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(54) Suspendable writing pad assembly.

(57) Suspendable writing pad assembly (4, 14) comprising a plurality of sheets (1, 11) of paper or of a plastics material each adapted to be written on, said sheets (1, 11) provided in a superimposed arrangement and adhering to each other in areas along their to edges and being adapted to be withdrawn from each other and forming a pad (4, 14) which adheres releasably to a rear holding sheet (5). Having been withdrawn from the pad (4, 14), the sheets (1, 11) are self-adheringly attachable to a plane surface and may be provided with inscriptions. Sheets (1, 11) are adapted to be self-adheringly attachable to said plane surface a number of times and are reunifiable repeatedly to form a pad (4, 14). Inscriptions written on them may be erased by wiping them off within a predetermined period of time. Holding sheet (5) has a portion (6) extending beyond the top edge of pad

(4) and adapted to be releasably retained in clamping means (7) having on its rear surface (8) elements (9) to releasably affix clamping means (7) to a plane surface a number of times.

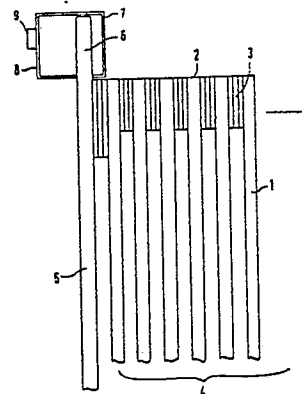


FIG. 2

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Suspendable Writing Pad Assembly

The invention relates to a suspendable writing pad assembly comprising a plurality of sheets of paper or of a plastics material each adapted to be written on, said sheets adhering to each other in an area along their top edges and being releasable from each other and forming a pad releasably adheringly secured to a rear holding sheet. Also, said sheets are adapted to be attached self-adheringly to a plane surface and to be written on after they have been withdrawn from the pad.

For lecturers and speakers it is desirable - particularly on travel - to have available an easily transported writing pad assembly of which the sheets can be written on in a suitable size and can be suspended re-usably from vertical surfaces or stands so that an audience may see them. Conventionally, paper sheets are used for this purpose; they are provided with means such as perforations by which they may be suspended from a stand or the like. The paper sheets may be united by means of a suitable adhesive along their top edges to form a pad. Once written upon, the individual sheets are placed on a vertical surface by means of adhesive tape or pins, resulting in residues of the adhesive remaining on the supporting surface or that surface sustaining damage. In many cases, it is not possible to re-use the adhesive tape once it has been withdrawn. Also, in many cases, a plurality of sheets of paper are placed side by side for demonstration purposes.

In a prior writing pad assembly of the kind mentioned above (European Patent Application 0 163 127), a plurality of sheets of paper or plastic is stacked to form a pad. Each sheet has a self-adhesive tape secured thereto on its top surface along an edge, said tape having a portion which extends beyond and along the respective edge of the sheet and the sheet being separable from that portion together with the adhesive tape secured thereon. The lowermost sheet of the pad rests on a rear holding sheet having such a length that the outer edges of the portions extending beyond the sheets of the adhesive tapes coincide with the corresponding edge of the holding sheet. In the area of that edge, the holding sheet has on its surface adjacent the pad a self-adhesive tape by which the pad is secured to the holding sheet. The individual sheets of the pad may be written on before or after they are withdrawn from the pad and may be attached to bulletin boards, telephones, plastic bags, windshields or the like for conveying information. In practical use, sheets of this kind can be attached a single time only; neither can they be reunited again to form a pad. Also, it is not possible to erase the information

written on them by wiping it off.

One disadvantage of the aforesaid pad system is that it is unsightly in appearance in the area of the top edge if the pad comprises a substantial number of sheets. The reason is that three different layer thicknesses are present in that top edge area: the sum thickness of the sheets to be written on, the sum thickness of the sheets and of the adhesive tapes in the overlap zone, and the thickness of the adhesive alone.

It has been known (U.S. Patent 4,138,523) in the production of blackboards to apply to the board surface a film of a plastics material such as polyethylene or polypropylene which is flexible and can be written on, said film having on its surface facing away from the board a colored coat of polyurethane. In the production of the boards, the film material may be withdrawn in sections from a coil and be affixed to the board surface by means of a vinyl acetate resin emulsion adhesive in such a manner that the colored coat forms a surface to be written on from which writings are readily erased.

