 610 227 (W.VAN DE KAMP) *Page 2, lines 33-36; figure 3*	1,11	B 44 C 1/16
A	--- US-A-3 344 012 (O.R.F.STRÖM) *Column 5, lines 20-47*	1,11	
A	--- GB-A-1 217 915 (O.R.F.STRÖM) *Page 3, lines 72-124*	1,11	
A	--- GB-A-1 039 850 (CHART-PAK) *Page 3, lines 98-115*	1,11	
A	--- GB-A- 954 459 (LETRASET) *Claim 1*	1,11	
A	--- GB-A-2 005 596 (LETRASET INTERNATIONAL) *Claim 1*	1,11	TECHNICAL FIELDS SEARCHED (Int. Cl. <sup>3</sup> )
A	--- US-A-3 987 225 (K.J.REED)  -----		B 44 C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 03-01-1983	Examiner FRIDEN N.
<b>CATEGORY OF CITED DOCUMENTS</b>			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons  & : member of the same patent family, corresponding document	