

#### Search history

Search PN=(WO2016142243) (Results 1)

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Search [SP]: 1. a process for the production of a fiber cement sheet, comprising the steps of: (a) providing a fiber cementitious slurry comprising fibers, cement and water, (b) continuously discharging said fiber cementitious slurry on an endless water-permeable transport belt, and (c) removing excess of water from said fiber cementitious slurry through said water-permeable transport belt by suction, to form a fiber cement sheet with a predetermined thickness. 2. the process according to claim 1, wherein removing excess of water from said slurry by suction through said water-permeable transport belt takes place in at least three consecutive zones with different under-pressures. 3. the process according to claim 2, wherein the under-pressure of a first of said zones ranges between about 15 and about 65 mbar, in a second of said zones between about 65 and about 200 mbar and in a third of said zones between about 200 to about 550 mbar. 4. the process according to claim 1, wherein removing excess of water from said slurry by suction through said water-permeable transport belt takes place in at least four consecutive zones, the under-pressure of a first of said zones ranges between about 15 and about 65 mbar, in a second of said zones between about 65 and about 200 mbar, in a third of said zones between about 200 to about 550 mbar, and in a fourth of said zones between about 550 mbar and about 850 mbar. 5. the process according to claim 1, wherein step (c) of removing excess of water from said fiber cementitious slurry through said water-permeable transport belt is additionally performed by applying mechanical force. 6. the process according to claim 5, wherein the step of removing excess of water from said fiber cementitious slurry by applying mechanical force is performed by a mechanical belt press. 7. the process according to claim 1, wherein step (b) of continuously discharging the slurry on an endless water-permeable transport belt is performed by one or more flow-on systems through which said slurry is continuously dispensed on the belt. 8. the process according to claim 1, wherein step (b) of continuously discharging the slurry on an endless water-permeable transport belt is performed by one or more brush-like dispensing systems, through which said slurry is continuously and randomly sputtered on the belt. 9. the process according to claim 1, wherein step (b) of continuously discharging the slurry on an endless water-permeable transport belt is performed by one or more spraying systems, through which said slurry is continuously and randomly sprayed on the belt. 10. the process according to claim 1, further comprising the step of spraying a hydrophobic substance onto the discharged fiber cement slurry and/or onto the obtained fiber cement sheet. 11. the process according to claim 1, wherein the predetermined thickness of the dewatered fiber cement sheet ranges between about 8 mm and about 200 mm. 12. fiber cement sheet obtainable by the process according to claim 1. 13. apparatus for continuous production of fiber cement sheets, at least comprising: (i) one or more dispensing systems connected to a fiber cement source for continuously discharging a fiber cement slurry on an endless water-permeable transport belt, (ii) an endless water-permeable transport belt onto which the fiber cement slurry is discharged, and (iii) one or more devices installed adjacent to or near the water-permeable belt to achieve, facilitate and/or accelerate the removal of excess of water from the fiber cement slurry, thereby forming a fiber cement sheet with a predetermined thickness. 14. the apparatus according to claim 13, wherein said one or more devices installed adjacent to or near the water-permeable belt are one or more mechanical belt presses and/or one or more vacuum pumps. 15. the apparatus according to claim 13, wherein said one or more dispensing systems are one or more flow-on systems through which said slurry is continuously dispensed on the belt and/or one or more brush-like dispensing systems, through which said slurry is continuously and randomly sputtered on the belt and/or one or more spraying systems, through which said slurry is continuously and randomly sprayed on the belt. 16. the apparatus according to claim 14, wherein said one or more dispensing systems are one or more flow-on systems through which said slurry is continuously dispensed on the belt and/or one or more brush-like dispensing systems, through which said slurry is continuously and randomly sputtered on the belt and/or one or more spraying systems, through which said slurry is continuously and randomly sprayed on the belt. 17. the process according to claim 3, wherein removing excess of water from said slurry by suction through said water-permeable transport belt takes place in at least four consecutive zones, the under-pressure of a first of said zones ranges between about 15 and about 65 mbar, in a second of said zones between about 65 and about 200 mbar, in a third of said zones between about 200 to about 550 mbar, and in a fourth of said zones between about 550 mbar and about 850 mbar. 18. the process according to claim 2, wherein removing excess of water from said slurry by suction through said water-permeable transport belt takes place in at least four consecutive zones, the under-pressure of a first of said zones ranges between about 15 and about 65 mbar, in a second of said zones between about 65 and about 200 mbar, in a third of said zones between about 200 to about 550 mbar, and in a fourth of said zones between about 550 mbar and about 850 mbar. 19. the process according to claim 18, wherein step (c) of removing excess of water from said fiber cementitious slurry through said water-permeable transport belt is additionally performed by applying mechanical force. 20. the process according to claim 17, wherein step (c) of removing excess of water from said fiber cementitious slurry through said water-permeable transport belt is additionally performed by applying mechanical force. (Results 6)

Search process and production and lamina and (asbestos cement) (Results 76)

3:

Search process and laminated and fiber and cement (Results 4210)

4:

Search 4 and (band conveyor or conveyor belt) (Results 223)

5:

Search 5 and suction (Results 57)

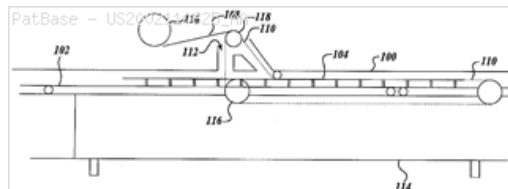
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**Title:** CONTINUOUS PACKAGING IN ENCLOSED CONDUITS

**Abstract:** The invention relates to a package having a first web defining a cavity and a second web bonded to the first web, wherein the second web includes microperforations at a location that is specific to minimize the escape of liquids from the cavity to the exterior of the package. In one particular embodiment, the first web defines a four sided cavity with walls and corresponding flaps attached to the walls that can be folded and bonded to the cavity walls. The second web is an overwrapping lidding web, wherein microperforations are provided on the web material so that the microperforations are aligned with a flap recess, which in turn is in communication with the interior of the tray cavity. In this manner, suitable gas exchange can occur with minimal to no escape of liquids from the tray cavity.

**Classifications:**

**International (IPC 8-9):** A22C17/00 A22C17/08 A22C17/10 A22C18/00 A23B4/00 A23B4/12 A23B4/16 A23B4/18 A23B4/20 A23B4/24 A23B4/26 A23K1/18 A23L1/015 A23L1/27 A23L1/31 A23L1/312 A23L1/313 A23L1/317 A23L1/48 A23L13/00 A23L13/20 A23L13/30 A23L13/60 A23L3/015 A23L3/34 A23L3/3418 A23L3/3445 A23L35/00 A23L5/20 A23L5/40 A23P1/00 A23P1/02 A23P1/10 A61L2/16 B01D21/02 B01D21/26 B04B3/04 B32B37/00 B60K6/12 B61J1/08 B65B25/06 B65B31/00 B65B31/02 B65B47/02 B65B55/00 B65B55/12 B65B7/16 B65D21/00 B65D21/06 B65D5/42 B65D6/10 B65D77/20 B65D81/00 B65D81/20 B65D81/28 B65D85/00 B65G47/61 C10L1/18 C10L5/00 C10L5/40 C12C3/04 F02B57/08 G01N21/00 G01N31/12 G01N33/12 G06Q30/00 (Advanced/Invention); B04B1/20 (Advanced/Non-invention); A23B4/00 A23B4/12 A23B4/14 A23B4/26 A23L1/015 A23L1/27 A23L1/31 A23L1/317 A23L3/015 A23L3/34 A23P1/02 A61L2/16 B01D21/02 B32B37/00 B65B25/00 B65B31/02 B65B7/16 B65D21/06 B65D6/00 B65D77/10 B65D81/20 B65D81/26 B65D81/28 C12C3/00 G01N33/02 (Core/Invention)



**International (IPC 1-7):** A01J1/00 A23B4/00 A23B4/12 A23C9/12 A23L1/27 A23P1/00 B01D11/02 B61J1/08 B65B25/06 B65B31/00 B65B31/02 B65B47/02 B65B51/10 B65B55/00 B65B9/04 B65D21/00 B65D5/42 B65D77/20 B65D81/00 B65D81/20 B65D85/00 B65G47/61 C12C3/04 G01N21/00 G01N33/02  
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**Family:**

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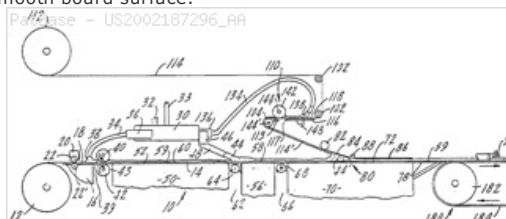
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**Title:** GLASS REINFORCED GYPSUM BOARD AND METHOD OF MANUFACTURE

**Abstract:** A method of manufacture of multilayer gypsum board, and a multilayer gypsum board, having face sheets comprising randomly oriented inorganic or glass fibers completely impregnated with a gypsum slurry penetrating through the random interstices between the inorganic fibers and coating the board surfaces with gypsum slurry. Wet gypsum board passes through a board forming station having upper and lower forming plates, set at an angle relative to each other and being separated by a predetermined dimension substantially equal to the desired thickness of the manufactured gypsum board product. Additives in the gypsum, such as engineered polymers, provide for a better surface for coating. The gypsum board has a first layer of a mixture of set gypsum having an outer surface and the polymeric compound additive entrained therein and impregnated in a thin sheet of randomly aligned inorganic fibers to essentially encase the core gypsum within two facing layers. An edger bar assembly includes bases mounted on pneumatic arms at opposite lateral ends supporting an edger bar extending therebetween, and each base includes an attached flapper edge mechanism having an inboard surface abutting the gypsum board edge to retain unset slurry skimmed off the wet gypsum board surface by the edger bar from overflowing onto the conveyor belt. A microporous fluid bed mounted longitudinally across the board injects a fluid film under pressure by means of micropores into the interface between the bed surface and the top surface of the gypsum board to provide an ultrasmooth board surface.

**Classifications:**

**International (IPC 8-9):** B05D3/00 B05D5/00 B05D7/24 B23B13/04 B28B1/30 B28B1/50 B28B1/52 B28B11/08 B28B19/00 B28B23/00 B28B23/18 B28B5/02 B29D99/00 B32B1/04 B32B13/00 B32B13/02 B32B13/04 B32B13/06 B32B13/08 B32B13/12 B32B13/14 B32B15/08 B32B17/04 B32B17/06 B32B23/04 B32B25/02 B32B25/10 B32B27/04 B32B27/08 B32B27/10 B32B27/12 B32B27/14 B32B27/28 B32B27/30 B32B27/32 B32B27/34 B32B27/36 B32B3/00 B32B3/04 B32B3/06 B32B31/00 B32B5/02 B32B5/12 B32B5/14 B32B5/18 B32B5/22 B32B5/26 B32B5/28 B32B7/02 B32B7/04 B32B7/08 B32B7/10 C04B14/38 C04B14/42 C04B16/06 C04B24/00 C04B24/24 C04B24/26 C04B28/14 C04B41/52 D04H3/08 D06N7/00 E04C2/04 E04C2/06 E04C2/26 E04F15/16 F16G5/00 (Advanced/Invention); B32B13/14 C04B111/00 C04B111/27 C04B111/60 C04B28/14 (Advanced/Non-invention); B05D3/00 B05D7/24 B28B11/00 B28B11/08 B28B19/00 B28B23/00 B32B1/00 B32B13/00 B32B15/08 B32B25/00 B32B27/04 B32B27/14 B32B3/00 B32B3/06 B32B5/12 B32B7/02 D04H3/08 E04C2/00 E04C2/04 E04C2/26 F16G5/00 (Core/Invention); B28B B32B D04H F16G (Subclass/Invention)



**International (IPC 1-7):** B05D7/24 B23B13/04 B28B1/52 B28B11/04 B28B19/00 B28B23/04 B28B23/18 B28B23/22 B28B3/12 B28B5/02 B32B B32B1/04 B32B13/00 B32B13/02 B32B13/06 B32B13/14 B32B15/08 B32B25/02 B32B25/10 B32B27/04 B32B27/12 B32B27/14 B32B3/02 B32B3/06 B32B31/00 B32B5/02 B32B5/12 B44C1/26 B44C1/28 B44C3/12 D04H D04H3/08 E04C2/26 F16G F16G5/00 H01B13/10 H01B13/26

**CPC:** B32B2255/24 Y10T156/1062 Y10T156/1011 Y10T156/1034 Y10T156/1043 Y10T428/22 Y10T428/23 Y10T428/232 Y10T428/237 Y10T428/239 B28B5/02 B28B5/026 B28B5/027 Y10T428/24355 Y10T428/24802 Y10T428/24851 B28B3/123 Y10T428/31786 Y10T428/31938 Y10T428/31971 Y10T442/102 Y10T442/133 Y10T442/171 B28B7/0079 Y10T442/674 B32B5/145 B32B5/28 B32B17/04 B32B2307/51 B32B2307/542 B32B2307/56 B32B2307/73 B32B2307/744 C04B2111/60 B28B23/0006 B32B5/22 B32B5/26 B32B7/08 B32B7/10 B32B13/08 B32B13/12 B32B27/08 B32B27/10 B32B27/28 B32B27/30 B32B27/308 B32B27/32 B32B27/34 B32B27/36 B32B2250/44 B32B2260/021 B32B2260/044 B32B2260/046 B32B2264/10 B32B2307/102 B32B2307/202 B32B2307/304 B32B2307/3065 B32B2307/402 B32B2307/414 B32B2307/50 B32B2307/514 B32B2307/54 B32B2307/554 B32B2307/558 B32B2307/58 B32B2307/5825 B32B2307/71 B32B2307/7265 B32B2607/00 C04B14/42 C04B24/2623 C04B24/2682 C04B24/42 B32B13/04 B32B3/04 B32B5/022 B32B5/18 B32B7/02 B32B13/14 B32B27/12 B32B27/306 B32B2255/02 B32B2255/26 B32B2255/28 B32B2262/101 B32B2307/536 B32B2307/72 B32B2419/00 C04B28/14 C04B2111/00405 C04B2111/00612 Y10T428/249955 Y10T428/31504 Y10T428/31678 Y10T428/31993 Y10T442/20 Y10T442/2926 Y10T442/604 Y10T428/24992 Y10T442/2139 Y10T442/60 E04C2/06 B29D99/0021 E04C2/043 B32B2262/00 B32B2391/00 B32B2307/7242 B32B2581/00 B28B19/0092 B32B13/02 B28B11/0845

**European:** B28B11/08C B28B19/00K B28B23/00A B28B3/12B B28B5/02 B28B5/02C B28B5/02C2 B28B7/00F5 B32B13/02 B32B13/04 B32B13/14 B32B27/12 B32B27/30C B32B3/04 B32B5/02A B32B5/18 B32B7/02 C04B28/14 E04C2/04C L32B255/02 L32B255/24 L32B255/26 L32B255/28 L32B262/10A L32B307/536 L32B307/720 L32B419/00 M04B111/00P34 M04B111/00T6

**US:** 1/1 118/123 118/123S 156/202 156/216 156/221 156/256 156/280 156/346 156/346S 156/348 156/39 156/39S 156/40 156/41 156/41P 156/45 156/52 264/129 264/255 264/256 264/261 264/295 264/339 425/101 425/104 425/110 425/115 425/123 425/130 425/220 425/224 425/346R 425/96 427/299 427/372.2 427/372.200S 428/141 428/141P 428/195.1 428/195.100S 428/201 428/201S 428/218 428/218P 428/306.6 428/306.600S 428/411.1 428/411.100S 428/432 428/432P 428/457 428/457S 428/480 428/480S 428/523 428/523S 428/532 428/532S 428/537.5 428/537.500S 428/67 428/68 428/7 428/70 428/703 428/703S 428/74 428/76 442/172 442/172S 442/2 442/20 442/20S 442/2S 442/327 442/327S 442/331 442/331S 442/394 442/42 442/42P 442/59 442/59S 442/76 442/76S 524/2 524/2S

**Family:**

| Publication number | Publication date | Application number | Application date |
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#### Priority:

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| WO2012US21065  | 20120112 | US20120491744 | 20120608 | CA20132818143 | 20130605 |
| US20130941950  | 20130715 | US20160044639 | 20160216 | US20170857922 | 20171229 |

**Probable Assignee:** CERTAINTED GYPSUM INC

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**Agent(s):** CULLENS PATENT AND TRADE MARK ATTORNEYS; SPRUSON AND FERGUSON; CULLENS PTY LTD; CHRYSILIOU IP; TATLOCKS CHRYSILIOU IP; HALFORDS IP; GOWLING LAFLEUR HENDERSON LLP; RICHES MCKENZIE AND HERBERT LLP; RIDOUT AND MAYBEE LLP; ADOLF LUEKEN HOEFELICH SAWODNY RECHTS U PATENTANWALTE; CHAPMAN HELGA CLAIRE; PUGSLEY VICTORIA ANTONIETTA; BOTELLA ANTONIO; ISERN JORGE; PATENT AND TRADEMARK DOCKET CLERK, RYNDAL AND SURI; PATENT AND TRADEMARK DOCKET CLERK RYNDAL AND SURI; VANGELIS ECONOMOU, C/O IPHORGAN LTD; VANGELIS ECONOMOU C O IPHORGAN LTD; VANGELIS ECONOMOU, C/O IPHORGAN LTD; GRAY ROBINSON ATTN STEFAN V STEIN IP DEPT; RYNDAL AND SURI; VANGELIS; RYNDAL AND SURI VANGELIS ECONOMOU; VANGELIS ECONOMOU IPHORGAN LTD; ECONOMOU IP LAW; GRAYROBINSON PA; MICHAEL J; COLITZ MICHAEL J; ECONOMOU VANGELIS; COLITZ MICHAEL J III

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

**Title:** RAISED ISLAND ABRASIVE AND PROCESS OF MANUFACTURE

**Abstract:** Abrasive sheet materials, abrasive sheet materials with island distributions of abrasive particles, processes for manufacture of abrasive sheet materials with minimized abrasive content, processes for attaching abrasive particles exclusively on the top surface of raised islands in monolayers, and processes for attaching raised island foundation structures to inexpensive flexible backing sheets are described. The process for manufacturing the abrasive sheeting provides an economical method for providing improved quality abrasive sheeting, while also allowing for greater control over the shape and distribution of abrasive islands on the sheet than is available from present processes of manufacture.

**Classifications:**

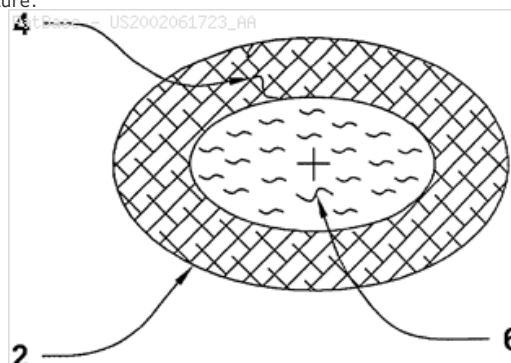
**International (IPC 8-9):** B23P25/00 B24B1/00 B24B27/00 B24B37/00 B24B37/04 B24B45/00 B24B5/00 B24B7/00 B24B9/00 B24D11/00 B24D18/00 B24D3/00 B24D3/28 B24D9/10 B29B11/16 B29B9/00 B29B9/08 C09K3/14 (Advanced/Invention); B24B1/00 B24B7/00 B24D11/00 B24D18/00 B24D3/00 C09K3/14 (Core/Invention)

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**CPC:** B24B1/00 B24B5/00 B24B7/00 B24B9/00 B24B37/00 B24B37/14 B24B45/00 B24D9/10 B24B37/042 B24B37/12 B24B37/245 B24B37/26 Y10T29/4998 Y10T29/49982 B24D2203/00 B24D18/00 B24D11/00 B24D11/001 C09K3/1436

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**US:** 264/11 264/12 264/13 264/15 29/527.1 29/527.2 451/178 451/259 451/259P 451/28 451/285 451/286 451/287 451/290 451/36 451/360 451/41 451/449 451/494 451/527 451/527P 451/53 451/530 451/533 451/539 451/548 451/548P 451/550 451/56 451/56P 451/59 51/293 51/293S 51/298 51/300 51/300S 51/309



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| Publication number | Publication date | Application number | Application date |
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**Probable Assignee:** KELTECH ENGINEERING INC

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**Designated states:** AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

**Title:** DEVICES AND METHODS FOR TISSUE MODIFICATION

**Abstract:** Methods and apparatus are provided for selective surgical removal of tissue. In one variation, tissue may be ablated, resected, removed, or otherwise remodeled by standard small endoscopic tools delivered into the epidural space through an epidural needle. The sharp tip of the needle in the epidural space, can be converted to a blunt tipped instrument for further safe advancement. The current invention includes specific tools that enable safe tissue modification in the epidural space, including a barrier that separates the area where tissue modification will take place from adjacent vulnerable neural and vascular structures. A nerve stimulator may be provided to reduce a risk of inadvertent neural abrasion.

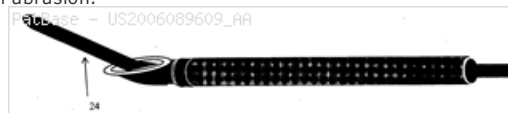
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**International (IPC 8-9):** A61B1/00 A61B1/32 A61B10/00 A61B10/02 A61B17/00 A61B17/02 A61B17/14 A61B17/16 A61B17/17 A61B17/22 A61B17/26 A61B17/29 A61B17/32 A61B17/3205 A61B17/3207 A61B17/34 A61B17/56 A61B17/58 A61B17/68 A61B17/70 A61B17/82 A61B17/88 A61B17/90 A61B18/14 A61B18/18 A61B19/00 A61B5/00 A61B5/04 A61B5/05 A61B5/107 A61B90/00 A61D1/02 A61F11/00 A61F2/00 A61F2/30 A61F2/44 A61F2/46 A61F5/00 A61F5/04 A61H1/02 A61M25/00 A61M25/09 A61M29/00 A61M5/32 A61N1/00 A61N1/05 A61N1/08 (Advanced/Invention); A61B1/313 A61B17/00 A61B17/02 A61B17/04 A61B17/06 A61B17/14 A61B17/16 A61B17/22 A61B17/295 A61B17/32 A61B17/34 A61B17/84 A61B17/88 A61B18/00 A61B18/02 A61B18/08 A61B18/14 A61B18/18 A61B18/20 A61B5/00 A61B5/0488 A61B5/107 A61B5/11 A61F2/00 A61M25/09 A61N1/05 A61N1/36 A61N7/02 (Advanced/Non-invention); A61B1/32 A61B10/00 A61B17/00 A61B17/14 A61B17/16 A61B17/22 A61B17/24 A61B17/32 A61B17/56 A61B17/58 A61B18/18 A61B19/00 A61B5/00 A61B5/04 A61B5/05 A61B5/107 A61D1/00 A61F2/44 A61F5/00 A61F5/04 A61H1/02 A61M25/00 A61M5/32 A61N1/00 A61N1/05 (Core/Invention)

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| US20150816813  | 20150803 | US20150969691  | 20151215 |                |          |

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**Assignee(s):** (std): SPISAK STEVEN A ; SAADAT VAHID ; HLAVKA EDWIN J ; MILLER DAVID R ; GARABEDIAN ROBERT ; CHUNG WINNIE ; MILLER DAVID J ; MICHLITSCH KENNETH ; LEGUIDLEGUID ROY ; SCHMITZ GREGORY P ; SHEINBERG MICHAEL ; LEGUIDLEGUID RONALD ; DREWS MIKE ; HLAVKA EDWIN J ; HLAVKA EDWIN J ; DREWS MICHAEL ; SCHMITZ GREGORY ; LEGUIDLEGUID RONALD ; MICHLITSCH KENNETH J ; ARGENIO GREGORY B ; ASHLEY JOHN ; ASHLEY JOHN E ; BAXANO INC ; BLEICH JEFFERY L ; BLEAM JEFFEREY ; BLEAM JEFFERY ; CATORNA NESTOR C ; BORGSTROM AMIE R ; BAXANO SURGICAL INC ; BAXANO SIGNAL INC ; BLEICH JEFFREY L ; MILLER ERIC C ; YURCHENCO JAMES ; WALLACE MICHAEL P ; YURCHENCO JAMES R ; VILLALTA MICHAEL ; AMENDIA INC

**Assignee(s):** ANTARES CAPITAL LP AGENT AS ; AGILENT TECHNOLOGIES INC ; BAXANO INC MOUNTAIN VIEW ; CATORNA NESTOR C ; EXWORKS CAPITAL FUND I LP ; QUANDARY MEDICAL LLC ; CORTLAND CAPITAL MARKET SERVICES LLC AGENT AS ; MIS IP HOLDINGS LLC

**Inventor(s):** (std): ARGENIO GREGORY B ; ASHLEY JOHN ; ASHLEY JOHN E ; BLEAM JEFFEREY ; BLEAM JEFFERY ; BLEICH JEFFERY L ; BLEICH JEFFREY L ; BORGSTROM AMIE R ; CATORNA NESTOR C ; CATORNA NESTOR C ; CHUNG WINNIE ; DREWS MICHAEL ; DREWS MIKE ; HLAVKA EDWIN J ; HLAVKA EDWIN J ; HLAVKA EDWIN J ; LEGUIDLEGUID RONALD ; LEGUIDLEGUID ROY ; LEGUIDLEGUID RONALD ; GARABEDIAN ROBERT ; MICHLITSCH KENNETH ; MICHLITSCH KENNETH J ; MILLER DAVID J ; MILLER DAVID R ; MILLER ERIC C ; SAADAT VAHID ; SCHMITZ GREGORY ; SCHMITZ GREGORY P ; SHEINBERG MICHAEL ; SPISAK STEVEN A ; TANG WINNIE ; VILLALTA MICHAEL ; WALLACE MICHAEL P ; YURCHENCO JAMES ; YURCHENCO JAMES R

**Inventor(s):** ARGENIO GREG ; VAHID SAADAT ; STEVEN A SPISAK ; SPISAK STEVEN ; NESTOR C CATORNA ; RONALD LEGUIDLEGUID ; ROY LEGUIDLEGUID ; MIKE DREWS ; GREGORY SCHMITZ ; HLAVKA EDWIN ; MICHAEL P WALLACE ; JAMES YURCHENCO ; JEFFEREY BLEAM ; JEFFERY L BLEICH ; JOHN ASHLEY ; EDWIN J HLAVKA ; EDWIN J HLAVKA ; DAVID R MILLER ; BORGSTROM AMIE ; BLEICH JEFFREY ; BLEICH JEFFERY

**Agent(s):** PEGASUS IP; BAXTER PATENT ATTORNEYS PTY LTD; IP SOLVED ANZ PTY LTD; BORDEN LADNER GERVAIS LLP; FRANKE AND PARTNER PATENT U RECHTSANWALTE INTELLECTUAL PROPERTY LAW FIRM; DR SCHOEN NEYMEYR AND PARTNER MBB; RUHRMANN ANDREA ELIZABETH ET AL; RUHRMANN ANDREA ELIZABETH; MILLER JAMES LIONEL WOOLVERTON; PROBERT GARETH DAVID; POTTER CLARKSON LLP; LEVINE BAGADE LLP; BAXANO INC AND TOWNSEND AND TOWNSEND AND CREW; GREENBERG TRAUIG LLP (SV2); GREENBERG TRAUIG LLP SV2; SHAY LAW GROUP LLP; SHAYGLENN LLP; SHAY GLENN LLP; BAXANO C/O SHAY LAW; BAXANO C O SHAY LAW; SHAY GLEN LLP; DAVID L; KING DAVID L; GLENN BENJAMIN W ET AL; SHOOP RICHARD D ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ

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NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN  
TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

**Title:** ACOUSTICAL PANEL HAVING A HONEYCOMB STRUCTURE AND METHOD OF MAKING THE SAME

**Abstract:** An acoustically absorbent porous panel with a layer constructed from a substantially continuous open-celled porous material comprising a cured foamed cementitious material including a first face and a second face. The first face has a surface with a substantially planar profile and the second face has a substantially geometric pattern of depressions formed therein comprising approximately 50 percent to approximately 90 percent of the layer by volume.

**Classifications:**

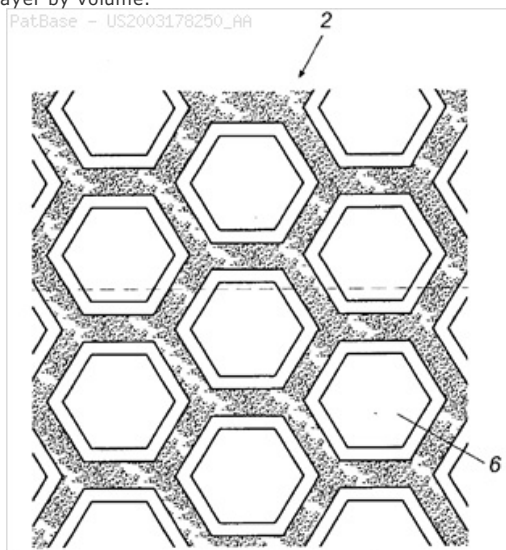
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**International (IPC 1-7):** B28B1/50 B28B1/52 B28B11/08 B28B5/02 B28C5/38 B32B3/26 C04B111/27 C04B111/52 C04B28/00 C04B28/14 C04B38/10 E04B1/80 E04B1/82 E04B1/84 E04B1/86 E04B2/02

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**US:** 106/122 106/713 181/284 181/285 181/286 181/287 181/288 181/290 181/293 181/293S 181/294 181/295 264/162 264/284 264/293 264/42 264/45.5 264/45.6 264/455 264/456 264/46.2 264/462 264/48 366/10 366/3 366/4 428/307.3 428/310.5 428/312.2 428/312.4 428/317.9 428/318.4 428/319.1 428/703 52/144 521/100 521/83



**Family:**

| Publication number | Publication date | Application number | Application date |
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| AT448181 E         | 20091115         | AT20000120753T     | 20000922         |
| AT501098 E         | 20110315         | AT20000120754T     | 20000922         |
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| MXPA00009587 A1    | 20030312         | MX2000PA09587      | 20000929         |
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| US6613424 BA       | 20030902         | US20000663288      | 20000915         |
| US6780356 BA       | 20040824         | US20000662929      | 20000915         |
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**Priority:**

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| US20030384240 20030307  |                         |                         |

**Probable Assignee:** AWI LICENSING LLC

**Assignee(s):** (std): ARMSTRONG WORLD IND INC ; AWI LICENSING CO ; PUTT DEAN L ; WORK JAMES L

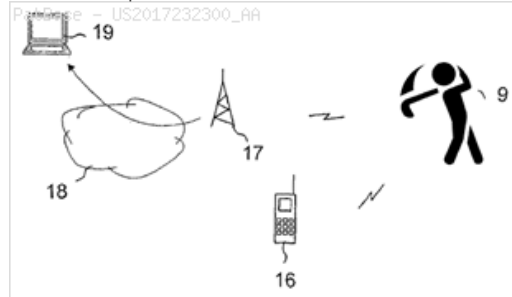
**Assignee(s):** BISCHEL MARSHA STALKER ; MOSER ANDREA M ; WIKER ANTHONY L ; CHRISTIE PETER A ; HALLETT CHESTER W ; HARTMAN JOHN J JR ; AWI LICENSING COMPANY ; AWI LICENSING LLC ; AWI LIENSING CO ; BANK OF AMERICA NA COLLATERAL AGENT AS ; ARMSTRONG WORLD IND INC LANCASTER ; ARMSTRONG WORLD INDUSTRIES INC ; ARMSTRONG WORLD IND

**Inventor(s):** (std): MOSER ANDREA M ; PUTT DEAN L ; STALKER BISCHEL MARSHA ; WIKER ANTHONY L ; WORK JAMES L ; CHRISTIE PETER A ; HALLETT CHESTER W ; HARTMAN JOHN J JR ; HARTMAN JR JOHN J ; HARTMAN JOHN J ; STALKER BISHEL MARSHA ; BISCHEL MARSHA STALKER

**Inventor(s):** CHESTER W. HALLETT ; MARSHA STALKER BISCHEL ; DEAN L. PUTT ; ANTHONY L. WIKER ; ANDREA M. MOSER ; JOHN J. HARTMAN JR ; WORK JAMES L LANCASTER ; WIKER ANTHONY L LANCASTER ; STALKER BISCHEL MARSHA LANCASTER ; PUTT DEAN L LITITZ ; MOSER ANDREA M MILLERSVILLER

**Agent(s):** GOWLING LAFLEUR HENDERSON LLP; V FUENER EBBINGHAUS FINCK HANO; FINCK DIETER

**Designated states:** AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

**Title:** SMART DEVICE**Abstract:** An Internet of Thing (IoT) device includes a camera coupled to a processor; and a wireless transceiver coupled to the processor. Blockchain smart contracts can be used with the device to facilitate secure operation.**Classifications:****International (ipc 8-9):** A42B3/04 A61B5/00 A61B5/0205 A61B5/0404 A61B5/11 A63B24/00 A63B43/00 A63B60/46 A63B69/36 A63B69/38 A63B71/00 A63B71/06 A63B71/14 A63F11/00 A63F13/00 A63F13/211 A63F13/212 B33Y10/00 B33Y80/00 B60Q1/00 G01L5/00 G01L5/10 G01L5/22 G01M17/02 G01M17/06 G01N29/00 G01P15/08 G01P15/18 G06F1/16 G06F17/30 G06F19/00 G06F3/00 G06F3/01 G06K9/00 G06K9/78 G06N5/04 G06N99/00 G06Q20/36 G06Q20/40 G09B19/00 G16H20/30 G16H50/20 H04B1/3827 H04N5/225 H04N7/18 H04Q9/00 H04W84/18 (Advanced/Invention); A42B3/04 A61B5/00 A61B5/024 A61B5/0402 A61B5/0488 A61B5/11 A61B5/22 A63B21/072 A63B69/00 A63B69/02 A63B69/06 A63B69/16 A63B69/36 A63B71/08 A63B71/10 A63B71/12 A63B71/14 G06K9/62 H04B1/04 H04B1/38 H04L29/08 H04N7/18 H04W88/02 (Advanced/Non-invention)**CPC:** A63B2230/04 A63B2230/50 A63B24/0006 A63B2208/0204 A63B24/0021 H04B1/38 G06K9/6277 H04N7/185 G09B19/003 A63F13/211 G01P15/18 A63F13/212 A61B5/02055 A61B5/0404 G06N99/005 G06N5/04 G06K9/78 G06K9/00355 G06K9/00302 G01P15/0802 A63F2300/8082 A61B2562/0219 A63B24/0062 H04Q9/00 H04Q2209/40 A61B5/0205 A61B5/681 A61B5/6895 G06K9/00671 H04N5/2253 H04W4/027 H04W4/38 A61B5/1123 A61B5/6898 A61B5/01 A61B5/024 A61B5/053 A61B5/0533 A61B5/055 A61B5/11 A61B5/4872 A61B5/6806 A61B2503/10 H04W84/18 A61B5/1116 A61B5/1118 A61B5/1128 A61B5/163 A61B5/165 A61B5/18 A61B5/6826 A61B5/6893 G06F3/00 G06K9/00342 H04L67/04 H04L67/125 H04L67/20 H04L67/22 H04L67/303 H04L67/32 H04L69/40 G06K9/00805 G06K9/2018 G06K9/228 G06K9/4604 G06K9/4633 G06K9/4671 G06K9/6205 A63B21/072 A63B21/0724 A63B21/0726 A63B69/0002 A63B69/0026 A63B69/0028 A63B69/0048 A63B69/0071 A63B69/02 A63B69/06 A63B69/16 A63B69/36 A63B69/3632 A63B71/085 A63B71/10 A63B71/1216 A63B71/1291 A63B71/141 A63B2071/1233 A63B2071/125 A63B2071/1283 A63B2207/02 A63B2220/12 A63B2220/13 A63B2220/16 A63B2220/20 A63B2220/24 A63B2220/30 A63B2220/40 A63B2220/51 A63B2220/53 A63B2220/56 A63B2220/72 A63B2220/74 A63B2220/75 A63B2220/76 A63B2220/803 A63B2220/806 A63B2220/807 A63B2220/833 A63B2220/836 A63B2225/30 A63B2225/50 A63B2225/54 A63B2230/06 A63B2230/60 A63B2230/70 A63B2243/0025 A63B2243/0037 A63B2243/0054 A63B2243/0066 A63B2243/007 A63B2243/0095 A63B2244/102 A63B2244/18 A63B2244/19 A63B2244/20 A63B2244/203 A63B43/004 A63B60/46 A63B69/38 A63B71/06 G16H20/30 H04W88/02 G06F19/00 A42B3/046 A61B5/0022 A61B5/02416 A61B5/0402 A61B5/0488 A61B5/224 A61B5/6804 A61B5/7203 A61B5/7264 B33Y10/00 B33Y80/00 G01L5/0052 G01L5/10 G01L5/226 G01M17/02 G01M17/06 G06F1/163 G09B19/0038 H04B1/385 H04L67/12 H04N7/183 G01N29/14 G01N29/4436 G01N2291/0258 G01N2291/044 G06F3/013 G06F3/014 G16H30/20 A42B3/0433 G06F3/017 G16H50/20 H04B1/04 H04L67/10 H04N5/2257 H04N7/18 G06F19/345 G06Q20/00 H04L9/3242 G01N29/00 H04L67/18 A63F11/00 A63B24/0075 A63B71/145 G06N7/005**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2017232300 AA    | 20170817         | US20170586199      | 20170503         |
| US2017312578 AA    | 20171102         | US20170626087      | 20170617         |
| US2017312614 AA    | 20171102         | US20170626099      | 20170617         |
| US2017318360 AA    | 20171102         | US20170624014      | 20170615         |
| US2018001183 AA    | 20180104         | US20170407255      | 20170117         |
| US2018001184 AA    | 20180104         | US20170624927      | 20170616         |
| US2018078843 AA    | 20180322         | US20170807138      | 20171108         |
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| US2018117447 AA    | 20180503         | US20170594311      | 20170512         |
| US2018133583 AA    | 20180517         | US20170821718      | 20171122         |
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| US10022613 BB      | 20180717         | US20170594311      | 20170512         |
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**Priority:**

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**Probable Assignee:** TRAN BAO  
**Assignee(s):** (std): TRAN BAO  
**Inventor(s):** (std): TRAN BAO ; TRAN HA  
**Agent(s):** TRAN AND ASSOCIATES

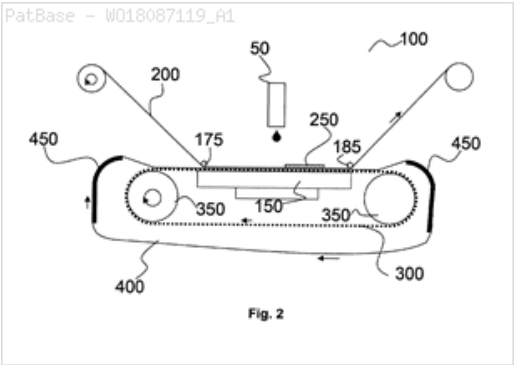
**Title:** PRINTING DEVICE WITH CONVEYOR BELT

**Abstract:** An inkjet printer and a printing method on the inkjet printer which comprises a first conveyor belt (300, CB1) which is wrapped around a vacuum table and supported by an upstream pulley (Pupstream) and a downstream pulley (Pdownstream); and a vacuum area (Avacuum) on the first conveyor belt (300, CB1); and a second conveyor belt (400, CB2) which is wrapped around the first conveyor belt (300, CB1); and which is supported by an upstream sliding support (450, Supstream) and a downstream sliding support (450, Sdownstream); and wherein the second conveyor belt (400, CB2) is adhered in the vacuum area (Avacuum) by vacuum power wherein a print receiver (200) is attached to the second conveyor belt (400, CB2) for conveying and printing.