There have also been known ink compositions (U.S. Patents 3,949,132 and 3,834,823) which may be used in felt-tipped pens or other so-called board marker pens to write on a board or panel of a hard non-porous plastics material and having a smooth surface, with the writings readily wiped from the board surface by means of a fabric or paper cloth. The essential ingredients of ink compositions of this kind include water, a water-soluble coloring material, a silicone component and a release agent in which the water-soluble coloring material is insoluble.

In the office area, it has been known to use clamping means such as clamp strips, magnets, buttons and the like for posting slips of paper and the like.

The object underlying the invention is to provide a writing pad assembly of the kind initially specified and useful particularly for lecturing halls and the like to provide lecturers in an effective manner with an assembly that handles easily (in the way of the so-called flip charts) and comprises a plurality of film-like sheets from which inscriptions may easily be removed, which sheets after having been written on may be suspended individually, may be re-suspended elsewhere without sustaining damage, and may be re-united to form an easily-handled unitary article.

In accordance with the invention, this object is accomplished by the sheets being adapted to be self-adhesively affixed to a plane surface a plurality of times and to be re-united repeatedly to form a pad, by any writings on them being erasable by

wiping within a pre-determined period of time, and by the holding sheet having a portion which extends beyond the top edge of the pad and is releasably clampable in clamping means having on its rear surface elements by which the clamping means may be affixed repeatedly to a plane surface in a releasable manner.

Advantageous further developments of the inventive writing pad assembly follow from the dependent claims. The clamping means may be a clamping strip of a flexible plastics material and may comprise, for example, two members that are hinged to each other. The members of the clamping device are movable by hand into a clamping position in which they clamp the holding sheet. The elements on the rear surface of the clamping device have the form of fastening or affixing means suited to readily suspend the so-called flip-chart from a vertical surface and to change its position thereon. The aforesaid elements on the rear surface preferably comprise two spaced self-adhesive foam material pads which firmly adhere to the plane surface as the clamping device is pressed onto it and may be withdrawn from and re-affixed to that surface a number of times without being damaged.

The sheets preferably are formed from polymer films that are suited for use without additional coatings.

However, the sheets preferably comprise two or three layers each, with two-layer sheets accepting writing on the front surface only and three-layer sheets accepting writing on both the front and the rear surfaces thereof.

In the case of a two-layer construction of the sheets, the film consists of biaxially oriented polypropylene, high-density polyethylene or isotactic polypropylene with an additional coat of polyvinylidene chloride which may be applied to one or both surfaces, with each one of the polymer films being combinable with each one of the other polymer films.

An additional acrylic coat may be provided on the rear surface.

In the case of a three-layer construction of the sheets, each one of the front and the rear surfaces comprises a writable sheet made up of the aforesaid polymer films, with the intermediate film preferably being polyester, paper, polyvinyl chloride or polycarbonate. The film may also consist of biaxially oriented polypropylene having on both sides a coat of ethylene-propylene copolymer. The film may consist of a polymer coat on a paper layer. The film may also be opaque or translucent and - like the paper layer - be colored, provided with multi-colored printing, or be left all white.

Each sheet of the pad is provided in the area along its top edge with a re-usable adhesive strip

which serves as a fastening or affixing means. The said adhesive strip may comprise an adhesive tape double-coated to provide different adhesive strengths on its two sides. The same effect may be obtained by coating the film with a special adhesive which when used in combination with an adhesion promoting material adheres strongly to the coated film surface, but by itself adheres relatively weakly to the rear surface of the film opposite the coated film surface so that the individual films may be withdrawn readily from each other. For applying this special adhesive, the film should first be coated with the adhesion promoting material, which will then receive the coat of adhesive.

The rear holding sheet preferably is formed of paper and may have therethrough in the portion extending beyond the top edge of the pad a plurality of openings - such as holes or slots intersecting in cross shape - to be used for suspending the writing pad assembly.

The clamping means may be provided with magnets on the rear surface. For affixing the clamping means to textured surfaces, it may have thistle-cloth means on its rear surface.

The pad preferably comprises 20 to 50 or even more sheets each 15 to 150 μm and preferably 50 μm thick. Depending on the nature of the surface, inscriptions on these sheets may be erased by means of a suitable pad or simply by means of a soft paper cloth for a period up to four days, for example, after the time of writing. The size and format of the sheets may be selected in accordance with the intended use; exemplary dimensions are 5 x 5 cm^2 to 1.5 x 1.5 m^2 .

