



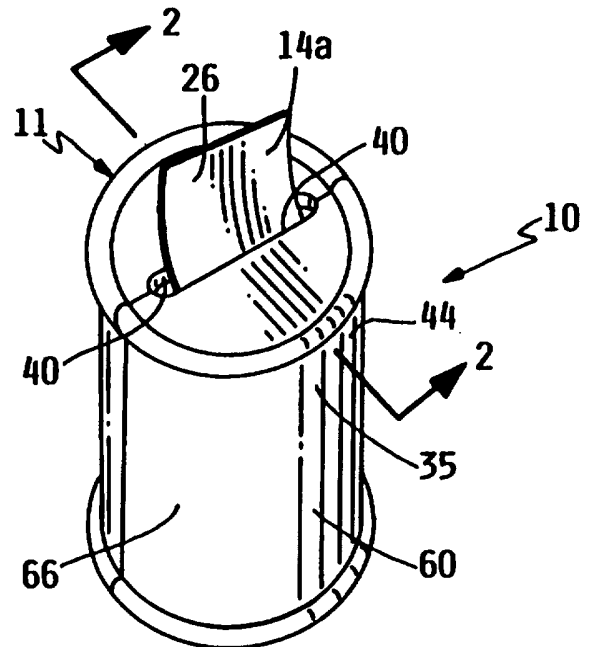
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| <p>(21) International Application Number: PCT/US96/03389 (22) International Filing Date: 12 March 1996 (12.03.96) (30) Priority Data: 08/425,409 20 April 1995 (20.04.95) US (71) Applicant: MINNESOTA MINING AND MANUFACTURING COMPANY [US/US]; 3M Center, P.O. Box 33427, Saint Paul, MN 55133-3427 (US). (72) Inventors: BODZIAK, Douglas, P.; P.O. Box 33427, Saint Paul, MN 55133-3427 (US). GROESS, Michael, S.; P.O. Box 33427, Saint Paul, MN 55133-3427 (US). (74) Agents: HUEBSCH, William, L. et al.; Minnesota Mining and Manufacturing Company, Office of Intellectual Property Counsel, P.O. Box 33427, Saint Paul, MN 55133-3427 (US).</p> | <p>(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i></p> | |

(54) Title: DISPENSER PACKAGE

(57) Abstract

A dispenser package including a stack of flexible sheets adhered together by layers of pressure sensitive adhesive with first and second ends of successive sheets in the stack adjacent; and an enclosure in which the stack of sheets is arched having top wall portions defining a slot transverse of the top of the arched stack of sheets. The first end portion of the uppermost sheet on the stack projects through the slot and when it is pulled through the slot, it will carry with it the first end portion of the next underlying sheet and leave it projecting through the slot. The enclosure is separable to afford inserting a new stack of sheets into the chamber.



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DISPENSER PACKAGE

Technical Field

The present invention relates to dispenser packages for a plurality of flexible
5 sheets each comprising a layer of pressure sensitive adhesive on a backing, which
sheets have are adhered to each other in a stack with first and second ends of
successive sheets in the stack adjacent, and have first end portions adjacent their
first ends that are not adhered to or can be easily separated from the underlying
sheet in the stack to facilitate removal of the uppermost sheet from the stack.

10

Background Art

Dispenser packages are known that include a stack of sheets of the type
described above. U.S. Patent No. 4,770,320 (Miles et al) describes such a package
including such a stack of sheets in which the layers of pressure sensitive adhesive
15 extend over only a portion of the backings for the sheets. U.S. Patents Nos.
5,086,946 (Blackwell et al) and 5,299,712 (Carlson et al) describe such a package
including such a stack of sheets in which the layers of pressure sensitive adhesive
extend over the entire backings on the sheets, and the separation of the first end
portions of the sheets is afforded by the use of release means for providing a first
20 low adhesion level along the first end portion of each of the sheets between the
layer of adhesive and the surface of the adjacent sheet in the stack to which the
layer of adhesive is releasably adhered, and attachment means for providing a
second adhesion level along a second end portion of each of the sheets adjacent
their second ends between the layer of adhesive and the adjacent sheet in the stack
25 that provides a release force that is higher than the low release force along the first
end portion. While each of the dispensing packages described in these U.S. Patents
is effective, both utilize shuttling of the stack to dispense the sheets.

U.S. Patent Application No. 08/263,601 describes a dispenser package for
such a stack of sheets in which the stack does not shuttle, but which utilizes an
30 opening extending a major portion of the length of the sheets through which the
sheets are dispensed.

Disclosure of Invention

The present invention provides a simple dispenser package for stacks of sheets of the types described above that does not require shuttling of the stack or a wide outlet opening to dispense the sheets, which dispenser is compact, easily
5 refillable, and can be molded to provide a dispenser in the shape of a small cylindrical container that can have indicia, such as advertising printed about its periphery.

The present invention provides a dispenser package that can include a stack
10 of flexible sheets generally of the type described in U.S. Patent No. 4,770,320, or generally of the type described in U.S. Patent No. 5,086,946, each of which sheets has first and second ends and comprises a backing having a layer of pressure sensitive adhesive on a bottom surface by which the sheets are releasably adhered to each other in the stack with adjacent ends of the sheets aligned and with first and
15 second ends of successive sheets in the stack adjacent. The sheets include either (1) release means for providing a first low adhesion level along a first end portion of each of the sheets adjacent its first end, which first adhesion level provides a low release force between the layer of adhesive and the adjacent top surface of a sheet to which the adhesive is releasably adhered, or (2) means for preventing adhesion of
20 the first end portions of the sheets to underlying sheets in said stack; and attachment means for providing a second adhesion level along a second end portion of each of the sheets adjacent its second end between the layer of adhesive and the top surface of the adjacent sheet in the stack that provides a release force that is higher than the low release force (if any) along the first end portion and firmly adheres the sheet to
25 the adjacent sheet in the stack while affording peeling the sheet from the stack along its second end portion.

