



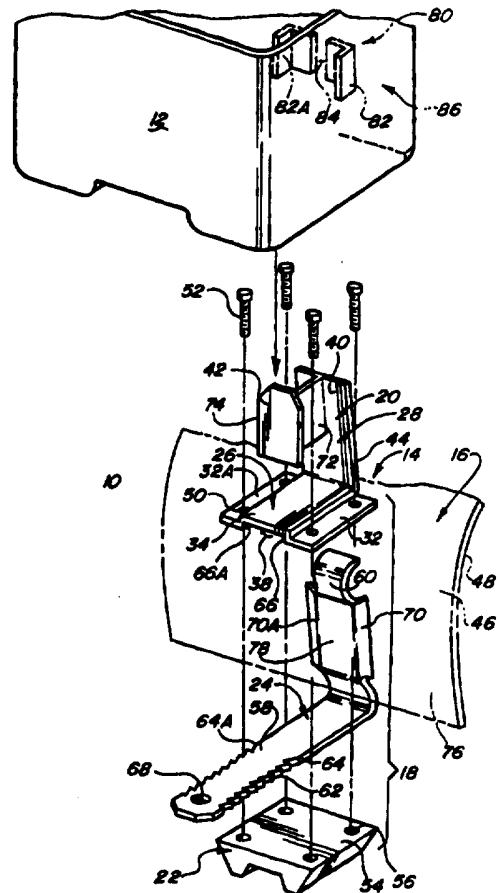
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>6</sup> : <b>B60N 3/08</b></p>	<p><b>A1</b></p>	<p>(11) International Publication Number: <b>WO 96/17746</b> (43) International Publication Date: 13 June 1996 (13.06.96)</p>
<p>(21) International Application Number: PCT/US94/13849 (22) International Filing Date: 6 December 1994 (06.12.94)</p> <p>(71) Applicant (for all designated States except US): PROPRIETARY TECHNOLOGY, INC. [US/US]; Suite 114, 2550 Telegraph Road, P.O. Box 7048, Bloomfield Hills, MI 48302-7048 (US).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): BARTHOLOMEW, Donald, D. [US/US]; 35442 Jefferson, 400 On The Lake, Unit 32C, Mt. Clemens, MI 48045 (US).</p> <p>(74) Agents: MILLER, H., Keith et al.; Harness, Dickey &amp; Pierce, P.L.C, P.O. Box 828, Bloomfield Hills, MI 48303 (US).</p>		<p>(81) Designated States: AU, CA, JP, KR, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p><b>Published</b> <i>With international search report.</i></p>

(54) Title: WASTE RECEPTACLE ASSEMBLIES FOR AUTOMOBILES

(57) Abstract

The present invention relates to waste receptacle assemblies, and more particularly relates to waste receptacle assemblies (10) having means (14) for attaching the waste receptacle (12) against the side of a vehicle seat. Under the first embodiment the means for attachment include a selectively adjustable clamp assembly (18) including a top piece secured tightly against the outer surface of the vehicle seat. Under an alternative embodiment, the means for attaching the waste receptacle (12) include a male locking member (124) which is attached directly to the outer surface (128) of the seat and a backing plate (114) which is attached along the inner surface of the seat. Under yet another alternative embodiment, the means for attaching the waste receptacle includes a substantially U-shaped steel spring (214) including a first plate which engages a backing plate (218) and a second leg which hosts a male locking element (222).