The inventive writing pad assembly is space saving in construction for easy transport. Its flip-chart portion and the clamping device may be sold and/or shipped separately. After a lecture, the flip-chart portion can readily be rolled up on the clamping strip, for example. After use, the re-usable sheets are readily adhered to each other for joint clamping by the clamping device. By means of the clamping device, the inventive writing pad assembly may be affixed easily to vertical surfaces or stands; after a lecturer has written on the sheets, they may be grasped and withdrawn from the pad individually to be suspended so that the audience may see them readily. As the sheets are very thin, the weight of the writing pad assembly is relatively low so that the adhesive elements provided on the clamping device will safely support the writing pad assembly on a wall or vertical surface. Since the sheets are reusable, the inventive writing pad assembly is cost-effective and may be put to use in an efficient and flexible manner.

One particular advantage is that the sheets of the writing pad assembly may be adhered to and removed from a plane surface repeatedly. These

repositioning properties of the sheets may be realized a number of ways. On the one hand, and as mentioned above, the sheet material made of paper or a plastics material may be coated with a suitable adhesion promoting material and an adhesive, and on the other hand the sheet material made of paper or of a plastics material may be laminated with a so-called double-coated adhesive tape having different adhesive strengths on its two sides, with the high-adhesion side connected firmly with the sheet. Also, repositioning properties may be obtained by a coat of adhesive spots in a raster array pattern.

The sheets of the flip-chart portion are easily fastened in the clamping device to hang down freely to be grasped individually.

In case it is not desired for the sheets to be repositionable, a high-strength adhesive may be used.

Preferred embodiments of the inventive writing pad assembly will now be explained in greater detail under reference to the attached drawings.

Fig. 1 shows a plan view of a sheet of the writing pad assembly which is provided with an adhesive strip, and

Fig. 2 shows a schematical side view in section of the inventive writing pad assembly; and

Fig. 3 is a side view similar to Fig. 2 showing a plurality of sheets having their adhesive strips on the front and rear sides thereof.

Fig. 1 shows a plan view of a paper or plastics sheet 1 of the inventive writing pad assembly which is provided in the area along its top edge on the side opposite the surface to be written on with an adhesive strip 3 which allows sheet 1 to be adhered to and removed from a plane surface a number of times without being damaged.

Fig. 2 shows a number of sheets 1 of the aforesaid nature assembled in an overlying relationship and connected to the adjacent sheet 1 by adhesive strip 3 along top edge 2 of each sheet 1 so as to form a pad 4. The lowermost sheet 1, i.e. the sheet 1 Fig. 2 shows at the left-hand end of pad 4, is attached by means of adhesive strip 3 to a holding sheet 5, said holding sheet 5 having a portion 6 extending beyond the top edge of pad 4 for being releasably retained in a clamping device 7. Holding sheet 5 may be paper or a transparent and/or colored polymer material such as polypropylene. Holding sheet 5 should be made of a relatively stable or stiff sheet material having a thickness in the range of 50 to 200 μm so as to impart to the pad sufficient stability and satisfactory handling properties.

On rear surface 8 of clamping device 7, which may comprise two members interengaged in hinge fashion, there are provided affixing means such as spaced self-adhesive foam material pads 9, self-

adhesive thistle-cloth means, magnets, or the like, to enable the inventive writing pad assembly to be safely affixed to and removed from a plane surface a number of times.

Fig. 3 shows the manner of providing an adhesive 13 on the front and rear surface of each individual paper or plastics sheet 11 in the vicinity of its top edge 12. Taken together, sheets 11 form a pad 14.

In order that each sheet 11, once withdrawn from pad 14, may be repositioned on other surfaces with its front surface as well as its rear surface, each sheet 11 is provided on both sides with a pressure-sensitive adhesive 13 applied to sheet 11 with the aid of an adhesion-promoting primer 15. This way, an adhesive strip is created which may be released and reapplied a number of times. That surface of adjacent sheet 11 which lies opposite pressure-sensitive adhesive 13 has thereon a coating 16 which ensures ready release of sheet 11 from pad 14.