The dispenser package includes an enclosure comprising walls defining a chamber in which the stack of sheets is positioned. Those walls include (1) a
bottom wall defining a bottom side of the chamber; (2) side wall means projecting
30 generally at a right angle with respect to the bottom wall from a juncture with the bottom wall for defining opposite ends of the chamber, with the opposite ends of

the chamber being spaced at a distance less than the length of the stack of sheets so that the stack of sheets is arched upwardly in the chamber away from the bottom wall with the top sheet of the stack on the side of the stack opposite the bottom wall; and (3) top wall means for defining a wall portion extending transversely
5 across the central portion of the top sheet on the arched stack and for providing opposed surfaces defining a slot transverse of the central portion of the arched stack through which the first end portion of the uppermost sheet projects while resting against one of the opposed surfaces defining the slot.

The arched stack of sheets and the opposed surfaces defining the slot afford,
10 as the uppermost sheet is pulled through said slot by its first end portion, peeling of successive portions of that uppermost sheet from the first underlying sheet on the stack, separation of the first end portion of the first underlying sheet from the second underlying sheet, and movement of the first end portion of the first underlying sheet through the slot with the second end portion of the uppermost
15 sheet to leave, after the uppermost sheet is fully peeled from the first portion of the first underlying sheet, the first end portion of the first underlying sheet in a position projecting through the slot and resting against the opposed surface opposite the opposed surface against which the removed sheet had been supported and disposed in a position where it may be grasped for manual removal in a manner similar to the
20 removal of the uppermost sheet.

Preferably, the side wall means of the housing comprises a hollow tubular side wall having a central axis (e.g., having a circular cross section), the enclosure is formed of first and second portions separable along a plane through that central axis, and the enclosure includes means for releasably retaining its first and second
25 portions in a closed position disposed to define the chamber, while affording movement of its first and second portions to an open position with the portions spaced apart to afford inserting a stack of sheets into the chamber.

Those means for releasably retaining can comprise hinge means mounting the first and second portions for relative pivotal movement around a pivot axis
30 parallel to said central axis and along the side wall between those closed and open

positions, and means in the form of a latch for releasably retaining the first and second portions in the closed position.

Also, the first and second portions of the enclosure and the hinge means can be a unitary polymeric molding (e.g., of polypropylene or polyethylene) with the hinge means comprising a portion of the molding (e.g., of the type called a living hinge) that is relatively thin in cross section and flexible compared to the first and second portions.

The opposed surfaces defining the slot can be generally parallel with the plane through the central axis at which the first and second portions can be separated, in which case the top wall means can comprise parallel inner and outer top walls spaced axially of the central axis that define the opposed surfaces with spaced surface portions.

Alternatively, the top wall means can comprise parallel slot defining walls defining the opposed surfaces and extending transverse to the tubular side wall at right angles to the plane through the central axis at which the first and second portions can be separated.

Additionally, the enclosure can further include a second tubular wall corresponding in cross sectional shape to the side wall and projecting coaxially on the side of the bottom wall opposite the side wall, and an end wall extending across the end of the second tubular wall opposite the bottom wall so that the second tubular wall, the bottom wall and the end wall define a storage chamber within the dispensing package that can be used for a spare stack of sheets for use in refilling the dispenser.

The dispenser package can further include a sheet adhered around the peripheral surface of its tubular wall and the end wall that can bear indicia such as advertising or the like.

Brief Description of Drawing

The present invention will be further described with reference to the accompanying drawing wherein like reference numerals refer to like parts in the several views, and wherein:

5 Figure 1 is a perspective view of a first embodiment of a dispenser package according to the present invention;

 Figure 2 is a sectional view taken approximately along line 2-2 of Figure 1;

 Figure 3 is an enlarged side view of two of a plurality of sheets in a stack in the dispenser package of Figure 1;

10 Figure 4 is a perspective view of an enclosure included in the dispenser package of Figure 1 shown open as it is molded;

 Figure 5 is a vertical sectional view of a second embodiment of a dispenser package according to the present invention;

 Figure 6 is a perspective view of an enclosure included in the dispenser package of Figure 5 shown open as it is molded; and

15 Figure 7 is an enlarged side view of two of a plurality of sheets in an alternate embodiment of a stack of sheets that can be used in either the first or second embodiments of the dispenser package.

20 Detailed Description

 Referring now to Figures 1 through 4 of the drawing, there is shown a first embodiment of a dispenser package according to the present invention generally designated by the reference numeral 10. The dispenser package 10 comprises an enclosure 11 for a stack 12 of sheets 14 from which sheets 14 can be withdrawn

25 from the dispenser package. The stack 12 of sheets 14 can be of the type described in U.S. Patent No. 4,770,320. Figure 3 illustrates the top two sheets 14a and 14b on such a stack 12 of sheets 14. The two sheets 14a and 14b are aligned with respect to each other as they are on the stack 12 but are separated for clarity concerning which portions are part of which sheet. As is illustrated in Figure 3,

30 each of the sheets 14 comprises a backing 16 having opposite major top and bottom surfaces, first and second opposite ends 19 and 20, and a predetermined length

between the first and second ends 19 and 20. Each of the sheets 14 includes a layer 22 of pressure sensitive adhesive on at least a second end portion 30 of the bottom surface adjacent the second end 20 of the backing 16, which second end portion 30 has a length from the second end 20 of the backing 16 toward its first end 19 that is longer than half the predetermined length of the backing 16. The sheets 14 in the stack 12 are releasably adhered to each other by adhesion of the layers of pressure sensitive adhesive 22 to portions of the top surfaces of underlying sheets 14 adjacent the first ends 19 of the underlying sheets 14 to form the stack 12 with adjacent ends 19 and 20 of the sheets 14 aligned and with the first and second ends 19 and 20 of successive sheets 14 in the stack 12 being adjacent. The sheets 14 include means for preventing adhesion of first end portions 26 of the sheets 14 adjacent their first ends 19 to underlying sheets 14 in the stack 12, which first end portions 26 have lengths from their first ends 19 toward their second ends 20 that are shorter than half their predetermined lengths so that centered portions 32 of the layers 22 of pressure sensitive adhesive between the first end portions 26 of successive sheets 14 in the stack 12 releasably adhere the sheets 14 in surface to surface relationship in the stack 12. In the sheets 14 illustrated, the pressure sensitive adhesive in the layers 22 is repositionable, and the first end portions 26 of the sheets 14 are free of adhesive on their bottom surfaces to provide that means for preventing adhesion of the first end portions of the sheets 14 adjacent their first ends 29 to an underlying sheet 14.