**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

<b>AT</b>	Austria	<b>GB</b>	United Kingdom	<b>MR</b>	Mauritania
<b>AU</b>	Australia	<b>GE</b>	Georgia	<b>MW</b>	Malawi
<b>BB</b>	Barbados	<b>GN</b>	Guinea	<b>NE</b>	Niger
<b>BE</b>	Belgium	<b>GR</b>	Greece	<b>NL</b>	Netherlands
<b>BF</b>	Burkina Faso	<b>HU</b>	Hungary	<b>NO</b>	Norway
<b>BG</b>	Bulgaria	<b>IE</b>	Ireland	<b>NZ</b>	New Zealand
<b>BJ</b>	Benin	<b>IT</b>	Italy	<b>PL</b>	Poland
<b>BR</b>	Brazil	<b>JP</b>	Japan	<b>PT</b>	Portugal
<b>BY</b>	Belarus	<b>KE</b>	Kenya	<b>RO</b>	Romania
<b>CA</b>	Canada	<b>KG</b>	Kyrgystan	<b>RU</b>	Russian Federation
<b>CF</b>	Central African Republic	<b>KP</b>	Democratic People's Republic of Korea	<b>SD</b>	Sudan
<b>CG</b>	Congo	<b>KR</b>	Republic of Korea	<b>SE</b>	Sweden
<b>CH</b>	Switzerland	<b>KZ</b>	Kazakhstan	<b>SI</b>	Slovenia
<b>CI</b>	Côte d'Ivoire	<b>LI</b>	Liechtenstein	<b>SK</b>	Slovakia
<b>CM</b>	Cameroon	<b>LK</b>	Sri Lanka	<b>SN</b>	Senegal
<b>CN</b>	China	<b>LU</b>	Luxembourg	<b>TD</b>	Chad
<b>CS</b>	Czechoslovakia	<b>LV</b>	Latvia	<b>TG</b>	Togo
<b>CZ</b>	Czech Republic	<b>MC</b>	Monaco	<b>TJ</b>	Tajikistan
<b>DE</b>	Germany	<b>MD</b>	Republic of Moldova	<b>TT</b>	Trinidad and Tobago
<b>DK</b>	Denmark	<b>MG</b>	Madagascar	<b>UA</b>	Ukraine
<b>ES</b>	Spain	<b>ML</b>	Mali	<b>US</b>	United States of America
<b>FI</b>	Finland	<b>MN</b>	Mongolia	<b>UZ</b>	Uzbekistan
<b>FR</b>	France			<b>VN</b>	Viet Nam
<b>GA</b>	Gabon				

## WASTE RECEPTACLE ASSEMBLIES FOR AUTOMOBILES

### BACKGROUND OF THE INVENTION

5           The present invention relates generally to waste receptacles, and more particularly to waste receptacles assemblies for use in association with an automotive vehicle seats.

          Originally, waste receptacles used inside an automobile were either extremely simplistic such as a bag or other container suspended from a door window handle or the belt line flange or have included weighted flaps which extend from the base of the  
10       receptacle for the placement across the transmission hump of the front seat floor. Still other waste receptacles have included means for attaching the receptacle to the dash board, vehicle door pillars, kick pads and transmission consoles, among others. However, most if not all of the above mentioned waste receptacles suffer from the disadvantage of being disposed in positions which make the vehicle passenger  
15       compartment appear cluttered. Worse yet, by positioning the waste receptacle in one of the aforementioned locations, the waste receptacle may interfere with the driver or passenger's operation of vehicle systems.

          In an attempt to overcome such disadvantages there has been a recent trend to provide waste receptacles which can be disposed at a location against the front seat of  
20       an automobile and maintained in a fixed position against the lower portion of the front seat. For example, United States Patent No. 3,598,232 which issued August 10, 1971 to Trammel discloses a litter disposal unit which is attachable to the front side of an automotive vehicle seat. However, as with most attachable disposal units, the apparatus disclosed in Trammell appears to be unduly complicated to assembly and apply to the  
25       seat panel.

### SUMMARY OF THE INVENTION

30           The present invention therefore relates to a waste receptacle assembly which is easy to attach and detach from a panel such as the forward panel of an automotive vehicle seat. Under a first embodiment, the waste receptacle assembly of the present invention includes means for attaching the receptacle contiguously against the seat panel by providing clamping means. The clamping means comprise a top piece and bottom  
35       piece which can be tightened together to retain a flat spring against the inner surface of the seat panel. At the same time the rear surface of the top piece is positioned against

the outer surface of the seat panel to thereby retain the clamp assembly over the marginal edge of the seat panel. Also provided are means for mounting the receptacle against the seat member. The mounting means are generally in the form of a T-shaped male locking element which extends from the inner surface of the top piece and a female locking element disposed along a wall of the receptacle which includes a slot for receiving the male locking element.