As shown in Fig. 3, the front surface of each sheet 11 is provided at the top edge thereof with primer 15 and pressure-sensitive adhesive 13, with release coating 16 being provided therebelow. On its rear surface, each sheet 11 is coated correspondingly in a mirror-image arrangement, i.e. coating 16 is provided along top edge 12, with primer 15 and pressure-sensitive adhesive 13 provided therebelow.

Claims

1. Suspensible writing pad assembly comprising a plurality of sheets of paper or of a plastics material each adapted to accept writing, said sheets lying on top of each other and adhering to each other in a area along their top edges and being adapted to be withdrawn from each other and forming a pad affixed in a releasably adhering manner to a rear holding sheet, said sheets being adapted to be attached self-adheringly to a plane surface and to be written on after having been withdrawn from the pad, characterized in that sheets (1) are self-adhesively attachable to the plane surface a number of times and reunifiable repeatedly reunited to form said pad (4), in that the writings thereon are erasable by wiping within a predetermined period of time, and in that holding sheet (5) has a portion (6) extending beyond the top edge of pad (4) and releasably clampable in clamping means (7) having on its rear surface (8) elements (9) by which clamping means (7) may be releasably affixed to a plane surface a number of times.

2. Writing pad assembly as in claim 1, characterized in that clamping means (7) consists of a

flexible plastics material and has a length equal to the width of holding sheet (5), in that said clamping means comprising two elongated members interconnected in hinge-fashion and movable by hand into and from a clamping position wherein they clamp holding sheet (5), and in that elements (9) on rear surface (8) of clamping means (7) comprise two spaced self-adhesive foam materials pads which adhere firmly to the plane surface in response to clamping means (7) being pressed thereonto and may be withdrawn from said surface a number of times without damage.

3. Writing pad assembly as in claim 1, characterized in that elements (9) on the rear surface (8) of clamping device (7) comprise magnets or thistle-cloth means.

4. Writing pad assembly as in claim 1, characterized in that sheets (1) are formed of one or several polymer films.

5. Writing pad assembly as in claim 1 and 4, characterized in that sheets (1) consist of biaxially oriented polypropylene with a coat of polyvinylidene chloride.

6. Writing pad assembly as in claim 1 and 4, characterized in that sheets (1) consist of high-density polyethylene with a coat of polyvinylidene chloride.

7. Writing pad assembly as in claim 1 and 4, characterized in that sheets (1) consists of isotactic polypropylene with a coat of polyvinylidene chloride.

8. Writing pad assembly as in claim 1 and 4, characterized in that sheets (1) are two-layered in construction and have a writable layer formed of biaxially oriented polypropylene, high-density polyethylene or isotactic polypropylene, and in that a coat of polyvinylidene chloride may be provided on one or both sides, with each one of said polymer films being combinable with any other one of said polymer films.

9. Writing pad assembly as in claim 1 and 4, characterized in that sheets (1) are three-layered in construction, with the outer writable layers being formed of two polymer films selected from the group comprising biaxially oriented polypropylene, high-density polyethylene or isotactic polypropylene and the intermediate layer being polyester, paper, polyvinyl chloride or polycarbonate.

10. Writing pad assembly as in claim 1 and 4, characterized in that sheets (1) are formed of a biaxially oriented polypropylene coated on both sides with ethylene-propylene copolymer.

11. Writing pad assembly as in claim 1 and 4 to 8, characterized by each sheet (1) being 50 μ m thick.

12. Writing pad assembly as in claim 1 and 4 to 10, characterized by sheets (1) being printed.

13. Writing pad assembly as in claim 1 and 4

to 11, characterized by sheets (1) being transparent.

14. Writing pad assembly as in claim 1 and 4 to 11, characterized sheets (1) being opaque or translucent.

15. Writing pad assembly as in claim 1 and 4 to 12, characterized by sheets (1) being colored.

16. Writing pad assembly as in claim 1 and 4 to 13, characterized by sheets (1) being white.

17. Writing pad assembly as in claim 1 and 4 to 16, characterized in that each sheet (1) of pad (4) has in the area along its top edge (2) an adhesive strip (3) capable of adhering a number of times.

18. Writing pad assembly as in claim 1, characterized in that each sheet (11) of pad (14) has in the area along its top edge (12) on its front and rear surfaces a re-usable strip of adhesive (13, 15).