The enclosure 11 comprises walls defining a chamber 32, which walls include a bottom wall 34 defining a bottom side of the chamber 32; and side wall means 35 projecting generally at a right angle with respect to the bottom wall 34 from a juncture 36 with the bottom wall 34 for defining opposite ends of the chamber 32. The opposite ends of the chamber 32 are spaced at a distance less than the length of the stack 12 of sheets so that the stack 12 of sheets is disposed in the chamber 32 with the stack 12 arched upwardly away from the bottom wall 34 and with the top sheet of the stack 12 on the side of the stack 12 opposite the bottom wall 34. The walls also include top wall means 38 for defining a wall portion adapted to extend transversely of and engage the central portions of the top sheets

on the arched stack 12 and for providing opposed surfaces 40 defining a slot transverse of the central portion of the arched stack 12 with the first end portion 26 of the uppermost sheet 14a on the stack projecting through the slot and resting against one of said opposed surfaces 40. The opposed surfaces 40 are sufficiently
5 closely spaced (e.g., 0.18 inch) and have sufficient height (e.g., 0.25 inch) in a direction parallel to a central axis 42 of the enclosure 11 so that that first end portion 26 projects at less than about a 30 degree angle with respect to the axis 42 above the end of the enclosure 11 where it is easily grasped by a person wishing to withdraw that uppermost sheet 14a.

10 The arched stack 12 of sheets and the opposed surfaces 40 defining the slot afford, as the uppermost sheet 14a is pulled through the slot, peeling of successive portions of the uppermost sheet 14a from the first underlying sheet 14b in the stack to which that uppermost sheet 14a is adhered, separation of the first end portion 16
15 of the first underlying sheet 14b from the second underlying sheet, and movement of the first end portion 16 of the first underlying sheet 14b through the slot with the second end portion 30 of the uppermost sheet 14a to leave, after the uppermost sheet 14a is fully peeled from the first end portion 16 of the first underlying sheet 14b, the first end portion 16 of the first underlying sheet 14b in a position projecting through the slot and resting against the opposed surface 40 opposite the opposed
20 surface 40 against which the uppermost sheet 14a had rested, and disposed in a position where it to may be easily grasped for manual removal in a manner similar to the removal of the uppermost sheet 14a.

As illustrated, the side wall means comprises a hollow tubular or hollow cylindrical side wall 44 defining the central axis 42. The enclosure 11 is formed of
25 first and second portions 46 and 48 separable along a plane through its central axis 42, and includes hinge means 50 mounting the first and second portions 46 and 48 for relative pivotal movement around a pivot axis parallel to the central axis 42 and along the side wall 44 between a closed position (Figures 1 and 2) with those portions disposed to define the chamber 32, and an open position (Figure 4) with
30 those portions 46 and 48 spaced apart to afford inserting the stack 12 of sheets into the chamber 32. The enclosure 11 includes means for releasably retaining its first

and second portions 46 and 48 in their closed position, which means is provided by a resiliently flexible hook like projection 52 (Figure 4) on the edge of the first portion 46 opposite the hinge means 50 adapted to releasably engage over a lip 54 along the edge of the second portion 48 opposite the hinge means 50. The hook like projection 52 has a cam surface which deflects it around the lip 54 when the first and second portions 46 and 48 are moved to their closed position, and the side wall 44 can be manually deflected inwardly adjacent the hook like projection 52 to release the hook like projection 52 from the lip 54 when a person desires to move the first and second portions 46 and 48 to their open position.

10 Preferably, as illustrated, the first and second portions 46 and 48 of the enclosure 11 and the hinge means 50 are a unitary polymeric molding of polypropylene or polypropylene with the hinge means 50 comprising a thin portion of that molding that is relatively flexible compared to its first and second portions 46 and 48, and is strengthened and made flexible by molecular orientation to form what is called a "living hinge" when the first and second portions are first pivoted relative to each other after the molding is made.

In the enclosure 11 the opposed surfaces 40 defining the slot are generally parallel with the plane through the central axis 42 about which the first and second portions 46 and 48 can be separated, and the top wall means 38 comprises parallel inner and outer top walls 56 and 58 spaced along the central axis 42 and each extending radially of the central axis. The top walls 56 and 58 have axially spaced surface portions defining the opposed surfaces 40.

The enclosure further includes a second tubular or cylindrical wall 60 coaxial with and corresponding in its circular cross sectional shape to the side wall 44 and projecting on the side of the bottom wall 34 opposite the side wall 44, and an end wall 62 extending across the end of the second tubular wall 60 opposite the bottom wall 34. The second tubular wall 60, bottom wall 34 and end wall 62 define a storage chamber 64 within the enclosure 11 which can be used for storing many things, and is particularly useful for storing one or more spare stacks 12 of sheets for use in the dispensing package 10.

The dispenser package 10 further includes a sheet 66 bearing indicia adhered around the peripheral surfaces of the tubular side wall 44 and the second tubular wall 60 which can bear various indicia, such as decorations and/or advertisements. Alternatively, the peripheral surfaces of the tubular side wall 44 and the second tubular wall 60 could be impressed and/or painted with such indicia.

Referring now to Figures 5 and 6 of the drawing, there is shown a second embodiment of a dispenser package according to the present invention generally designated by the reference numeral 70.