**Classifications:**

**International (IPC 8-9):** B41J11/00 B41J3/407 (Advanced/Invention)

**CPC:** B41J11/0085 B41J3/407 B41J3/4078 B41J11/007



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| WO18087119 A1      | 20180517         | WO2017EP78547      | 20171108         |

**Priority:**

EP20160198588 20161114

**Probable Assignee:** AGFA GEVAERT NV

**Assignee(s):** (std): AGFA NV

**Assignee(s):** AGFA GEVAERT NV

**Inventor(s):** (std): DE ROECK LUC

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** Method and apparatus for conditioning coins prior to discrimination

**Abstract:** A coin conditioner is provided for cleaning or otherwise conditioning coins in a coin discriminator apparatus prior to transfer to a coin sensor. Coins enter through a feed tray and move down the length of a perforated tumbler, preferably without the use of gravity, such as under screw force, mechanical or centrifugal force. The spinning tumbler is preferably rotated about its longitudinal axis by a motor. In one embodiment, a blower or vacuum draws or moves air from one area to another, with the air preferably being filtered. As coins move through and down a tumbler, projections such as vanes, fins, ridges, dimples, spines or other raised features cause mechanical agitation and/or abrasion as coins are lifted and dropped while passing longitudinally through the tumbler. The coins are conditioned and non-coin matter is collected as it is separated and/or abraded from the coin surfaces. Tumbler perforations permit non-coin matter to pass through the perforations into a collection tray or other apparatus and/or are collected into filter media as a result of the air flow. In one embodiment, the air pressure system eliminates or reduces the occurrence of low density or light non-coin matter, such as hair or dust, and prevents these materials from settling or being carried through downstream portions of the coin processing system.

**Classifications:**

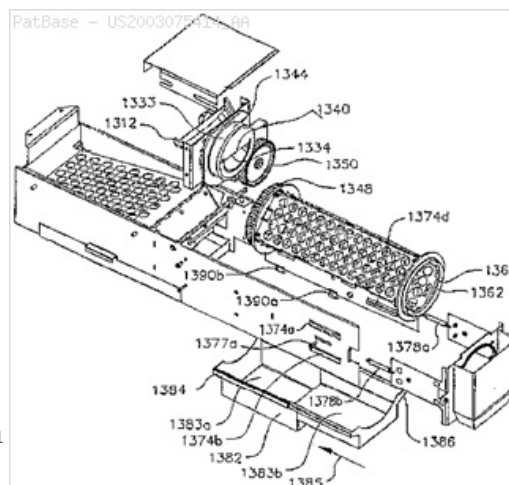
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**Family:**

| Publication number | Publication date | Application number | Application date |
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**Designated states:** BE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

**Title:** LIGHT-ACTIVATED CATION CHANNEL AND USES THEREOF

**Abstract:** The present invention provides compositions and methods for light-activated cation channel proteins and their uses within cell membranes and subcellular regions. The invention provides for proteins, nucleic acids, vectors and methods for genetically targeted expression of light-activated cation channels to specific cells or defined cell populations. In particular the invention provides millisecond-timescale temporal control of cation channels using moderate light intensities in cells, cell lines, transgenic animals, and humans. The invention provides for optically generating electrical spikes in nerve cells and other excitable cells useful for driving neuronal networks, drug screening, and therapy.

**Classifications:**

**International (IPC 8-9):** A01K67/00 A01K67/027 A01K67/033 A01N33/02 A61F2/02 A61F2/18 A61H33/00 A61K31/137 A61K31/353 A61K31/405 A61K31/4172 A61K31/7088 A61K35/12 A61K35/28 A61K35/30 A61K35/36 A61K35/48 A61K35/545 A61K35/76 A61K36/05 A61K38/00 A61K38/04 A61K38/16 A61K38/17 A61K38/22 A61K38/27 A61K38/28 A61K41/00 A61K48/00 A61K50/00 A61L27/28 A61L27/36 A61M37/00 A61N1/36 A61N5/06 A61P17/00 A61P21/00 A61P25/00 A61P25/02 A61P25/16 A61P25/24 A61P25/28 A61P25/30 A61P27/02 A61P29/00 A61P3/04 A61P31/12 A61P31/18 A61P31/20 A61P35/00 A61P43/00 A61P5/00 A61P5/02 A61P5/06 A61P5/48 A61P5/50 A61P7/00 A61P7/06 A61P9/00 C07H21/00 C07H21/02 C07H21/04 C07K14/00 C07K14/195 C07K14/215 C07K14/405 C07K14/435 C07K14/47 C07K14/705 C07K19/00 C07K4/04 C12M1/00 C12M3/00 C12N13/00 C12N15/00 C12N15/09 C12N15/63 C12N15/86 C12N5/06 C12N5/071 C12N5/079 C12N5/0793 C12N5/10 C12N7/00 C12P21/00 C12Q1/02 C12Q1/06 C40B30/10 C40B60/12 G01N33/00 G01N33/50 G01N33/53 G01N33/68 G06F19/00 (Advanced/Invention); A61K38/00 A61K48/00 C12N15/09 (Advanced/Non-invention); A01K67/00 A01K67/027 A01N33/00 A61H33/00 A61K31/137 A61K31/352 A61K31/403 A61K31/4164 A61K31/7088 A61K35/12 A61K35/28 A61K35/30 A61K35/36 A61K35/48 A61K35/66 A61K38/00 A61K38/04 A61K38/16 A61K38/17 A61K38/22 A61K38/28 A61K48/00 A61N5/06 A61P17/00 A61P21/00 A61P25/00 A61P27/00 A61P29/00 A61P31/00 A61P35/00 A61P43/00 A61P5/00 A61P7/00 A61P9/00 C07H21/00 C07K14/00 C07K14/435 C07K19/00 C12M1/00 C12M3/00 C12N13/00 C12N15/00 C12N15/09 C12N15/63 C12N5/06 C12N5/079 C12N5/10 C12P21/00 C12Q1/02 C40B30/10 C40B60/12 G01N33/00 G01N33/53 G06F19/00 (Core/Invention)

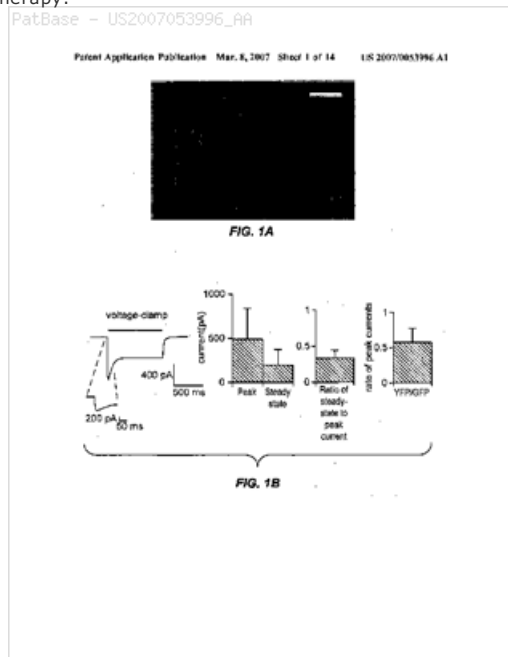
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**Priority:**

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| US20080187927  | 20080807 | US20100522520  | 20100108 | US20100715259  | 20100301 |
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| US20140219547  | 20140319 | US20140537290  | 20141110 | US20140537305  | 20141110 |
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| US20170623081  | 20170614 | US20170658090  | 20170724 |                |          |

**Probable Assignee:** BOARD OF TRUSTEES OF LELAND STANFORD JUNIOR UNIV

**Assignee(s):** (std): BOARD OF TRUSTEES OF LELAND STANFORD JR UNIV ; BOARD OF TRUSTEES OF LELAND STANFORD JUNIOR UNIV ; BOYDEN EDWARD S ; DEISSEROTH KARL ; MISHELEVICH DAVID J ; BOYDEN EDWARD STUART ; HENDERSON JAMIE M ; GRADINARU VIVIANA ; BOYDEN EDWARD ; ARAVANIS ALEXANDER ; JUNIOR UNIV BOARD OF TRUSTEES OF LELAND STANFORD ; HENDERSON JAIMIE M ; UNIV LELAND STANFORD JUNIOR ; SCHNEIDER M B ; ZHANG FENG ; SCHNEIDER M BRET ; TRUSTEES OF THE LELAND BOARD OF ; TRUSTEES OF LELAND BOARD OF

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**Inventor(s):** SCHNEIDER M ; KARL DEISSEROTH ; MISHELEVICH DAVID ; EDWARD S BOYDEN

**Agent(s):** WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD;  
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CRAWFORD MAUNU PLLC; PAULA A; BOZICEVIC FIELD AND FRANCIS LLP; BORDEN PAULA A; CRAWFORD  
ROBERT J

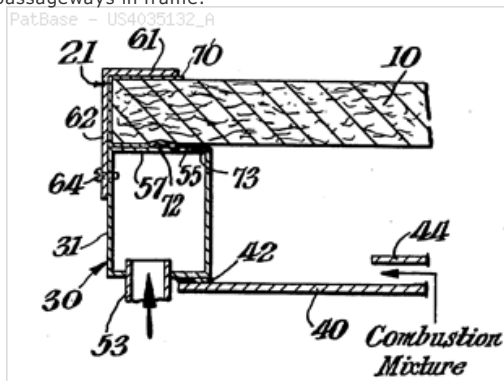
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NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN  
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**Title:** Gas-fired radiant heater

**Abstract:** Radiant heater having supported porous refractory panel through which combustion mixture passes and on the surface of which mixture burns as it emerges, has a narrow stream of incombustible relatively cold gas like air pumped through the panel adjacent the support to act as a barrier seal and minimize the leakage of combustible gas around the margin of the panel, and the consequent burning of such leaking gas, which burning can damage the marginal support and cause flashback. Panel can have edges held on tubular frame sealed to a back plate to provide a simpler heater construction with combustion mixture plenum defined by back plate and frame, and with cold gas supply to the tubular passageways in frame.

**Classifications:**

**International (IPC 8-9):** B23K1/00 B23K1/005 B23K3/04 B31F1/28 D21F5/00 F23D14/12 F23D14/16 F23D14/18 F23D14/78 F24C3/04 F24C3/06 F26B13/10 F26B3/30 F28F9/18 (Advanced/Invention); B23K1/00 B23K1/005 B23K3/04 B31F1/20 D21F5/00 F23D14/12 F23D14/18 F24C3/00 F26B13/10 F26B3/00 F28F9/04 (Core/Invention)  
**International (IPC 1-7):** B23K1/12 B23K3/04 B23K31/00 B65G23/44 C03B29/04 C21D9/52 C21D9/54 F16L39/00 F23D13/12 F23D13/14 F23D13/16 F23D13/18 F23D14/12 F23D14/16 F23D14/18 F23D14/78 F23D3/40 F23N5/00 F23Q3/00 F24C3/04 F24D14/12 F26B13/00 F26B13/10 F26B3/32 F27B9/28  
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**European:** B23K1/005 B23K1/005L B23K1/00S4 B23K3/04 B31F1/28J2 D21F5/00B2 F23D14/12 F23D14/16 F24C3/04A F24C3/06A F26B3/30B F28F9/18 R23D203/101A R23D900/14001  
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**Family:**

| Publication number | Publication date | Application number | Application date |
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**Probable Assignee:** SMITH T M

**Assignee(s):** (std): FIRST CITY NAT BANK HOUSTON ; FIRST CITY NATIONAL BANK OF HO ; KOOMEY INC ; SMITH T M ; SMITH THOMAS M ; SMITH THOMAS MARSDEN ; TOOMASU MAAZUDEN SUMISU ; TOMASU EMU SUMISU

**Assignee(s):** THOMAS MARSDEN SMITH ; SMITH THOMAS M CINNAMINSON N J US

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**Inventor(s):** THOMAS MARSDEN SMITH ; M SMITH THOMAS

**Agent(s):** SMART AND BIGGAR

**Title:** MICROARRAY FABRICATION TECHNIQUES AND APPARATUS

**Abstract:** Disclosed is a microarray printing system and methods of printing probe microarrays. The system has a print-head formed of one or more capillary bundle, such as light-guiding capillaries. The bundles may especially be bundles of capillaries that provide a large number of probes on the surface of a substrate. Methods of registering or correlating the distal and proximal ends of the capillaries are also provided. Further, the invention provides methods and equipment for identifying defective microarrays that are missing one or more probes from the surface of the microarray.

**Classifications:**

**International (IPC 8-9):** A61K31/137 A61K31/7036 A61K9/12 A61M11/00 A61M11/06 A61M15/00 A61M16/00 A61M16/04 A61M16/08 A61M16/10 A61P11/06 A61P11/08 A61P31/04 A62B7/00 A62B9/06 B01J19/00 B01J4/00 B01L3/00 B01L3/02 B01L9/00 B41J2/01 B81B1/00 C07B61/00 C12M1/00 C12M1/34 C12N15/09 C12Q1/68 C40B40/06 C40B40/10 C40B60/14 G01N21/25 G01N21/64 G01N33/48 G01N33/53 G01N33/543 G01N35/10 G01N37/00 (Advanced/Invention); A61M11/00 A61M16/00 A61M16/04 A61M16/08 A61M16/10 B01J19/00 B01J4/00 B41J2/01 B81B1/00 C12M1/00 C12N15/09 C12Q1/68 C40B40/06 C40B40/10 C40B40/12 C40B50/14 C40B60/14 G01N33/53 G01N35/10 G01N37/00 (Advanced/Non-invention); A61M11/00 A61M15/00 A61M16/00 A61M16/04 B01J19/00 B01L3/00 B01L3/02 B01L9/00 C07B61/00 C12M1/34 C12Q1/68 G01N21/25 G01N21/64 G01N33/48 (Core/Invention); A61M16/08 A61M16/10 B81B1/00 C40B40/04 C40B50/14 C40B60/14 G01N35/10 (Core/Non-invention); A61H (Subclass/Invention)

**International (IPC 1-7):** A61H A61H0/00 A61M11/00 A61M16/00 A61M16/04 A62B7/00 A62B9/06 B01J16/00 B01J19/00 B01J4/00 B01L1/00 B01L3/00 B01L3/02 B05D3/00 B41J2/01 B41K1/38 B81B1/00 C07H21/02 C07H21/04 C12M1/00 C12M1/34 C12M3/00 C12N15/09 C12Q1/68 G01N1/00 G01N33/48 G01N33/53 G01N33/543 G01N33/545 G01N37/00 G02B6/00 G02B6/02

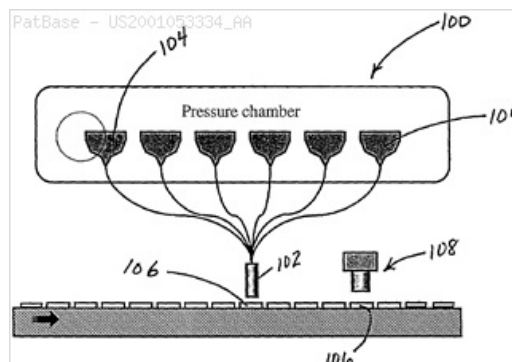
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**European:** A61M11/06 A61M15/00 A61M16/04 A61M16/04D A61M16/08 A61M16/08C B01F11/00C4 B01F11/00D B01F11/00D2D B01F11/00L B01F11/02H B01F13/00M6A B01F13/00M6D B01F13/08C B01F15/00P6A B01F5/06B3B B01F5/06B3C4B B01F5/06B3F2 B01F9/00C B01F9/00G B01J19/00C B01L3/00B3 B01L3/02D10 B01L3/02D2 B01L3/02D6 B01L3/5025 B01L3/5027D B01L3/50857 B01L3/5088 B01L3/563 B01L9/523 B01L9/54 C40B60/12 G01N21/25B2 G01N21/64P G01N21/64P2 G01N21/64P4 G01N21/64P8 G01N33/53B2 G01N33/543K K61M16/04E K61M16/04FD K61M16/08C K61M16/08D4 K61M16/10F1 K61M16/10F2A K61M16/10F2B L01F13/00M L01F5/06B3B20D L01F5/06B3B40B L01J219/00C10B L01J219/00C10B16 L01J219/00C10B16B L01J219/00C10B2 L01J219/00C10B4 L01J219/00C10B8 L01J219/00C2B2D L01J219/00C2B4D L01J219/00C2B4D2 L01J219/00C2B4D2B L01J219/00C2D10 L01J219/00C2D16 L01J219/00C2D18 L01J219/00C2D3 L01J219/00C2D4B2 L01J219/00C2D8 L01J219/00C2D9 L01J219/00C2F2 L01J219/00C2H2D L01J219/00C2H4 L01J219/00C2J L01J219/00C2K L01J219/00C2L4 L01J219/00C2L6 L01J219/00C2L7F2 L01J219/00C2L7H L01J219/00C2L8 L01J219/00C2L8B L01J219/00C2L8F L01J219/00C4B L01J219/00C4B2 L01J219/00C4H L01J219/00C4L12 L01J219/00C4L12B L01J219/00C4L16 L01J219/00C4L2 L01J219/00C4L2B L01J219/00C4L2D L01J219/00C4L2F L01J219/00C4L2H2 L01J219/00C4L2H2H L01J219/00C4L2H4 L01J219/00C4L2J2 L01J219/00C4L2J4 L01J219/00C4L2J6 L01J219/00C4L2L4 L01J219/00C4L3B L01J219/00C4L4B L01J219/00C6P L01J219/00C6P2 L01J219/00C6P4 L01L200/02A L01L200/02C L01L200/02D2 L01L200/06A L01L200/06H L01L200/06K L01L3/02D L01L300/06A L01L300/06B2 L01L300/06B4 L01L300/06B6 L01L300/08B12 L01L300/08B6 L01L300/08B8 L01L300/08E12 L01L300/08E14 L01L300/08E6 L01L300/08G L01L300/16B L01L300/18A6 L01L400/02C L01L400/02E L01L400/04F10 L01L400/04F12C L01L400/04F2 L01L400/04F6 L01L400/04F8 L01L400/04M4 L01L400/04M8 L01L400/06S L01L400/08P L01L400/08P2 L01L400/08P4 L01L9/523 L01L9/54 M07B200/11 M40B40/06 M40B40/10 M40B40/12 M40B50/14 M40B60/14 S01N21/64P12 S01N35/10F4A S01N35/10M5

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| CA20152485340  | 20150703 |                |          |                |          |

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**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NI NL NO NZ OM PH PL PT RO RU SC SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

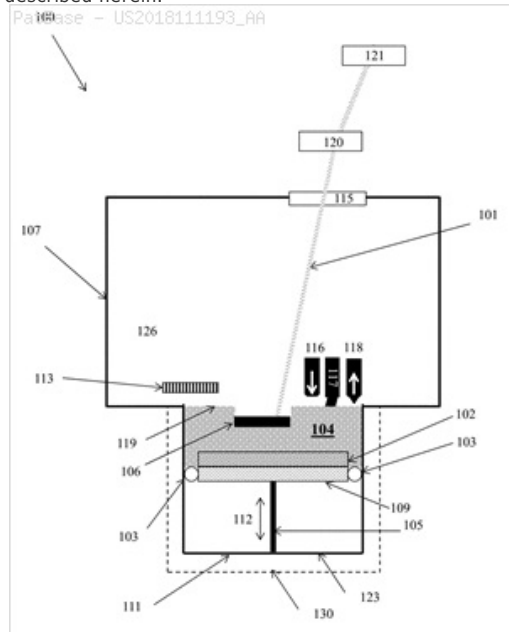
**Title:** OPERATION OF THREE-DIMENSIONAL PRINTER COMPONENTS

**Abstract:** The present disclosure provides three-dimensional (3D) printing systems, apparatuses, methods and non-transitory computer readable media for the production of at least one desired 3D object. The 3D printer described herein comprises, inter alia, an opening that comprises a first side and a second side. A component of the 3D printing, such as a layer dispenser, may be conveyed from the first side of the opening to the second side of the opening (e.g., and vice versa) during the 3D printing. The opening may be closeable. A closure of the opening may seclude the component during at least a portion of the 3D printing. Additional features relating to components of the 3D printing systems are described herein.

**Classifications:**

**International (IPC 8-9):** B22F3/105 B23K26/08 B23K26/12 B23K26/14 B23K26/142 B23K26/144 B23K26/342 B29C64/153 B29C64/255 B29C64/35 B29C64/357 B29C64/364 B33Y10/00 B33Y30/00 B33Y40/00 B33Y50/02 (Advanced/Invention)

**CPC:** B33Y10/00 B33Y30/00 B33Y50/02 B22F2003/1059 B23K26/142 B23K26/342 B22F2003/1056 B23K26/14 B22F2003/1057 B23K26/127 B23K26/144 B23K26/083 B29C64/153 B29C64/255 B33Y40/00 B23K26/123 B29C64/205 B29C64/329 B22F3/1055 B22F2999/00 B29C64/35

**Family:**

| Publication number | Publication date | Application number | Application date |
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**Priority:**

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| US20170788532  | 20171019 | US20170788568  | 20171019 | US20170788662 | 20171019 |

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**Agent(s):** MCSWAIN KAREN ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** INTEGRATED SYSTEM FOR THE BALLISTIC AND NONBALLISTIC INFIXION AND RETRIEVAL OF IMPLANTS

**Abstract:** Provided are methods and apparatus for the use of magnetic traction to maintain the patency of a tubular anatomical structure, whether a vessel, duct, the trachea, bronchus, bile duct, ureter, vas deferens, fallopian tube, or portions of the digestive tract, as to constitute means for extraluminal stenting. An extraluminal stent consists of a perimedial or medial intravascular and an extravascular component. The intravascular component consists of ferromagnetic spherules implanted aeroballistically or stays implanted by means of a special hand tool, while the extravascular component consists of a pliant jacket or mantle that has magnets mounted about its outer surface. A catheter adapted for use as the barrel of a gas-operated implant insertion gun is so devised that it can be used independently to perform an angioplasty and thereafter have its free or extracorporeal end inserted into the airgun to initiate implantation of the intravascular component without the need for withdrawal and reinsertion through the introducer sheath. When the implants must be spaced too closely together to be controlled by hand, a positional control system is used to effect discharge automatically. Spherules that consist entirely of medication or that have a radiation emitting seed as the core can be implanted with the same apparatus. A glossary of terms follows the specification.

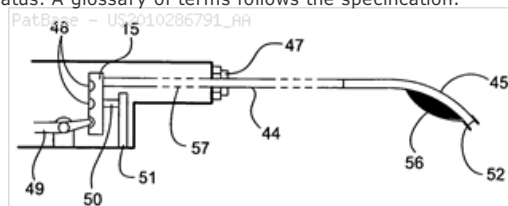
**Classifications:**

**International (IPC 8-9):** A61B17/28 A61B17/50 A61B18/04 A61F13/00 A61F2/04 A61F2/82 A61F2/95 A61M25/00 A61M31/00 A61M36/12 A61M37/00 (Advanced/Invention)

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**European:** A61B17/12P A61B17/12P5B1S A61B17/12P7Z K61B17/00N4 K61B17/00S14 K61B17/12P2 K61B17/22A K61B17/34J K61B18/04 K61B18/18

**US:** 600/8 600/8S 602/43 602/43S 604/500 604/523 604/523S 604/524 604/524S 604/93.01 604/93.010S 606/205 606/205S 606/211 606/211S 606/27 606/27S 623/1.11 623/23.7 623/23.700P



**Family:**

| Publication number | Publication date | Application number | Application date |
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| US2014163664 AA    | 20140612         | US20130694835      | 20130109         |

**Priority:**

US20060860392P 20061121 US20070986021 20071119 US20130694835 20130109

**Probable Assignee:**

GOLDSMITH DAVID S

**Assignee(s):** (std):

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**Inventor(s):** (std):

GOLDSMITH DAVID S

**Agent(s):**

DAVID S GOLDSMITH

**Title:** DEVICES AND METHODS FOR TISSUE ACCESS

**Abstract:** Methods and apparatus are provided for selective surgical removal of tissue, e.g., for enlargement of diseased spinal structures, such as impinged lateral recesses and pathologically narrowed neural foramen. In one variation, tissue may be ablated, resected, removed, or otherwise remodeled by standard small endoscopic tools delivered into the epidural space through an epidural needle. Once the sharp tip of the needle is in the epidural space, it is converted to a blunt tipped instrument for further safe advancement. A specially designed epidural catheter that is used to cover the previously sharp needle tip may also contain a fiberoptic cable. Further embodiments of the current invention include a double barreled epidural needle or other means for placement of a working channel for the placement of tools within the epidural space, beside the epidural instrument. The current invention includes specific tools that enable safe tissue modification in the epidural space, including a barrier that separates the area where tissue modification will take place from adjacent vulnerable neural and vascular structures. In one variation, a tissue abrasion device is provided including a thin belt or ribbon with an abrasive cutting surface. The device may be placed through the neural foramina of the spine and around the anterior border of a facet joint. Once properly positioned, a medical practitioner may enlarge the lateral recess and neural foramina via frictional abrasion, i.e., by sliding the abrasive surface of the ribbon across impinging tissues. A nerve stimulator optionally may be provided to reduce a risk of inadvertent neural abrasion. Additionally, safe epidural placement of the working barrier and epidural tissue modification tools may be further improved with the use of electrical nerve stimulation capabilities within the invention that, when combined with neural stimulation monitors, provide neural localization capabilities to the surgeon. The device optionally may be placed within a protective sheath that exposes the abrasive surface of the ribbon only in the area where tissue removal is desired. Furthermore, an endoscope may be incorporated into the device in order to monitor safe tissue removal. Finally, tissue remodeling within the epidural space may be ensured through the placement of compression dressings against remodeled tissue surfaces, or through the placement of tissue retention straps, belts or cables that are wrapped around and pull under tension aspects of the impinging soft tissue and bone in the posterior spinal canal.

**Classifications:**

**International (IPC 8-9):** A61B1/00 A61B1/012 A61B1/06 A61B17/00 A61B17/02 A61B17/08 A61B17/14 A61B17/16 A61B17/17 A61B17/20 A61B17/28 A61B17/32 A61B17/3207 A61B17/34 A61B17/56 A61B17/60 A61B17/66 A61B17/70 A61B17/86 A61B17/88 A61B17/94 A61B18/04 A61B18/14 A61B18/18 A61B19/00 A61B5/00 A61B5/04 A61B5/0488 A61B5/05 A61B5/053 A61B5/11 A61F11/00 A61F2/44 A61M25/00 A61M25/09 A61M5/32 A61N1/00 A61N1/05 (Advanced/Invention); A61B17/00 A61B17/02 A61B17/14 A61B17/221 A61B17/32 A61B17/56 A61B17/70 A61B19/00 A61B5/00 A61F2/46 A61M25/09 A61M29/00 (Advanced/Non-invention); A61B1/00 A61B17/00 A61B17/02 A61B17/03 A61B17/20 A61B17/32 A61B17/34 A61B17/56 A61B17/60 A61B18/04 A61B18/14 A61B18/18 A61B19/00 A61B5/00 A61B5/04 A61B5/0488 A61B5/05 A61B5/053 A61F11/00 A61M25/00 A61M5/32 A61N1/00 (Core/Invention); A61B17/32 A61B17/56 A61B17/70 A61F2/46 A61M25/09 A61M29/00 (Core/Non-invention)  
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**US:** 1/1 128/898 128/898S 600/101 600/101P 600/104 600/104S 600/184 600/373 600/373P 600/373S 600/393 600/546 600/546P 600/547 600/547P 600/554 600/554P 604/22 604/264 604/264S 604/274 604/274P 606/1 606/108 606/108S 606/114 606/114P 606/129 606/129S 606/151 606/151S 606/167 606/167P 606/167S 606/170 606/170P 606/205 606/249 606/249P 606/279 606/279S 606/32 606/32P 606/34 606/35 606/35P 606/39 606/39P 606/39S 606/41 606/53 606/53S 606/79 606/79P 606/82 606/83 606/83P 606/85 606/86.00R 606/86R 606/90 607/115 607/116 607/117 607/118 607/145 607/48

**Family:**

| Publication number | Publication date | Application number | Application date |
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**Assignee(s):** (std): ARCENIO GREGORY B ; BAXANO INC ; BAXANO SURGICAL INC ; BLEICH JEFFERY L ; CHUNG WINNIE ; BORGSTROM AMIE R ; HLAVKA EDWIN J ; BLEAM JEFFEREY ; LEGUIDLEGUID RON ; GARABEDIAN ROBERT ; CANTORNA NESTOR C ; LEGUIDLEGUID RONALD ; BLEICH JEFFREY L ; MILLER ERIC C ; SCHMITZ GREGORY ; WALLACE MICHAEL P ; LEGUIDLEGUILD ROY ; LEGUIDLEGUILD RONALD ; SCHMITZ GREGORY P ; LEGUIDLEGUID ROY ; SHEINBERG MICHAEL A ; SHAPIRO JAMES ; SHEINBERG MICHAEL ; SUN BENJAMIN KAO SHING ; SUMMA CHRISTOPHER D ; MIMRAN RONNIE I ; SPISAK STEVEN A ; YURCHENCO JAMES ; SAADAT VAHID ; MILLER DAVID R ; AMENDIA INC ; WALLCE MICHAEL P

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**Inventor(s):** GREGORY P SCHMITZ ; MICHAEL P WALLACE ; JEFFREY L BLEICH ; JEFFERY L BLEICH ; JEFFEREY BLEAM ; NESTOR C CANTORNA ; BLEICH JEFFERY ; RON LEGUIDLEGUID ; SUN BENJAMIN ; SPISAK STEVEN ; MILLER DAVID ; HLAVKA EDWIN

**Agent(s):** PEGASUS IP; BAXTER PATENT ATTORNEYS PTY LTD; IP SOLVED ANZ PTY LTD; BORDEN LADNER GERVAIS LLP; RUHRMANN ANDREA ELIZABETH ET AL; PROBERT GARETH DAVID; POTTER CLARKSON LLP; RUHRMANN ANDREA ELIZABETH; LEVINE BAGADE LLP; BAXANO INC AND TOWNSEND AND TOWNSEND AND CREW; SHAY GLENN LLP; BAXANO C/O SHAY LAW; BAXANO C O SHAY LAW; DAVID L; GLENN W BENJAMIN ET AL; COHEN DAVID C ET AL; SHOOP RICHARD D ET AL; SHAY JAMES R ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** USE OF FIBROUS MAT-FACED GYPSUM BOARD IN EXTERIOR FINISHING SYSTEMS FOR BUILDINGS

**Abstract:** An exterior finishing system for a building, including particularly an exterior insulation system, which includes a fibrous mat-faced gypsum board, preferably a board in which the set gypsum core thereof is water resistant, and preferably one in which the set gypsum core is sandwiched between two sheets of porous glass mat, with the outer surface of at least one of said mats being substantially free of set gypsum, and means for preparing the board, including control of the viscosity of the aqueous gypsum slurry from which the set gypsum core of the board is formed. Also, the use of fibrous mat-faced gypsum board as the shaft liner panel in a shaft wall assembly.