19. Writing pad assembly as in claim 18, characterized in that each sheet (11) is provided in surface portions thereof opposite adhesive strip (13, 15) on the adjacent sheet with a coating (16) ensuring ready release.

20. Writing pad assembly as in claim 1, characterized in that rear holding sheet (5) is formed of paper or of a polymer film and in that portion (6) of holding sheet (5) which extends beyond the top edge of pad (4) has punched therethrough a plurality of spaced openings for suspending the sheet.

21. Writing pad assembly as in claim 1, characterized in that writings on sheet (1) are erasable therefrom by wiping after various periods of time depending on the material and on the surface properties of said sheets.

22. Writing pad assembly as in claim 1 and 4 to 16, characterized in that sheets (1) are impermeable to liquids.

23. Writing pad assembly as in claim 1, characterized in that pad (4) has a width of 70 cm and a length of 100 cm and comprises a plurality of sheets (1) of high-density polyethylene each 50 μ m thick.

24. Writing pad assembly as in claim 17, characterized by reusable adhesive strip (3) provided on each sheet (1) being a double-coated adhesive tape having different adhesive power on its two sides, with a substrate such as polymer film or a non-woven material being provided between the two adhesives.

25. Writing pad assembly as in claim 1, 2, 20 or 23, characterized by the height of portion (6) of sheet (5) which extends beyond pad (4) corresponding to the width of clamping means (7).

26. Writing pad assembly as in claim 1, 2 or 25, characterized in that clamping means (7) is 70 cm long and 3 cm wide.

27. Writing pad assembly as in claim 1 and 14, characterized by each sheet (1) of pad (4) being

coated in the area along its top edge (2) with dots of an adhesive applied in a raster array pattern.

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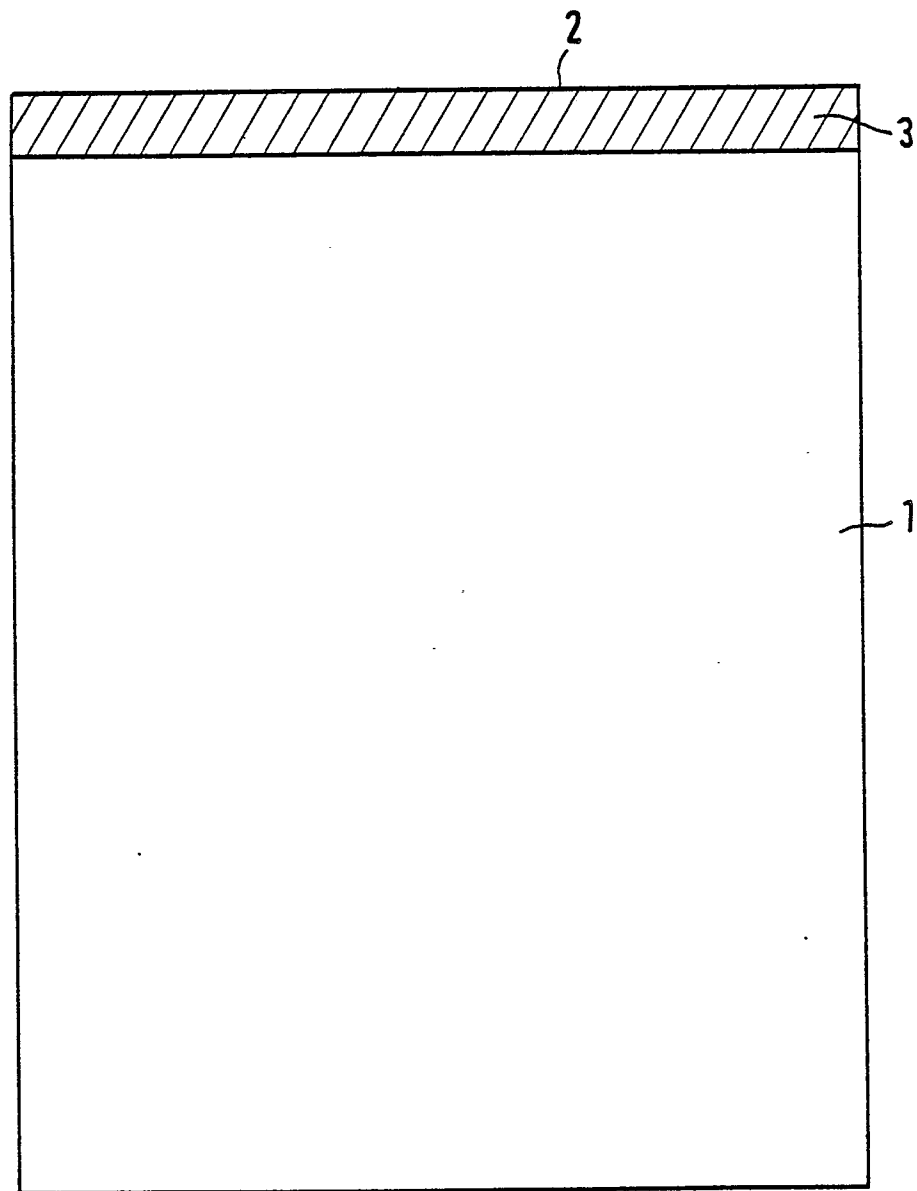