Generally the dispenser package 70 comprises an enclosure 71 for the stack 12 of sheets 14 described above and in U.S. Patent No. 4,770,320. The enclosure 71 comprises walls defining a chamber 72, which walls include a bottom wall 74 defining a bottom side of the chamber 72; and side wall means 75 projecting generally at a right angle with respect to the bottom wall 74 from a juncture 76 with the bottom wall 74 for defining opposite ends of the chamber 72. The opposite ends of the chamber 72 are spaced at a distance less than the length of the stack 12 of sheets so that the stack 12 of sheets in the chamber 72 is arched upwardly away from the bottom wall 74 with the top sheet 14a of the stack 12 on the side of the stack 12 opposite the bottom wall 74. The walls also include top wall means 78 for defining a wall portion adapted to extend transversely of and engage the central portions of the uppermost sheets 14a and 14b on the arched stack 12 and for providing opposed surfaces 80 defining a slot transverse of the central portion of the arched stack 12 with the first end portion 26 of the uppermost sheet 14a on the stack projecting through the slot and resting against one of those opposed surfaces 80. The opposed surfaces 80 are sufficiently closely spaced (e.g., 0.18 inch) and have sufficient height in a direction parallel to a central axis 82 of the enclosure 71 so that that first end portion 26 projects at less than about a 30 degree angle with respect to the axis 82 above the end of the enclosure 71 where it is easily grasped by a person wishing to withdraw that uppermost sheet 14.

As illustrated, the side wall means 75 comprises a hollow tubular or hollow cylindrical side wall 84 defining the central axis 82. The enclosure 71 is formed of first and second portions 86 and 88 separable along a plane through its central axis

82, and includes hinge means 90 mounting the first and second portions 86 and 88 for relative pivotal movement around a pivot axis through the hinge means 90 along the side wall 84 and parallel to the central axis 82. The first and second portions 86 and 88 are pivotable between a closed position (Figure 5) with those portions 86 and 88 disposed to define the chamber 72, and an open position (Figure 6) with those portions 86 and 88 spaced apart to afford inserting the stack 12 of sheets into the chamber 72. The enclosure 71 includes means for releasably retaining its first and second portions 86 and 88 in their closed position, which means is provided by a resiliently flexible hook like projection 92 on the edge of the first portion 86 opposite the hinge means 90 adapted to releasably engage over a lip 94 along the edge of the second portion 88 opposite the hinge means 90. The hook like projection 92 has a cam surface which deflects it around the lip 94 when the first and second portions 86 and 88 are moved to their closed position, and the side wall 84 can be manually deflected inwardly adjacent the hook like projection 92 to release the hook like projection 92 from the lip 94 when a person desires to move the first and second portions 86 and 88 to their open position.

Preferably, as illustrated, the first and second portions 86 and 88 of the enclosure 71 and the hinge means 90 are a unitary polymeric molding of polypropylene or polyethylene with the hinge means 90 comprising a thin portion of that molding that is relatively flexible compared to the first and second portions 86 and 88, and is strengthened and made flexible by molecular orientation to form what is called a "living hinge" when the first and second portions 86 and 88 are first pivoted relative to each other after the molding is made.

In the enclosure 71 the opposed surfaces 80 defining the slot are generally at right angles to the plane through the central axis 42 about which the first and second portions 86 and 88 can be separated, and the top wall means 78 comprises parallel slot defining walls 96 defining the opposed surfaces 80 and extending transverse to the tubular side wall 84 at right angles to the plane through the central axis 82 about which the first and second portions 86 and 88 can be separated.

The enclosure further includes a second tubular or cylindrical wall 100 coaxial with and corresponding in its circular cross sectional shape to the side wall 84

and projecting on the side of the bottom wall 74 opposite the side wall 84, and an end wall 102 extending across the end of the second tubular wall 100 opposite the bottom wall 74. The second tubular wall 100, bottom wall 74 and end wall 102 define a storage chamber 104 within the enclosure 71 which can be used for storing many things, and is particularly useful for storing one or more spare stacks 12 of sheets for use in the dispensing package 70.

Figure 7 illustrates two sheets 114 from a stack 112 of flexible sheets 114 of a type described in U.S. Patent No. 5,086,946. Flexible sheets 114 from the stack described in U.S. Patent No. 5,086,946 can also be dispensed from the enclosure 11 or the enclosure 71. The two sheets 114 from the stack 112 illustrated in Figure 7 aligned with respect to each other as they would be on the stack 112, but are slightly separated for clarity concerning the portions of the sheets 114. Each of the sheets 114 has first and second opposite ends 119 and 120 and a predetermined length between its first and second ends 119 and 120. Each sheet 114 also comprises a backing 116 (e.g., of transparent polymeric material) having opposite major top and bottom major surfaces, and a layer of pressure sensitive adhesive 122 on its bottom surface. The sheets 114 in the stack 112 are releasably adhered to each other by releasable adhesion of the layers of pressure sensitive adhesive 122 to the top surfaces of underlying sheets 114 to form the stack 112 with adjacent ends 119 or 120 of the sheets 114 aligned and with the first and second ends 119 and 120 of successive sheets 114 in the stack 112 adjacent. The sheets 114 have release means in the form of a first layer of release material 124, which on an underlying sheet 114 in the stack 112 provides a first adhesion level along a first end portion 126 of an overlying sheet 114 adjacent the first end 119 of its backing 116 between the layer of adhesive 122 and the top surface of the adjacent underlying sheet 114 in the stack 112 to which the layer of adhesive 122 is releasably adhered, which first adhesion level provides a sufficiently low release force between the layer of adhesive 122 and the adjacent underlying sheet 114 to which the adhesive 122 is releasably adhered to afford easy separation between the top and bottom surfaces of the adjacent sheets 114 along the first end portion 126 of the overlying sheet 114. Also the sheets 114 have attachment means in the form of a coating of a different

release material 128 which on an underlying sheet 114 provides a second adhesion level along a second end portion 130 of an overlying sheet 114 adjacent the second end 120 of its backing 116 between the layer of adhesive 122 and the top surface of the adjacent sheet in the stack 112 to which the layer of adhesive 122 is releasably
5 adhered. This second adhesion level provides a release force that is higher than the low release force along the first end portion 126 and firmly adheres the sheet 114 to the adjacent underlying sheet 114 in the stack 112 during separation of the sheet 114 relative to the adjacent sheet 114 along the first end portion 126 while affording peeling away of the sheet 114 from the stack 112 along the second end
10 portion 130. The first end portions 126 have lengths from the first ends 119 toward the second ends 120 of the backings 116 that are shorter than half the predetermined lengths of the backings 116 so that centered portions 132 of the layers of pressure sensitive adhesive 122 between the first end portions 126 of successive sheets 114 in the stack 112 releasably adhere the sheets 114 in surface to
15 surface relationship in the stack 112.