**Classifications:**

**International (IPC 8-9):** B28B11/04 B28B19/00 B28B23/00 B32B13/00 B32B13/14 B32B17/02 B32B5/08 C04B11/00 C04B24/28 C04B24/42 C04B28/14 E04B1/34 E04B1/74 E04B1/76 E04B1/80 E04B1/94 E04B2/00 E04C2/00 E04C2/04 E04C2/26 E04C2/284 E04C2/288 E04D11/02 E04D13/16 E04F13/14 E04F17/00 E04F17/08 (Advanced/Invention); B28B11/04 B28B19/00 B28B23/00 B32B13/00 B32B17/02 B32B5/08 C04B24/00 C04B28/00 E04B1/34 E04B1/74 E04B1/76 E04B1/80 E04B1/94 E04C2/00 E04C2/04 E04C2/26 E04D11/00 E04D13/16 E04F13/14 E04F17/00 (Core/Invention)

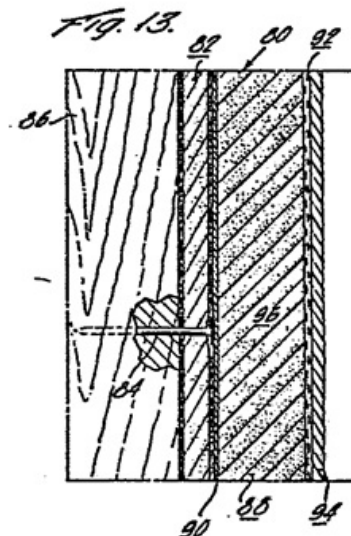
**International (IPC 1-7):** B32B13/00 B32B13/02 B32B13/04 B32B13/14 B32B17/02 B32B17/04 B32B31/12 B32B31/22 B32B5/08 C04B11/00 C04B11/024 C04B24/00 C04B24/28 E04B1/34 E04B1/74 E04B1/76 E04B1/80 E04B1/94 E04B2/00 E04B2/04 E04B5/00 E04B7/00 E04C1/00 E04C2/00 E04C2/02 E04C2/04 E04C2/26 E04F13/00 E04F13/04 E04F13/08 E04F13/14 E04F13/16 E04F13/18 E04F17/08

**CPC:** Y10S428/92 B28B11/04 E04F17/005 E04F13/047 Y10T428/232 Y10T428/237 Y10T428/26 Y10T428/266 Y10T428/31801 Y10T428/31815 Y10T442/665 Y10T442/696 B28B19/0092 B28B23/0006 E04C2/043 E04C2/284 E04C2/288 E04D13/1643 E04D13/1668 C04B28/14 C04B24/42 C04B2111/0062 Y10T428/249968 Y10T428/249932 C04B2111/00612 Y02W30/97 B32B3/26 B32B7/12 B32B2262/101 B32B2305/08 B32B2307/304 B32B2307/7265 B32B2607/00 B32B13/14 E04D11/02

**European:** B28B11/04 B28B19/00K B28B23/00A B32B13/14 C04B24/42 C04B28/14 E04C2/04C E04C2/284 E04C2/288 E04D11/02 E04D13/16A2 E04D13/16A4 E04F17/00B M04B111/00T6B

**US:** 106/772 106/775 106/776 106/778 106/781 156/39 156/41 156/42 156/43 156/45 156/71 264/133 428/251 428/285 428/294.7 428/302 428/311.5 428/312.4 428/332 428/337 428/484 428/484.1 428/489 428/70 428/703 428/74 428/920 442/386 442/414 52/309.15 52/309.17 52/317 52/408 52/416 52/443 52/481 52/481.1 52/783.1 52/794.1 52/796.1 524/430

PatBase - US4647496\_A

**Family:**

| Publication number | Publication date | Application number | Application date |
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| CA1293606 A2       | 19911231         | CA19890589064      | 19890124         |
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| CA1309831 A1       | 19921110         | CA19850616157      | 19850206         |
| CA1309831 A2       | 19921110         | CA19910616157      | 19910909         |
| CA1326625 A1       | 19940201         | CA19860616425      | 19860822         |
| CA1326625 A2       | 19940201         | CA19920616425      | 19920625         |
| CA2047123 AA       | 19920128         | CA19912047123      | 19910716         |
| DE3484508 D1       | 19910529         | DE19843484508      | 19841228         |
| DE4124892 A1       | 19920305         | DE19914124892      | 19910726         |
| EP0154094 A2       | 19850911         | EP19840309124      | 19841228         |
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| EP0154094 B1       | 19910424         | EP19840309124      | 19841228         |
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| MX164255 B         | 19920727         | MX19850204450      | 19850227         |
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| US4647496 A        | 19870303         | US19840583874      | 19840227         |
| US4810569 A        | 19890307         | US19870020872      | 19870302         |
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**Priority:**

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| CA19850473643 19850206 | CA19850589064 19850206 | CA19850616157 19850206 |
| CA19854736435 19850206 | JP19850034687 19850225 | US19850769583 19850826 |
| US19850769582 19850826 | CA19860516602 19860822 | CA19865166021 19860822 |
| CA19860616425 19860822 | US19870020872 19870302 | US19880257180 19881013 |
| US19880262229 19881021 | CA19890589064 19890124 | CA19895890641 19890124 |
| US19890319638 19890306 | US19900481710 19900215 | US19900558808 19900727 |
| US19900627091 19901211 | US19900626381 19901212 | US19910725946 19910627 |
| CA19912047123 19910716 | US19910742219 19910806 | US19920838551 19920219 |
| CA19920616425 19920625 | US19930058898 19930506 | US19940187199 19940126 |
| US19950480800 19950607 | US19960744510 19961106 |                        |

**Probable Assignee:** G P GYPSUM CORP

**Assignee(s):** (std): ALTMAN FRANKLIN A ; GEORGIA PACIFIC CORP ; LEHNERT CHARLES W ; RICHARDS TURNER W ; SELLERS DWIGHT G ; GEORGIA PASIFIC CORP

**Assignee(s):** GEORGIA PACIFIC CORP ATLANTA GA US ; RANDALL BRIAN G ; HINKEL RAY W ; GEORGIA PACIFIC RESIN INC ; GEORGIA PACIFIC GYPSUM LLC ; JII PII JIPUSAMU CORP ; CITICORP NORTH AMERICA INC ; FOWLER GEORGE F JR ; G P GYPSUM CORP ; GEORGIA PACIFIC A CORP OF GA CORP ; GEORGIA PACIFIC A CORP OF GEORGIA CORP ; GEORGIA PACIFIC A OF GA CORP

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**Agent(s):** SMART AND BIGGAR; SHAPIRO COHEN

**Designated states:** AT CH DE FR GB LI

**Title:** Process for producing board of cement-like material reinforced by glass fiber

**Abstract:** This invention relates to a process for continuously producing a dense board of cement-like material reinforced by glass fiber, which comprises (1) preparing a slurry of cement-like material; (2) simultaneously spraying the cement-like slurry and short lengths of glass fiber on a suction conveyor in such a manner that the cement-like slurry stream and the glass fiber stream intersect on the suction conveyor to form a dense mat of an intimate mixture of the two; and (3) dehydrating the mat by pulse-like intermittent suction using one or more suction boxes before the cement-like material begins to set, and to an apparatus used in carrying out the process.

**Classifications:**

**International (IPC 8-9):** B28B1/52 B28B13/02 B28B17/02 B28B5/02 B29C63/00 B32B37/00 (Advanced/Invention);

B28B1/52 (Advanced/Non-invention);

B28B1/52 B28B13/00 B28B17/00 B28B5/00 B29C63/00

B32B37/00 (Core/Invention);

B28B1/52 (Core/Non-invention)

**International (IPC 1-7):** B28B1/08 B28B1/42 B28B1/50 B28B1/52

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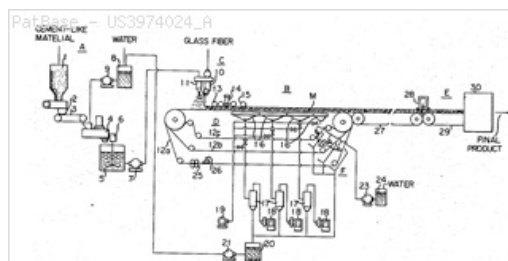
B32B13/02 B32B31/18 B32B5/26 B32B5/32 E04C2/06

**CPC:** B32B13/02 B28B1/522 B28B1/526 B28B5/027 B28B17/02

B32B13/04 B32B2262/101 B32B2607/00

**European:** B28B1/52C B28B1/52F B28B17/02 B28B5/02C2

**US:** 106/676 106/680 156/62.8 156/78 162/101 162/125 162/156 162/209 162/213 264/42 264/70 264/87



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
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| FR2226255 A1       | 19741115         | FR19740013511      | 19740418         |
| FR2226255 B1       | 19780331         | FR19740013511      | 19740418         |
| GB1463769 A        | 19770209         | GB19740015012      | 19740404         |
| JP49130416 A2      | 19741213         | JP19730043106      | 19730418         |
| JP49130417 A2      | 19741213         | JP19730043108      | 19730418         |
| JP49130421 A2      | 19741213         | JP19730043107      | 19730418         |
| JP52033645 B4      | 19770830         | JP19730043106      | 19730418         |
| JP54002218 B4      | 19790203         | JP19730043107      | 19730418         |
| JP904393 C3        | 19780330         | JP19730043106      | 19730418         |
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| US3974024 A        | 19760810         | US19740455351      | 19740327         |

**Priority:**

JP19730033394 19730323

JP19730043106 19730418

JP19730043107 19730418

JP19730043108 19730418

JP19730033394 19730521

**Probable Assignee:** ONODA CEMENT CO LTD

**Assignee(s):** (std): ONODA CEMENT CO LTD

**Assignee(s):** ONODA CEMENT CO LTD ONODA YAMAGUCHI JAPAN ; ONODA CEMENT COMPANY LTD ; ONODA CEMENT CY LTD ; ONODA CEMENT CY LTD JA ; ONODA CEMENT CO

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**Inventor(s):** YANO TSUYOSHI TOKIO ; TAKE TAKAO MITAKA ; SASANO TETSURO CHIBA ; ICHIKAWA KAZUMASA KOGANEI

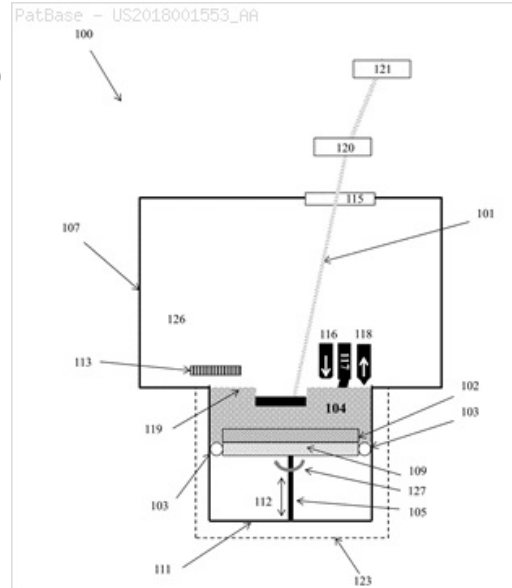
**Title:** THREE-DIMENSIONAL PRINTING AND THREE-DIMENSIONAL PRINTERS

**Abstract:** The present disclosure provides three-dimensional (3D) printing processes, apparatuses, software, and systems for the production of at least one desired 3D object. The 3D printer system (e.g., comprising a processing chamber, build module, or an unpacking station) described herein may retain a desired (e.g., inert) atmosphere around the material bed and/or 3D object at multiple 3D printing stages. The 3D printer described herein comprises one or more build modules that may have a controller separate from the controller of the processing chamber. The 3D printer described herein comprises a platform that may be automatically constructed. The invention(s) described herein may allow the 3D printing process to occur for a long time without operator intervention and/or down time.

**Classifications:**

**International (IPC 8-9):** B22F3/105 B28B1/00 B28B17/00 B29C64/153 B29C64/188 B29C64/20 B29C64/25 B29C64/255 B29C64/364 B29C64/371 B29C64/386 B29C64/393 B29C67/00 B33Y10/00 B33Y30/00 B33Y40/00 B33Y50/02 (Advanced/Invention)

**CPC:** B29C64/188 B29C64/255 B33Y50/02 B29C64/386 B29C64/393 B29C64/153 B29C64/25 B29C64/364 B33Y30/00 B33Y40/00 B22F2201/10 B28B1/001 B28B17/0081 B22F2003/1057 B29C64/371 B22F3/1055 B29C64/20

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| EP3263316 A1       | 20180103         | EP20170178143      | 20170627         |
| US2018001553 AA    | 20180104         | US20170634228      | 20170627         |
| US2018001556 AA    | 20180104         | US20170634267      | 20170627         |
| US2018001557 AA    | 20180104         | US20170634727      | 20170627         |
| US2018056391 AA    | 20180301         | US20170634666      | 20171002         |
| WO18005439 A1      | 20180104         | WO2017US39422      | 20170627         |

**Priority:**

|                |          |                |          |                |          |
|----------------|----------|----------------|----------|----------------|----------|
| US20160356465P | 20160629 | US20160421836P | 20161114 | US20170472320P | 20170316 |
| US20170506149P | 20170515 | US20170634228  | 20170627 | US20170634267  | 20170627 |
| US20170634727  | 20170627 | US20170634666  | 20171002 |                |          |

**Probable Assignee:** VELO3D INC

**Assignee(s):** (std): VELO3D INC

**Inventor(s):** (std): BREZOCZKY THOMAS BLASIUS ; BULLER BENYAMIN ; KOROBKOV ANDREI ; LAPPAS TASSO ; LAPPEN ALAN RICK ; ELGAR YACOV ; MURPHREE ZACHARY RYAN ; ROMANO RICHARD JOSEPH ; LEVIN EVGENI ; MILSTEIN EREL ; TRALONGO JOE ; MARTINSON ROBERT MICHAEL

**Agent(s):** COHAUSZ AND FLORACK; BULLER RONIT ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

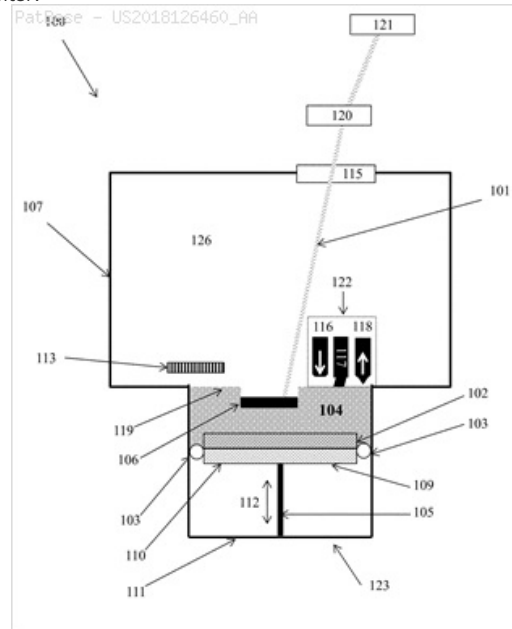
**Title:** GAS FLOW IN THREE-DIMENSIONAL PRINTING

**Abstract:** The present disclosure provides three-dimensional (3D) printing processes, apparatuses, software, and systems for controlling and/or treating gas borne debris in an atmosphere of a 3D printer.

**Classifications:**

**International (IPC 8-9):** B01D46/00 B08B5/04 B22F3/00 B22F3/105 B28B1/00 B29C64/153 B29C64/245 B29C64/25 B29C64/268 B29C64/35 B29C64/357 B29C64/393 B33Y10/00 B33Y30/00 B33Y40/00 B33Y50/02 (Advanced/Invention)

**CPC:** B22F3/1055 B33Y10/00 B22F2003/1059 B33Y40/00 B33Y30/00 B22F2003/1056 B33Y50/02 B22F2003/1057 B29C64/35 B29C64/25 B29C64/153 B29C64/245 B08B5/04 B29C64/268 B01D46/0012

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2018126460 AA    | 20180510         | US20170803675      | 20171103         |
| US2018126461 AA    | 20180510         | US20170803683      | 20171103         |
| US2018126462 AA    | 20180510         | US20170803692      | 20171103         |
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| WO18128695 A2      | 20180712         | WO2017US60035      | 20171103         |
| WO18128695 A3      | 20180823         | WO2017US60035      | 20171103         |

**Priority:**

|                         |                         |                         |
|-------------------------|-------------------------|-------------------------|
| US20160418601P 20161107 | US20170477631P 20170328 | US20170489239P 20170424 |
| US20170549868P 20170824 | US20170803675 20171103  | US20170803683 20171103  |
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**Probable Assignee:** VELO3D INC

**Assignee(s):** (std): VELO3D INC

**Inventor(s):** (std): BOWERS KENJI ; BREZOCZKY THOMAS ; BREZOCZKY THOMAS BLASIUS ; BRUDNY ALEXANDER ; BULLER BENYAMIN ; CHOUDHARI CHARUDATTA ; CHOUDHARI CHARUDATTA MUKUNDRAO ; ELGAR YACOV ; ENDRUHN CLAUD ; KOREPANOV SERGEY ; LAPPAS TASSO ; MARTINSON ROBERT ; MARTINSON ROBERT MICHAEL ; MILSTEIN EREL ; MURPHREE ZACHARY ; MURPHREE ZACHARY RYAN ; ROMANO RICHARD ; ROMANO RICHARD JOSEPH ; TRALONGO JOE

**Agent(s):** MCSWAIN KAREN ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** METHOD OF APPLYING SILICATE TO WET ASBESTOS-SLAG CEMENT SHEETS AFTER FORMATION BUT PRIOR TO CONSOLIDATION OF SUCH SHEETS

**Abstract:** 1,070,700. Asbestos-cement board; board-making. JOHNS-MANVILLE CORPORATION Oct. 2, 1964 [Dec. 24, 1963], No. 40096/64. Headings D2A and D2B. [Also in Division F2] Asbestos-cement products are made from a dilute aqueous slurry containing asbestos fibre and hydraulic cement, of which at least part is a slag cement, by forming a single thin wet sheet of slurry solids on a moving member, applying an aqueous solution of sodium silicate to the wet sheet, removing the sheet from the moving member, superposing several layers of the sheet, and consolidating and curing the laminated structure. The slurry may also contain silica. The slag cement is an artificial cement made by chilling blast-furnace slag, grinding it and adding an alkaline activator such as lime or Portland cement. As shown, a cylinder mould 2 rotates in a vat 1 of slurry. The thin sheet 3 formed on the cylinder is transferred to the felt 4 and a spray device 6 sprays sodium silicate solution on to it. Water is removed by the suction box 7 and the wet sheet wound on the forming roll 5 and consolidated by pressure from the press roll 8. The specification also describes, by way of comparison, the making of products which are similar but have in place of the sodium silicate one of the following: calcium chloride, sodium chloride, sodium hydroxide or sodium carbonate, or in which the cement used is wholly Portland cement.

**Classifications:**

**International (IPC 8-9):** B28B1/42 B28B21/48 C04B28/08 C04B28/26 C04B41/50 C04B41/68 (Advanced/Invention); B28B1/30 B28B21/00 C04B28/00 C04B41/45 C04B41/60 (Core/Invention)

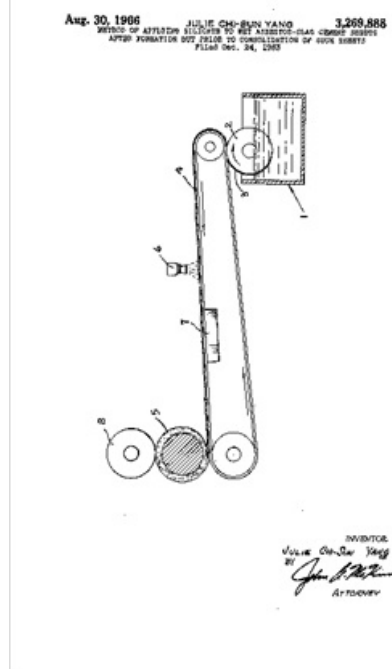
**International (IPC 1-7):** B28B1/42 B28B1/52 C04B39/00 C04B41/32

**CPC:** B28B1/42 B28B21/48 C04B28/08 C04B28/26 C04B41/009 C04B41/5089 C04B41/68 Y02P40/143

**European:** B28B1/42 B28B21/48 C04B28/08 C04B28/26 C04B41/00V C04B41/50T24 C04B41/68

**US:** 106/700 162/119 162/122 162/123 162/154 162/184 162/265 162/284

PatBase - US3269888\_A



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| BE655381 A         | 19650506         |                    | 19641106         |
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| FR1422382 A        | 19651224         | FR19640995625      | 19641119         |
| GB1070700 A        | 19670601         | GB19640040096      | 19641002         |
| US3269888 A        | 19660830         | US19630332998      | 19631224         |

**Priority:**

US19630332998 19631224 FR19640995625 19641119

**Probable Assignee:**

JOHNS MANVILLE

**Assignee(s): (std):**

JOHNS MANVILLE

**Assignee(s):**

JOHNS MANVILLE CORP

**Inventor(s): (std):**

CHI SUN YANG JULIE

**Inventor(s):**

YANG JULIE CHI SUN

**Title:** FOAMED STARCH COMPOSITIONS, ARTICLES AND METHODS

**Abstract:** Articles, particularly containers and packaging materials, having a starch-bound cellular matrix reinforced with substantially uniformly dispersed fibers and methods for manufacturing the articles. High strength articles that have adequate flexibility and toughness immediately or very shortly after being demolded without the need for subsequent conditioning are molded from compositions having a starch-based binder and fibers that are uniformly dispersed by means of a high yield stress fluid fraction within the starch-based composition. In a two-step mixing process, a preblended mixture is formed by gelating a portion of the starch-based binder or other thickening agent in water to form a liquid phase having high yield stress into which the fibers are substantially uniformly dispersed. At least some of the fibers preferably have an average length of at least about 2 mm and an aspect ratio of at least about 25:1. The remaining starch-based binder, water, and other desired admixtures, such as mold-release agents, inorganic fillers, rheology-modifying agents, plasticizers, integral coating or sealing materials, and dispersants, are added to the preblended mixture to form a moldable starch-based composition, which is molded between heated molds to produce form-stable articles having a desired shape and a selectively controlled foamed structural matrix. Such articles can replace articles presently made from conventional materials like paper, paperboard, polystyrene, plastic, or other organic-based materials and have especial utility in the mass-production of containers, particularly food and beverage containers.

**Classifications:**

**International (ipc 8-9):** A47G19/00 B05B11/00 B27N3/00 B29C33/36 B29C39/00 B29C39/02 B29C39/42 B29C43/00 B29C43/06 B29C43/34 B29C43/36 B29C43/38 B29C44/00 B29C44/04 B29C65/00 B29C67/20 B29C70/02 B29C70/12 B29C70/50 B29C71/00 B32B3/26 B32B5/14 B32B5/18 B65D43/16 B65D65/40 B65D65/46 C04B20/00 C04B26/28 C04B40/00 C08J3/20 C08J9/00 C08J9/28 C08L3/00 C08L3/02 (Advanced/Invention); B05C5/02 B29C33/04 B29C33/10 B29K105/04 B29K105/06 E05D1/02 (Advanced/Non-invention)

**International (ipc 1-7):** B29C44/02 C08J9/12 C08L3/02  
**CPC:** Y02W90/11 B05B11/0037 B05B11/30 B05C5/0245 B27N3/002 B27N3/007 B29C33/04 B29C33/10 B29C33/20 B29C33/36 B29C39/003 B29C39/42 B29C43/003 B29C43/06 B29C43/34 B29C43/36 B29C43/38 B29C44/0407 B29C67/202 B29C70/025 B29C70/12 B29C70/50 B29C71/0009 B29C2043/3433 B29C2043/3615 B29C2043/3623 B29K2003/00 B29K2105/0064 B29K2105/04 B29K2105/06 B29K2105/12 B29K2105/16 B65D43/162 B65D65/466 B65D2565/385 C04B20/0048 C04B26/285 C04B40/006 C08J2303/00 C08L3/00 E05D1/02 E05Y2900/602 B32B5/18 B32B1/02 B32B5/14 B32B2262/062 B32B2305/08 B32B2305/30 B32B2305/70 B32B2307/7246 B32B2317/20 B32B2439/70 C08J9/0085 Y02A40/961

**European:** B05B11/00B5 B27N3/00B B27N3/00R B29C33/36 B29C39/00B B29C39/42 B29C43/00B B29C43/06 B29C43/34 B29C43/36 B29C43/38 B29C44/04A B29C67/20C B29C70/02A4 B29C70/12 B29C70/50 B29C71/00C B32B5/14 B32B5/18 B65D43/16B B65D65/46C C04B20/00F C04B26/28B C04B40/00D7 C08J9/00N C08L3/00 L05B11/30 L05C5/02E L29C33/04 L29C33/10 L29C33/20 L29C43/06 L29C43/34B L29C43/36C2 L29C43/36C2B1 L29K105/00G4 L29K105/04 L29K105/06 L29K105/12 L29K105/16 L29K3/00 L65D565/38Y7 M08J303/00 P05D1/02 P05Y900/602

PatBase - EP0960711\_A2

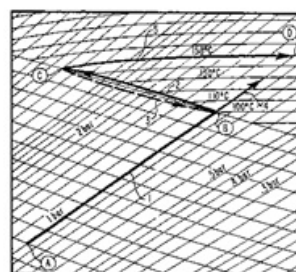


FIG. 1

**Family:**

| Publication number | Publication date | Application number | Application date |
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| DE29522138 U1      | 20000302         | DE19952022138U     | 19950912         |
| EP0960711 A2       | 19991201         | EP19990111122      | 19950912         |
| EP0960711 A3       | 20010711         | EP19990111122      | 19950912         |
| EP0960711 B1       | 20021204         | EP19990111122      | 19950912         |

**Priority:**

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 US19940353783 19941209 EP19950931822 19950912

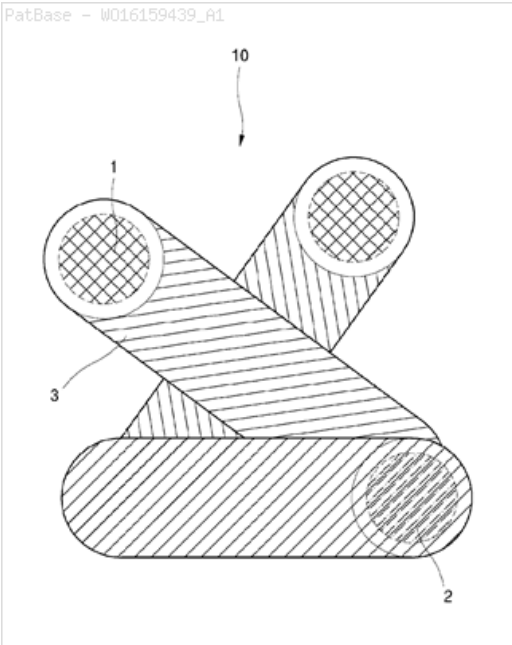
**Probable Assignee:** E KHASHOGGI IND LLC**Assignee(s):** (std): KHASHOGGI E IND**Assignee(s):** E KHASHOGGI IND ; E KHASHOGGI IND LLC ; E KHASHOGGI INDUSTRIES ; E KHASHOGGI INDUSTRIES LLC**Inventor(s):** (std): ANDERSEN PER JUST ; HODSON SIMON**Designated states:** AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

**Title:** POROUS FIBER-REINFORCED COMPOSITE AND METHOD FOR PREPARING SAME

**Abstract:** Provided is a porous fiber-reinforced composite comprising: first fibrous particles; second fibrous particles; and a binder for binding the first fibrous particles and the second fibrous particles, wherein the first fibrous particles are bound to the second fibrous particles by the binder to form an irregular network structure having pores, wherein the first fibrous particles are formed of inorganic or organic fibers, and wherein the second fibrous particles contain a first thermoplastic resin and the binder contains a second thermoplastic resin, the melting point of the first thermoplastic resin being higher than that of the second thermoplastic resin.

**Classifications:**

**International (IPC 8-9):** B29C70/10 B29C70/12 B32B27/12 C08J5/04 C08K7/02 C08K7/22 C08L101/00 D04H1/4218 D04H1/541 D04H1/732 (Advanced/Invention)  
**CPC:** C08J5/048 C08J2300/22 C08L2666/72 C08J5/047 D04H1/4218 D04H1/541 D04H1/732



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| ■ CN107428997 A    | 20171201         | CN201580078639     | 20150519         |
| ■ EP3279249 A1     | 20180207         | EP20150887849      | 20150519         |
| ■ EP3279249 A4     | 20180425         | EP20150887849      | 20150519         |
| ■ KR101646455 B1   | 20160808         | KR20150047708      | 20150403         |
| ■ TW201636194 A    | 20161016         | TW20160106406      | 20160302         |
| ■ WO16159439 A1    | 20161006         | WO2015KR05000      | 20150519         |

**Priority:**

KR20150047708 20150403      WO2015KR05000 20150519

**Probable Assignee:** LG HAUSYS LTD

**Assignee(s):** (std): LG HAUSYS LTD

**Inventor(s):** (std): AHN SEUNG HYUN ; HAN KYUNG SEOK ; JUNG SEONG MOON

**Agent(s):** WYNNE JONES LAINE AND JAMES LLP; DAE A INTELLECTUAL PROPERTY CONSULTING

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** DEGRADATION RESISTANT IMPLANTABLE MATERIALS AND METHODS

**Abstract:** Methods are provided for making materials suitable for implantation in a mammal. The methods include the steps of providing a base material having a desirable surface topography, such as a polyurethane foam, contacting the base member with a silicone-based fluid material to form a coating, and allowing the coating to set to form a silicone-based structure suitable for implantation in a mammal. The base material may be removed from the coating.

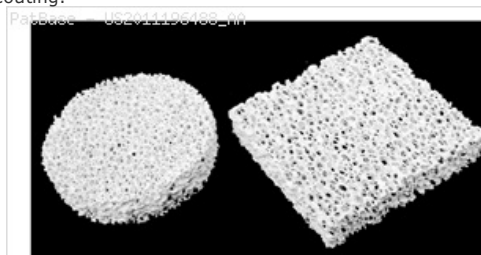
**Classifications:**

**International (IPC 8-9):** A61F2/02 A61F2/12 A61L24/00 A61L27/00 A61L27/18 A61L27/32 A61L27/34 A61L27/50 A61L27/56 A61L27/58 A61L28/00 A61L31/14 B05D1/36 B05D1/38 B05D3/00 B05D7/00 B32B27/08 B32B5/18 C08J9/26 (Advanced/Invention)

**CPC:** A61L31/10 A61L27/16 A61F2/12 A61L2430/04 Y10T156/10 Y10T428/249999 A61L27/34 Y10T428/26 Y10T428/269 Y10T428/2989 A61L27/18 A61L27/50 A61L27/56 A61L27/58

**European:** A61L24/00H A61L24/00H8 A61L27/18 A61L27/34 A61L27/50 A61L27/56 A61L27/58 A61L28/00H A61L28/00H8 A61L31/14 A61L31/14H K61L430/04

**US:** 427/2.24 427/2.240S 428/322.7 428/322.700S 623/8 623/8P



**Family:**

| Publication number | Publication date | Application number | Application date |
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| AU2011252017 AA    | 20111117         | AU20110252017      | 20110510         |
| AU2011252017 BB    | 20150716         | AU20110252017      | 20110510         |
| AU2011252023 AA    | 20111117         | AU20110252023      | 20110510         |
| AU2011252023 BB    | 20150521         | AU20110252023      | 20110510         |
| AU2015215916 AA    | 20150910         | AU20150215916      | 20150820         |
| AU2015215916 BB    | 20170202         | AU20150215916      | 20150820         |
| AU2015243077 AA    | 20151105         | AU20150243077      | 20151016         |
| CA2788101 AA       | 20110811         | CA20112788101      | 20110128         |
| CA2788265 AA       | 20110811         | CA20112788265      | 20110204         |
| CA2799201 AA       | 20121109         | CA20112799201      | 20110510         |
| CA2799201 C        | 20160920         | CA20112799201      | 20110510         |
| CA2799211 AA       | 20121109         | CA20112799211      | 20110510         |
| CA2799211 C        | 20150630         | CA20112799211      | 20110510         |
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| CN102985119 B      | 20150211         | CN201180034228     | 20110510         |
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| DK2569021 T3       | 20170410         | DK20110727830T     | 20110510         |
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| EP2569021 A1       | 20130320         | EP20110727830      | 20110510         |
| EP2569021 B1       | 20170104         | EP20110727830      | 20110510         |
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| JP5852640 B2       | 20160203         | JP20130510241T     | 20110510         |
| KR101854481 B1     | 20180503         | KR20127032046      | 20110510         |
| KR101861390 B1     | 20180528         | KR20127032249      | 20110510         |
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| KR20130101983 A    | 20130916         | KR20127032046      | 20110510         |
| PL2569021 T3       | 20170731         | PL20110727830T     | 20110510         |
| TR201704750 T4     | 20170421         | TR20170004750T     | 20110510         |
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| US2012004722 AA    | 20120105         | US20110104893      | 20110510         |
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**Priority:**

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| US20100333613P | 20100511 | US20100375338P | 20100820 | US20110015309  | 20110127 |
| WO2011US22830  | 20110128 | US20110021615  | 20110204 | WO2011US23773  | 20110204 |
| AU20110252017  | 20110510 | AU20110252023  | 20110510 | JP20130510242T | 20110510 |
| EP20110727830  | 20110510 | JP20160022108  | 20110510 | US20110104893  | 20110510 |
| WO2011US35917  | 20110510 | WO2011US35923  | 20110510 | AU20150215916  | 20150820 |
| AU20150243077  | 20151016 | JP20160022108  | 20160208 |                |          |

**Probable Assignee:** ALLERGAN INC

**Assignee(s):** (std): MA KEVIN A ; GORALTCHOUK ALEXEI ; ABIAD MIRIAM M ; ALLERGAN INC ; THOMPSON JORDAN M

**Assignee(s):** VAN EPPS DENNIS E ; YU XIAOJIE ; ALLERGAN INC IRVINE ; THOMPSON JORDAN ; REN CINDY D ; LIU FUTIAN ; MANESIS NICHOLAS J ; CHAN ATHENE W ; STROUMPOULIS DIMITRIOS

**Inventor(s):** (std): ABIAD MIRIAM M ; CHAN ATHENE W ; GORALTCHOUK ALEXEI ; LIU FUTIAN ; MA KEVIN A ; MANESIS

NICHOLAS J ; REN CINDY D ; STROUMPOULIS DIMITRIOS ; THOMPSON JORDAN ; THOMPSON JORDAN M ;  
VAN EPPS DENNIS E ; YU XIAOJIE ; NICHOLAS J MANESIS ; DIMITRIOS STROUMPOULIS ; ALEXEI  
GORALTCHOUK

**Inventor(s):** XIAOJIE YU ; MANESIS NICHOLAS J ESCONDIDO ; FUTIAN LIU ; ATHENE W CHAN

**Agent(s):** DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; GOWLING LAFLEUR HENDERSON LLP;  
GOWLING WLG CANADA LLP; HOFFMANN EITLE PATENT U RECHTSANWAELTE PARTMBB; HOFFMANN EITLE;  
FUSTER GUSTAVO NICOLAS; YAMAZAKI HIROSHI; MORIZUMI KEN ICHI; TANAKA MITSUO; YAMASAKI  
KAZUO; NISHIJIMA TAKAKI; HAKODA ATSUSHI; ICHIKAWA SATSUKI; ASAI KENJI; DESHIMARU TAKESHI;  
UGUR GUERSAD YALCINER; FOX LINDA A ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY  
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IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY  
MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG  
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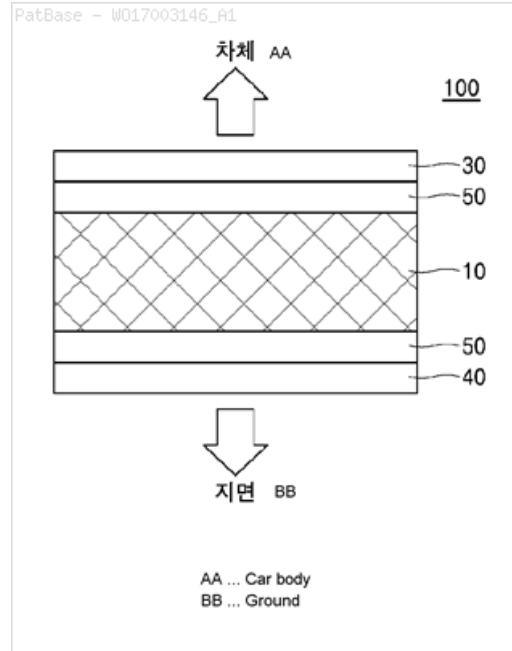
**Title:** VEHICLE UNDERBODY COVER AND METHOD FOR MANUFACTURING SAME

**Abstract:** Provided is a vehicle underbody cover comprising: a central layer; and coating layers arranged on both surfaces of the central layer, wherein the central layer comprises: first fibrous particles; second fibrous particles; and a binding material for binding the first fibrous particles and the second fibrous particles, wherein the first fibrous particles and the second fibrous particles are bound by the binding material so as to form an irregular network structure including pores, the first fibrous particles are inorganic fiber or organic fiber, the second fibrous particles include a first thermoplastic resin, the binding material includes a second thermoplastic resin, and a melting point of the first thermoplastic resin is higher than a melting point of the second thermoplastic resin.