Under a second waste receptacle assembly embodiment the male locking element is attached directly to the outer surface of the seat panel through the use of a variety of fasteners and adhesives to provide means for mounting the receptacle thereupon. Again, the waste receptacle includes an integral female locking element engagable by the male locking element to selectively retain the receptacle against the seat panel.

Under a third waste receptacle embodiment according to the teachings of the present invention the clamping means which is attached over the marginal edge of a vehicle seat panel comprises a substantially a U-shaped flat spring which is manipulated open by a tool while inserting the spring over the seat panel's edge and closed upon release of the tool to lock the clamping means to the seat. Thereafter the waste receptacle is attached in the above described manner for use in the passenger compartment of the automobile. It should be recognized by those skilled in the art that while the various embodiments of the present invention are described as being particularly useful when attached to an automobile seat panel the waste receptacle assemblies are also useful in association with various other open edged substrates.

Accordingly, it is an object of the present invention to provide a selectively attachable and detachable waste receptacle assembly which is particularly useful in an automobile passenger compartment.

It is another object of the present invention to provide a waste receptacle assembly which is easy to attach to a panel over the marginal edge of a seat frame. It is another object of the present invention to provide a waste receptacle assembly which is inexpensive to manufacture.

Still other object, advantages, and benefits of the present invention will become apparent from a review of the following specification taken in association with appended claims.

**BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 is a blown apart perspective illustrating a first waste receptacle assembly according to the teachings of the present invention;

5        Figure 2 is a front view illustrating the clamp assembly of Figure 1;

Figure 3 is a side elevation view illustrating the clamp assembly attached to a seat panel over seat's marginal edge;

Figure 4 is a partially broken away front view illustrating the waste receptacle coming to rest upon the horizontally extending portion of the clamp assembly;

10       Figure 5 is a blown apart perspective view illustrating a first alternative waste receptacle assembly embodiment according to the teachings of the present invention;

Figure 6 is a side view illustrating the male locking element of Figure 5 attached to a vehicle seat panel;

15       Figure 7 is a side elevation view illustrating an alternative means for attaching a male locking member to the seat panel;

Figure 8 is a blown apart perspective view of an alternative waste receptacle assembly embodiment according to the teachings of the present invention;

20       Figure 9 is a perspective view showing the waste receptacle assembly of Figure 8 being altered by a tool which assists in mounting the clamp assembly over the marginal edge of the seat frame;

Figure 10 is a partially broken away perspective view illustrating a waste receptacle useful in association with the present invention having a lid which is integrally attached over the top edge of the receptacle;

25       Figure 11 is a perspective view of an alternative lid assembly useful in association with a waste receptacle according to the teachings of the present invention having a web which snaps over the top edge of the receptacle;

Figure 12 is a perspective view of an alternative lid assembly useful in association with a waste receptacle according to the teachings of the present invention which is press fit over the outer surface of the receptacle along the top edge; and

30       Figure 13 is a perspective view of another lid assembly which is integrally attached to the receptacle along one top edge via a living hinge.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figure 1 a blown apart perspective view of a first waste receptacle assembly according to the teachings of the present invention is provided. The receptacle assembly 10, as illustrated in Figure 1 includes, in an addition to the receptacle 12, means 14 for attaching the receptacle 12 adjacent the vehicle seat panel 16. Again while it is primarily intended that the waste receptacle assemblies of the present invention be adaptable for attachment to a vertically disposed panel of an automotive vehicle seat, those skilled in the art should recognize that the invention lends itself to attachment over a variety of substrates.

Under the embodiment illustrated in Figure 1, the means 14 for attaching waste receptacle 12 to the panel 16 generally comprise a clamp assembly 18 including a top piece 20 and bottom piece 22 which can be tightly joined to retain a portion of a substantially L-shaped spring 24 as will be described in greater detail below.