The present invention has now been described with reference to different embodiments thereof. It will be apparent to those skilled in the art that many changes can be made in the embodiments described without departing from the scope of the present invention. For example, the first and second portions 46 and
20 48 of the enclosure 11 or the first and second portions 86 and 88 of the enclosure 71 could be molded separately without the "living hinge" therebetween, and a length of adhesive coated tape or a portion of the sheet 66 could serve as a hinge means between the portions 46 and 48 or 86 and 88. Thus, the scope of the present invention should not be limited to the structures and methods described in this
25 application, but only by the structures and method described by the language of the claims and the equivalents thereof.

CLAIMS:

1. A dispenser package comprising:
 - a plurality of flexible sheets, each of said sheets having first and second spaced ends and a predetermined length between said first and second ends,
5 comprising a backing having opposite major top and bottom surfaces, and having a layer of pressure sensitive adhesive on said bottom surface, said sheets being releasably adhered to each other by releasable adhesion of the layers of pressure sensitive adhesive to the top surfaces of underlying sheets to form a stack with
10 opposite ends and with adjacent ends of the sheets in the stack aligned and with the first and second ends of successive sheets in the stack being adjacent, and having release means for providing a first adhesion level along a first end portion of each of said sheets adjacent said first end between said layer of adhesive and the top surface of the adjacent sheet in the stack to which said layer of adhesive is releasably
15 adhered that affords easy separation of surfaces of adjacent sheets along said first end portion, and attachment means for providing a second adhesion level along a second end portion of each of said sheets adjacent said second end between said layer of adhesive and the top surface of the adjacent sheet in the stack, which second adhesion level provides a release force that is higher than said release force
20 along said first end portion and firmly adheres the sheet to the adjacent sheet in the stack during separation of the sheets along said first end portion while affording peeling away of the sheet from the stack along said second end portion; and
an enclosure comprising walls defining a chamber, said walls including
a bottom wall defining a bottom side of said chamber;
25 side wall means projecting generally at a right angle with respect to said bottom wall from a juncture with said bottom wall for defining opposite ends of said chamber, with said opposite ends of said chamber being spaced at a distance less than the length of said stack of sheets, said stack of sheets being disposed in said chamber
30 with the stack arched upwardly away from said bottom wall and the

top sheet of the stack on the side of the stack opposite said bottom wall;

top wall means for defining a wall portion adapted to transversely engage the central portion of the top sheet on said arched stack and for providing opposed surfaces defining a slot transverse of said central portion of said arched stack with the first end portion of said uppermost sheet projecting through said slot and resting against one of said opposed surfaces;

said arched stack of sheet and opposed surfaces defining said slot affording, as said uppermost sheet is pulled through said slot at said first end portion, peeling of successive portions of said uppermost sheet from the first underlying sheet in said stack to which said uppermost sheet is adhered, separation of the first end portion of the first underlying sheet from the second underlying sheet, and movement of the first end portion of the first underlying sheet through said slot with the second end portion of said uppermost sheet to leave, after said uppermost sheet is fully peeled from the first portion of the first underlying sheet, the first end portion of said first underlying sheet in a position projecting through said slot and resting against the opposed surface opposite said one opposed surface and disposed in a position where it may be grasped for manual removal in a manner similar to the removal of the uppermost sheet.

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2. A dispenser package according to claim 1 wherein said side wall means comprises a hollow tubular side wall having a central axis, said enclosure is formed of first and second portions separable along a plane through said central axis, and said enclosure includes means for releasably retaining said first and second portions in a closed position with said portions disposed to define said chamber, while affording movement of said first and second portions to an open position with said portions spaced apart to afford inserting a stack of sheets into said chamber.

3. A dispenser package according to claim 1 wherein said side wall means comprises a hollow tubular side wall having a central axis, said enclosure is formed of first and second portions separable along a plane through said central axis, and

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said enclosure includes hinge means mounting said first and second portions for relative pivotal movement around a pivot axis parallel to said central axis and along said side wall between a closed position with said portions disposed to define said chamber, and an open position with said portions spaced apart to afford inserting a stack of sheets into said chamber, and said enclosure includes means for releasably retaining said first and second portions in said closed position.

4. A dispenser package according to claim 3 wherein said tubular side wall is cylindrical.

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5. A dispenser package according to claim 3 wherein said first and second portions of said enclosure and said hinge means are a unitary polymeric molding with said hinge means comprising a portion of said molding that is relatively flexible compared to said first and second portions.

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6. A dispenser package according to claim 3 wherein said opposed surfaces defining said slot are generally parallel with said plane through said central axis, and said top wall means comprises parallel inner and outer spaced top walls each extending radially of said central axis and defining portions of said opposed surfaces.

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7. A dispenser package according to claim 3 wherein said top wall means comprises parallel slot defining walls defining said opposed surfaces and extending transverse to said tubular side wall at right angles to said plane through said central axis.

25

8. A dispenser package according to claim 3 wherein said enclosure further includes a second tubular wall corresponding in cross sectional shape to said side wall and projecting on the side of said bottom wall opposite said side wall, and an end wall extending across the end of said second tubular wall opposite said bottom

30

wall, said second tubular wall, bottom wall and end wall defining a storage chamber within said enclosure.

9. A dispenser package according to claim 3 further including a sheet
5 bearing indicia adhered around the peripheral surface of said tubular wall.

10. A dispenser package according to claim 1 wherein said first end
portions of said sheets have lengths from said first ends toward said second ends of
the sheets that are shorter than half said predetermined length so that centered
10 portions of the layers of pressure sensitive adhesive between the first end portions
of successive sheets in the stack releasably adhere the sheets in surface to surface
relationship in the stack.