FIG. 1

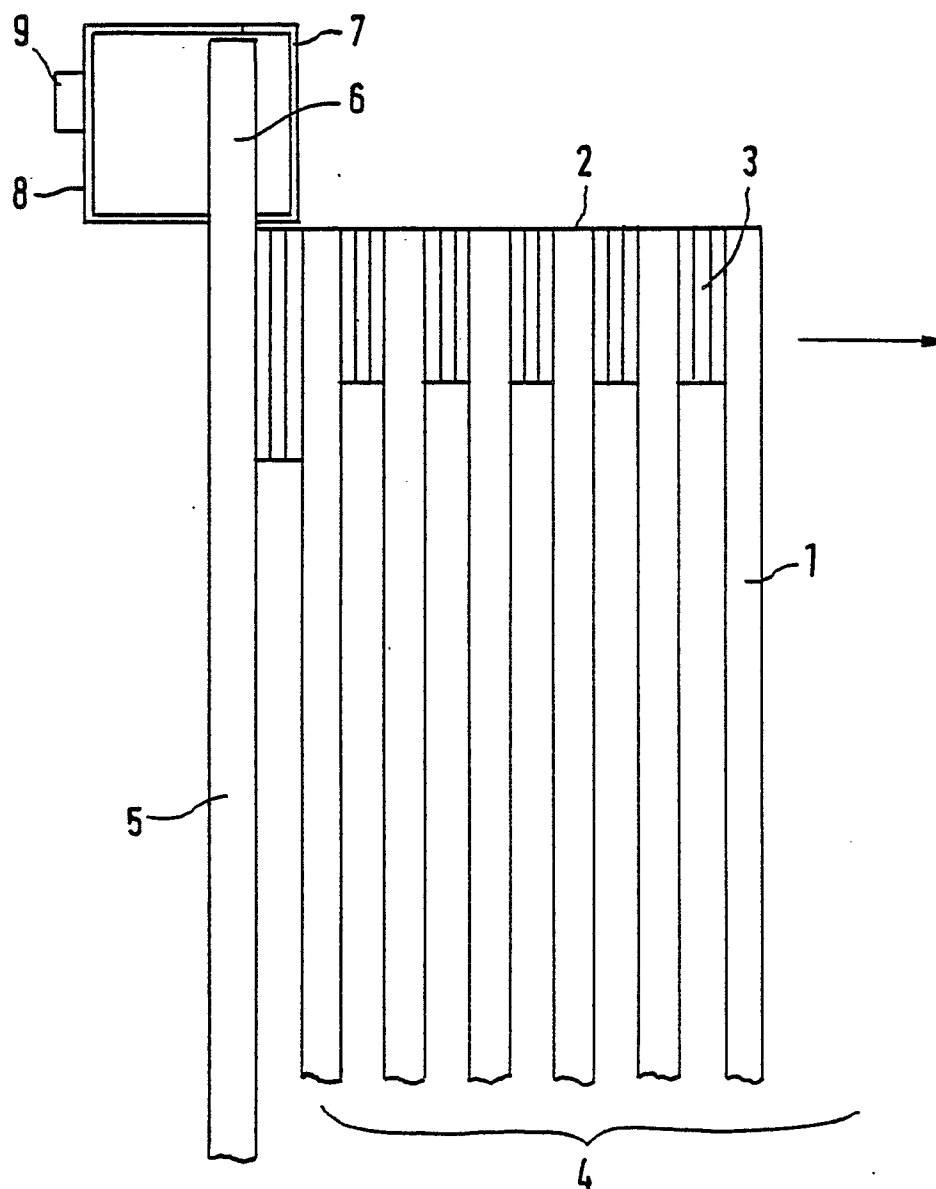


FIG. 2

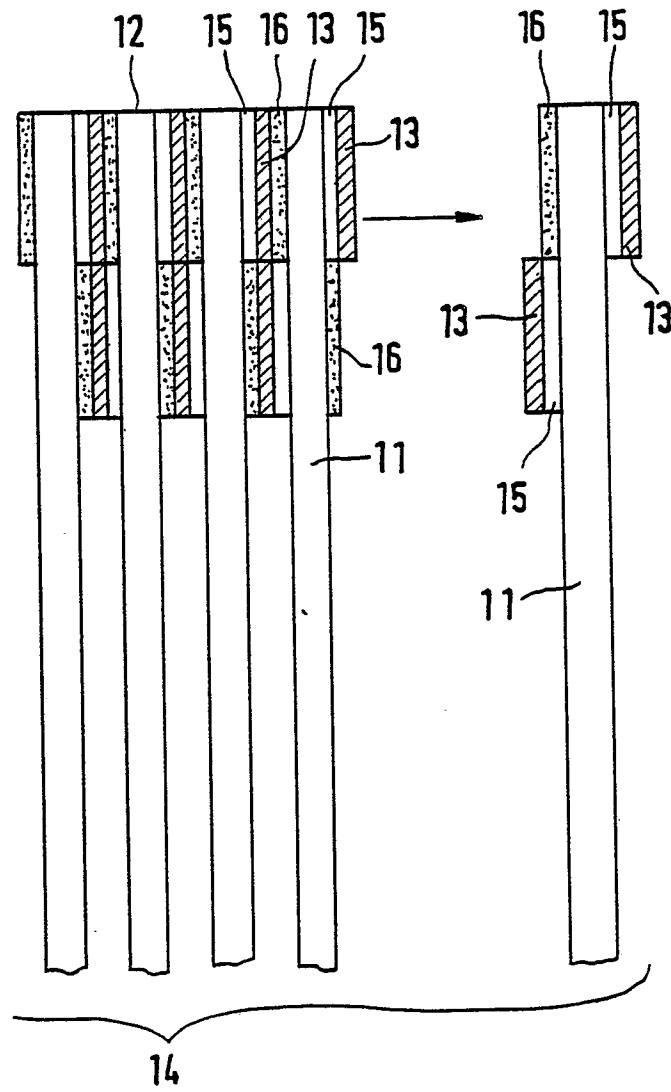


FIG. 3



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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.5)
Y	GB-A-419385 (ALFRED GEORGE BARRETT ET AL.) * page 2, line 48 - page 3, line 18; claims 1, 2; figures 1-8 *	1, 3, 4, 20, 21	B42D5/00 B43L1/00
Y	EP-A-0012789 (PADOWICZ MIRON) * abstract; claims 1-8; figures 1-4 * * page 2, line 24 - page 3, line 20 *	1, 3, 4, 20, 21	
A		18, 19, 27	
Y	US-A-3150296 (JOSEPH J. MCINTOSH) * column 1, line 42 - line 58; claims 1-3; figures 1-6 *	3	
Y,D	US-A-4138523 (TADASHI KATSURAYAMA ET AL.) * abstract; claims 1-9; figures 2, 5 *	4	
A		5-17, 22-24	
A	US-A-4623169 (JAMES E. HUTTEN) * column 1, line 55 - column 2, line 35; figures 1, 2 * * abstract *	2, 20, 23, 25, 26	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	FR-A-2510044 (MARTI JEAN-LOUIS) * claims 1-3 *	4-16	B42D B42F B43L
A	DE-A-2649982 (ALBRECHT, BRUNO) * claims 1-6 *	1-16	
A,D	EP-A-0163127 (BANSON NOMINEES PTY. LTD.) * page 12, line 31 - page 13, line 15; figure 1 *	1	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 29 JUNE 1989	Examiner GREINER E. F.
CATEGORY OF CITED DOCUMENTS 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 I : document cited for other reasons & : member of the same patent family, corresponding document	