With regard to the top piece 20 of the clamp assembly 18, the top piece 20 which is generally formed from a plastic material includes a base portion 26 and upwardly extending back portion 28, disposed along the rear of base portion 26. Preferably, the base portion 26 includes lower longitudinally extending sides 32 and 32A having a plurality of apertures 50 therethrough for receiving fasteners 52, and an elevated or humped central portion 34, extending therebetween along the length of the base portion. Below the humped central portion 36 is a groove 38 for receiving the horizontally disposed leg of spring 24.

The upwardly extending back portion 28 of the top piece 20 may extend at an angle consistent with the angle at which the panel 16 is disposed. The back portion 28 includes both a front surface 40 and a rear surface 44, as shown more clearly in Figure 3, which abuts the outer surface 46 of panel 16. Extending transversely from the front surface 40 is a T-shaped male locking element 42 which includes a stem 72 and an anchor plate 74 extending perpendicularly from the stem.

The bottom piece 22 generally includes a flat top surface 54 having a plurality of apertures 56 extending therethrough which are intended to be in axial alignment with the apertures 50 provided along the sides of the base portion upon attachment. Preferably, the bottom piece 22 is sufficiently thick along the portions including the apertures 56 such that substantially the entire length of fasteners 52 are embedded therein.

The spring 24, which preferably is L-shaped and made from a high tensile strength steel includes a horizontally disposed leg 58 and a substantially vertically disposed leg 60. Preferably the horizontally disposed leg 58 includes serrations 62 along the side edges 64 and 64A, respectively, which nest into the walls 66 and 66A of the groove 38 upon construction of the clamp assembly. Optionally, but preferably, a hole 68 is provided along the leading end of leg 58 through which a tool (not shown) can be inserted to pull the spring 24 forwardly. The vertically disposed leg 60 of spring 24 is generally provided with accommodating portions 70 and 70A extending outwardly from the side edges 64 and 64A to provide additional support upon engagement of the spring 24 against the inner surface of the panel 16 as will now be described.

Initially the clamp assembly 18 is attached over the marginal edge 76 of seat panel 16 prior to attaching the receptacle 12 by inserting the vertically disposed leg 60 under the seat and positioning it parallel to the panel's inner surface 48. Thereafter, with the horizontally disposed leg 58 extending outwardly from the seat panel, the top piece 20 and bottom piece 22 are brought together such that the horizontally disposed leg is seated within groove 38. The fasteners 52 are tightened sufficiently to retain the spring 24 in position but not so tight as to preclude movement of the spring 24 relative to the top and bottom pieces. After hand tightening the fasteners 52 the top and bottom pieces 20 and 22, respectively, are slid rearwardly along leg 58 of the spring and simultaneously leg 58 is pulled forwardly thus drawing the back surface 44 of the top piece 20 into contact with the outer surface 46 of the panel and the inner surface 78 of the spring's vertical leg 60 into contact with the inner surface 48 of the seat panel. The fasteners 52 are then more thoroughly tightened to retain the clamp assembly 18 over the panel 16.

To further tighten the clamp assembly, leg 58 of spring 24 may be pulled forwardly by a tool (not shown) which is inserted into the hole 68. As the leg 58 is pulled even more forwardly the serrations 62 provided along the side edges 64 and 64A bite into the walls 66 and 66A of groove 38. As previously noted it is preferable that the top piece 20 is made from a plastic which is sufficiently soft to allow the serrations 62 to bite into the walls 66 and 66A. Optionally or additionally, the walls 66 and 66A could be provided with teeth (not shown) which lock against the serrations thus allowing the spring to only be moved forwardly after the clamp assembly is tightened.

With the clamp assembly 18 mounted to the panel 16 the receptacle 12 can thereafter be attached as illustrated in Figures 1, 3, and 4. Referring specifically to Figure

1, the receptacle 12 is provided with a female locking element 80 which mates with the male locking element 42. The female locking element 80 includes a pair of incurved flanges 82 and 82A which extend from a wall 86 of the receptacle. The flanges face each other to provide a slot 84 for receiving the anchor plate 74 of the male locking element 42.