**Classifications:**

**International (IPC 8-9):** B29C43/18 B32B23/08 B60R13/08 B62D21/00 B62D25/20 (Advanced/Invention)

**CPC:** B62D25/2072 B29C43/18 B60R13/0861 B60R13/08 B62D25/20



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| ■ CN107848578 A    | 20180327         | CN201680037424     | 20160627         |
| ■ EP3315389 A1     | 20180502         | EP20160818179      | 20160627         |
| ■ KR20170002725 A  | 20170109         | KR20150091973      | 20150629         |
| ■ TW201700293 A    | 20170101         | TW20160120269      | 20160628         |
| ■ WO17003146 A1    | 20170105         | WO2016KR06850      | 20160627         |

**Priority:**

KR20150091973 20150629 WO2016KR06850 20160627

**Probable Assignee:** LG HAUSYS LTD

**Assignee(s):** (std): LG HAUSYS LTD

**Inventor(s):** (std): AHN SEUNG HYUN ; HAN KYUNG SEOK ; JUNG SEONG MOON

**Agent(s):** GILL JENNINGS AND EVERY LLP; DAE A INTELLECTUAL PROPERTY CONSULTING

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

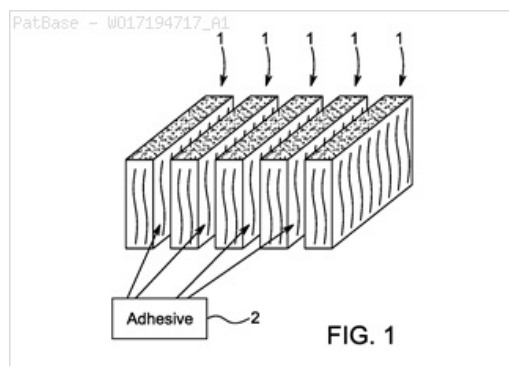
**Title:** COMPACTED BODY

**Abstract:** The invention relates to a compacted body, in particular a briquette, suitable for use as mineral charge in the production of man-made vitreous fibres (MMVF), said compacted body comprising: (i) recycled mineral wool waste which comprises MMV fibres and a sugar component and (ii) a binder comprising at least one phenol and/or quinone containing compound, at least one protein.

**Classifications:**

**International (IPC 8-9):** B29C70/20 B32B17/04 B32B19/00 B32B19/04 B32B19/06 B32B27/28 B32B7/12 C03B1/02 C03C1/00 C03C1/02 C03C13/06 C03C25/10 C03C25/26 C09J101/10 C09J105/00 C09J189/00 C09J189/06 D04H1/4209 D04H1/4218 D04H1/593 D04H1/64 D04H3/002 D04H3/004 D04H3/005 E04B1/00 E04B1/74 E04B1/76 E04B1/82 E04B1/88 (Advanced/Invention)

**CPC:** C03C25/26 C09J101/286 C09J103/02 C09J105/00 C09J105/04 C09J105/06 C09J105/12 C09J189/06 C08L5/12 D04H1/4218 D04H1/74 E04B2001/7683



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| WO17194717 A1      | 20171116         | WO2017EP61410      | 20170511         |
| WO17194718 A1      | 20171116         | WO2017EP61411      | 20170511         |
| WO17194719 A1      | 20171116         | WO2017EP61413      | 20170511         |
| WO17194720 A1      | 20171116         | WO2017EP61414      | 20170511         |
| WO17194721 A1      | 20171116         | WO2017EP61415      | 20170511         |
| WO17194722 A1      | 20171116         | WO2017EP61416      | 20170511         |
| WO17194723 A1      | 20171116         | WO2017EP61417      | 20170511         |
| WO17194724 A2      | 20171116         | WO2017EP61418      | 20170511         |
| WO17194724 A3      | 20171221         | WO2017EP61418      | 20170511         |
| WO17194725 A2      | 20171116         | WO2017EP61419      | 20170511         |
| WO17194725 A3      | 20171221         | WO2017EP61419      | 20170511         |
| WO17194726 A1      | 20171116         | WO2017EP61420      | 20170511         |

**Priority:**

EP20160169635 20160513 EP20160169638 20160513 EP20160169641 20160513

**Probable Assignee:** ROCKWOOL INT AS

**Assignee(s):** (std): FLUMROC AG ; ROCKWOOL INT A S ; ROCKWOOL INT AS

**Inventor(s):** (std): TIELEMANN THOMAS ; PFIFFNER ROLAND ; MERES OSKAR ; KARALLUS SASCHA ; JORGENSEN KRISTIAN SKOVGAARD ; JACOBSEN BENT ; HJELMGAARD THOMAS ; HALD LARS ; CHAPELLE LUCIE ; CEKO IVAN

**Agent(s):** HOIBERG P S; SAMUELS LUCY ALICE; LETZELTER DR FELIX; LETZELTER FELIX

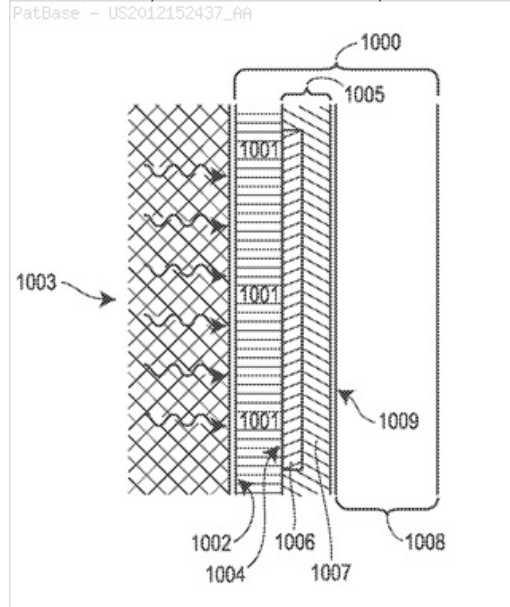
**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** INDUCTION WELDED WATERPROOFING

**Abstract:** In accordance with an embodiment of the disclosure, A water-proofing laminate includes a drainboard having a first surface positioned against a hydraulic source and a second surface opposed to the first surface, a fastener plate positioned against the second surface of the drainboard securing the drainboard to the hydraulic surface, the fastener plate comprising a conductive element and a thermoplastic resin, and a self-healing hydraulic barrier comprising a thermoplastic surface adjoined to a geotextile and carrying a water-absorbent material, the thermoplastic surface inductively welded to the fastener plate.

**Classifications:**

**International (IPC 8-9):** B29C65/32 B29C65/48 B29C65/56 B29D99/00 B32B27/00 B32B27/12 B32B3/06 B32B37/12 B32B38/18 B32B43/00 B32B7/04 B32B7/08 C09J5/06 E02D31/00 E04B2/96 E04F13/07 E04F13/09 E04F13/21 E04F13/24 E21D11/38 (Advanced/Invention)  
**CPC:** B29D99/001 B32B3/06 B32B37/00 B32B2038/166 B32B2307/718 B32B2307/7246 B32B2309/02 B32B2310/0812 B32B2419/00 E02D31/02 E21D11/383 Y10T156/10 Y10T428/24008  
**European:** E02D31/02 E21D11/38F L32B307/718 L32B307/724B4 L32B309/02 L32B310/08B2 L32B37/00 L32B38/16B2 L32B419/00  
**US:** 156/272.2 156/272.200S 156/272.4 156/308.2 156/308.4 156/60 156/60S 156/71 156/71P 156/91 156/92 156/92S 428/99 428/99S

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AU2011326113 AA    | 20120518         | AU20110326113      | 20111108         |
| BR112013011465 A2  | 20160809         | BR20131111465      | 20111108         |
| CA2817075 AA       | 20130506         | CA20112817075      | 20111108         |
| CL2013001263 A1    | 20131011         | CL20130001263      | 20130507         |
| EP2638247 A2       | 20130918         | EP20110782520      | 20111108         |
| IN04294CN2013 A    | 20160610         | IN2013CN04294      | 20130604         |
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| US2013302557 AA    | 20131114         | US20130867771      | 20130422         |
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| WO12064698 A2      | 20120518         | WO2011US59716      | 20111108         |
| WO12064698 A3      | 20121206         | WO2011US59716      | 20111108         |

**Priority:**

US20100411002P 20101108      US20110291614 20111108      WO2011US59716 20111108  
US20130867771 20130422

**Probable Assignee:** AMCOL INT CORP**Assignee(s):** (std): AMCOL INT CORP ; CISNEROS ROBERT**Assignee(s):** JPMORGAN CHASE BANK NA ADMINISTRATIVE AGENT AS**Inventor(s):** (std): CISNEROS ROBERT**Inventor(s):** ROBERT CISNEROS**Agent(s):** GRIFFITH HACK; ROBIC; CLARKE MODET AND CO CHILE LIMITADA; BANZER HANS JOERG; PATENT CORPORATE BODY ARCO PATENT OFFICE; MARSHALL GERSTEIN AND BORUN LLP; BURNETTE JENNIFER ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** SELF HEALING SALT WATER BARRIER

**Abstract:** Geocomposite articles that can provide a barrier against high conductivity water e.g., ocean water, are described and their method of manufacture, for waterproofing surfaces that contact high conductivity water. The geocomposite article mat includes a woven or non-woven geotextile sheet or mat containing a powdered or granular partially cross-linked acrylamide/acrylate/acrylic acid copolymer across its entire major surface(s). The powdered or granular copolymer has an unexpectedly high free-swelling when hydrated with High Conductivity water, such as ocean water. A liquid-impermeable cover sheet is adhered to the upper major surfaces of the filled copolymer-carrying geotextile to provide a primary high conductivity water barrier layer that, if ruptured, is sealed by the swell of an underlying layer of water-insoluble, partially cross-linked acrylamide/acrylic acid copolymer.

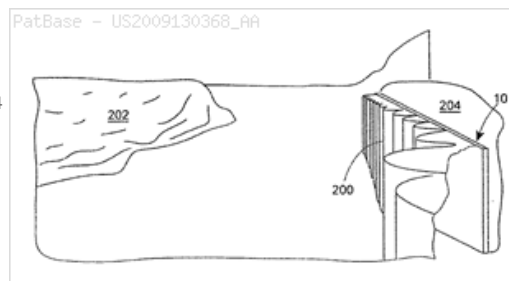
**Classifications:**

**International (IPC 8-9):** A47C1/022 A47C3/00 A47C31/12 A47C7/02 A47C7/14 A47C7/40 A47C7/44 A47C7/46 B32B27/12 B32B27/14 B32B27/30 B32B3/02 B32B31/00 B32B33/00 B32B37/04 B32B37/12 B32B37/16 B32B5/02 B32B5/22 B32B5/24 B32B5/30 B32B7/02 B32B7/04 B32B7/08 B32B7/12 C09K3/18 C09K8/467 D03D25/00 D04H13/00 E02B3/12 E02D17/20 E02D19/00 E02D19/18 E02D31/00 E02D31/02 E04B1/66 E21D11/38 (Advanced/Invention); A47C1/022 A47C7/40 A47C7/44 B32B27/12 B32B27/32 B32B29/00 B32B3/26 B32B3/28 B32B37/12 B32B37/24 B32B7/12 (Advanced/Non-invention); A47C1/022 A47C3/00 A47C7/14 A47C7/40 A47C7/46 B32B27/30 B32B3/02 B32B37/04 B32B7/02 D03D25/00 D04H13/00 E02D19/00 E02D31/00 E21D11/38 (Core/Invention); A47C7/40 C09K3/18 C09K8/467 (Core/Non-invention)

**CPC:** A47C7/405 A47C7/465 A47C31/126 B32B5/30 B32B3/266 B32B3/28 B32B5/22 B32B5/24 B32B27/30 B32B27/306 B32B27/32 B32B29/002 B32B37/12 B32B37/24 B32B2262/00 B32B2262/062 B32B2264/025 B32B2264/10 B32B2264/12 B32B2270/00 B32B2305/18 B32B2307/546 B32B2307/718 B32B2571/00 E21D11/383 B32B3/02 B32B5/022 B32B5/024 B32B7/045 B32B7/08 B32B7/12 B32B27/12 B32B27/14 B32B27/304 B32B2255/02 B32B2262/0246 B32B2262/0253 B32B2262/0261 B32B2262/0276 B32B2262/0292 B32B2262/04 B32B2262/101 B32B2262/105 B32B2307/714 B32B2307/7145 B32B2307/726 B32B2307/7265 B32B2307/728 B32B2307/762 B32B2307/762 B32B2419/00 B32B2581/00 B32B2607/00 E02D31/004 E02B3/126 E02D17/202 E02D19/00 Y10T442/3496 Y10T442/3764 Y10T428/23 Y10T428/24942 Y10T442/30 Y10T442/60 Y10T156/10 Y10T442/273 Y10T442/3854 Y10T442/674

**European:** A47C31/12C A47C7/40C A47C7/46A2 B32B27/30 B32B5/22 B32B5/24 B32B5/30 E02D17/20B E02D19/00 E02D31/00B2 E21D11/38F L32B305/18 L32B307/726B L32B307/762 L32B37/12 L32B37/24

**US:** 156/308.2 156/308.200S 156/332 156/334 156/334S 156/60 156/60S 156/73.1 156/73.100S 156/73.6 156/73.600S 297/284.1 297/284.2 297/284.3 297/284.300P 297/452.29 428/212 428/220 428/68 442/148 442/148P 442/181 442/242 442/275 442/286 442/286S 442/327 442/394 442/394S



**Family:**

| Publication number | Publication date | Application number | Application date |
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| CA2705548 AA       | 20090528         | CA20082705548      | 20080904         |
| CA2705548 C        | 20150331         | CA20082705548      | 20080904         |
| CA2772908 AA       | 20120930         | CA20122772908      | 20120330         |
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| CN101390691 B      | 20100811         | CN200810110058     | 20080529         |
| CN201274902 Y      | 20090722         | CN200820115401U    | 20080529         |
| CN201414599 Y      | 20100303         | CN200920168444U    | 20080529         |
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| DE602008029350 D1  | 20140206         | DE200860029350T    | 20080912         |
| DE602012017989 D1  | 20160616         | DE201260017989T    | 20120330         |
| EP2039271 A1       | 20090325         | EP20080016067      | 20080912         |
| EP2039271 B1       | 20131218         | EP20080016067      | 20080912         |
| EP2217439 A1       | 20100818         | EP20080799119      | 20080904         |
| EP2217439 B1       | 20110629         | EP20080799119      | 20080904         |
| EP2505719 A2       | 20121003         | EP20120162611      | 20120330         |
| EP2505719 A3       | 20130529         | EP20120162611      | 20120330         |
| EP2505719 B1       | 20160504         | EP20120162611      | 20120330         |
| ES2366362 T3       | 20111019         | ES20080799119T     | 20080904         |
| ES2585334 T3       | 20161005         | ES20120162611T     | 20120330         |
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| PL2505719 T3       | 20161031         | PL20120162611T     | 20120330         |
| TW200925256 A      | 20090616         | TW20080135376      | 20080915         |
| TW200927031 A      | 20090701         | TW20080133288      | 20080829         |
| TWI359643 B        | 20120311         | TW20080133288      | 20080829         |
| TWI365909 B        | 20120611         | TW20080135376      | 20080915         |
| US2009130368 AA    | 20090521         | US20070942638      | 20071119         |
| US2009236887 AA    | 20090924         | US20080211453      | 20080916         |
| US2011177736 AA    | 20110721         | US20110077871      | 20110331         |
| US2014302735 AA    | 20141009         | US20140310668      | 20140620         |
| US7909402 BB       | 20110322         | US20080211453      | 20080916         |
| US9995014 BB       | 20180612         | US20140310668      | 20140620         |
| US10012079 BB      | 20180703         | US20070942638      | 20071119         |

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|  WO09067286 A1 | 20090528 | WO2008US75162 | 20080904 |

**Priority:**

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|-------------------------|------------------------|------------------------|
| US20070973212P 20070918 | US20070942638 20071119 | EP20080799119 20080904 |
| WO2008US75162 20080904  | EP20080016067 20080912 | US20080211453 20080916 |
| US20110077871 20110331  | CA20122772908 20120330 | EP20120162611 20120330 |
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**Probable Assignee:** AMCOL INT CORP

**Assignee(s):** (std): CHU ZOOEY C ; BEIHOFFER THOMAS W ; LARIONOVA NATALIYA V ; JIATIAN ZHU ; DONOVAN MICHAEL ; LU SHUNJIE ; MOSIEWICZ MAREK R ; SHUNJIE LU ; SYNERGY PRODUCT DEV INC ; ZOOEY C CHU ; ZHU JIATIAN ; AMCOL INT CORP

**Assignee(s):** AMCOL INT CORPORATIONUS ; AMCOL INT HOFFMAN ESTATES CORP ; AMCOL INT ; ZOOEY CCHU ; LU SHUNJIE DONGGUAN CITY ; SYNERGY PRODUCT DEVELOPMENT INC ; CHU ZOOEY C US ; JPMORGAN CHASE BANK NA ADMINISTRATIVE AGENT AS ; CHU ZOOEY C GRAND RAPIDS

**Inventor(s):** (std): CHU ZOOEY C ; JIATIAN ZHU ; LU SHUN JIE ; LU SHUNJIE ; SHUNJIE LU ; ZOOEY C CHU ; LARIONOVA NATALIYA V ; LARIONOVA NATALIYA ; MOSIEWICZ MAREK R ; MOSIEWICZ MAREK ; DONOVAN MICHAEL ; BEIHOFFER THOMAS W ; BEIHOFFER THOMAS

**Inventor(s):** BEIHOFFER THOMAS W ARLINGTON HEIGHTS ; LARIONOVA NATALIYA V EVANSTON ; JU SHUN JIE ; DONOVAN MICHAEL HUNTLEY ; MOSIEWICZ MAREK R CHICAGO ; ZHU JIATIAN ; LU SHUNJIE TIANXIN VILLAGETANGXIA TOWN DONGGUAN CITY GUANGDONG PROVINVE ; BEIHOFFER THOMAS W MOSIEWICZ MAREK R LARIONOVA NATALIYA V

**Agent(s):** SMART AND BIGGAR; CLARKE; KRAUS AND WEISERT PATENTANWAELTE PARTGMBB; GRAETTINGER MOEHRING VON POSCHINGER PATENTANWAELTE PARTNERSCHAFT; UEXKUELL AND STOLBERG PARTNERSCHAFT VON PATENT U RECHTSANWAELTEN MBB; GRAETTINGER AND PARTNER (GBR); GRAETTINGER MOEHRING VON POSCHINGER PATENTANWAELTE PARTNERSCHAFT; ALBRECHT THOMAS; ADAM HOLGER; UEXKUELL AND STOLBERG; DE ELZABURU ALBERTO; MARSHALL GERSTEIN AND BORUN LLP; KANE AND CO PLC; ANDERSON RICHARD H

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** METHODS OF FORMING SYNTHETIC DIAMOND COATINGS ON PARTICLES USING MICROWAVES

**Abstract:** An apparatus and method for applying hard surface coatings to articles of manufacture such as particles, filaments, spheroids, rollers, bearings, tools, and assemblies. In one form, coating of hard surface film, such as synthetic diamond, is effected while the objects fall freely through space in a coating chamber. In another form, coating is effected while particles are fluidized by gas containing molecules which are formed of matter to be deposited by gas or chemical vapor deposition employing high energy radiation, such as microwave energy and/or other form of radiation. In other forms, an ion beam or beams containing hot carbon ions is directed through a fluidized bed of particles to be coated or through a chamber in which small objects are made to continuously fall freely through space to coat same with carbon in the form of synthetic diamond. In another method, such small objects are caused to continuously tumble through a coating region of a coating chamber into which is directed gas and/or vapor containing molecules of a hydrocarbon, such as methane, and hydrogen, while microwave energy is directed through such region. Other forms of the invention include the selective deposition and coating of synthetic diamond onto substrates to form or protect microminiature electronic circuits and circuit elements such as transistors and interconnects and to protect bonds such as welds, or to form bonds between components joined together thereby. In yet another form, hard synthetic diamond coatings are deposited per se or in combination with other materials, by a hybrid process including chemical vapor deposition, ion deposition by beam(s), sputtering and the like.

**Classifications:**

**International (IPC 8-9):** A63B17/00 A63B47/00 A63B47/02 A63B63/00 A63B69/12 A63B69/40 A63B9/00 A63C1/30 A63F7/24 A63F9/00 A63F9/02 A63G21/00 A63G21/18 A63G31/00 A63G33/00 B01J19/12 B01J8/42 B05B17/08 B23D61/18 B24D18/00 B28D1/12 C04B35/80 C23C16/00 C23C16/26 C23C16/27 C23C16/44 C23C16/442 C23C26/00 C23C28/00 C30B25/10 E04H3/10 E21B10/46 F01L3/02 F01L3/04 F02F1/00 F02F1/24 F02F3/10 F02F5/00 F16C33/04 F16C33/10 F16C33/32 F16C33/34 F16C9/00 F16C9/04 F16J1/01 F16J9/26 G09B23/28 (Advanced/Invention);

A63B17/00 A63B47/00 A63B47/02 A63B63/00 A63B69/40 A63B9/00 A63F9/00 H05K1/03 (Advanced/Non-invention);

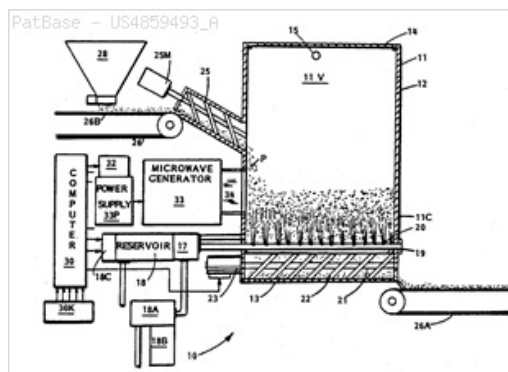
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**CPC:** A63B69/407 A63B69/409 A63G31/007 H05H1/46 A63G21/18 Y10S384/913 Y10S428/902 Y10S411/902 Y10S411/914 A63G31/00 A63B47/002 A63B47/025 A63B63/00 A63B69/40 A63B2009/002 A63B2009/006 A63B2047/028 A63B2063/001 A63F9/02 A63F2009/0087 A63F2009/0092 F16C33/34 F16C19/507 F16C33/30 F16C33/32 F16C33/445 F16C33/62 B01J8/42 B01J19/126 C23C16/274 C23C16/277 C23C16/4417 C23C16/442 C30B25/105 F01L3/04 F02F2200/04 F05C2201/021 F05C2201/0448 H05K1/0373 A63C1/30 Y10T74/19949 Y10T74/19953 Y10T74/19958 Y10T74/19991 Y10T74/19995 Y10T428/24975 Y10T428/265 Y10T428/30 Y10T428/2907 Y10T428/292 Y10T428/2933 Y10T428/2991 Y10T428/31678 A63B9/00 A63B2009/008 A63B2208/12 F16H57/041 F16C2352/00 B24D18/00 B23D61/185 B28D1/12 C04B35/80 E21B10/46 C30B29/04

**European:** A63B47/00D A63B47/02E A63B63/00 A63B69/40P A63B69/40P A63B9/00 A63C1/30 A63F9/02 A63G31/00 A63G31/00W B01J19/12D6 B01J8/42 B23D61/18B B24D18/00 B28D1/12 C04B35/80 C23C16/27G C23C16/27N C23C16/442 C23C16/44P C30B25/10B E21B10/46 F01L3/04 F16C19/50R F16C33/04 F16C33/12 F16C33/30 F16C33/32 F16C33/34 F16C33/44C F16C33/62 F16C9/00 F16H57/04H K63B208/12 K63B47/02E K63B47/02E1P K63B63/00A2 K63B63/00B K63B69/40E K63B9/00 K63B9/00F K63B9/00P K63B9/00P2 K63F9/00N4 K63F9/00N5 R02F200/04 R05C201/02A R05C201/04S4 T05K1/03C4D **US:** 106/14.44 118/50.1 118/730 123/188.3 123/188AA 123/193.6 123/193P 124/16 148/525 148/537 228/199 228/262.2 252/29 273/394 280/11.12 280/11.18 280/608 280/610 313/141 313/311 313/315 313/345 313/355 384/463 384/491 384/492 384/565 384/907.1 384/913 407/45.1 411/157 411/424 411/427 411/544 411/902 411/914 423/446 427/213 427/242 427/249.14 427/249.8 427/314 427/318 427/45.1 427/523 427/554 427/562 427/565 427/566 427/575 427/577 427/585 427/596 428/216 428/336 428/361 428/368 428/375 428/403 428/408 428/457 428/688 428/698 428/699 428/700 428/704 428/902 472/117 472/128 472/136 472/137 482/35 74/457 74/458 74/459.5 74/467 74/468 92/223 D21/814 D21/818 D21/819 D21/826

**Family:**

| Publication number | Publication date | Application number | Application date |
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| US5194048 A     | 19930316 | US19900604946 | 19901029 |
| US5255929 A     | 19931026 | US19900494689 | 19900316 |
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| US5288556 A     | 19940222 | US19910765447 | 19910925 |
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| US5853332 A     | 19981229 | US19960621173 | 19960321 |
| US5967901 A     | 19991019 | US19970846116 | 19970424 |
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#### Priority:

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|----------------|----------|---------------|----------|----------------|----------|
| US19870032307  | 19870331 | US19870032352 | 19870331 | US19890438220F | 19891120 |
| US19890438220  | 19891120 | US19900488116 | 19900305 | US19900488248  | 19900305 |
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| US19920849155  | 19920310 | US19920849156 | 19920310 | US19920852308  | 19920316 |
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| US19950466536  | 19950606 | US19950482086 | 19950607 | US19950602605  | 19950821 |
| US19950002605P | 19950821 | US19960621173 | 19960321 | WO1996US03842  | 19960322 |
| US19960689771  | 19960812 | WO1996US13488 | 19960821 | US19970038464P | 19970221 |
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| US19980002694  | 19980105 | WO1998US05331 | 19980220 | US19980133505  | 19980812 |

**Probable Assignee:** WHITEWATER WEST IND LTD

**Assignee(s):** (std): BRIGGS RICK A ; JIEROOMU EICHI REMERUSON ; LEMELSON JEROME H ; LEMELSON JEROME ; KOALA CORP ; RICK A BRIGGS ; SCS INTERACTIVE INC

**Assignee(s):** US BANK NATIONAL ASSOCIATION ; WHITEWATER WEST IND ; WHITEWATER WEST IND LTD ; RFC WATERPARK LLC ; RITSUKU EE BURITSUGUSU ; SYNDIA CORP ; SPINAL INNOVATIONS LLC ; US ACQUISITION LLC ; CONLEY JAMES G ; CONSOLIDATED KOALA ; DEUTSCHE BANK TRUST CO ; DEUTSCHE BANK TRUST CO AMERICAS ; 07 12690 INC

**Inventor(s):** (std): JIEROOMU EICHI REMERUSON ; LEMELSON JEROME ; LEMELSON JEROME H ; RITSUKU EE BURITSUGUSU ; RICK A BRIGGS ; BRIGGS RICK A ; BRIGGS RICK A ; CONLEY JAMES G

**Agent(s):** SPRUSON AND FERGUSON; ASPEN PHARMA PTY LTD; OYEN WIGGS GREEN AND MUTALA LLP; SIM AND MCBURNEY; LAMBERT ANTHONY R

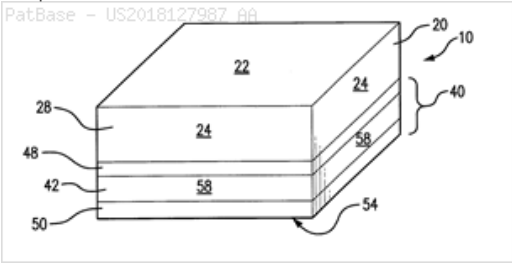
**Designated states:** AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG US UZ VN YU ZW

**Title:** ADHESIVE-BACKED FLOORING PANEL, SYSTEM, AND METHOD

**Abstract:** Adhesive-backed flooring panels, a flooring system including flooring panels, a method of installing flooring panels, a method of manufacturing flooring panels, and a packaged flooring system are provided.

**Classifications:**

**International (IPC 8-9):** B32B7/12 D06N7/00  
E04F15/02 (Advanced/Invention)  
**CPC:** D06N7/0076 D05C17/02 B32B7/12 D06N7/0081 E04F15/02155  
B32B2307/542 D06N2203/042 D06N2213/065 D10B2331/04



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2018127987 AA    | 20180510         | US20170798491      | 20171031         |
| WO18089225 A1      | 20180517         | WO2017US59154      | 20171031         |

**Priority:**

US20160418861P 20161108      US20170798491 20171031

**Probable Assignee:** MANNINGTON MILLS

**Assignee(s):** (std): MANNINGTON MILLS

**Assignee(s):** MANNINGTON MILLS INC

**Inventor(s):** (std): BRADWAY DENNIS ; BRADWAY DENNIS H ; MOROZ MATTHEW JAMES ; GUYNN GREGORY A ; GUYNN GREGORY ; MOROZ MATTHEW

**Agent(s):** KILYK LUKE A ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** HARDENED BODY, AND METHOD AND DEVICE FOR MANUFACTURING THE HARDENED BODY

**Abstract:** A hardened body manufacturing device, comprising a raw material conditioning mechanism (10) for conditioning paper-making sludge to generate slurry (14), a paper-making mechanism (20) having a transfer belt (23) allowing a sheet body made of the slurry (14) by wire cylinders (22A), (22B), and (22C) to be adhered thereto and transferring the sheet body, a reversal device (40), a press (50) for dewatering the sheet body by pressuring, and a dryer (60), wherein a suction box (24) is installed on the rear surface of the transfer belt (23) formed of felt so as to suck the belt by a vacuum pump (17) for dewatering, whereby water content in the sheet body can be reduced efficiently.