11. An enclosure adapted to dispense a plurality of flexible sheets, each of
15 said sheets has first and second spaced ends and a predetermined length between
said first and second ends, comprises a backing having opposite major top and
bottom surfaces, and has a layer of pressure sensitive adhesive on said bottom
surface, said sheets being releasably adhered to each other by releasable adhesion of
the layers of pressure sensitive adhesive to the top surfaces of underlying sheets to
20 form a stack with opposite ends and with adjacent ends of the sheets in the stack
aligned and with the first and second ends of successive sheets in the stack being
adjacent, and having release means for providing a first adhesion level along a first
end portion of each of said sheets adjacent said first end between said layer of
adhesive and the top surface of the adjacent sheet in the stack to which said layer of
25 adhesive is releasably adhered that affords easy separation of surfaces of adjacent
sheets along said first end portion, and attachment means for providing a second
adhesion level along a second end portion of each of said sheets adjacent said
second end between said layer of adhesive and the top surface of the adjacent sheet
in the stack, which second adhesion level provides a release force that is higher than
30 said release force along said first end portion and firmly adheres the sheet to the
adjacent sheet in the stack during separation of the sheets along said first end

portion while affording peeling away of the sheet from the stack along said second end portion;

said enclosure comprising walls defining a chamber, said walls including a bottom wall defining a bottom side of said chamber;

5 side wall means projecting generally at a right angle with respect to said bottom wall from a juncture with said bottom wall for defining opposite ends of said chamber, with said opposite ends of said chamber being spaced at a distance less than the length of said stack of sheets, said stack of sheets being disposed in said chamber
10 with the stack arched upwardly away from said bottom wall and the top sheet of the stack on the side of the stack opposite said bottom wall;

top wall means for defining a wall portion adapted to transversely engage the central portion of the top sheet on said arched stack and for providing
15 opposed surfaces defining a slot transverse of said central portion of said arched stack with the first end portion of said uppermost sheet projecting through said slot and resting against one of said opposed surfaces;

said arched stack of sheet and opposed surfaces defining said slot affording, as said uppermost sheet is pulled through said slot at said first end portion, peeling
20 of successive portions of said uppermost sheet from the first underlying sheet in said stack to which said uppermost sheet is adhered, separation of the first end portion of the first underlying sheet from the second underlying sheet, and movement of the first end portion of the first underlying sheet through said slot with the second end portion of said uppermost sheet to leave, after said uppermost sheet is fully peeled
25 from the first portion of the first underlying sheet, the first end portion of said first underlying sheet in a position projecting through said slot and resting against the opposed surface opposite said one opposed surface and disposed in a position where it may be grasped for manual removal in a manner similar to the removal of the uppermost sheet.

30

12. An enclosure according to claim 11 wherein said side wall means comprises a hollow tubular side wall having a central axis, said enclosure is formed of first and second portions separable along a plane through said central axis, and said enclosure includes means for releasably retaining said first and second portions
5 in a closed position with said portions disposed to define said chamber, while affording movement of said first and second portions to an open position with said portions spaced apart to afford inserting a stack of sheets into said chamber.

13. An enclosure according to claim 11 wherein said side wall means
10 comprises a hollow tubular side wall having a central axis, said enclosure is formed of first and second portions separable along a plane through said central axis, and said enclosure includes hinge means mounting said first and second portions for relative pivotal movement around a pivot axis parallel to said central axis and along
15 said side wall between a closed position with said portions disposed to define said chamber, and an open position with said portions spaced apart to afford inserting a stack of sheets into said chamber, and said enclosure includes means for releasably retaining said first and second portions in said closed position.

14. An enclosure according to claim 13 wherein said tubular side wall is
20 cylindrical.

15. An enclosure according to claim 13 wherein said first and second portions of said enclosure and said hinge means are a unitary polymeric molding with said hinge means comprising a portion of said molding that is relatively flexible
25 compared to said first and second portions.

16. An enclosure according to claim 13 wherein said opposed surfaces defining said slot are generally parallel with said plane through said central axis, and said top wall means comprises parallel inner and outer spaced top walls each
30 extending radially of said central axis and defining portions of said opposed surfaces.

17. An enclosure according to claim 13 wherein said top wall means
comprises parallel slot defining walls defining said opposed surfaces and extending
transverse to said tubular side wall at right angles to said plane through said central
5 axis.

18 An enclosure according to claim 13 wherein said enclosure further
includes a second tubular wall corresponding in cross sectional shape to side wall
and projecting on the side of said bottom wall opposite said side wall, and an end
10 wall extending across the end of said second tubular wall opposite said bottom wall,
said second tubular wall, bottom wall and end wall defining a storage chamber
within said enclosure.

19. An enclosure according to claim 13 further including a sheet bearing
15 indicia adhered around the peripheral surface of said tubular wall.

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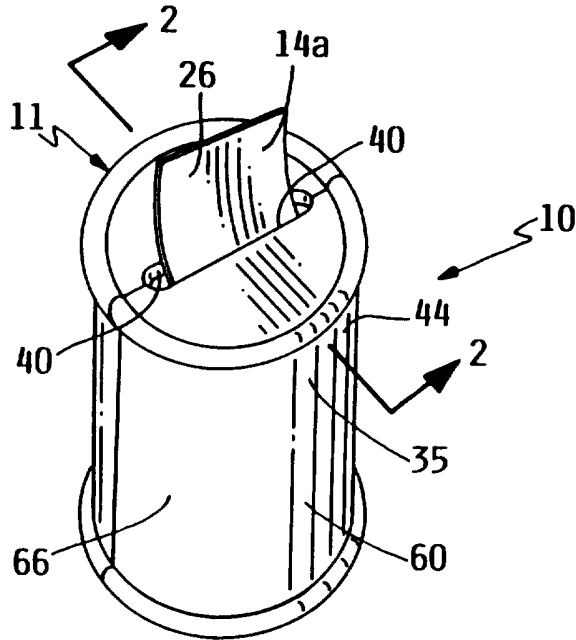