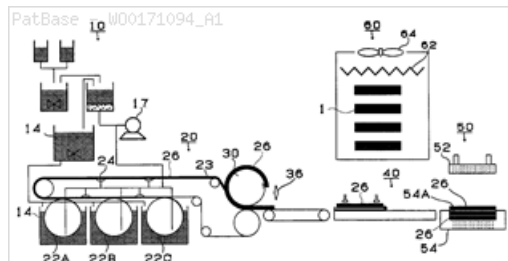
**Classifications:**

**International (IPC 8-9):** B01D33/04 B01D33/048 B01D33/06 B26D5/26 B28B1/42 B28B1/52 B28B11/00 B28B11/10 B28B11/14 C02F11/12 C04B18/24 C04B18/28 C04B28/02 C04B30/02 D21F11/08 D21F13/04 D21F13/08 D21F13/10 D21H17/01 D21J11/00 D21J11/02 D21J11/18 (Advanced/Invention); C04B111/30 (Advanced/Non-invention); B01D33/04 B01D33/044 B01D33/06 B26D5/20 B28B1/30 B28B1/52 B28B11/00 B28B11/08 B28B11/14 C02F11/12 C04B18/04 C04B28/00 C04B30/00 D21F11/00 D21H17/00 (Core/Invention)

**International (IPC 1-7):** B01D33/048 B01D33/06 B26D5/26 B28B1/42 B28B1/52 B28B11/00 B28B11/10 B28B11/14 C02F11/12 C04B111/30 C04B18/24 C04B18/28 C04B28/02 C04B30/02 D21F13/04 D21F13/08 D21F13/10 D21H17/01 D21J11/02 D21J11/18 D21J3/00

**CPC:** D21F11/08 D21F13/04 D21F13/08 D21J11/00 Y02W30/97 C04B18/243

**European:** C04B18/24B2 D21F11/08 D21F13/04 D21F13/08 D21J11/00



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
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| JP2001271297 A2    | 20011002         | JP20000077722      | 20000321         |
| JP2001334513 A2    | 20011204         | JP20010080146      | 20010321         |
| JP2001334514 A2    | 20011204         | JP20010080147      | 20010321         |
| JP2001334515 A2    | 20011204         | JP20010080148      | 20010321         |
| JP2001336080 A2    | 20011207         | JP20010080145      | 20010321         |
| JP2001336081 A2    | 20011207         | JP20010080149      | 20010321         |
| JP2001336082 A2    | 20011207         | JP20010080150      | 20010321         |
| JP2001336096 A2    | 20011207         | JP20010080143      | 20010321         |
| JP2001336097 A2    | 20011207         | JP20010080144      | 20010321         |
| JP2001336098 A2    | 20011207         | JP20010080151      | 20010321         |
| JP2001336099 A2    | 20011207         | JP20010080152      | 20010321         |
| JP2001336100 A2    | 20011207         | JP20010080153      | 20010321         |
| JP2004003108 A2    | 20040108         | JP20030191997      | 20030704         |
| JP3462185 B2       | 20031105         | JP20010080143      | 20010321         |
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**Priority:**

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|---------------|----------|---------------|----------|---------------|----------|
| JP20000077722 | 20000321 | JP20000077723 | 20000321 | JP20000077724 | 20000321 |
| JP20000077728 | 20000321 | JP20000077729 | 20000321 | JP20000077730 | 20000321 |
| JP20000077727 | 20000321 | JP20000077726 | 20000321 | JP20000077725 | 20000321 |
| JP20000077733 | 20000321 | JP20000077731 | 20000321 | JP20000077732 | 20000321 |
| JP20010080143 | 20010321 | JP20010080148 | 20010321 | JP20010080145 | 20010321 |
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| JP20010080151 | 20010321 | JP20010080147 | 20010321 | JP20010080146 | 20010321 |
| JP20010080153 | 20010321 | WO2001JP02245 | 20010321 | JP20010080152 | 20010321 |
| JP20030191997 | 20030704 |               |          |               |          |

**Probable Assignee:** IBIDEN CO LTD

**Assignee(s):** (std): IBIDEN CO LTD ; MATSUNO YOSHIYA ; NOMURA TOSHIHIRO ; OGAWA SATOSHI ; SATO KENJI

**Inventor(s):** (std): MATSUNO KICHIYA ; MATSUNO YOSHIYA ; NOMURA TOSHIHIRO ; OGAWA SATOSHI ; OGAWA TETSUJI ; SATO KENJI

**Designated states:** AT BE CA CH CN CY DE DK ES FI FR GB GR ID IE IT KR LI LU MC NL PT SE TR US

**Title:** PROCESS FOR THE MANUFACTURE OF POROUS, AIR-PERMEABLE, FLEXIBLE SHEET MATERIAL

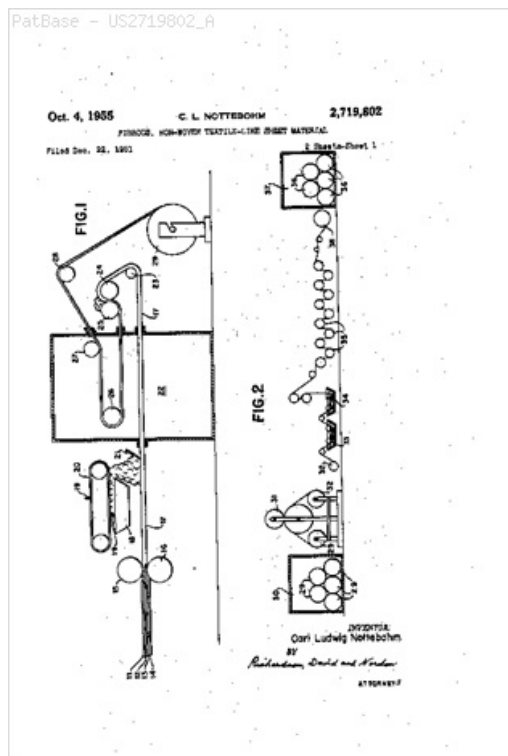
**Abstract:** 716,178. Agglutinated fibrous sheet materials. FREUDENBERG KOMM.-GES. AUF AKTIEN, C. July 13. 1950 [Oct. 1, 1948; Oct. 1, 1948: Oct. 1, 1948; Oct. 1, 1948], No. 17597/50 Class 140 A flexible, fabric-like material is made by pretreating one surface of a fleece of randomly arranged fibres with a small quantity of an agglutinant to stick surface fibres together without appreciably reducing porosity, pressing a viscous, foamed, aqueous binding agent into the other surface, and drying without pressure. The fleece may be passed between hot pressure rollers after leaving the carding machine, and, after the pretreatment, may be impregnated with the foamed adhesive while passing through the nip of a pair of rollers. The fibres may be cotton bast, jute, wool, hair, wool comber waste, shoddy, rayon staple fibres, nylon, polyvinyl chloride, polyvinylidene chloride, casein, glass wool or slag wool. Mixtures may be used, which may include elastic fibres. The agglutinant for pretreating the fleece may be a froth of rubber or synthetic resin. The binding agent may be an aqueous emulsion of rubber or synthetic rubber, a polyvinyl or polyacrylic compound, or ethylene-vinylidene chloride copolymer. Vulcanizing agents, accelerators, antiagers, thickening agents such as flour or fish glue, and fillers such as clay may be added. The composition may vulcanize on storage, or on heating after the drying step. A specified emulsion contains butadiene-styrene copolymer, glue aminoethane sulphonic acid sodium salt, sulphur, zinc oxide, zinc salt of diethyl dithiocarbamic acid, and phenylbetanaphthylamine. The dried impregnated fleece may be calendered, treated with a water-repellent substance such as a wax or paraffin emulsion which may contain aluminium acetate or formate, crease-proofed, e.g. by treatment with urea - formaldehyde or urea - dicyandiamideformaldehyde resin, or softened, e.g. with a compound of diethanolamine monostearate and ethylene oxide. Products made from cotton or ramie fibres may be treated with caustic soda, and products containing wool fibres may be decatized. The product may also be improved by treatment with an organic liquid which has no effect on the impregnant more than a slight swelling. Specified liquids are trichlorethylene, carbon tetrachloride, benzene, benzine, acetone, ethyl or methyl alcohol. The liquid may be applied in vapour form. The products may be made abrasion-resistant by applying straight or ornamental rows of stitching. e.g. using cotton, artificial silk, nylon, or perlon threads. The products may be used for stiffening launderable fabrics, e.g. collars, cuffs, or clothing giving protection against cold or dust.

**Classifications:**

**International (IPC 8-9):** A41B3/10 B32B27/00 C08J5/14 C09J5/08 D04H1/4258 D04H1/4266 D04H1/4334 D04H1/559 D04H1/593 D04H1/64 D04H1/68 D06M17/00 (Advanced/Invention)

**CPC:** Y10S521/918 A41B3/10 D06M17/00 Y10T428/2495 Y10T442/56 Y10T428/249921 D04H1/593 B32B27/00 C09J5/08 D04H1/4258 D04H1/4266 D04H1/4334 D04H1/559 D04H1/68 D04H1/64

**European:** A41B3/10 B32B27/00 C09J5/08 D04H1/4258 D04H1/4266 D04H1/4334 D04H1/559 D04H1/593 D04H1/64C D04H1/68 D06M17/00  
**US:** 156/155 156/305 156/62.8 156/77 156/78 264/128 264/233 427/209 427/245 427/369 427/381 428/213 428/219 428/221 442/324 521/54 521/61 521/71 521/918 524/571 524/575



**Family:**

| Publication number | Publication date | Application number | Application date |
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| US2719806 A        | 19551004         | US19510262941      | 19511222         |

**Priority:**

GB19530025514 19500713 GB19530007414 19530317

**Probable Assignee:** FREUDENBERG CARL KG

**Assignee(s):** (std): FREUDENBERG CARL KG ; PELLON CORP

**Assignee(s):** CARL FREUDENBERG AUF AKTIEN KG

**Inventor(s):** (std): LUDWIG NOTTEBOHM CARL ; NOTTEBOHM CARL LUDWIG ; NOTTEBOHN CARL LUDWIG

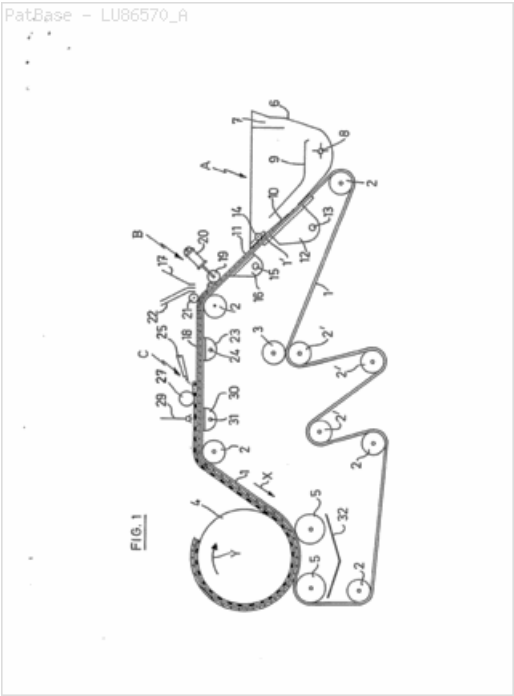
**Title:** PROCEDE POUR FABRIQUER EN CONTINU DES PRODUITS STRATIFIES PROCESS FOR PRODUCING CONTINUOUSLY LAYERED PRODUCTS (Machine translation)

**Abstract:** Source: LU86570A [FR] [Source: Claim 1] b 2 20 2b 3 REVENDICATIONS Procédé de fabrication en continu de produits stratifiés, dans lequel on dépose successivement sur une bande transporteuse (1) perméable aux liquides, des couches de constitution différente (11,18,29) et on recueille ces couches (11,18,29) sur un cylindre accumulateur (4), l'une au moins desdites couches (11) étant armée de fibres naturelles ou synthétiques, caractérise en ce qu'on dépose sur une couche armée de fibres (11) au moins une couche d'un mortier (18) constitue au moins d'un liant hydraulique et d'eau, complétée éventuellement d'une charge siliceuse ou autre, de fibres et d'additifs de manière à recueillir sur le cylindre (4) précite un produit stratifié composé d'au moins deux couches (11,18) adhérent l'une à l'autre. Procédé suivant la revendication 1, caractérise en ce qu'on dépose sur la bande transporteuse (1) une première couche (11) formée au moins de fibres et d'eau ainsi qu'éventuellement d'un liant hydraulique et d'une charge siliceuse ou autre et d'additifs, et on dépose sur la couche armée de fibres (11) au moins une couche (18) du mortier précite, de manière à recueillir sur le cylindre accumulateur un produit stratifié formé d'une couche armée de fibres (11) et d'au moins une couche de mortier (18), ces diverses couches adhérent l'une à l'autre. Procédé suivant l'une quelconque des revendications 1 et 2, caractérise en ce qu'on dépose sur une première couche armée (11), une couche de mortier (18) et on recueille ces couches (11,18) sur le cylindre (4), puis on dépose sur une nouvelle couche armée de fibres (11) au moins une couche de mortier (18) et on recueille les couches (11,18) mentionnées en premier lieu, de façon que le cylindre (4) porte au moins quatre couches dans lesquelles des couches de mortier (18) sont alternées avec des couches armées de fibres (11). Procédé suivant la revendication 3, caractérise en ce qu'on forme successivement sur la bande transporteuse (1) plusieurs paires superposées de couches, dont l'une est armée de fibres (11) et l'autre est constituée de mortier (18), et on recueille successivement ces paires de couches (11,18) superposées sur le cylindre (4) de manière à former sur ce dernier un produit stratifié dans lequel des couches armées de fibres (11) alternent avec des couches de mortier (18). Procédé suivant l'une quelconque des revendications 1 et 2, caractérise en ce qu'on dépose sur une première couche armée de fibres (11) au moins une couche de mortier (18) et on recueille ces couches (11,18) sur le cylindre (4), puis on dépose sur la bande transporteuse (1) au moins une couche supplémentaire de mortier (18) que l'on recueille sur le cylindre (4) portant déjà la couche armée de fibres (11) et la couche de mortier (18) mentionnée en premier lieu. Procédé suivant la revendication 5, caractérise en ce qu'on dépose finalement sur la bande transporteuse (1) au moins une couche armée de fibres (11) que l'on recueille sur le cylindre (4), de manière à former sur celui-ci un produit stratifié composé de deux couches extérieures armées de fibres (11) entre lesquelles sont intercalées des couches de mortier (18). Procédé suivant l'une quelconque des revendications précédentes, caractérise en ce que la ou les couches de mortier (18) contiennent du gravier. Procédé suivant l'une quelconque des revendications précédentes, caractérise en ce que la ou les couches de mortier (18) peuvent être armées de fibres mais en quantité nettement moindre que dans les couches armées de fibres (11). Procédé suivant l'une quelconque des revendications précédentes, caractérise en ce que la ou les couches armées de fibres (11) contiennent des fibres naturelles ou synthétiques. Procédé suivant la revendication 8, caractérise en ce que la ou les couches de mortier (18) sont armées de fibres. Procédé suivant l'une quelconque des revendications précédentes, caractérise en ce qu'on munit le produit stratifié d'au moins une couche de finition (29) extérieure. Procédé suivant l'une quelconque des revendications précédentes, caractérise en ce que le liant hydraulique est choisi parmi le ciment, la chaux, le plâtre, l'argile et des matières durcissables. Procédé suivant l'une quelconque des revendications précédentes, caractérise en ce que la charge siliceuse est constituée de sable. Procédé suivant l'une quelconque des revendications précédentes, caractérise en ce qu'on démoule le produit stratifié recueilli sur le cylindre (4) de manière à former des produits stratifiés plats (32,33,34). Procédé suivant l'une quelconque des revendications précédentes, 1 à 12, caractérise en ce qu'on démoule le produit stratifié recueilli sur le cylindre (4) de manière à former des produits stratifiés tubulaires (35). Procédé suivant l'une quelconque des revendications précédentes, caractérise en ce qu'on donne à la ou les couches de mortier (18) une épaisseur d'environ 0,2 à 2,5 millimètres après durcissement du mortier. 5 10 15 20 25 30 35 17 17 Procédé suivant l'une quelconque des revendications précédentes, caractérise en ce qu'on comprime les produits stratifiés. 18 Procédé suivant l'une quelconque des revendications précédentes, caractérise en ce qu'on soumet les produits stratifiés à un traitement thermique dans un autoclave. 19 Produit stratifié, caractérise en ce qu'il comprend au moins une couche armée de fibres (11) et au moins une couche de mortier durci (18). 20 Produit stratifié suivant la revendication 19, caractérise en ce qu'il est formé d'une série de couches armées de fibres (11) alternant avec des couches de mortier durci (18). 21 Produit stratifié suivant la revendication 19, caractérise en ce qu'il comprend une ou plusieurs couches de mortier (18) durci interposées entre deux couches armées de fibres (11). 22 Produit stratifié suivant l'une ou l'autre des revendications 19 à 21, caractérise en ce qu'il comporte en outre une couche de finition (29). 23 Produit stratifié suivant l'une quelconque des revendications 19 à 22, caractérise en ce que la ou les couches armées de fibres (11) sont constituées de nappes de fibres plus ou moins enchevêtrées, stabilisées éventuellement par un liant hydraulique. 24 Produit stratifié suivant l'une quelconque des revendications 19 à 23, caractérise en ce que la ou les couches sont armées de fibres naturelles ou synthétiques. 23 Produit stratifié suivant la revendication 24, caractérise en ce que les fibres sont d'amiante. 25 Produit stratifié suivant l'une quelconque des revendications 19 à 25, caractérise en ce que la ou les couches de mortier (18) durci ont une épaisseur d'environ 0,2 à 2,5 millimètres. 27 Produit stratifié suivant l'une quelconque des revendications 19 à 26, caractérise en ce qu'il se présente sous forme d'une plaque. 18 28 Produit stratifié suivant l'une quelconque des revendications 19 à 25, caractérise en ce qu'il se présente sous forme d'un tuyau. **Machine translation:** [Source: Claim 1] b February 20 2b 3 CLAIMS continuous manufacturing Process for laminating products, in which successively deposited on a conveyor belt (1) permeable to liquids, layers of different constitution (11,18, 29) and collected these layers (11,18,29) on an accumulator cylinder (4), at least one of said layers (11) being reinforced natural or synthetic fibers, characterized in that deposited on an armed fiber layer (11) at least a layer of mortar (18) is at least one hydraulic binder and water, optionally supplemented with a siliceous filler or other fibers and additives a way of collecting on the cylinder (4) cited above laminated product consists of two layers (11,18) adhering to one another. Method according to Claim 1, characterized in that deposited on the conveyor belt (1) a first layer (11) formed at least of fiber and water and optionally a hydraulic binder and a coal or other siliceous filler and additives, and deposited it on the armed fiber layer (11) at least one layer (18) cited above mortar, way to collect on a product accumulator cylinder stratified form of an armed fiber layer (11) and at least a layer of mortar (18), these various layers adhering to one another. Method according to any one of claims 1 and 2, characterized in that deposited on a first layer (11), a mortar layer (18) and collected these layers (11,18) on the cylinder (4) and then deposited on a new layer of fiber-reinforced (11) at least a layer of mortar (18) and also collects on the cylinder (4) the layers (11,18) mentioned lastly, of way that the cylinder (4) has at least four layers in which mortar layers (18) are alternated with armed fiber layers (11). Method according to claim 3, characterized by forming successively on the conveyor belt had E (1) a plurality of superimposed pairs of layers, one of which is fiber-reinforced (11) and the other is constituted of mortar (18), and successively collects these pairs of layers (11,18) superimposed on the cylinder (4) so as to form thereon a laminated product in which the armed fiber layers (11) alternating with NEET layers of mortar (18). Method according to any one of claims 1 and 2, characterized in that deposited on a first reinforced layer of fibers (11) at least one layer of mortar (18) and collected these layers (11,18) on the cylinder (4) and then deposited on the conveyor belt (1) at least one additional layer of mortar (18) which is collected on the cylinder (4) already bearing the armed fiber layer (11) and the mortar layer (18) first mentioned. Method according to Claim 5, characterized in that finally deposited on the conveyor belt (1) at least one reinforced layer of fibers (11) which is plucked on the cylinder (4), so as to form on the -ci a laminated product consists of two armed External fiber layers (11) between which are sandwiched layers of mortar (18). Method according to any one of claims previous, characterized in that said the or mortar layers 16 10 15 8 10 11 12 13 25 14 15 16 33 tier (18) contain gravel. Method according to any one of claims previous, characterized in that said the or the layers of mortar (18) can be armed fiber but in much smaller quantity than in the armed fiber layers (11). Method according to any one of the preceding claims, characterized in that the or armed fiber layers (11) contain natural or synthetic fibers. Method according to Claim 8, characterized in that the mortar or the layers (18) are fiber reinforced. Method according to any one of the preceding claims, characterized in that endow the product laminate of at least a finishing layer (29) EX-ERATION. Method according to any one of the preceding claims, characterized in that the hydraulic binder is selected from cement, lime, plaster, argillaceous and curable

materials. Method according to any one of the preceding claims, characterized in that the siliceous filler is sand. Method according to one of claims previous, characterizes in that Demoule product stratifies gathered on the cylinder (4) so forming a stratified flat products (32,33,34). Method according to any one of claims previous, 1 to 12, characterized in that strips the laminated product collected on the cylinder (4), and orient as to form laminated tubular products (35).Method according to one of claims previous, characterizes in that it gives to the mortar or layers (18), a thickness of about 0.2 to 2.5 millimeters after hardening of the mortar. 5 10 15 20 25 30 35 17 17 Method according to any one of the preceding claims, characterized in that compresses the laminated products. 18 Method according to any one of claims previous, characterized in that the laminated product subjected to a heat treatment in an autoclave. 19 Product laminates, characterized in that it comprises at least one reinforced layer of fibers (11) and at least a hardened mortar layer (18). 20 Product laminates according to Claim 19, characterizes in that it is formed of a series of armed fiber layers (11) alternating with hardened mortar layer (18). 21 Product laminates according to Claim 19, characterizes in that it comprises one or more layers of mortar (18) interposed between two armed hardened fiber layers (11). 22 Product laminates according to any of claims 19 to 21, characterized in that it further comprises a finishing layer (29). 23 Product laminate according to any one of claims 19 to 22, characterized in that the or armed fiber layers (11) consist of sheets of fibers more or less entangled Stabilized optionally with a binder. 24 Product laminate according to any one of claims 19 to 23, characterized in that the layer or layers are armed natural or synthetic fibers. 23 Product laminates according to Claim 24, characterizes in that the fibers are asbestos. 25 Product laminate according to any one of claims 19 to 25, characterized in that the mortar or the layers (18) have a cured thickness of about 0.2 to 2.5 millimeters. 2? Laminated product according to any one of claims 19 to 26, characterized in that it is in the form of a plate. 18 28 Product laminate according to any one of sells! cations 19 25, characterizes in that it presents itself as a pipe.

**Classifications:**

**International (IPC 8-9):** B28B1/52 (Advanced/Invention);  
B28B1/52 (Core/Invention)  
**International (IPC 1-7):** B32B  
**CPC:** B28B1/522 B28B1/526  
**European:** B28B1/52C B28B1/52F



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| ■ LU86570 A        | 19880405         | LU19860086570      | 19860903         |

**Priority:**

LU19860086570 19860903

**Probable Assignee:**

JOHNS MANVILLE NV

**Assignee(s):** (std):

JOHNS MANVILLE NV

**Assignee(s):**

N V JOHNS MANVILLE

**Inventor(s):** (std):

BIJLEN EDGAR VAN

**Inventor(s):**

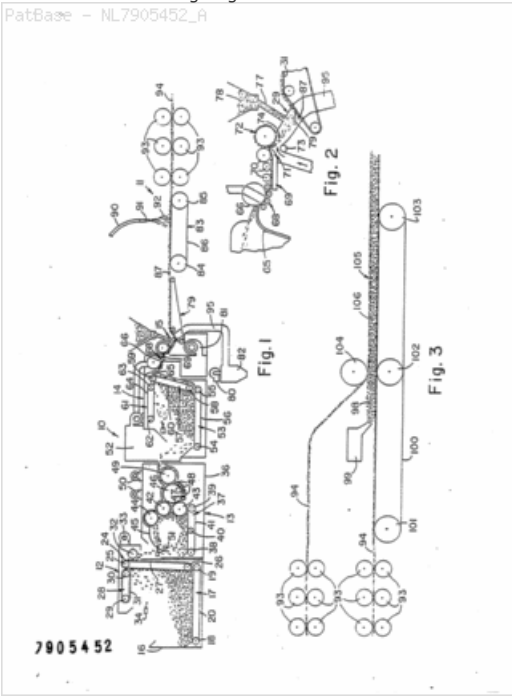
EDGAR VAN BIJLEN

**Title:** FIBRE REINFORCED CEMENT BUILDING BOARD MFR. - BY MIXING THE DRY COMPONENTS SPREADING ON A FORAMINOUS BELT, WETTING, SETTING AND DRYING

**Abstract:** Fibre reinforced building board is made by (a) mixing, in a circulating air current a dry cementitious water hardenable material in the form of fine particles, with reinforcing fibres; (b) depositing the mixt. on a moving foraminous surface to form a sheet; (c) applying water onto the sheet, esp. by spraying, and allowing the mixt. to set; and (d) drying the sheet to remove any surplus water. The cementitious substance is CaSO4.1/2H2O, alpha or beta-type or a hydraulic cement esp. of high early strength or their mixts. To direct the cement and the fibres towards the foraminous during setting a vacuum is applied beneath the moving surface. Used for wall panels etc. without paper surfacing, which can be used in lift shafts, stair walls, air return chimneys etc., where municipal codes of practice require standards of zero flame, zero smoke and zero toxic gas generation.

**Classifications:**

**International (IPC 8-9):** B28B1/52 C04B14/42 E04C2/04  
E04C2/06 (Advanced/Invention);  
B28B1/52 C04B14/38 E04C2/04 E04C2/06 (Core/Invention)  
**International (IPC 1-7):** B28B23/00 C04B13/00 C04B13/14 C04B31/04  
C04B31/06  
**CPC:** B28B1/521 B28B1/522 C04B14/42 E04C2/043 E04C2/06  
**European:** B28B1/52B B28B1/52C C04B14/42 E04C2/04C E04C2/06



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| NL7905452 A        | 19810114         | NL19790005452      | 19790712         |

**Priority:**

NL19790005452 19790712

**Probable Assignee:** UNITED STATES GYPSUM CO

**Assignee(s):** (std): UNITED STATES GYPSUM CO

**Assignee(s):** UNITED STATES GYPSUM CO TE CHICAGO ILLINOIS VERSTVAM ; UNITED STATES GYPSUM COMPANY TE CHICAGO ILLINOIS VER ST V AM

**Title:** PILE ARTICLE

**Abstract:** 986, 357. Pile fabrics. E. I. DU PONT DE NEMOURS & CO. March 4, 1963 [Jan. 22, 1963], No. 8581/63. Heading D1K. A pile fabric suitable for carpets and imitation furs comprises an intermingled mass of synthetic or artificial organic polymeric filaments which have a three-dimensional crimp anchored in an adhesive layer in a randomly spaced and angled manner. The average filament denier is from 2 to 25 and pile fibre density is between 0.5 and 3.21b per cubic foot with 5000 to 16,000 filaments per square inch and the ratio of the average extended length of the filaments to the height of the pile is between 1.33 and 3.0. The filaments may be of a wide range of polymers and the adhesive layer may be of chloroprene rubber, elastomeric foams and sponges, butadiene-styrene rubber or one of a number of resins which can be thermoset. Backings for the fabric may be woven such as burlap, canvas and nylon scrim, or knitted such as nylon tricot, or non-woven synthetic materials, metal foils, or rigid sheets of metal, ceramics, or wood. The fabric may be prepared by treating a mass of the filaments in a mould with a binding composition, cutting sheets therefrom of the desired thickness, applying the same to an adhesive layer and then curing and or drying to solidify the adhesive layer. One or more backing layers may be applied while the adhesive is still tacky. The pile is then treated to remove all the binding composition but leaving the pile secured to the adhesive layer.

**Classifications:**

**International (IPC 8-9):** D04H1/74 D04H11/00 (Advanced/Invention);  
D04H1/70 D04H11/00 (Core/Invention)

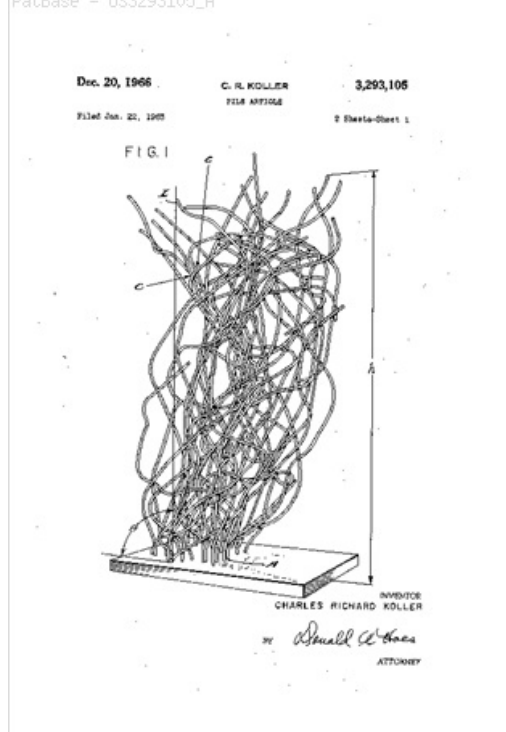
**International (IPC 1-7):** B32B5/02 D03D27/00 D04H1/74 D04H11/00  
D06K D06N7/00 G03D13/10

**CPC:** Y10T428/2922 Y10T428/298 Y10T156/1075 Y10T156/13 D04H1/74  
D04H11/00 Y10T428/23943 Y10T428/23979 Y10T428/23993  
Y10T428/23914 Y10T428/23957

**European:** D04H1/74 D04H11/00

**US:** 156/166 156/181 156/264 156/435 156/441 156/512 156/72 428/369  
428/401 428/86 428/90 428/92 428/95 428/97

PatBase - US3293105\_A



**Family:**

| Publication number | Publication date | Application number | Application date |
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| BE622062 A         | 00000000         |                    | 00000000         |
| BE629176 A         | 00000000         |                    | 00000000         |
| CH263363 A4        | 19680815         | CH19630002633      | 19630301         |
| CH421891 A         | 19660531         | CH19600000564      | 19600119         |
| CH465544 A         | 19690115         | CH19630002633      | 19630301         |
| DE1435111 A1       | 19681017         | DE19601435111      | 19600119         |
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| FR1348388 A        | 19640110         | FR19620907295      | 19620820         |
| FR83150 E          | 19640619         | FR19630926755      | 19630304         |
| GB942455 A         | 19631120         | GB19600001994      | 19600119         |
| GB986357 A         | 19650317         | GB19630008581      | 19630304         |
| NL247488 A         | 00000000         |                    | 19640210         |
| NL289661 A         | 00000000         |                    | 00000000         |
| US3085922 A        | 19630416         | US19590787662      | 19590119         |
| US3293105 A        | 19661220         | US19630253175      | 19630122         |

**Priority:**

US19590787662 19590119 US19590861915 19591224 FR19620907295 19620820  
US19630253175 19630122 FR19630926755 19630304

**Probable Assignee:** DU PONT

**Assignee(s):** (std): DU PONT

**Assignee(s):** E I DU PONT DE NEMOURS AND CO ; E I DU PONT DE NEMOURS AND COMPANY ; EI DU PONT DE NEMOURS AND CO ; EIDU PONT DE NEMOURS AND CO

**Inventor(s):** (std): CHARLES RICHARD KOLLER ; RICHARD KOLLER CHARLES

**Inventor(s):** KOLLER CHARLES RICHARD

**Title:** TUFTING PROCESS AND PRODUCTS HAVING TUFTED STRUCTURES

**Abstract:** 1,047,946. Pile fabrics. E. I. DU PONT DE NEMOURS and CO. Sept. 10, 1963 [Sept. 10, 1962], No. 35726/63. Heading D1K. A tufted fabric is made by projecting filaments or yarns at high speed against an apertured structure so that they penetrate the apertures and form loops on the opposite side. The apertures may be in scrim which remains permanently in the fabric, or may be in a wire mesh, a perforated plate, or an array of wires or blades, from which the fabric is stripped when completed. The filaments or yarn may be propelled by nip rollers or by a jet of fluid; they may come from bobbins, or filaments may come straight from the spinnerets or from a bulking or crimping device. After penetrating the apertures, the filaments or yarn may impinge on a stopper screen which limits the height of loop and to which suction may be applied to improve uniformity of tufting. The stopper screen may have depressions to vary the height of loop for patterning; or the height may be varied by altering the speed of the filaments or the speed at which the nozzles are traversed. The filaments or the apertured structure or the stopper screen may be electrically charged to spread the filaments apart. The tufting density may be increased by employing a stretchable or shrinkable apertured structure or by using shrinkable or crimpable filaments. The apertured structure may consist of parallel blades along which tufts are moved closer together or farther apart by means of a comb. The filaments may be bonded to the apertured structure by heating them during tufting or subsequently, or by heating the apertured structure, or by applying adhesive. A backing of randomly disposed filaments may be formed by continuing to deposit filaments after the apertures are full. A further backing of sheet material may also be applied. The tufts may be sheared to produce cut pile. Patterns may be produced by traversing different yarns on different paths along the apertured structure. Tufting may be effected from both sides, some apertures being filled from one side and some from the other. During tufting, the apertured structure may be flat and stationary, or may be mounted round a rotating drum; or a continuous roll of scrim may be run under a succession of transverse rows of jets. Fig. 5 shows a backing of filaments 60 applied after the apertures have been filled with tufts 62. Fig. 11 shows initial tufts 94 of heated filaments which buckle and are set to shape on encountering a cool stopper screen, their interior then being filled with filaments 93. In an example, a brown polytetra fluoroethylene yarn is plied with a white crimpable nylon yarn and tufted into terylene scrim mounted on a drum, a stopper screen being arranged 1/2 inch inside the scrim. In another example, tufting is effected with a two-component filament, one component being nylon 6 and the other a copolymer of nylons 6 and 610. The apertured structures in one example is a sheet of foamed polypropylene lanced and stretched so that the slits open into apertures. The jets may be traversed so that filaments in each aperture pass into every adjacent aperture.

**Classifications:**

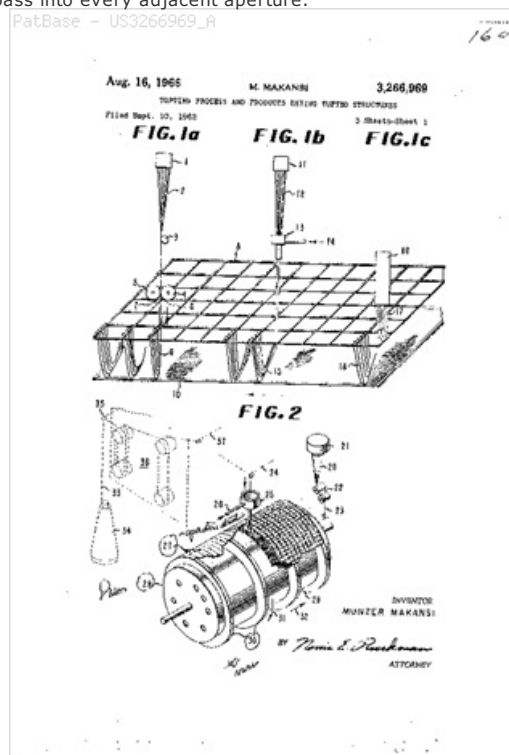
**International (IPC 8-9):** D04H11/00 D05C15/00 (Advanced/Invention); D04H11/00 D05C15/00 (Core/Invention)

**International (IPC 1-7):** D04H11/00 D05C17/02 D06C29/00

**CPC:** Y10T428/23957 Y10T428/23964 Y10T428/23979 D04H11/00 D05C15/00

**European:** D04H11/00 D05C15/00

**US:** 112/80.7 156/148 156/435 156/72 156/85 28/159 428/92 428/93 428/95

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| BE644593 A         | 19640902         |                    | 19640302         |
| DE1485487 A1       | 19690710         | DE19631485487      | 19630910         |
| FR1368590 A        | 19640731         | FR19630946968      | 19630909         |
| GB1047946 A        | 19661109         | GB19630035726      | 19630910         |
| LU44416 A          | 19640910         |                    | 19630910         |
| US3266969 A        | 19660816         | US19620222707      | 19620910         |

**Priority:**

US19620222707 19620910 FR19630946968 19630909

**Probable Assignee:** DU PONT

**Assignee(s):** (std): DU PONT

**Assignee(s):** E I DU PONT DE NEMOURS AND CO ; E I DU PONT DE NEMOURS AND COMPANY ; EI DU PONT DE NEMOURS AND CO

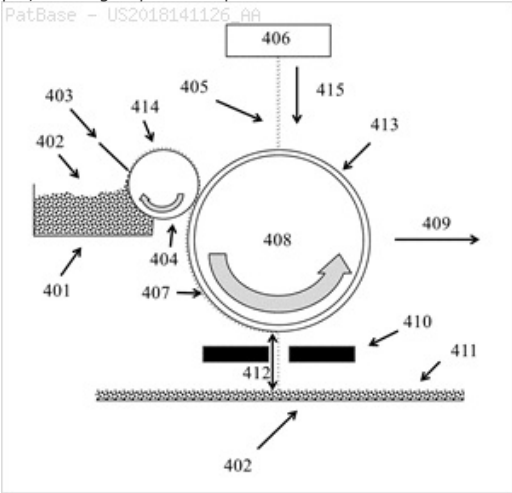
**Inventor(s):** (std): MAKANSI MUNZER ; MUNZER MAKANSI

Title: TRANSFER OF PARTICULATE MATERIAL

**Abstract:** The present disclosure provides three-dimensional (3D) printing processes and systems, including methods, apparatuses, software, and systems for transferring a particulate material from one position (e.g., on one surface) to another position (e.g., on a different surface), which particulate material may be used for the production of a 3D object. In some embodiments, the particulate material may be transferred using, for example, a charged particle optical device.

Classifications:

**International (IPC 8-9):** B22F1/00 B22F3/105 B29C67/00 B33Y40/00 (Advanced/Invention)  
**CPC:** B29C64/153 G03G15/225 B22F1/0011 B22F1/0014 B22F2003/1056 B22F2999/00 Y02P10/295 B22F2003/1057 B22F3/1055 B22F1/0018 B29C64/20 B33Y10/00 B33Y30/00 B33Y40/00



Family:

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2018141126 AA    | 20180524         | US20180873832      | 20180117         |
| WO17015217 A2      | 20170126         | WO2016US42818      | 20160718         |
| WO17015217 A3      | 20170316         | WO2016US42818      | 20160718         |

Priority:

US20150194770P 20150720      US20150216324P 20150909      WO2016US42818 20160718  
US20180873832 20180117

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Assignee(s) (std): VELO3D INC

Assignee(s): US DEPARTMENT OF ENERGY

Inventor(s) (std): BREZOCZKY THOMAS BLASIUS ; BULLER BENYAMIN ; FISCHBACH ADAM ; JIANG XINRONG ; MILSHTEIN EREL ; SEELINGER SHERMAN

Agent(s): BULLER RONIT ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** PROCESS AND APPARATUS FOR MAKING AND COLORING CEMENT FIBER AND THE LIKE PRODUCTS

**Abstract:** 1,929,301 and insofar as I claim it therein, I make no claim to it here. The dewatering units It is well understood that the strength of concrete bears a definite relation to the water-cement ratio of the mix. Obviously it is desirable to obtain as strong a final product as needful and possible, Hence it would appear to be desirable to adhere as closely as possible to a predetermined ratio for optimum strength. On the other hand strict adherence to this ratio is accompanied by the difficulty that the mix can not be handled mechanically with sufficient facility. Therefore an additional amount of water over and above that used to bring about the desired water-cement ratio, is used to give the requisite plasticity for fashioning the desired product. In the present case the plasticity must be such that the mix will flow on the distributor and can be laid on the conveyor belt in slats as hereinbefore described. Also, the additional amount of water will be quite considerable on account of the absorbent nature of the fibrous aggregate used in the mix. For convenience I will call the aforesaid additional amount of water, "surplus" water. I have used the word "dewatering" to describe one function of the units of the machine, which are now to be described, this function being the removal of a considerable portion of the surplus water from the layers. Other functions of the dewatering units are to compress the layers and to cause the concretions of the superposed discrete layers as they pass through certain of the units. The plastic mixture is carried along by the belt 262, from the distributing unit 210 to a dewatering unit 212 between the distributing units 210, 212. Similar dewatering units 218, 229 are placed between the distributing units 212, 214 and between the unit 214 and the delivery end of the machine. Each dewatering unit comprises four presser cylinders 230-233 located at the center of the unit; and two belt rolls or cylinders 236, 238 one at each end of the unit; and four small cylinders or rollers 240 near the center of the unit. The unit is supported by a frame 242, and all are supported at their ends by bearings carried by the frame of the machine. An endless 24 gauge wire mesh belt 231 is placed around the cylinders 230-233, 236, 238 and over two of the cylinders 200 and under the other two as shown in Figure 24. Directly beneath each of the presser cylinders 230-233 is one of the carrier belt supporting rollers 208 so that as the plastic sheet is conducted through the dewatering unit on the carrier belt 202 it will be pressed between four pairs of rollers, for example 230-208 form one pair. Rotating brushes 244 and 243 and streams of water keep the meshes of the belts 202, 231 open. I have found that the plastic layer may be more satisfactorily worked if the belt 231 is inclined slightly to the conveyor belt 202 by locating each of the cylinders 238, 233, 232, 231, 230 a little nearer the belt 202 than its predecessor. In this way the pressure on the layer is gradually applied and increased and a better product results. The bearings 236, 238 of the cylinders 236, 238 are movable vertically upon the uprights 242 of the frame, with which the bearings are slidably engaged. To adjust the height of these bearings and hence of the cylinders, horizontal rods 244 have hand wheels 240 on them, and by a worm and pinion gearing these hand wheels can rotate vertical screw rods 248 engaging in screw threaded sleeves 249 formed integral with bearings 236, 238, and thus cause the bearings and sleeves 249 to rise up and down the rods 240. On opposite sides of the machine are pairs of parallel, horizontal, lengthwise-extending beams 250-250a, one above the other and secured together at their ends by a pair of vertical angle irons 251, thus forming a carriage for the cylinders 230-233 of the dewatering unit. Each pair of these beams is vertically adjustable at each end by the rotation of a fixedly located screw rod 252 engaging with a screw-threaded sleeve 253 on each beam. The rotation of these rods 252 may be accomplished by hand wheels 254 having worm pinion and worm gear connections with the screw rods. The carriage 250 is suspended from the upper beam 250 and slidably engaged with the lower beam 250a are bearings 256a, b, c and d, for the cylinders 230-233, all of which are vertically adjustable relative to the beams 250-250a, by means of screw threaded connecting rods connecting the beams and the bearings. As will hereinafter appear it is desirable to simultaneously adjust opposite ends of adjacent cylinders. Therefore, the upper ends of alternate connecting rods for example, the connecting rods for the cylinders 230, 232, are provided with worm wheels 260 which engage with worm gears 252 which are on a horizontal rod 264 extending lengthwise of the machine, that rod being rotatable by a hand wheel 266 through another worm gear and pinion connection 258. Upon the opposite side of the machine, a rod equivalent to rod 264, by mechanism similar to that just set forth, enables the adjustment of the ends, on that side of the machine, of cylinders 231, 233, and that rod as well as rod 264, is controlled by the hand wheel 266. Thus, hand wheel 266 causes simultaneous movement of opposite ends of adjacent cylinders. By reason of this adjustability of one end only of each cylinder a crowned sheet of plastic may be rolled out, that is to say, the sheet will taper off from the middle toward the edges. Fig. 25 shows the cylinders adjusted for a tapered sheet. All the rollers and cylinders are driven at constant speed by a motor through appropriate gearing, in such a way that all the belts and peripheries of the cylinders have the same speed. Thus as the layer of material is laid upon the belt by the first distributor 210 it is carried along at constant speed to the first dewatering unit 212 where it passes between the conveyor belt 202 and the dewatering belt 231 of the dewatering unit. As the layer passes beneath the cylinders 230-233 surplus water is pressed out of it through both the upper and lower belts. If the cylinders 230-233 are set as shown in Fig. then the layer of plastic will be crowned in the center. The single layer thus made may be carried on belt 202 to the pressure cylinders 210-212 but generally I prefer to make a product of a plurality of layers and in that case the following procedure is carried out. The first layer having been dewatered it is carried on by the conveyor belt beneath the second distributor 212. Here a second layer of plastic, is deposited on the conveyor belt 202 on the top of the first layer. Both layers are carried by the conveyor belt through the second dewatering unit which, it will be remembered, is exactly the same in construction as the first unit. In the second dewatering unit surplus water is pressed from the upper or second layer of plastic, the water passing off through the upper belt of the dewatering unit, since the lower layer of plastic is practically impervious to water. While passing through the second dewatering unit the two layers of plastic, which up to this point have been discrete; are concreted into a thicker layer, which is conveyed onward by the carrier belt 202, beneath the third distributor unit 214. Here another layer of plastic is laid on the belt on top of the thicker plastic layer. This new layer is dewatered and concreted with the thicker layer in the same manner as was the second layer. When a small amount of surplus water is used in the plastic the transverse strips deposited on the conveyor belt by the distributor will have less tendency to now together as soon as they fall on the belt. However these strips are flattened out and merged as they pass through the dewatering unit and there is complete union between adjacent strips so that it is impossible to tell where one strip ended and another began. Instead of laying the layers of plastic on the belt 202 by means of a distributor, such as 210, the layers may be spread on the belt by the spreaders hereinbefore described; or still other means to accomplish the same purpose may be devised. However, if a distributing cylinder is used in connection with the hopper 210 the width of the sheets may be varied, or a thick narrow layer may be laid down and pressed out in the dewatering units to the width of the belt or a lesser width, as desired. Thus the width of the layer may be regulated in a variety of ways to suit the desires of the manufacturer. - Treatment of the concrete sheet The sheet passing from the last dewatering unit is a concrete sheet to make up which one or more layers may have been used. The further treatment of this sheet is dependent on the product to be made. If load bearing articles are made the sheet may be cut into small units which afterward are compressed under great pressure in a hydraulic press, If non-load bearing products such as wall panel sheets, wall tile sheets and the like are made, further and greater compression of the continuous sheet may be accomplished before it is cut into the small, wall tile or wall panel sheets. For this purpose I provide a series of cylindrical pressure rollers 210-212 having bearings mounted in a carriage 214 like that carriage 250, 260, 11, 251 used for the dewatering unit cylinders 231-233. The bearings of the rollers 216-212 are secured in the carriage 214 by four bolts, the ends of which about the bearings at points spaced 90 degrees apart, whereby minor adjustment of the rollers 216-212 is made possible without changing the position of the carriage. The carriage 214 is vertically adjustable as a whole by mechanism exactly like that used for the adjustment of the dewatering unit carriages, hence it need not be described further. By means of this adjustability sheets of different thicknesses can be pressed, and the degree of pressure can be varied. As in the dewatering units so also in the compression unit, an endless belt 215 is passed around the rollers 210-212. This belt preferably is rubber, but may be polished steel or wire mesh if desired. This belt also passes around cylinder 216 which is located directly above the cylinder 206 and is of equal size thereto, and it also passes around a cylinder 211 which is vertically adjustable on vertical members of the frame 200, by bolts passing through slots in the vertical members. The slack of this belt 215 may be taken up by a guide roller 218 which is mounted on and vertically movable relative to the framework 200. As a matter of course certain of the supporting rollers 208 are located directly below the rollers 211-212, so that the compression of the continuous sheet may take place between them and the rollers 208. The same motor which drives the dewatering units, and rotates the distributors and causes movement of the dewatering and conveyor

belts, may be used to drive the compression rollers 2'11J-212 through appropriate gearing. The actual construction and operation of all this gearing is a matter of mechanical skill and need not be described other than to say that the peripheral speed of all the belts and rollers in contact therewith are determined by, and are controlled so as to be the same as, the desired speed of the conveyor belt 202. ' Coloration The process and machine described here are particularly suited to the manufacture of colored products. The two usual ways of coloring products of the sort here concerned are to apply a coloring agent to the surface as a veneer or to mix it all through the plastic mass before it is pressed. The chief disadvantage of surface coloration is its lack of durability under the erosion of the weather when the product is used out of doors. The coloration by complete impregnation of the product with a coloring agent is durable but very expensive. In the present process, the coloring agent is added only to the body of mixed cementitious and fibrous ingredients which is formed into an outer layer of the initial mass and which becomes the outer thickness of the final concrete body. The coloration extends to a substantial depth, as distinguished from surface or veneer coloration, and is therefore as durable under weather erosion as a product colored throughout. It effects a saving of two thirds or more when the initial mass is three layered, as shown in the drawings, since the outer layer need not be as much as a third of the total thickness. So far as I am aware, there has never been known a product of this sort-i. e., one having cementitious and fibrous materials as its principal and characterizing ingredients-in which the coloring agent is present in the material and not merely on its surface, and to a depth sufficient to resist erosion by the weather yet not extending all the way through the product. Thus, the desirable qualities are present without entailing the cost of complete coloration. The present process and apparatus makes available and practicable certain coloring agents which generically may be described as those organic pigments or stable lake colors which may be combined with the plastic alkaline material forming the body of the products here concerned without chemical decomposition. These organic pigments are known and are extensively used. Before this time their cost and the lack of a practicable and economical way of adding them to the product have prevented their use in cementitious fibrous sheets for walls and roofing or for shingles. This invention makes it practicable to use these organic pigments alone or in conjunction with metal oxide pigments and thus to obtain more varied colors and mottled var-colored effects in each sheet or shingle. I have also found a material which, to my knowledge, heretofore has not been used for coloring products of this class and which, while being extremely inexpensive and readily procurable, is satisfactory for giving a red color to the products. It may be finely ground as usual and added to the initial mix in the same way as the finely ground oxide pigments are added, or it may be crushed only to a coarse size so that of the strip it when added to the outer layer will give a rough pebbled surface- thus enhancing product. This decorative quality of the material is an impure red oxide of iron formed as a clinker residue in the manufacture of sulphuric acid from iron pyrites. In the manufacture of shingles by the machine first described it is possible to effect a greater saving in coloring material by taking advantage of the fact that only the exposed butt of the shingle need be colored. The spreader which is delivering the outer layer may be set for a narrow width by swinging its gates IH toward the center. With a divider H0 in each spreader the machine will be forming two strips, tapered slightly if desired, from which two series of shingles may be cut. With the orifice of the last spreader narrowed, the colored mixture is delivered in a strip extending only over the inner parts of the previously delivered uncolored layers and therefore forms a butt having colored material to a substantial depth. The subsequent pressing between belts B and C removes the sharp line of demarcation between this top, partial layer and the other full width layers. In this way only one-sixth or less of the shingle contains the coloring agent, yet the result, for all practical purposes, is the same as if the whole shingle were colored. When one orifice is narrowed in this manner, it is desirable to reduce the volume of material fed to that spreader. This obviously may be done by reducing the V0] .I.I'11€ of dry materials delivered from the well I I. The spiral conveyor in the well delivering to the last spreader may be provided a,oo7,e1s 9 with an individual drive for this purpose. The same result would be obtained by providing an individual drive for the screw conveyor 22 delivering to the last spreader so that its speed could be reduced. An equivalent saving can be made in the manufacture of shingles on the machine second described, because the distributor which is laying the outer layer may have the plastic mixture delivered to only its center portion by reason of the movable aids of the hopper being set for such delivery. The description above of coloration of the product by adding a coloring agent to the plastic mixture has reference to coloring agents such as metal oxide pigments or lamp black or other suitable color pigments. The number of colors obtainable in this manner is limited and each side of each strip is of a single color. - In Figures 17 and 18 are shown the means for adding the organic pigments which may be applied in a paste or in dry form or semi-liquid form. A number of inlet nipples 120 are provided in the upper surface of the last spreader. Inwardly opening check valves may be provided in these connections to prevent loss of the plastic mixture when pigments are not being added. The pigments with a cement to give a mixture are injected into the material in the spreader and, in passing through the spreader orifice and between the belts, each body of pigment is spread somewhat giving a region of color. The nipples are so spaced that, if all are used, the regions of color are close together or even may merge. The pigment is sufficiently deep in the sheet to withstand weather erosion but no inordinate amount of pigment is necessary. Different colors may be used to give a mottled effect. This mottled effect may be obtained where the outer layer is given a solid color by adding a pigment to the whole mixture forming that layer and then injecting a pigment at spaced points to form local color regions in the solid color. It is possible also to use metallic pigments in this manner in varicolored combination or along with lake pigments of various colors. The layer into which the pigments, either the metallic oxide or the lake pigments, are injected may be an uncolored layer or it may have an initial solid color by reason of the admixture with it of a pigment while in the mixer M. In the preferred machine shown in Figures 22- beside the coloration of one layer it is possible to produce a mottled effect by making one layer very wet, either with or without color being added to it, and then superposing on it another layer of another color and concreting these layers. For example the mixture of plastic in the first layer may be made very wet so that a measurable amount of surplus water remains in it after it has passed through the first dewatering unit. No color will be added to this layer. Then the second layer, with color mixed in it, may be laid on. In passing through the second dewatering unit the two layers are concreted and the sheet emerges with a mottled appearance. Alternatively the first layer may be colored with a color different from the second to give a different mottled effect. - The products The product therefore may be described generally as being of strip form, i. e., having considerably greater lateral extent than thickness, made up principally of fibrous material bound together by cementitious material and comprising concreted layers which may or may not be of identical composition. Further, having reference to the colored product, at least one of the concreted layers contains a coloring agent throughout or, as an alternative, it contains local regions having a coloring agent present, the colors being either the same in all regions or different, as desired, and the local color regions existing either in an uncolored layer or in a layer having a coloring agent throughout. There is also the product in which only a portion of a layer is colored throughout, as for instance, the butt or that portion of the outer layer of a shingle which would be exposed on a building. - More specifically, there is the product having a colored roughened surface, by reason of the presence in an outer layer of a coarsely ground coloring agent, in particular, the impure red oxide of iron obtained as described above. In some cases, it will be possible to use the machines described herein to make a laminated product in which one or more layers have no cement but simply a vegetable fiber having sufficient gelatinous material to bind the fibers together when pressed. The machines will bind such a layer either to a cementitious layer or between cementitious layers, or it will make a board or mat of several layers of fibrous material containing a non-cementitious binding material, the layers in any case being concreted by the pressing operation. From the foregoing it will be apparent that many modifications within the scope of my invention may be made and therefore I do not limit myself to the embodiments shown. I claim:- 1. In combination, a bed plate having its upper surface longitudinally corrugated, an endless carrier belt adapted to travel over said surface and capable of assuming the contour thereof, means for forming a strip of plastic material on said belt as it passes over said bed plate, a second endless belt above said carrier belt and corrugated rollers within said second belt adapted to press said belt against the material on said carrier belt. 2. In combination, a bed plate having its upper surface longitudinally corrugated, an endless carrier belt adapted to travel over said surface and capable of assuming the contour thereof, a second belt above said first belt and means for giving its surface toward the carrier belt a contour conjugate with that of the bed plate surface, and means for forming a strip of plastic material on said carrier belt in advance of said upper belt whereby it may pass under said upper belt and be pressed. ~ 3: In combination, a mixing plant for making a number of mixtures of cementitious material and fibrous material, an endless carrier belt, a plurality of ducts for delivering said mixtures from said plant to said belt, each of said ducts having a spreader adapted to deliver a thin layer of material onto said belt, said spreaders being spaced along the belt whereby a strip of superposed layers is formed. 4. In combination, an endless carrier belt, a series of spreaders spaced along a portion of said belt to deliver material thereon in strip form, certain of said spreaders having a divider in the path of the material to divide the strip longitudinally. 5. In combination, an endless carrier belt, a series of spreaders spaced along a portion of said belt to deliver material thereon in strip form, certain of said spreaders having inlet openings in their upper wall whereby a coloring agent may be introduced into the material within the spreader. ~ 6. In combination, an endless carrier belt, a series of spreaders spaced along a portion of said belt to deliver material thereon in strip form, certain of said spreaders having means enabling the introduction of a coloring agent into the material within the spreader. 7. The process of manufacturing in strip form a product having fibrous material and cementitious

material as its principal ingredients, which comprises forming a plurality of continuous superposed layers, each fabricated from a series of parallel slats, continuously advancing said layers, and subjecting said layers to pressure to remove surplus water and to concrete them. 8. The process of manufacturing in strip form B. product having fibrous material and cementitious material as its principal ingredients, which comprises forming a plurality of continuous superposed layers each fabricated from a series of parallel slats, continuously advancing said layers, and subjecting said layers in succession to pressure to remove surplus water and to concrete them. 9. The process of manufacturing in strip form a product having fibrous material and cementitious material as its principal ingredients, which comprises forming a plurality of continuous superposed layers, each layer being composed of a series of parallel slats, continuously advancing said layers while permitting said slats to dovetail together, and subjecting said layers to pressure to remove surplus water and to concrete them. 10. The process of manufacturing in strip form a product having fibrous material and cementitious material as its principal ingredients, which comprises forming a plurality of continuous superposed layers, each layer being composed of a series of parallel slats, continuously advancing said layers while permitting said slats to dovetail together, and subjecting said layers to pressure to remove surplus water and to concrete them. 11. The process of manufacturing in strip form a product having fibrous material and cementitious material as its principal ingredients, which comprises forming a layer composed of a succession of narrow slats, continuously advancing said layer while permitting said slats to dovetail together, subjecting said layer to pressure to remove surplus water, forming and solidifying one or more continuous layers in succession on the first mentioned layer, and pressing said superposed layers in turn to remove the surplus water and to simultaneously concrete the layers. 12. In combination with an endless belt supported by a plurality of horizontal cylindrical rollers, a carriage, a plurality of cylindrical members supported by said carriage, one end of certain of said members being readily movable toward and away from said belt while the other ends of said members remain stationary, whereby a tapered sheet of plastic material may be pressed. 13. In combination with an endless belt supported by a plurality of horizontal cylindrical rollers, a carriage, a plurality of cylindrical members, supported by said carriage, opposite ends of certain of said members being readily movable toward and away from said belt while the other ends of said members remain stationary, whereby a tapered sheet of plastic material may be pressed. 14. In combination with an endless belt supported by a plurality of horizontal cylindrical rollers, a carriage, a plurality of cylindrical members supported by said carriage, one end of certain of said members being readily movable toward and away from said belt while the other ends of said members remain stationary, said carriage being readily movable toward and away from said belt, whereby tapered sheets of plastic material of different thicknesses may be pressed. 15. In combination, an endless belt, means for mixing cementitious materials and fibrous materials, means to deliver said mixtures on said belt in layers, means to press said layers to remove surplus water and concrete them, said means being adjustable whereby a tapered sheet may be pressed. 16. In combination, an endless belt, means for mixing cementitious materials and fibrous materials, means to deliver said mixtures on said belt in layers, means to press said layers to remove surplus water and concrete them, and means to incline said pressing means whereby a tapered sheet may be pressed. 17. In combination, an endless belt, means for mixing cementitious materials and fibrous materials, means to deliver said mixtures on said belt in layers, means to press said layers to remove surplus water and concrete them, and means to incline a portion of said pressing means in one direction and another portion in the opposite direction whereby a tapered sheet may be pressed. 18. The process of forming a continuous strip of plastic material, comprising forming continuously a plurality of parallel slats of plastic material, continuously advancing said slats in succession while subjecting them to pressure to unite them into a strip. 19. The process of depositing plastic material on a moving belt comprising forming continuously a plurality of parallel slats of the material and laying them on the belt in succession. 20. The process of making a product in layers from plastic material, comprising forming a series of slats of the plastic subjecting said slats to pressure to integrate them into a layer, depositing another series of slats of plastic material on said layer, and subjecting the whole to pressure. 21. The process of making a continuous multilayer unitary strip from plastic material, comprising forming a series of slats of plastic material, continuously advancing them while compressing them into a concrete layer, forming another series of slats and depositing them upon said layer, and compressing the whole into a unitary strip while continuously advancing the same. 22. The process of producing a multi-layer product with a mottled surface comprising forming a layer of plastic material containing a large surplus of water, subjecting said layer to pressure, forming and superposing upon said first layer a stiffer second layer of plastic material of a different color having a small surplus of water, and subjecting both layers to pressure simultaneously to remove surplus water and concrete said layers. 23. The process of producing a multi-layer product with a mottled surface comprising forming a layer of plastic material, forming and superposing upon said first layer a stiffer second layer of plastic material of a different color, and subjecting both layers to pressure simultaneously to remove the surplus water and concrete said layers, said first layer being of sufficient plasticity to permit the forcing through it of portions of said second layer, during the subjecting of said layers to pressure, causing a mottled surface to be produced. 24. The process of producing a multi-layer product with a mottled surface comprising continuously forming and advancing a layer of plastic material containing a large surplus of water, subjecting said layer to pressure, continuously forming and superposing upon said first layer a stiffer second layer of plastic material of a different color having a small surplus of water, and subjecting both layers to pressure simultaneously to remove the surplus water and concrete said layers. 25. The process of producing a multi-layer product with a mottled surface comprising continuously forming, and advancing a layer of plastic material, continuously forming and superposing upon said first layer a stiffer second layer of plastic material of a different color, and subjecting both layers to pressure simultaneously to remove the surplus water and concrete said layers, said first layer being of sufficient plasticity to permit the forcing through it of portions of said second layer, during the subjecting of said layers to pressure, causing a mottled surface to be produced. 26. The process of producing a multi-layer product with a mottled surface, comprising depositing on a conveyor a series of transverse strips of plastic material containing a large surplus of water, subjecting said layer to pressure, forming and superposing upon said first layer a stiffer second layer of plastic material of a different color having a small surplus of water, and subjecting both layers to pressure simultaneously to remove surplus water and concrete said layers. 27. The process of producing a multi-layer product with a mottled surface comprising depositing on a conveyor a series of transverse strips of plastic material containing a large surplus of water, forming and superposing on said first layer a stiffer second layer of plastic material of a different color, and subjecting both layers to pressure simultaneously to remove the surplus water and concrete said layers, said first layer being of sufficient plasticity to permit the forcing through it of portions of said second layer, during the subjecting of said layers to pressure, causing a mottled surface to be produced. 28. The process of producing a multi-layer product with a mottled surface comprising forming a layer of plastic material containing a large surplus of water, subjecting said layer to pressure depositing upon said first layer, a series of transverse strips of stiffer plastic material having a small surplus of water and being of a different color than said first layer, and subjecting both layers to pressure simultaneously to remove surplus water and concrete said layers. 29. The process of producing a multi-layer product with a mottled surface comprising forming a layer of plastic material, forming a second layer of plastic material, which is stiffer and of a different color than the first layer, by depositing on said first layer a series of transverse strips of said stiffer material and subjecting both layers to pressure simultaneously to remove the surplus water and concrete said layers, said first layer being of sufficient plasticity to permit the forcing through it of portions of said second layer, during the subjecting of said layers to pressure, causing a mottled surface to be produced. 30. The process of producing a multi-layer product with a mottled surface comprising continuously forming and advancing a layer of plastic material, continuously forming and superposing upon said first layer a stiffer second layer of plastic material in a different color by depositing a series of transverse strips of said stiffer material, and subjecting both layers to pressure simultaneously to remove the surplus water and concrete said layers, said first layer being of sufficient plasticity to permit the forcing through it of portions of said second layer, during the subjecting of said layers to pressure, causing a mottled surface to be produced. 31. The process of producing a multi-layer product with a mottled surface comprising forming a layer by continuously depositing a series of transverse strips of plastic material upon a conveyor, continuously advancing said layer, continuously forming and superposing upon said first layer a stiffer second layer of plastic material of a different color, and subjecting both layers to pressure simultaneously to remove the surplus water and concrete said layers, said first layer being of sufficient plasticity to permit the forcing through it of portions of said second layer, during the subjecting of said layers to pressure, causing a mottled surface to be produced.

#### Classifications:

**International (IPC 8-9):** B28B1/52 B28B13/02

B28B5/02 (Advanced/Invention);

B28B1/52 B28B13/00 B28B5/00 (Core/Invention)

**International (IPC 1-7):** B28B1/52

**CPC:** B28B1/528 B28B5/027 B28B13/022

**European:** B28B1/52Z B28B13/02D2 B28B5/02C2



**Priority:**

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**Title:** THROW-AWAY BOY AND GIRL DIAPERS

**Abstract:** Throw-away diapers having elongate, absorbent pads, or sections of cellulosic fibers disposed within covering envelopes having a fluid pervious and fluid containing facing cover layer, and a backing cover layer. The absorbent pads have predetermined regions of differing fiber weight through the thickness per unit surface area thereof wherein the greatest weight of fibers through the thickness per unit surface area is included in a predetermined region where it is most needed to retain body fluids. An embossed pattern in the facing layer and underlying absorbent pad defines valleys and ridges in all of the predetermined regions, and the density of the absorbent pad in the valleys is greater than the density of the absorbent pad in the ridges. Absorbent pads in throw-away diapers for use by girl babies comprise an elongate, fluff batt of cellulosic fibers in which an elongate, middle one-third thereof constitutes the predetermined region having the greatest weight of fibers through the thickness per unit surface area. Absorbent pads in throw-away diapers for use by boy babies comprise a main fluff batt and a secondary fluff batt. The elongate, forward one-third of the main fluff batt constitutes the predetermined region having the greatest weight of fibers through the thickness per unit surface area thereof. The secondary fluff batt is disposed forwardly of the main fluff batt and is folded over the main fluff batt during use of the diaper. The elongate, absorbent pads utilized in the throw-away diapers of this invention also constitute a part of the present invention.

**Classifications:**

**International (IPC 8-9):** A61F13/15 A61L15/16 B32B29/02 D01G25/00 D04H1/00 (Advanced/Invention);

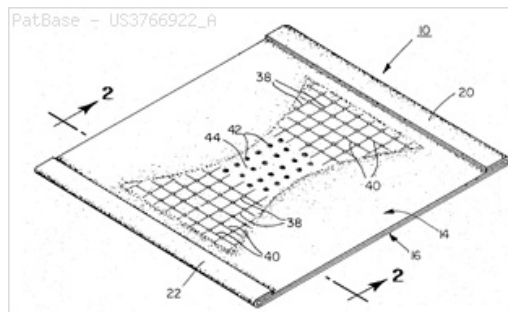
A61F13/15 A61L15/16 B32B29/00 D04H1/00 (Core/Invention)

**International (IPC 1-7):** A41B13/00 A41B13/02 A61F13/16 A61F13/18 B32B29/02 D01G25/00

**CPC:** A61F13/51104 A61F13/51121 A61F13/5116 A61F13/511 A61F13/4915 A61F13/15626 A61F13/15634 A61F13/491 A61F13/49466 A61F13/532 A61F2013/5326

**European:** A61F13/15M3B A61F13/15M3C A61F13/491 A61F13/491A A61F13/494B A61F13/511 A61F13/532 D21H5/26B K61F13/532C

**US:** 128/28.4 19/14.8 19/148 19/301 19/306 604/366 604/374 604/375 604/380

**Family:**

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**Priority:**

US19700067862 19700828 US19710168159 19710802 US19720237963 19720324  
US19740475034 19740531

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**Title:** LOW COST PROCESS FOR MANUFACTURE OF FORM-STABLE PHASE CHANGE MATERIAL

**Abstract:** The present invention generally relates to a method for manufacturing phase change material (PCM) pellets. The method includes providing a melt composition including paraffin and a polymer. The paraffin has a melt point between about 10 degrees centigrade and about 50 degrees centigrade, and more preferably between about 18 degrees centigrade and about 28 degrees centigrade. In one embodiment, the melt composition includes various additives, such as a flame retardant. The method further includes forming the melt composition into PCM pellets. The method further may include the step of cooling the melt to increase the melt viscosity before pelletizing.

**Classifications:**

**International (IPC 8-9):** B28B11/14 B29B9/12 C08J3/00 C08K3/04

C09K5/06 F24F5/00 F28D19/02 F28D19/04

F28D20/02 (Advanced/Invention);

B29B9/06 C08L23/04 (Advanced/Non-invention)

**CPC:** F28D20/023 C08K3/04 C09K5/06 B29B9/065 B29B9/12 C08J3/005

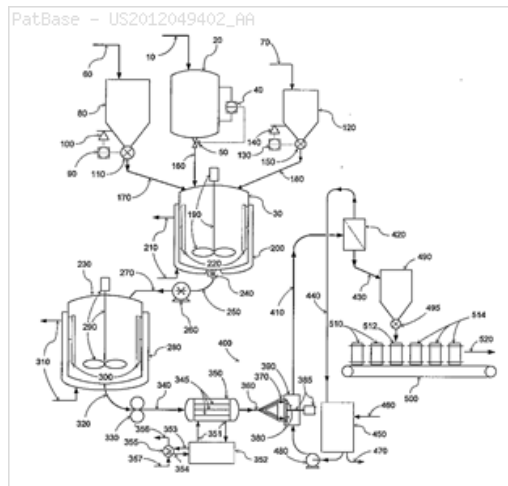
C08J2323/06 C08J2491/06 C08L23/04 F24F2203/10 F28D19/02

F28D19/042 F24F5/0035 C09K5/066 C09K5/063 Y02E60/145

**European:** B29B9/12 C08J3/00B L29B9/06B M08J323/06 M08J491/06

**US:** 1/1 165/104.17 252/71 252/73 252/75 264/140 264/140P 427/212

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|--------------------|------------------|--------------------|------------------|
| ■ US2012049402 AA  | 20120301         | US20110223122      | 20110831         |
| ■ US2013228308 AA  | 20130905         | US20130839770      | 20130315         |
| ■ US2015299416 AA  | 20151022         | US20150754267      | 20150629         |
| ■ US2016272864 AA  | 20160922         | US20160095302      | 20160411         |
| ■ US9102080 BB     | 20150811         | US20110223122      | 20110831         |
| ■ US9315710 BB     | 20160419         | US20130839770      | 20130315         |
| ■ US9346930 BB     | 20160524         | US20150754267      | 20150629         |
| ■ US10047263 BB    | 20180814         | US20160095302      | 20160411         |

**Priority:**

US20100379252P 20100901      US20110223122 20110831      US20130839770 20130315  
US20150754267 20150629      US20160095302 20160411

**Probable Assignee:** REG SYNTHETIC FUELS LLC

**Assignee(s):** (std): ABHARI RAMIN ; REG SYNTHETIC FUELS LLC ; SYNTROLEUM CORP

**Assignee(s):** ENERGY UNITED STATES DEPARTMENT OF

**Inventor(s):** (std): ABHARI RAMIN

**Agent(s):** FOLEY AND LARDNER LLP; JAMES P; JOSEPH P

**Title:** APPARATUS FOR CONTINUOUS FORMING OF GYPSUM BODIES, IN PARTICULAR PLATES

**Abstract:** An arrangement for the continuous production of form bodies, in particular of plates of gypsum and additional material, as well as voluminous filtering fibers by applying of the dry material onto an endless moving form face and moistening of the material with a quantity of water only slightly above the quantity necessary for setting which comprises at least two storage silos storing and discharging dry material. A conveying device having discharge openings as well as mixing-, moisture-, pressing- and drying stations. The conveying device includes at least one preliminary form band consisting of a dense member and passing on a horizontal and straight extending plane said material discharge station. The preliminary form band is connected with at least one device continuously measuring the weight of a material strand and terminating in the conveying direction in a mixing device of a combined mixing and moistening station, in which station being connectable a form band comprises an air passing sieve-like formed textile. The form band extends through all the stations forming the material strand to form bodies up to at least a separating station disposed in front of a drying station on a straight-line plane. The form band is connectable with a conveyor device having passing individual frames running upright through the drying station.