FIG. 1

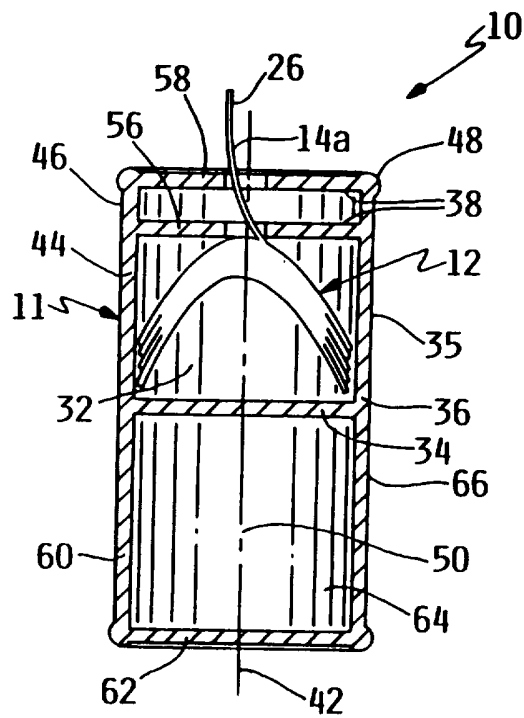


FIG. 2

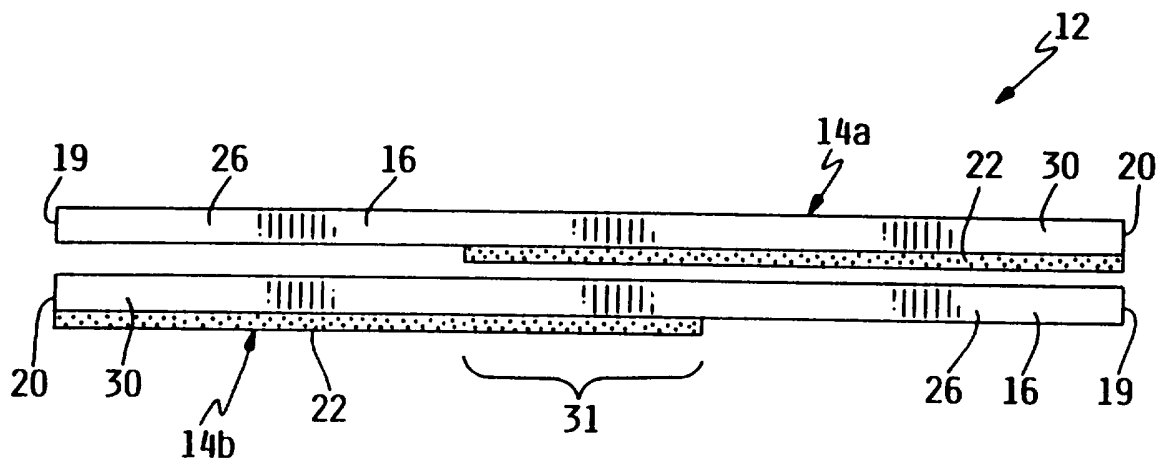


FIG. 3

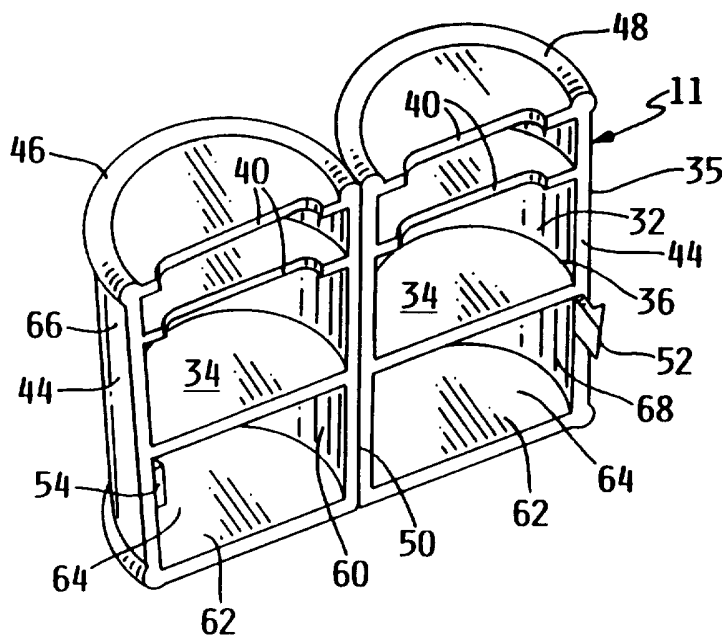


FIG. 4

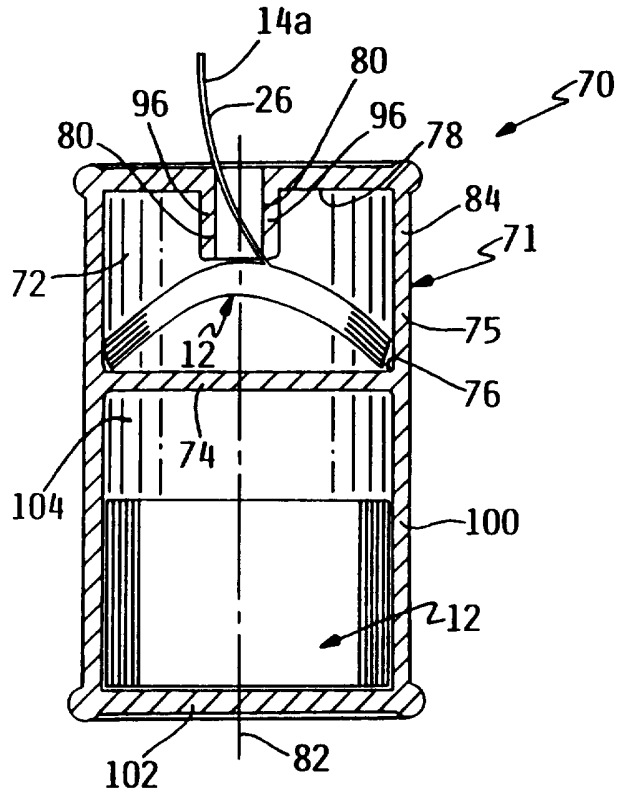


FIG. 5

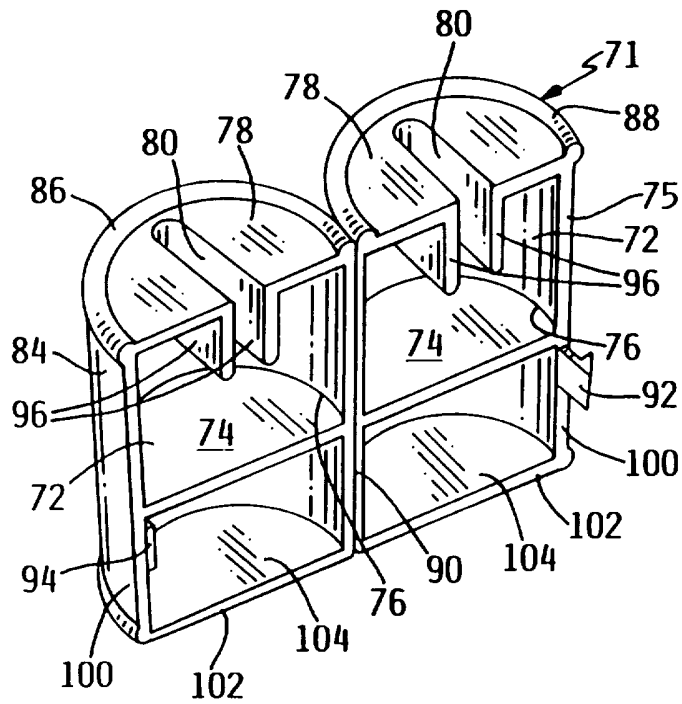


FIG. 6

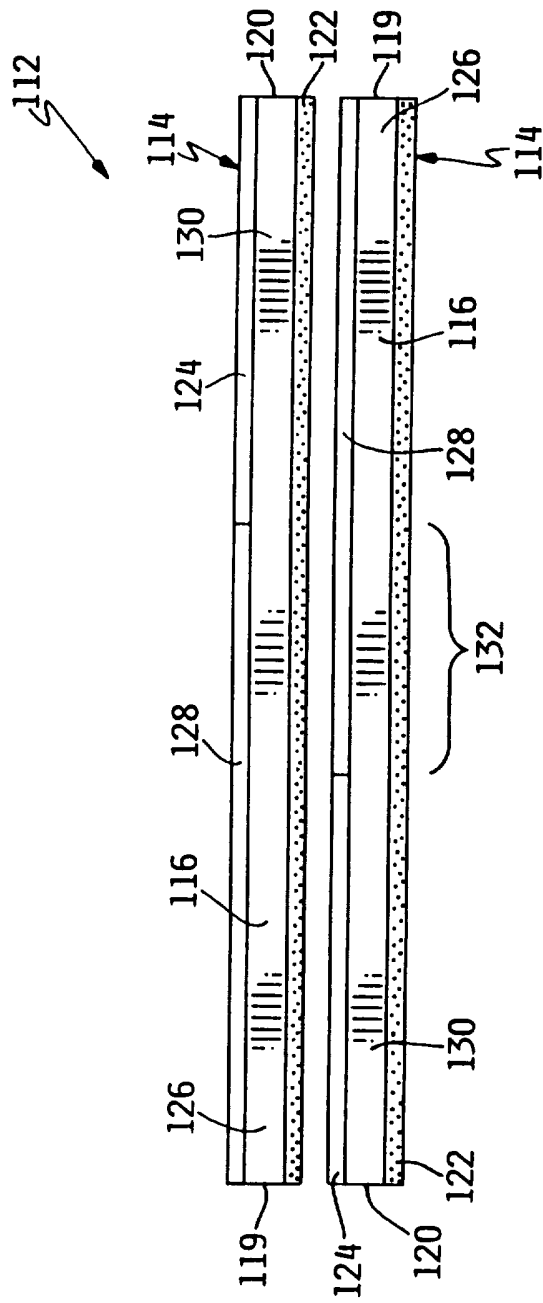


FIG. 7

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 96/03389

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 B42D5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 B42D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| A | FR,A,2 699 902 (BOITABLOC) 1 July 1994 --- | |
| A | US,A,4 770 320 (MINNESOTA MINING) 13 September 1988 cited in the application --- | |
| A | US,A,5 086 946 (MINNESOTA MINING) 11 February 1992 cited in the application ----- | |

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

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Date of the actual completion of the international search

11 July 1996

Date of mailing of the international search report

29.07.96

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl,