**Classifications:**

**International (IPC 8-9):** B28B1/52 B28B5/02

C04B28/14 (Advanced/Invention);

B28B1/52 B28B5/00 C04B28/00 (Core/Invention)

**International (IPC 1-7):** B28B1/52 B28B19/00 B28B5/00 B28B5/02

B28C7/06 B29C3/06 B29D7/14 B32B13/00 C04B13/14 C04B13/18

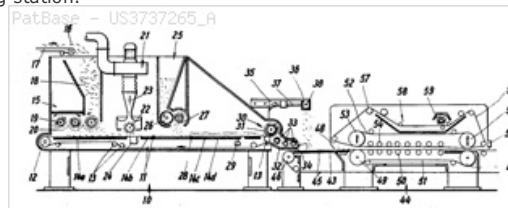
C04B31/04 C04B39/00 C04B43/00 E04C2/00 E04F13/14

**CPC:** B28B1/521 B28B5/02 C04B28/14

**European:** B28B1/52B B28B5/02 C04B28/14

**US:** 19/300 425/140 425/141 425/162 425/200 425/202 425/223 425/225

425/371 425/83.1



**Family:**

| Publication number | Publication date | Application number | Application date |
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| BG18590 A3         | 19750225         | BG19720019577      | 19720126         |
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| SE345980 B         | 19720619         | SE19690012015      | 19690829         |
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**Priority:**

DE19671784657 19680902

DE19681784657 19680902

DE19712103931 19710128

**Probable Assignee:** FERMA

**Assignee(s):** (std): FERMA ; FERMA ENTWICKLUNGSWERK ; FERMA GMBH AND CO ; FERMA GES FUR RATIONELLE FERTI ; FERMA GMBH ; FERMA GES FUER RATIONELLE FERT ; FERMA ENTWICKLUNGSWERK FUR RAT

**Assignee(s):** FERMA ENTWICKLUNGSWERK FUR RATIONELLE FERTIGBAUME ; FERMA INT MASCHINENANLAGEN GMBH AND CO KG ; FERMA GESELLSCHAFT FUR RATIONELLE FERTIGBAUMETHOD ; FERMA GESELLSCHAFT FUER RATIONELLE FERTIGBAUMETHODEN UND MASCHINENANLAGEN MBH AND CO ; FERMA INTERNATIONAL ENTWICKLUNGSWERK FUER RATIONELLE FERTIGBAUMETHODEN UND MASCHINENANLAGEN GMBH AND CO KG 7516 KARLSBAD ; FERMA INTERNATIONL ENTWICKLUNGSWERK FUR RATIONELLE FERTIGBAUMETHODEN U MASCHINENANLAGEN GMBH AND CO KG ; FERMA GES FUR RATIONELLE FERTIGBAUMETHOD ; FERMA GES F RATIONELLE FERT ; FERMA ENTWICKLUNGSWERK DT ; FERMA ENTWICKLUNGSWERK F RATIONELLE FERTIGBAUMETHODEN U MASCHINENLAGEN GMBH AND CO KG ; FERMA ENTWICKLUNGSWERK FUER RATIONELLE FERTIGBAUMETHODEN UND MASCHINENLAGEN GMBH AND CO KG

**Inventor(s):** (std): SCHAEFER K ; SCHAER K ; HOHNE A ; KARL SCHAEFER ; KASE SCHAER

**Inventor(s):** HOHNE A DT ; SCHAER K DT ; SCHAEFER KARL

**Agent(s):** SELIGSOHN GABRIELI AND CO



**Title:** COATED MAT PRODUCTS, LAMINATES AND METHOD

**Abstract:** Coated fibrous mats having properties particularly suited for a facer on gypsum wallboard, foam and other substrates and in laminates of various types, and the method of making the coated mat is disclosed. The mat contains a major portion of non-cellulosic fibers and a minor portion of cured resinous binder. The exposed surface coating has a smoothness of no more than about 15 microns and is comprised of one or more of a clay, a filler and a polymeric binder. The method comprises at least partially drying the coated mat while the exposed surface of the coating is in contact with a smooth surface.

**Classifications:**

**International (IPC 8-9):** B32B15/08 B32B17/02 B32B17/10 B32B27/20 B32B3/30 B32B5/02 D06N3/00 (Advanced/Invention);

B32B17/02 B32B27/20 B32B5/02 D06N3/00 (Core/Invention)

**International (IPC 1-7):** B32B17/02 B32B27/14 B32B3/00 B32B5/02 D04H1/00

**CPC:** D06N3/0022 D06N3/0063 Y10T428/2481 Y10T442/2926

Y10T442/2992 Y10T442/608 Y10T442/659 Y10T442/697 Y10T442/698

B32B5/02 B32B5/022 B32B17/02 B32B27/20 B32B38/164

**European:** B32B17/02 B32B27/20 B32B5/02 D06N3/00B8E D06N3/00E6

**US:** 428/196 428/196S 442/172 442/172P 442/180 442/180S 442/334

442/334S 442/381 442/381S 442/415 442/415S 442/416 442/416S

PatBase - US2005181693\_AA

Patent Application Publication Aug. 18, 2005 Sheet 1 of 4 US 2005/0181693 A1

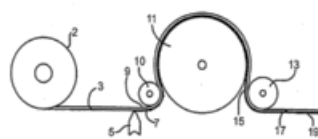


FIG. 1

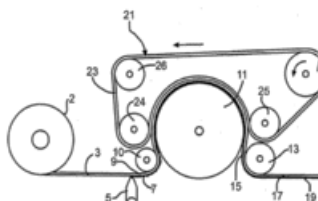


FIG. 2

**Family:**

| Publication number | Publication date | Application number | Application date |
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| US2005181693 AA    | 20050818         | US20040780069      | 20040217         |
| US7932193 BB       | 20110426         | US20040780069      | 20040217         |

**Priority:**

US20040780069 20040217

**Probable Assignee:** MANVILLE JOHNS

**Assignee(s):** (std): JOHNS MANVILLE

**Assignee(s):** KAJANDER RICHARD E ; MANVILLE JOHNS

**Inventor(s):** (std): KAJANDER RICHARD E ; KAJANDER RICHARD EMIL

**Inventor(s):** KAJANDER RICHARD

**Agent(s):** JOHNS MANVILLE, LEGAL DEPARTMENT; JOHNS MANVILLE LEGAL DEPARTMENT; ROBERT D

**Title:** BONDED NON-WOVEN FIBROUS MATERIALS

**Abstract:** ABSTRACT OF THE DISCLOSURE

A bonded fibrous material containing crimped fibres is made by forming a fibrous structure containing composite potentially crimpable fibres which comprise two fibreforming components one of which is potentially adhesive and subsequently developing the crimp and rendering the potentially adhesive component adhesive. This is a continuation-in-part of application Ser. No. 342,300, filed Feb. 3, 1964, and of application Ser. No. 342,241, filed Feb. 3, 1964.

**Classifications:**

**International (IPC 8-9):** B05B15/08 B05B15/68 D04H1/00 D04H1/04 D04H1/06 D04H1/485 D04H1/50 D04H1/54 D04H1/541 D04H1/549 D04H1/55 D04H3/009 D04H3/147 D04H3/16 D06M17/00 D06N3/00 D06N3/06 D06N3/14 (Advanced/Invention); B05B15/00 D04H1/00 D04H1/54 D04H3/16 D06N3/00 (Core/Invention)

**International (IPC 1-7):** A42B1/00 B05B15/08 B29D3/00 B32B5/14 B68G5/00 D04B1/06 D04H1/00 D04H1/06 D04H1/22 D04H1/44 D04H1/50 D04H1/54 D04H1/54 D04H3/08 D04H3/14 D04H3/16 D04H5/06 D06N3/00 D06N3/12 D06N7/00 D21H5/12 E02B3/14 F02M3/08

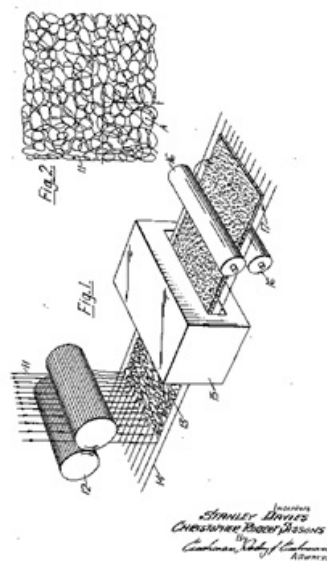
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**European:** B05B15/08 D04H1/485 D04H1/50 D04H1/54 D04H1/541 D04H1/549 D04H1/55 D04H3/009 D04H3/147 D04H3/16 D06N3/00B D06N3/00B8G

**US:** 156/148 156/305 161/150 428/151 428/474.9 442/353 442/409

PatBase - US3595731\_A

July 27, 1971 G. DAVIES ET AL 3,595,731  
BONDED NON-WOVEN FIBROUS MATERIALS  
Filed Aug. 13, 1968 3 Sheets-Sheet 1



**Family:**

| Publication number | Publication date | Application number | Application date |
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| DK120531 B         | 19710614         | DK19640000552      | 19640205         |
| ES296121 A1        | 19640816         | ES19640296121      | 19640205         |
| FI44052 B          | 19710430         | FI19640000220      | 19640205         |
| FI44052 C          | 19710810         | FI19640000220      | 19640205         |
| FR1392034 A        | 19650312         | FR19640962763      | 19640205         |
| FR1392035 A        | 19650312         | FR19640962764      | 19640205         |
| GB1073181 A        | 19670621         | GB19630004733      | 19630205         |
| GB1073183 A        | 19670621         | GB19640004400      | 19630205         |
| LU45363 A          | 19640406         | LU19640045363      | 19640205         |
| LU45367 A          | 19640414         |                    | 19640205         |
| NL6400929 A        | 19640806         | NL19640000929      | 19640205         |
| NL6400932 A        | 19640806         | NL19640000932      | 19640205         |
| NO124547 B         | 19720502         | NO19640151828      | 19640203         |
| SE327687 B         | 19700831         | SE19640001338      | 19640204         |
| SE327688 B         | 19700831         | SE19640001339      | 19640204         |
| US3595731 A        | 19710727         | US19680752395      | 19680813         |

**Priority:**

19270812 GB19630004733 19630205

**Probable Assignee:** ICI LTD

**Assignee(s):** (std): BRITISH NYLON SPINNERS LTD ; ICI LTD

**Assignee(s):** IMP CHEMICAL IND LTD ; IMPERIAL CHEMICAL INDUSTRIES LIMITED ; BRITISH NYLON SPINNERS LIMITED

**Inventor(s):** (std): STANLEY DAVIES ; SISSONS CHRISTOPHER ROBERT ; SISSONS C ; ROBERT SISSONS CHRISTOPHER ;  
DAVIES STANLEY ; DAVIES S ; CHRISTOPHER ROBERT SISSONS

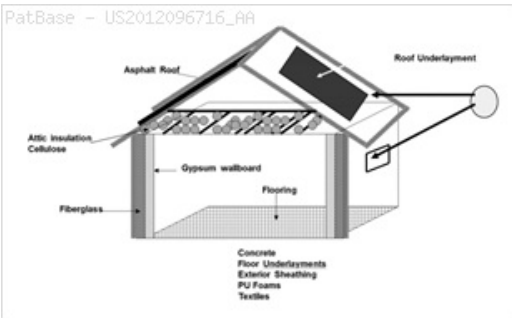
**Inventor(s):** STANLEY DAVIES AND CHRISTOPHER ROBERT SISSONS

**Title:** SMART BUILDING SYSTEMS AND METHODS

**Abstract:** Systems and methods are disclosed to fabricate a building structure by mixing a texture aggregate filler mixed with a phase change material (PCM), said filler including one of: perlite, glass microballoons, glass bubbles, phenolic microballoons, and microspheres; and placing the PCM with the filler on a surface exposed to a conditioned air flow to increase thermal contact between the PCM and the conditioned air flow.

**Classifications:**

**International (IPC 8-9):** B21D47/00 E04B2/00 (Advanced/Invention)  
**CPC:** F24F5/0021 F28D20/023 Y02E60/145 Y02E60/147 Y10T29/4935 Y10T29/49623 Y10T29/49629  
**US:** 29/890.03 29/897.3 29/897.300P 29/897.32



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2012096716 AA    | 20120426         | US20110339313      | 20111228         |
| US8359750 BB       | 20130129         | US20110339313      | 20111228         |

**Priority:**

US20110339313 20111228

**Probable Assignee:** CLEAN ENERGY MANAGEMENT SOLUTIONS LLC  
**Assignee(s):** (std): TRAN BAO Q  
**Assignee(s):** CLEAN ENERGY MANAGEMENT SOLUTIONS LLC  
**Inventor(s):** (std): TRAN BAO Q  
**Agent(s):** TRAN AND ASSOCIATES

**Title:** PACKAGING COMPONENT WITH SENSORY CUE FOR OPENING

**Abstract:** A personal care product includes a personal care product component disposed in a packaging component. The packaging component includes a panel and a flap having a free edge positioned adjacent the panel. One of the flap and panel includes a sensory cue directed at the free edge of the flap. The sensory cue provides indicia as to the location of the free edge and terminates at the free edge. In one embodiment, the packaging component includes a front panel, a back panel and a flap overlying a portion of the front panel. In one embodiment, the sensory cue is configured as a visual cue. In another aspect, a method of using a personal care product includes locating the free edge of the packaging component using the visual cue and grasping the flap and opening the packaging component to access the personal care product component.

**Classifications:**

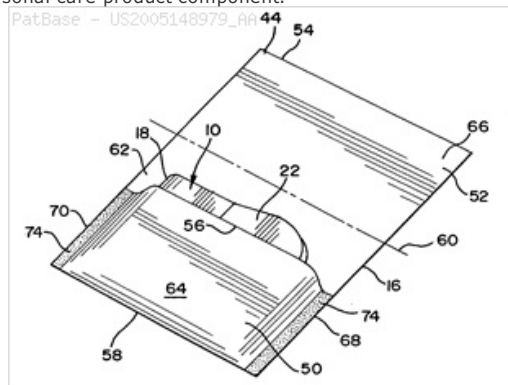
**International (IPC 8-9):** A61F13/00 A61F13/15 A61F13/20 A61F13/472  
A61F13/551 A61F15/00 B65D33/00 B65D33/18 B65D33/20 B65D75/20  
B65D75/58 B65D77/30 B65D85/07 B65D85/16 (Advanced/Invention);  
A61F13/15 A61F13/551 (Advanced/Non-invention);  
A61F13/15 A61F13/20 (Core/Invention)

**International (IPC 1-7):** A61F13/15 A61F13/20 A61F13/551

**CPC:** A61F13/551 A61F13/5514 A61F13/5513 A61F2013/8497

**European:** A61F13/551 A61F13/551B A61F13/551B2B K61F13/84G

**US:** 604/361 604/361S 604/385.02 604/385.020P



**Family:**

| Publication number | Publication date | Application number | Application date |
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| WO05065616 A3      | 20050909         | WO2004US43850      | 20041229         |

**Priority:**

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|---------------|----------|---------------|----------|---------------|----------|
| US20000713496 | 20001115 | US20000713604 | 20001115 | US20000713565 | 20001115 |
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| US20010043895 | 20011109 | AU20020227058 | 20011115 | WO2001US44975 | 20011115 |
| US20030750424 | 20031230 | US20040005684 | 20041207 | AU20040312075 | 20041229 |
| WO2004US43850 | 20041229 |               |          |               |          |

**Probable Assignee:** KIMBERLY CLARK CORP

**Assignee(s):** (std): LOYD ADRIENNE R ; MATHEWS MARIE A ; KIMBERLY CLARK CO ; HEYRMAN SHEILA M ; NIELSEN STEVEN J ; INGLE MARK L ; HANTKE RICHARD J ; BRYANT KRISTI J ; BRYANT KRISTI JO ; CLARK JAMES J JR ; KIMBERLY CLARK CORP ; WOLTMAN GARRY R ; WILKES SARAH L ; THOMAS BRIAN L ; WALKER LAURA J ; RASMUSSEN SHELLEY R ; ROTHE RICHARD L ; CLARK JR JAMES J ; DIPALMA JOSEPH

**Assignee(s):** KIMBERLY CLARK WORLDWIDE INC ; CLARK JR ; PALMA JOSEPH D ; KIMBERLI KLARK VORLDDVAJD INK

**Inventor(s):** (std): ADRIENNE R LOYD ; BRAJANT KRISTI DZHO ; BRIAN L THOMAS ; CLARK JAMES J ; CLARK JAMES J JR ; CLARK JR JAMES J ; DI PALMA JOSEPH ; DIPALMA DZHOZEF ; DIPALMA JOSEPH ; BRYANT KRISTI J ; BRYANT KRISTI JO ; GARRY R WOLTMAN ; HANTKE RICHARD J ; HANTKE RICHARD JOSEPH ; HEYRMAN DIPALMA JOSEPH LOYD ADRIE ; GARRY ROLAND WOLTMAN ; HEYRMAN SHEILA M ; INGL MARK L ; INGLE MARK L ; JAMES J CLARK ; JOSEPH DIPALMA ; JR JAMES J CLARK ; KHANTKE RICHARD DZH ; KHIRMEHN SHEILA M ; KLARK DZHEJMS DZH MLADSHIJ ; KRISTI JO BRYANT ; LAURA J WALKER ; LOJD ADRIENNE R ; LOYD ADRIENNE ; LOYD ADRIENNE R ; MARIE A MATHEWS ; MARK L INGLE ; MATHEWS MARIE A ; MEHT JUZ MEHRI A ; NIELSEN STEVEN J ; NIL SEN STIVEN DZH ; NTKE RICHARD J ; PALMA JOSEPH D ; RASMUSSEN SHELLEY R ; RASMUSSEN SHELLEY RAE ; RASMUSSEN SHELLI R ; RICHARD JOSEPH HANTKE ; RICHARD L ROTHE ; ROT RICHARD L ; RICHARD J HANTKE ; ROTHE RICHARD L ; SARAH L WILKES ; SHEILA M HEYRMAN ; SHELLEY R RASMUSSEN ; SHELLEY RAE RASMUSSEN ; STEVEN J NIELSEN ; THOMAS BRIAN L ; THOMAS BRAJAN L ; UILKS SARA L ; UOLKER LAURA DZH ; UOLTMENH GARRI R ; WALKER LAURA J ; WILKES SARAH L ; WOLTMAN GARRY R ; WOLTMAN GARRY ROLAND

**Inventor(s):** WILKES SARAH LOIS ; WOLTMAN GARRY ; WALKER LAURA JANE ; WILKES SARAH ; WALKER LAURA ; THOMAS BRIAN LEE ; THOMAS BRIAN ; ROTHE RICHARD LEE ; ROTHE RICHARD ; PALMA JOSEPH DI ; RASMUSSEN SHELLEY ; PALMA JOSEPH ; NIL'SEN STIVEN DZH. ; NIELSEN STEVEN JAMES ; MEHT'JUZ MEHRI A. ; NIELSEN STEVEN ; MATHEWS MARIE ; INGLE MARK LEONARD ; INGLE MARK ; HEYRMAN SHEILA MARIE ; HANTKE RICHARD ; HEYRMAN SHEILA ; CLARK JAMES ; DIPALMA JOSEPH LOYD ADRIENNE R ; DIPALMA JOSEPH LOYD ADRIENNE R MATHEWS MARIE A BRY ; CLARK JAMES JJR ; CLARK JAMES JOSEPH ; CLARK JR ; BRYANT KRISTI

**Agent(s):** SPRUSON AND FERGUSON; BRINKS HOFER GILSON AND LIONE; KIMBERLY CLARK WORLDWIDE INC

**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK  
DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ  
LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU  
SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

**Title:** MANUFACTURE OF SURFACE ELEMENTS

**Abstract:** The present invention is concerned with a method for the manufacture of objects having two shaped surfaces from setting material such as cement and gypsum mixtures. In this method a discrete quantity of the setting material is applied to a mold portion having a surface corresponding to one of the shaped surfaces of the object and is permitted to set therein. The improvement of the invention comprises the application of a discrete quantity of the setting material also to a mold portion having a surface corresponding to the second shaped surface of the desired object. The two mold portions are then brought together to form a mold while the setting material contained therein is still shapable. Hereby the quantities of shapable material are pressed against each other to form the desired object. The latter is then separated from the mold portions.

**Classifications:**

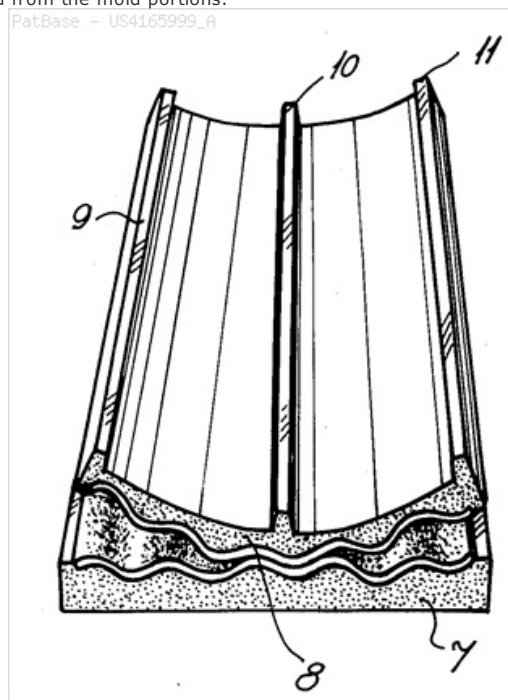
**International (IPC 8-9):** B28B1/00 B28B1/52 (Advanced/Invention);  
B28B1/00 (Advanced/Non-invention);  
B28B1/00 B28B1/52 (Core/Invention)

**International (IPC 1-7):** B28B1/00 B28B1/32 B28B1/52 B28B3/00  
B28B3/02 B28B3/10 B28B7/26 B29C1/00 B29C27/00 B32B1/10  
B32B31/04 C04B39/00 E04B1/10 E04D1/04 E04D1/10 E04D1/24  
E04D3/24

**CPC:** B28B1/528 Y10S264/57

**European:** B28B1/52Z

**US:** 156/245 264/248 264/250 264/308 264/309 264/316 264/DIG.57  
425/517

**Family:**

| Publication number | Publication date | Application number | Application date |
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| SE7514324 A        | 19770619         | SE19750014324D     | 19751218         |
| US4165999 A        | 19790828         | US19780884338      | 19780307         |

**Priority:**

SE19750014324 19751218      US19760751508 19761217      US19780884338 19780307

**Probable Assignee:** EUROCC DEVELOPMENT AB

**Assignee(s):** (std): EUROCC ADMINISTRATION AB ; EUROCC DEVELOPMENT AB

**Assignee(s):** EUROCC DEVELOPMENT A B

**Inventor(s):** (std): EGNER ERNST MARTIN ; EGNER E M ; ERUNESUTO MARUCHIN EGNERU ; EGNER M ; EGNER ERNST M

**Inventor(s):** EGNER EM ; ERNST MARTIN EGNER ; M EGNER ; MARTIN EGNER ERNST ; E M EGNER

**Agent(s):** WM; WATERMARK INTELLECTUAL PROPERTY PTY LTD

**Title:** BIAXIALLY REINFORCED STAPLE FIBRE SHEET - WITH WEFT FIBRES ADHERED TO ONE SIDE OF LONGITUDINAL WARP YARN

**Abstract:** (1), Biaxially reinforced staple fibre sheet is reinforced (a) longitudinally with parallel warp yarn and (b) breadth-wise with adhesive staples glued on one side of the warp layer across the warp yarns at suitable intervals. The parallel warp yarn is held as a cylinder, and a liquid adhesive polymer is jetted onto the inside of the cylinder from a tubular, perforated polymer-liquid container rotating at high speed to glue the adhesive staples onto the warp at suitable intervals. The resulting network sheet is unrolled into a flat sheet, which is then laminated with staple fibre web(s) to obtain the biaxially reinforced staple fibre sheet.

**Classifications:**

**International (IPC 8-9):** D04H1/72 D04H13/02 D04H5/00 D04H5/04 (Advanced/Invention);  
D04H1/70 D04H13/00 D04H5/00 (Core/Invention)

**International (IPC 1-7):** D04H1/52 D04H1/54 D04H1/72 D04H13/00 D04H5/04 D04H5/08

**CPC:** D04H5/04

**European:** D04H5/04

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
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| DE2536955 B2       | 19781019         | DE19752536955      | 19750819         |
| DE2536955 C3       | 19790613         | DE19752536955      | 19750819         |
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| JP52004674 B4      | 19770205         | JP19740134928      | 19741121         |
| JP880621 C3        | 19770831         | JP19740134928      | 19741121         |

**Priority:**

JP19740134928 19741121

**Probable Assignee:** KOBUNSHI KAKO KENKYUSHO

**Assignee(s):** (std): POLYMER PROCESSING RES INST ; SEKISUI CHEMICAL CO LTD ; KOBUNSHI KAKO KENKYUSHO

**Assignee(s):** KOBUNSHI KAKO KENKYUSHO KK ; SEKISUI KAGAKU KOGYO K K ; POLYMER PROCESSING RESEARCH INSTITUTE LTD TOKIO ; SEKISUI KAGAKU KOGYO K K OSAKA ; SEKISUI KAGAKU KOGYO KK ; POLYMER PROCESSING RESEARCH INST ; POLYMER PROCESSING RESEARCH INST LTD ; POLYMER PROCESSING RESEARCH INSTITUTE LTD

**Inventor(s):** (std): KURIHARA KAZUHIKO ; YAZAWA MASAHIRO

**Title:** FABRICATION OF CELLULAR RESINOUS PRODUCTS

**Abstract:** Method and apparatus for the production of agglomerated granules of polystyrene, in sheet or block form. The expanded granules are uniformly heated under relative slight compression by blowing air through them for a period of between 10 seconds and three minutes. The air is preferably at or above the softening temperature of the granules. The heated granules are then compressed under a pressure of from 0.5 to 4 metric tons/m.2 until their apparent volume is approximately one-half their original volume. The compressed granules are then cooled while remaining under pressure, to a temperature at which the agglomeration does not swell or re-expand. The method can be carried out by batch or by continuous procedures.

**Classifications:**

**International (IPC 8-9):** B29C43/00 B29C43/02 B29C43/22 B29C44/08 B29C44/20 B29C44/22 B29C44/24 B29C44/26 B29C44/30 B29C44/56 B29C51/00 B29C59/00 B29C63/00 B29C65/00 B29C67/20 B29C69/00 B29D7/00 B29D99/00 B32B37/00 C08J9/16 C08J9/36 E04F15/18 (Advanced/Invention);

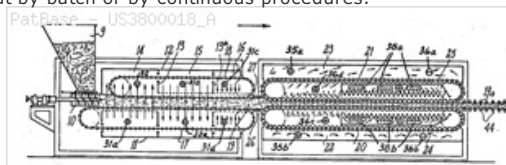
B29C43/00 B29C43/02 B29C43/22 B29C44/00 B29C44/02 B29C44/34 B29C51/00 B29C59/00 B29C63/00 B29C65/00 B29C67/20 B29C69/00 B29D7/00 B29D99/00 B32B37/00 C08J9/00 E04F15/18 (Core/Invention)

**International (IPC 1-7):** B29C15/00 B29C3/00 B29D27/00 B29D27/08 B32B21/08 B32B5/08 B32B5/12 B32B5/14 B32B5/30 B32B5/32 C08F47/10 C08J1/14

**CP:** B29C44/08 B29C43/00 B29L2007/00 C08J9/36 E04F15/18 B29C44/00 B29C44/56 Y10S428/921 Y10S264/05 Y10S264/09 Y10S264/15 Y10S264/14 B29C43/22 C08J9/16 B29C44/26 B29K2025/00 C08J2325/06 B29C44/22 B29C44/24 B29C44/30 B29C44/5636 Y10T428/24694 Y10T428/24711 Y10T428/24942 Y10T428/24992 Y10T428/25 Y10T428/29 Y10T428/249972 Y10T428/249981 B32B5/32 B32B1/00 B32B5/18 B32B7/02 B32B2250/22 B32B2266/0228 B32B2305/02 B29C44/206

**European:** B29C43/00 B29C43/22 B29C44/00 B29C44/08 B29C44/20C B29C44/22 B29C44/24 B29C44/26 B29C44/30 B29C44/56 B29C44/56F2 C08J9/16 C08J9/36 E04F15/18 L29K25/00 L29L7/00 M08J325/06

**US:** 161/133 264/101 264/109 264/113 264/126 264/321 264/345 264/45.5 264/46.2 264/48 264/5.1 264/5.3 264/51 264/53 264/55 264/DIG.14 264/DIG.15 264/DIG.5 264/DIG.9 425/174.4 425/329 425/363 425/371 425/384 425/4C 425/817C 428/182 428/184 428/212 428/218 428/313.5 428/316.6 428/323 428/357 428/921 521/146 521/189

**Family:**

| Publication number | Publication date | Application number | Application date |
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| NO141338 C    | 19800220 | NO19670170922 | 19671211 |
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**Priority:**

|                        |                        |                        |
|------------------------|------------------------|------------------------|
| FR19650013377 19650415 | US19660542367 19660413 | FR19660083268 19661110 |
| FR19660087044 19661212 | US19670681515 19671108 | FR19680135997 19680115 |
| FR19690029272 19690827 |                        |                        |

**Probable Assignee:** SAINT GOBAIN

**Assignee(s):** (std): CIE DE SAINT GOBAIN ; SAIN GOBAIN IND ; SAINT COMP D ; SAINT GOBAIN ; SAINT GOBAIN PONT A MOUSSON

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**Inventor(s):** (std): CHARPENTIER MAURICE ; CHARPENTIER ; CHARPENTIER M ; MAURICE CHARPENTIER ; NOZIERE J ; NOZIERE JEAN ; NOZIERE JEAN H

**Inventor(s):** MAURICE CHARPENTIER RANTIGNY ; M CHARPENTIER ; J NOZIERE ; CHARPENTIER MAURICE RANTIGNY OISE ; JEAN NOZIERE ; NOZIERE JEAN CLERMONT FRANKREICH ; NOZIERE JEAN CLERMONT OISE FRANKREICH ; NOZIERE J FR ; MAURICE CHARPENTIER RANTIGNY FR ; CHARPENTIER M FR ; CHARPENTIER MAURICE RANTIGNY FRANKREICH ; CHARPENTIER MAURICE RANTIGNY OISE FRANKREICH ; CHARPENTIER MAURICE RATIGNY FRANKREICH ; JEAN H NOZIERE

**Title:** MULTILAYER STRUCTURES

**Abstract:** A multilayer structure comprising (A) a fabric and (B) a polymeric layer comprising a substantially random interpolymer comprising in polymerized form i) one or more alpha-olefin monomers and ii) one or more vinyl or vinylidene aromatic monomers and/or one or more sterically hindered aliphatic or cycloaliphatic vinyl or vinylidene monomers, and optionally iii) other polymerizable ethylenically unsaturated monomer(s); layer (B) being free from a substantial amount of tackifier. The multilayer structure has desirable haptics and surprisingly good drape properties. It is useful in many applications, for example as water-impermeable clothes, tablecloths, tents, water-impermeable covers, curtains, artificial leather or upholstery.

**Classifications:**

**International (IPC 8-9):** A41D31/00 A41D31/02 B32B27/12 B32B27/30 B32B27/32 D06N7/00 (Advanced/Invention);

A41D31/00 B32B27/06 B32B27/32 D06N7/00 (Advanced/Non-invention);  
A41D31/00 B32B27/12 B32B27/32 D06N7/00 (Core/Invention)

**International (IPC 1-7):** A41D31/00 A41D31/02 B32B27/06 B32B27/12 B32B27/30 B32B27/32 B65D1/00 D06N7/00

**CPC:** Y10T428/1362 Y10T442/2213 B32B5/22 B32B5/24 B32B27/30 B32B2307/7265 B32B2317/10 B32B2433/02 B32B2437/00 B32B2439/06 B32B2601/00 B32B7/12 B32B27/12

**European:** B32B27/12

**US:** 428/36.1 428/36.100S 442/85 442/85P

PatBase - US2005106965\_RH

Patent Application Publication May 19, 2005

US 2005/0106965 A1

FIG. 1



FIG. 2



FIG. 3

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AT282524 E         | 20041215         | AT20000921570T     | 20000331         |
| AU200041869 A1     | 20001023         | AU20000041869      | 20000331         |
| AU200041869 A5     | 20001023         | AU20000041869D     | 20000331         |
| BRPI0011181 A      | 20030624         | BR2000PI11181      | 20000331         |
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| CN1124205 C        | 20031015         | CN20008005581      | 20000331         |
| CN1345271 A        | 20020417         | CN20008005581      | 20000331         |
| DE60015952 D1      | 20041223         | DE20006015952      | 20000331         |
| DE60015952 T2      | 20051222         | DE20006015952T     | 20000331         |
| EP1171295 A1       | 20020116         | EP20000921570      | 20000331         |
| EP1171295 B1       | 20041117         | EP20000921570      | 20000331         |
| ES2232440 T3       | 20050601         | ES20000921570T     | 20000331         |
| JP2002540984 T2    | 20021203         | JP20000609259T     | 20000331         |
| KR20010110472 A    | 20011213         | KR20017012467      | 20000331         |
| TW503176 B         | 20020921         | TW20000106068      | 20000617         |
| US2005106965 AA    | 20050519         | US20040781269      | 20040218         |
| WO0059723 A1       | 20001012         | WO2000US08646      | 20000331         |

**Priority:**

|                         |                         |                         |
|-------------------------|-------------------------|-------------------------|
| US19980172549P 19981217 | US19990127429P 19990401 | US19990131840P 19990430 |
| US19990172549P 19991217 | US20000539587 20000331  | WO2000US08646 20000331  |
| US20040781269 20040218  |                         |                         |

**Probable Assignee:** DOW GLOBAL TECHNOLOGIES INC

**Assignee(s):** (std): DOW GLOBAL TECHNOLOGIES INC ; HERSCHE EMIL ; KATZER KARIN ; HILL ALASTAIR ; KELLEY DAVE C ; NG STAN ; LEE SIMON ; WEVERS RONALD ; WADDINGTON SIMON ; BATISTINI ANTONIO ; DOW CHEMICAL CO ; DOW CHEMICAL INT CO LTD

**Assignee(s):** DOW CHEMICAL PACIFIC LTD ; DOW CHEMICAL TAIWAN LTD ; DOW EUROPE SA ; LEE SIMON L ; HILL ALASTAIR S ; THE DOW CHEMICAL CO ; THE DOW CHEMICAL COMPANY

**Inventor(s):** (std): KELLEY DAVE ; LI SHI MENG ; WEVES R ; WEVERS RONALD ; WADDINGTON SIMON ; NG STAN ; LEE SIMON ; KELLEY DAVE C ; KATZER KARIN ; KATZER K ; HILL ALASTAIR ; HERSCHE EMIL ; BATISTINI ANTONIO ; BATISTINI A ; KELLEY C

**Inventor(s):** LI SHI MENG AND ; R WEVES ; RONALD WEVERS ; SIMON LEE ; SIMON WADDINGTON ; STAN NG ; A BATISTINI ; ALASTAIR HILL ; ANTONIO BATISTINI ; DAVE C KELLEY ; DAVE KELLEY ; EMIL HERSCHE ; K KATZER ; KARIN KATZER

**Agent(s):** SMART AND BIGGAR; MASUI CHUJI; KOISO TAKAKO; TOMITA HIROYUKI; SHAMOTO ICHIO; KOBAYASHI YASUSHI; CHIBA AKIO; JENKENS AND GILCHRIST

**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CR CY CZ DE DK DM DZ EE ES

FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KR KZ LC LI LK LR LS LT LU LV MA  
MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT  
TZ UA UG US UZ YU ZA ZW

**Title:** METHOD AND DEVICE FOR PRODUCING A MOULDED BRICK, MOULDED BRICK AND CONSTRUCTION OF AT LEAST TWO MOULDED BRICKS

**Abstract:** The method involves partially inserting a filling made of an insulating material into a channel (14) of a moulded brick (16), where a cuboid shaped body of the brick consists of two parallel large surfaces that are aligned parallel and are at a distance to each other, and a right angled running side surfaces. The channel runs parallel to the side surfaces and is right angled to the large surfaces. A portion of the channel is filled with free flowing or blister insulating particles made of mineral fibers with or without adhesive cement. Independent claims are also included for the following: (1) a moulded brick, particularly a building brick, clay brick with a cuboid shaped body (2) a device for implementing the method for producing a moulded brick (3) a building, particularly a wall that consists of two moulding bricks.

**Classifications:**

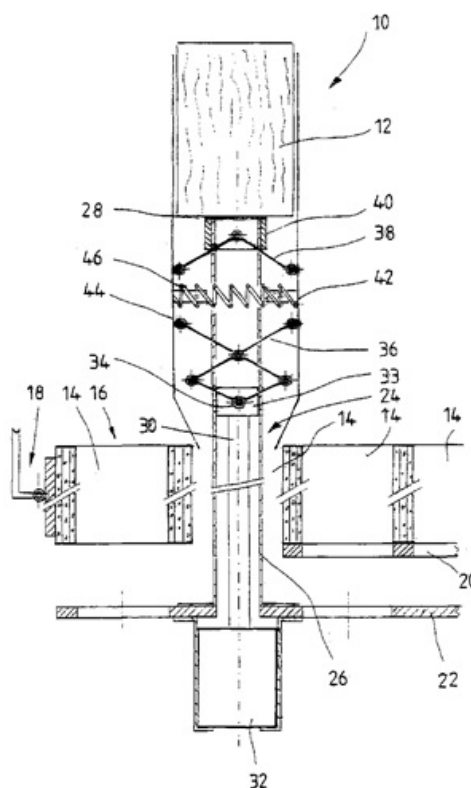
**International (IPC 8-9):** B28B11/00 B28B11/04 C04B26/12 C04B26/32 C04B28/24 C04B28/26 C04B30/02 E04B1/14 E04B2/02 E04B2/16 E04B2/42 E04C1/40 E04C1/41 (Advanced/Invention); B28B11/00 B28B11/04 E04B1/02 E04B2/02 E04B2/42 E04C1/00 (Core/Invention)

**CPC:** Y02W30/97 C04B26/12 C04B26/32 C04B28/24 C04B28/26 C04B30/02 C04B2111/00612 E04B2002/0291 Y02P40/63 E04B2/16 B28B11/042 B28B11/043 E04B2002/0208 E04B2002/0226 E04B2002/0293 B29C44/186 B29C44/445 B29K2025/06 B29L2031/102

**European:** B28B11/04B B28B11/04B1 C04B26/12 C04B26/32 C04B28/24 C04B28/26 C04B30/02 E04B2/16 M04B111/00T6 P04B2/02M1B P04B2/02M1F P04B2/02N11A P04B2/02N11B

PatBase - EP1745901\_A2

Fig. 1



**Family:**

| Publication number | Publication date | Application number | Application date |
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| ES2642589 T3       | 20171116         | ES20060015130T     | 20060720         |
| HU027193 T2        | 20161028         | HU20060015133T     | 20060720         |
| PL1745902 T3       | 20160930         | PL20060015133T     | 20060720         |

**Priority:**

DE200510034807 20050721 DE200610022516 20060515 DE200610034073 20060720  
EP20060015133 20060720 EP20060015130 20060720

**Probable Assignee:** ROCKWOOL INT AS

**Assignee(s):** (std): ROCKWOOL INT ; ROCKWOOL INT A S ; ROCKWOOL INT AS ; ROCKWOOL MINERALWOLLE

**Assignee(s):** DEUTSCHE ROCKWOOL MINERALWOLL GMBH AND CO OHG

**Inventor(s):** (std): PAULITSCHKE WERNER ; PIEPER DIPL ING HERBERT ; PIEPER HERBERT ; PIEPER HERBERT DIPL ING ; PAULITSCHKE WENER ; KLOSE GERD RUEDIGER

**Inventor(s):** PIEPER DIPL ING

**Agent(s):** KILBURN AND STRODE LLP; STENGER WATZKE AND RING;  
RAUSCHWANISCHECKBRINKMANNINTELLECTUAL PROPERTY; STENGER WATZKE RING; RAUSCH  
WANISCHECK BERGMANN BRINKMANN; CARPINTERO MARIO; CAMPELLO REYES

**Designated states:** AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO RS SE  
SI SK TR YU

**Title:** METHOD AND APPARATUS FOR CURVED-SURFACE TRANSFER

**Abstract:** PCT No. PCT/JP97/04490 Sec. 371 Date Oct. 16, 1998 Sec. 102(e) Date Oct. 16, 1998 PCT Filed Dec. 8, 1997 PCT Pub. No. WO98/29265 PCT Pub. Date Jul. 9, 1998 In order to produce a decorative laminate by adhering a transfer printing sheet to the three-dimensional irregular surface of a base, solid particles (P) are caused to collide with the transfer printing sheet (S) from the back surface thereof with the transfer printing sheet (S) facing the irregular surface of the base (B), and the transfer printing sheet (S) is brought into pressure contact with the irregular surface of the base (B) by utilizing the collisional pressure, thereby transferring the transfer printing sheet (S) to the base (B). In the case where a thermally stretchable transfer printing sheet is used, it is better to conduct transfer printing by heating at least one of the base, the transfer printing sheet, the solid particles, and so on.

**Classifications:**

**International (IPC 8-9):** B29C59/00 B29C59/02 B41F16/00 B41M3/12 B44C1/16 B44C1/17 B44C3/02 B65C3/00 (Advanced/Invention); B44C1/17 (Advanced/Non-invention); B29C59/00 B29C59/02 B41F16/00 B41M3/12 B44C1/16 B44C1/17 B44C3/00 B65C3/00 (Core/Invention)

**International (IPC 1-7):** B29C59/00 B29C59/02 B32B3/00 B32B31/12 B41F16/00 B41M3/12 B44C1/16 B44C1/17 B44C3/02 B65C3/00 B65C3/00 B65C9/26

**CPC:** Y10S428/914 B44C1/16 Y10T156/1705 Y10T156/171 Y10T428/24802 B44C1/17 B41M3/12

**European:** B41M3/12 B44C1/16 B44C1/17

**US:** 156/230 156/238 156/240 156/247 156/289 156/540 156/542 427/147 427/148 428/195 428/195.1 428/914

PatBase - US6110316\_A

U.S. Patent

Aug. 29, 2000

Sheet 1 of 6

6,110,316

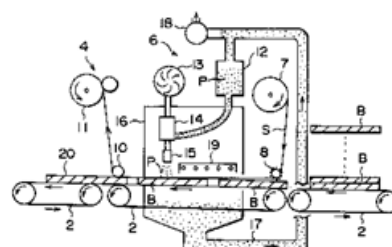


FIG. 1A

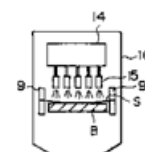


FIG. 1B

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| DE69722781 D1      | 20030717         | DE19976022781      | 19971208         |
| DE69722781 T2      | 20040429         | DE19976022781T     | 19971208         |
| EP0891881 A1       | 19990120         | EP19970946143      | 19971208         |
| EP0891881 A4       | 20010321         | EP19970946143      | 19971208         |
| EP0891881 B1       | 20030611         | EP19970946143      | 19971208         |
| ES2200199 T3       | 20040301         | ES19970946143T     | 19971208         |
| JP10193893 A2      | 19980728         | JP19960356672      | 19961227         |
| JP10236092 A2      | 19980908         | JP19970060126      | 19970228         |
| JP3200795 B2       | 20010820         | JP19960356672      | 19961227         |
| JP3235018 B2       | 20011204         | JP19970060126      | 19970228         |
| KR100308135 B1     | 20011228         | KR19980706678      | 19980826         |
| KR19990087276 A    | 19991215         | KR19980706678      | 19971208         |
| US6110316 A        | 20000829         | US19980125692      | 19981016         |
| WO9829265 A1       | 19980709         | WO1997JP04490      | 19971208         |

**Priority:**

JP19960356672 19961227      JP19970060126 19970228      WO1997JP04490 19971208

**Probable Assignee:** DAINIPPON PRINTING CO LTD

**Assignee(s):** (std): DAINIPPON PRINTING CO LTD ; ICHIHASHI TUTOMU ; KAN REIKO ; KOBAYASHI KAZUHISA ; MIYAKOSHI MITUTOYO ; OKAMOTO MASARU ; MIYASHITA HARUO ; YOSHIKAWA HIROHISA ; ONO HARUO ; KITAMURA KAZUO

**Assignee(s):** DAI NIPPON PRINTING CO ; DAI NIPPON PRINTING CO LTD

**Inventor(s):** (std): ICHIHASHI TSUTOMU ; MIYAKOSHI MITSUTOYO ; ONO HARUO DAI ; SUGA REIKO ; YOSHIKAWA HIROHISA ; YOSHIKAWA H ; ONO HARUO ; OKAMOTO MASARU ; MIYASHITA HARUO ; MIYAKOSHI M ; KOBAYASHI K ; KITAMURA KAZUO ; KAN REIKO ; ICHIHASHI TUTOMU ; MIYAKOSHI MITUTOYO ; KOBAYASHI KAZUHISA

**Designated states:** AT BE CH DE DK ES FI FR GB GR IE IT KR LI LU MC NL PT SE US

**Title:** METHOD OF MAKING COLOR ORNAMENTED ASBESTOS-CEMENT SHEETS

**Abstract:** 1) inst the surface of the iiltm' cylinder I9. ~ The said pipe 35 is mounted in sliding supporting members 38 and 39 and is arranged to be reciprocably moved therein by means of the mechanism 40 (shovm in Fig.

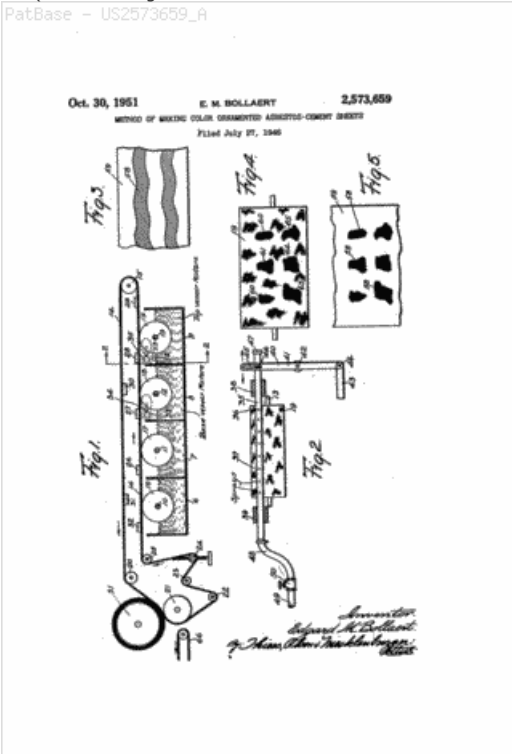
**Classifications:**

**International (IPC 8-9):** C04B28/02 (Advanced/Invention);  
C04B28/00 (Core/Invention)

**CPC:** C04B28/02 C04B2111/00612 Y10T428/31652

**European:** C04B28/02 M04B111/00T6

**US:** 162/126 162/134 162/154 427/403 427/428.2 428/443



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2573659 A        | 19511030         | US19460686669      | 19460727         |

**Priority:**

US19460686669 19460727

**Probable Assignee:** UNITED STATES GYPSUM CO  
**Assignee(s):** (std): UNITED STATES GYPSUM CO  
**Assignee(s):** UNITED STATES GYPSUM COMPANY  
**Inventor(s):** (std): BOLLAERT EDGARD M

**Title:** Continuous fleece manufacture, by splitting sheet to form endless network structure of coherent fibers, employs suction and directly-looped spreading to form structure held by binders

**Abstract:** The network comprises sheet fibers introduced into a conically enlarging air channel. It is entrained by an airflow driven by suction, simultaneously spreading it. In this form it is laid in a loop onto a recirculating sieve belt to make a fibrous sheet layer. This has an adjustable weight per unit area and high uniformity. Following conventional treatments, the layer is consolidated to a fleece. The network comprises a structure of sheet fibers (9), which are introduced into a conically enlarging air channel (5). It is entrained by an airflow driven by suction, simultaneously spreading it out. In this expanded form it is laid in a looped formation onto a recirculating sieve belt to make a fibrous sheet layer (11). This has an adjustable weight per unit area and high uniformity. Following conventional mechanical and/or chemical and/or thermal treatments, the layer is consolidated to a fleece. An Independent claim is included for corresponding equipment used to manufacture the fleece. It includes a fibrillator (2), a spreader (3), an air channel, a sieve conveyor belt (6), and a blower (8) connected for suction. The front wall of the air channel (5) is perpendicular, The angle (alpha) between the channel walls (5a, 5b) is 7-12 deg.

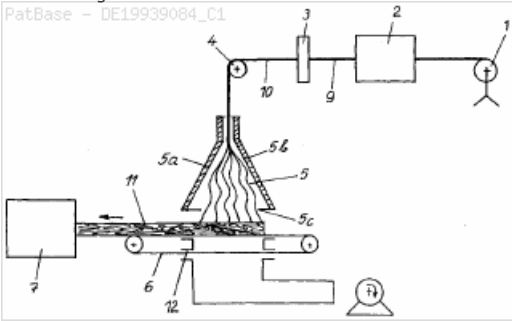
**Classifications:**

**International (IPC 8-9):** D04H13/02 D04H3/10 (Advanced/Invention);  
D04H3/08 (Core/Invention)

**International (IPC 1-7):** D04H13/02

**CPC:** D04H13/02

**European:** D04H13/02



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| DE19939084 C1      | 20010301         | DE19991039084      | 19990818         |

**Priority:**

DE19991039084 19990818

**Probable Assignee:** SAECHSISCHES TEXTILFORSCH INST

**Assignee(s):** (std): SAECHSISCHES TEXTILFORSCH INST

**Assignee(s):** SAECHSISCHES TEXTILFORSCHUNGSINSTITUT E V ; SAECHSISCHES TEXTILFORSCHUNGSINSTITUT EV

**Inventor(s):** (std): LANDGRAF FRANK ; LINDNER RAINER ; STEINBACH ULLRICH

**Title:** MUFFLER FOR COMPRESSORS

**Abstract:** A muffler for hermetically sealed compressors consisting of a body made of plastic material with two chambers separated by a wall and directly assembled on the compressor cylinder head by means of two lined up small tubes equipped with special sealing means. The danger that the muffler may break loose from the head and possibly rotate on its axis of vertical symmetry is thus avoided.

**Classifications:**

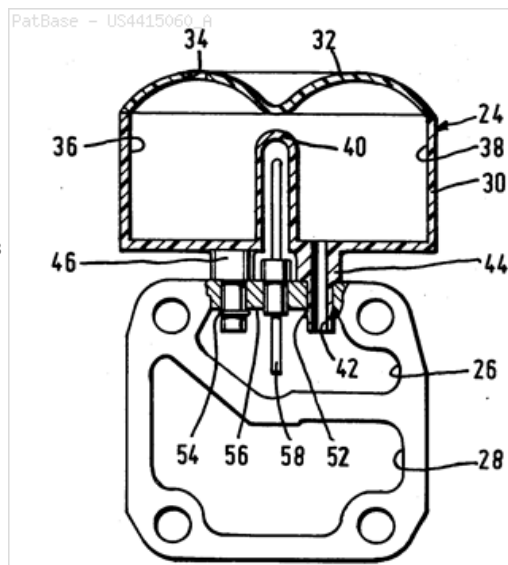
**International (IPC 8-9):** B02C13/04 B02C13/288 B05B13/00 B05C11/115 B05D1/02 B05D3/00 B05D7/00 B65H23/00 D06B23/18 D06B3/02 D06B5/00 D21B1/06 D21B1/14 D21D1/32 D21H19/10 F01N13/00 F01N7/00 F04B39/00 F04B39/12 (Advanced/Invention); B05B13/00 B05D3/00 B05D7/00 D06B5/00 (Advanced/Non-invention); B02C13/00 B05B13/00 B05C11/00 B05D1/02 B05D3/00 B05D7/00 B65H23/00 D06B23/00 D06B3/00 D06B5/00 D21B1/00 D21D1/00 D21H19/00 F01N7/00 F04B39/00 F04B39/12 (Core/Invention); B05C D06B (Subclass/Invention)

**International (IPC 1-7):** B02C13/04 B02C13/13 B02C13/288 B05B13/00 B05C1/04 B05C11/115 B05D3/00 B05D7/00 B27K B65H23/00 D06B23/18 D06B5/00 D21B1/06 D21B1/14 D21H1/34 F01N1/08 F01N7/16 F01N7/18 F04B39/12 F04D29/66 F25B31/00 F25D19/00

**CPC:** D06B3/02 B02C13/04 B02C13/288 D21B1/06 D21D1/32 B05C11/115 B05D1/02 D06B23/18 Y10S181/403 F01N13/002 F04B39/0061 F04B39/123

**European:** B02C13/04 B02C13/288 B05C11/115 B05D1/02 D06B23/18 D06B3/02 D21B1/06 D21D1/32 F01N13/00B F04B39/00D8A F04B39/12F

**US:** 181/272 181/403 417/312 62/296

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AU198425752 A1     | 19840928         | AU19840025752      | 19840305         |
| AU198425753 A1     | 19840928         | AU19840025753      | 19840305         |
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| DE3206037 A1       | 19820909         | DE19823206037      | 19820219         |
| DE3206037 C2       | 19900523         | DE19823206037      | 19820219         |
| DK108383 A0        | 19830303         | DK19830001083      | 19830303         |
| DK108483 A         | 19840904         | DK19830001084      | 19830303         |
| DK108483 A0        | 19830303         | DK19830001084      | 19830303         |
| DK232683 A         | 19840904         | DK19830002326      | 19830524         |
| DK232683 A0        | 19830524         | DK19830002326      | 19830524         |
| EP0135556 A1       | 19850403         | EP19840900972      | 19840305         |
| EP0135557 A1       | 19850403         | EP19840900973      | 19840305         |
| EP0144365 A1       | 19850619         | EP19840901986      | 19840523         |
| FI844317 A         | 19841102         | FI19840004317      | 19841102         |
| FI844317 A0        | 19841102         | FI19840004317      | 19841102         |
| FI844317 L         | 19841102         | FI19840004317      | 19841102         |
| FI850292 A         | 19850123         | FI19850000292      | 19850123         |
| FI850292 A0        | 19850123         | FI19850000292      | 19850123         |
| FI850292 L         | 19850123         | FI19850000292      | 19850123         |
| GB2093523 A1       | 19820902         | GB19820003192      | 19820204         |
| GB2093523 B2       | 19840510         | GB19820003192      | 19820204         |
| IT1147227 A        | 19861119         | IT19810042905      | 19810224         |
| IT8142905 A0       | 19810224         | IT19810042905      | 19810224         |
| JP60500659 T2      | 19850509         | JP19840501027T     | 19840305         |
| JP60501400 T2      | 19850829         | JP19840502196      | 19840523         |
| NO844374 A         | 19841102         | NO19840004374      | 19841102         |
| NO850280 A         | 19850123         | NO19850000280      | 19850123         |
| SE455630 B         | 19880725         | SE19820001047      | 19820219         |
| SE455630 C         | 19881117         | SE19820001047      | 19820219         |
| SE8201047 A        | 19820825         | SE19820001047      | 19820219         |
| SE8201047 L        | 19820825         | SE19820001047      | 19820219         |
| US4415060 A        | 19831115         | US19820349474      | 19820217         |
| WO8403454 A1       | 19840913         | WO1984DK00015      | 19840305         |
| WO8403485 A1       | 19840913         | WO1984DK00016      | 19840305         |
| WO8404704 A1       | 19841206         | WO1984DK00044      | 19840523         |

**Priority:**

|               |          |               |          |               |          |
|---------------|----------|---------------|----------|---------------|----------|
| IT19810042905 | 19810224 | DK19830001083 | 19830303 | DK19830001084 | 19830303 |
| DK19830002326 | 19830524 | WO1984DK00015 | 19840305 | WO1984DK00016 | 19840305 |
| WO1984DK00044 | 19840523 |               |          |               |          |

**Probable Assignee:** NECCHI COMPRESSORI SRL

**Assignee(s):** (std): HOLBEK K ; HOLBEK KJELD ; NECCHI SPA ; NECCHI COMPRESSORI

**Assignee(s):** NECCHI COMPRESSORI S R L ; NECCHI COMPRESSORI SRL ; NECCHI S P A ; NECCHI SO PER AZIONI ;  
NECCHI COMPRESSORI S R L PAVIA IT ; KJELD HOLBEK

**Inventor(s):** (std): BAR A ; BAR ALFREDO ; A BAR ; HOLBEK KJELD ; KJELD HOLBEK

**Inventor(s):** ALFREDO BAR ; BAR ALFREDO PAVIA IT ; HOLBEK K

**Agent(s):** FB RICE; FB RICE PTY LTD

**Designated states:** AT AU BE CH DE DK FI FR GB JP LI LU NL NO SE US

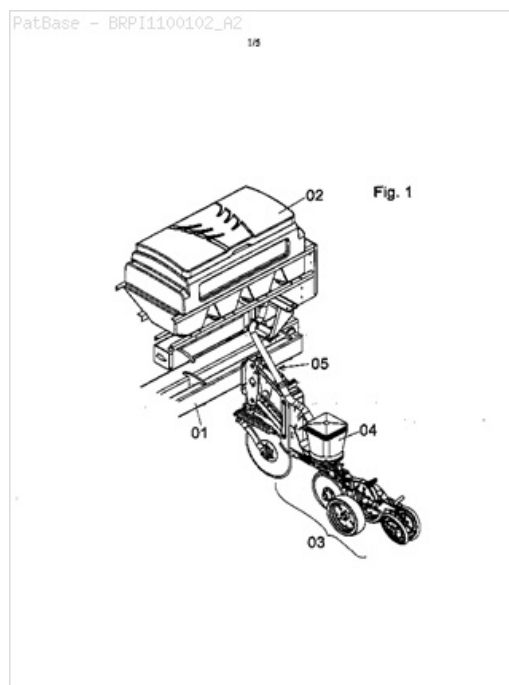
**Title:** usina movel de microrevestimento asfaltico A mobile asphalt plant microrevestimento (Machine translation)

**Abstract:** Source: BRPI1100117A [PT] USINA MOVEL DE MICROREVESTIMENTO ASFALTICO. Producao de mistura e espalhamento de micro revestimento asfaltico, para rejuvenescimento e impermeabilizacao de superficies asfalticas desgastadas de revestimentos porosos e/ou fissurados, em obras rodoviaras, O microrevestimeno asfaltico a frio com emulsao modificada por polimero deve ser executado com equipamento apropriado que apresente as seguintes caracteristicas: silo para agregado miudo, deposito separados para agua, emulsao asfaltica e aditivos; deposito para material de enchimento (Filler), com alimentador automatico; sistema de circulacao e alimentacao do ligante asfaltico, interligado, com sistema de alimentacao do agregado miudo, de modo a assegurar o traco da mistura; sistema misturador capaz de processar uma mistura uniforme e de despejar a massa diretamente sobre a pista, em operacao continua, sem processo de segregacao; chassi - todo o conjunto descrito nos itens anteriores e montado sobre um chassi movel autopropulsado, ou atrelado a um cavalo mecanico, ou trator de pneus; caixa distribuidora - esta peca apoia diretamente sobre o pavimento atrelado ao chassi. Deve ser montada sobre borracha, ter largura regulavel e ser suficientemente pesada para garantir uniformidade de distribuicao e bom acabamento.

**Machine translation:** MOBILE PLANT FOR MICROREVESTIMENTO Asphalt. Production mixing and spreading of micro asphalt coating, sealing and rejuvenation of worn asphalt surfaces of porous coatings and / or cleft in road works, the cold microrevestimeno asphalt emulsion modified with a polymer should be performed with appropriate equipment to provide the following characteristics: silo for added kid, separate deposit for water, asphalt emulsion and additives to deposit fill material (Filler), with automatic feeder, feeding system and circulation of the asphalt binder, interconnected with system feeding the kid added, the to ensure the trace of the mixture, mixing system capable of processing a uniform mixture and pour the batter directly onto the track still in operation, without due process of segregation; chassis - the whole set described in previous sections and mounted on a mobile chassis self-propelled or towed by a mechanical horse or tractor tires; distribution box - directly supports this piece on the floor tied to the chassis. Must be mounted on rubber, having adjustable width and be heavy enough to ensure uniform distribution and good finish.

#### Classifications:

**International (IPC 8-9):** A01C7/20 B60P3/00 C01B17/74  
E01C19/12 (Advanced/Invention)



#### Family:

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| BRPI1100102 A2     | 20120502         | BR2011PI00102      | 20110128         |
| BRPI1100109 A2     | 20120529         | BR2011PI00109      | 20110128         |
| BRPI1100117 A2     | 20120410         | BR2011PI00117      | 20110128         |

#### Priority:

BR2011PI00102 20110128      BR2011PI00109 20110128      BR2011PI00117 20110128

**Probable Assignee:** MARCHESAN IMPLEMENT AND MAQUIN

**Assignee(s):** (std): MARCHESAN IMPLEMENT AND MAQUIN ; N C ENGENHARIA IND E COM LTDA ; S R ROMANELLI EQUIPAMENTOS RODOVIARIOS LTDA

**Assignee(s):** N C ENGENHARIA INDUSTRIA E COMERCIO LTDA ; MARCHESAN IMPLEMENTOS E MAQUINAS AGRICOLAS TATU S A

**Inventor(s):** (std): MARCHESAN JOAO CARLOS ; PERELLA CLARK NELSON ; ROMANELLI SILVIO ROBERTO

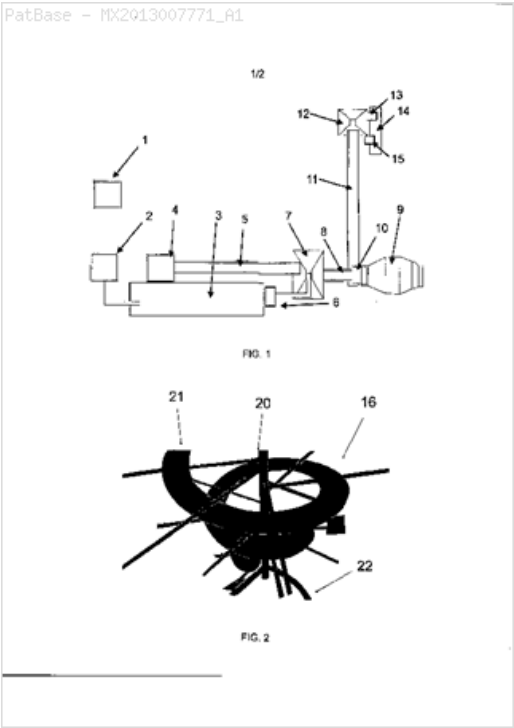
**Inventor(s):** SILVIO ROBERTO ROMANELLI ; NELSON PERELLA CLARK ; JOAO CARLOS MARCHESAN

**Title:** PRODUCTION LINE OF CONSTRUCTION MATERIAL BASED ON CELLULOSE.

**Abstract:** PRODUCTION LINE OF CONSTRUCTION MATERIAL BASED ON CELLULOSE, WHICH SOLVES THE PROBLEMS GENERATED BY THE HANDLE OF MATERIAL OF LOW DENSITY AND HIGH COHESION, WHICH ALLOWS THE RAW MATERIALS TO BE PREPARED FOR THEIR MANUFACTURE AND TRANSPORT, FOR WEIGHTING THE COMPONENTS, MIXING AND BOTTLING THE SAME, ALL THE AFOREMENTIONED BEING PERFORMED AVOIDING WASTES OR POLLUTIONS BY POWDERS GENERATED IN THE DIFFERENT STEPS OR STAGES OF MANUFACTURE OF THIS TYPE OF CONSTRUCTION MATERIALS WITH THERMAL INSULATING PROPERTIES.

**Classifications:**

**International (IPC 8-9):** B28C5/40 B28C7/04 B28C7/14 B28C7/16  
B28C9/02 (Advanced/Invention);  
B28C5/00 B28C7/00 B28C9/00 (Core/Invention)



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| ■ MX2013007771 A1  | 20141222         | MX20130007771      | 20130621         |

**Priority:**

MX20130007771 20130621

**Probable Assignee:** TERMO CELULOSA MEXICANA DE CV SA  
**Assignee(s):** (std): TERMO CELULOSA MEXICANA DE CV SA  
**Inventor(s):** (std): MORELLON JUAN FRANCISCO NIETO  
**Inventor(s):** JUAN FRANCISCO NIETO MORELLON

**Title:** Composite railway tie and method of manufacture thereof

**Abstract:** A composite railway tie, and process for manufacture thereof, is disclosed. The composite railway tie comprises a main body portion being made of a first composite material comprising a binding constituent in a proportion of about 10 percent to about 20 percent by volume, and an aggregate material in a proportion of about 80 percent to about 90 percent by volume. The binding constituent comprises a plastic material chosen from the group of polyethylene and a polyethylene blend having at least 10 percent polyethylene. The aggregate material is in the form of irregular multi-faceted pieces chosen from the group consisting of crushed furnace slag, crushed gravel, crushed limestone, crushed granite, crushed basalt, and crushed trap rock, and mixtures thereof. The pieces of the aggregate material are distributed and otherwise arranged within the main body portion of the second material so that opposed surfaces of the pieces of the aggregate material have at least partial contact, one with another, in a contiguous manner. In essence, the binding constituent (preferably polyethylene) holds the aggregate material together in this interlocked fashion, so as to provide for a strong railway tie. An inner strengthening core, made from a material having high tensile strength, may also be included within the railway tie.

**Classifications:**

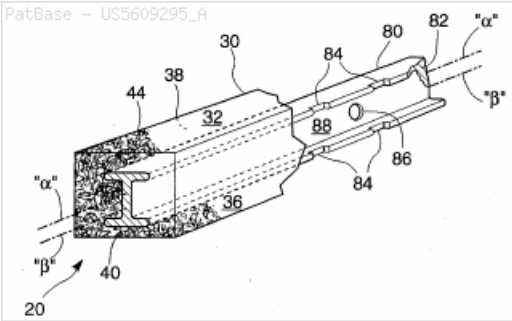
**International (IPC 8-9):** E01B3/36 (Advanced/Invention)

**International (IPC 1-7):** E01B3/36

**CPC:** E01B3/46

**European:** E01B3/36

**US:** 238/106 238/84 238/85



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US5609295 A        | 19970311         | US19950368903      | 19950105         |
| US5722589 A        | 19980303         | US19970814643      | 19970310         |

**Priority:**

US19950368903 19950105      US19970814643 19970310

**Probable Assignee:** GREEN TRACK INC

**Assignee(s):** (std): GREEN TRACK INC

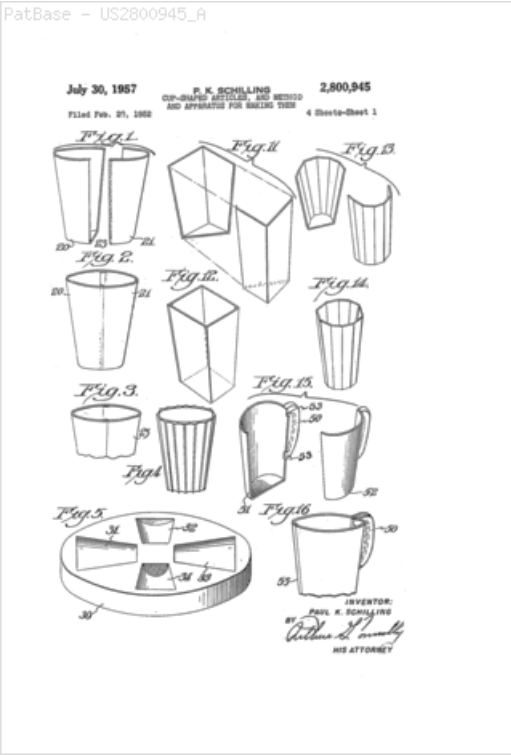
**Inventor(s):** (std): RICHARDS DENIS C

Title: CUP-SHAPED ARTICLES, AND METHOD AND APPARATUS FOR MAKING THEM

**Abstract:** (Claim 1) 1. A method of making a molded fibrous generaby deep walled article, which method comprises molding from a fibrous slurry, and at least partially drying, a split form of the article, then overlapping portions of the dried form to produce an intermediate member having the approximate shape of the final article ' and pressing the intermediate member to adherently join the overlapping portions and provide the finished article.

**Classifications:**

**International (IPC 8-9):** B29C65/02 B29C65/80 B31B17/00 B31F1/00 (Advanced/Invention); B29C65/02 B29C65/78 B31B17/00 B31F1/00 (Core/Invention)  
**CPC:** B29C65/80 B29C66/54 B29K2711/126 B29L2031/7132 B31F1/0077 B65D13/04 Y10T29/49801 Y10T29/49885 Y10T29/49893 Y10T156/1038 Y10T156/1048 Y10T156/1746 Y10T156/1771 B29C66/8322 B29C66/549 B31B2105/00 B31B2120/00 B29C66/112 B29C66/1222 B29C66/1224 B29C66/131 B29C66/72328 B29C66/72343  
**European:** B29C65/02 B29C65/80 B29C66/54 B31B17/00 B31F1/00B B65D13/04 L29C66/549 L29K711/12C L29L31/7132 L31B217/00  
**US:** 118/319 156/218 156/224 156/228 156/292 156/557 156/567 162/116 162/201 162/221 220/4.24 229/402 29/419.1 29/458 29/463 493/131 493/149 493/150 493/152



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2800945 A        | 19570730         | US19520272533      | 19520220         |

**Priority:**

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**Probable Assignee:**

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**Assignee(s):** (std):

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**Inventor(s):** (std):

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