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Loncke, J

INTERNATIONAL SEARCH REPORT

Information on patent family members

In International Application No
PCT/US 96/03389

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
| FR-A-2699902 | 01-07-94 | FR-A- 2713554 | 16-06-95 |
| ----- | | | |
| US-A-4770320 | 13-09-88 | AU-B- 3408189 | 31-08-89 |
| | | CA-A- 1318703 | 01-06-93 |
| | | DE-A- 3864823 | 17-10-91 |
| | | EP-A- 0338028 | 25-10-89 |
| | | EP-A- 0365055 | 25-04-90 |
| | | JP-T- 4504004 | 16-07-92 |
| | | WO-A- 8809983 | 15-12-88 |
| | | US-A- 4907825 | 13-03-90 |
| ----- | | | |
| US-A-5086946 | 11-02-92 | AU-B- 1220995 | 13-04-95 |
| | | AU-B- 668501 | 09-05-96 |
| | | AU-B- 9054391 | 08-07-92 |
| | | CA-A- 2097289 | 11-06-92 |
| | | DE-D- 69114019 | 23-11-95 |
| | | DE-T- 69114019 | 20-06-96 |
| | | EP-A- 0561873 | 29-09-93 |
| | | EP-A- 0663303 | 19-07-95 |
| | | ES-T- 2078725 | 16-12-95 |
| | | JP-T- 6503544 | 21-04-94 |
| | | WO-A- 9210370 | 25-06-92 |
| | | US-A- 5401547 | 28-03-95 |
| ----- | | | |