Referring to Figures 3 and 4 an alternative female locking element 80A is illustrated. Instead of extending from the wall 86 as illustrated in Figure 1, the female locking element 80A is recessed within the wall as further illustrated in Figure 8. The male locking element 42 extends into the slot 84A until the top edge 88 of the anchoring plate 74 comes into contact with the top wall 90 of the slot 84A as illustrated in Figure 4. The base 92 of the receptacle 12 can either come to rest on the base portion 26 of top piece 20 as illustrated in Figures 1 - 4 or can extend beyond the bottom piece 22 and come to rest on the vehicle floor (not shown).

Referring to Figures 5 and 6, an alternative waste receptacle assembly 18A embodiment is illustrated. According to this embodiment 110, the clamping assembly includes a backing plate 114 is provided which is attached to the inner surface 118 of the seat panel 116 by one or more fasteners 120 which extend through bores 122 provided thereon and through the seat panel 116. The fasteners 120 are then connected through the bores 126 provided on the male locking element 124 to retain the locking element 124 against the outer surface 128 of the seat panel. As a matter of design choice, the male locking element 124 can be formed such that the anchoring plate 130 is disposed substantially parallel to the outer surface 128 of the seat panel 116 or can be suspended from the outer surface 126 of the seat panel 116 at an oblique angle similar to that shown under the embodiment illustrated with reference to Figure 3. As with the embodiment illustrated in Figures 1 - 4, the receptacle 112 again includes either outwardly extending incurved flanges 132 and 132A which provide a slot 134 for receiving the male locking element 124 or includes a recessed slot similar to that shown in Figure 8.

Referring to Figure 7 an alternative method for mounting the male locking element 124A against the seat 116 panel is illustrated. According to this embodiment a base piece 136 is attached to the outer surface 128 of the seat panel 116 by mechanical fasteners such as studs, by sewing or through the use of adhesives which are known in the art. On the outer surface 138 of the base piece is a pad having hook and



loop type fasteners 140 disposed thereon. The male locking element 124A also includes mating hook and loop type fasteners 140A disposed on the inner surface 142 of the intermediate portion 144 which is integrally attached to the anchor plate 130A such that upon joining the male locking element 124A to the base piece 136 the male locking element 124A is positioned for receiving the receptacle in one of the above described manners.

Referring to Figure 8 a blown apart perspective view of an alternative waste receptacle assembly embodiment 210 according to the teachings of the present invention is provided. The waste receptacle assembly 210 and, more precisely, the clamping assembly 18B includes a substantially U-shaped flat steel spring 214 having a first leg 216 which engages the backing plate 218 and a second leg 220 which hosts the male locking element 222. The backing plate 218 includes incurved flanges 224 and 224A extending from the rear wall 226 which provide a slot 230 for receiving the spring 214. Preferably, the first leg 216 of spring 214 includes an aperture 232 through which a locating pin 234 positioned above the slot 230 extends as illustrated in Figure 9. The front side of the backing plate 218 also includes a pair of incurved flanges 236 and 236A which provide a slot 238 for receiving a sponge-like pad 240 which assists in limiting wear and tear on the inner surface of the seat panel.

As illustrated more clearly in Figure 9, the second leg 220 of the spring 214 is seated within a slot 246 formed by a pair of incurved flanges 242 and 242A extending rearwardly from a wall 244 integrally attached or molded to the back wall 248 of the male locking element 222. The slot 246 includes a stop pin 250 which limits the insertion of the second leg 220 of spring 214. Disposed slightly below the slot 246 is a locating pin 252 which extends through an aperture 254 provided on the second leg 220 of the spring to assist in retaining the spring within the slot.

To apply the waste receptacle clamp assembly illustrated 214 in Figures 8 and 9 over the marginal edge of a seat panel as illustrated in Figure 3, the spring 214 is opened by using a special tool 256. The tool 256 includes a handle 258 which is grasped by the individual applying the waste receptacle assembly to the seat panel and a hooked end 260 which fits over the spring 214. By pulling on the handle 258 the hooked end 260 rides across the spring 214 thereby causing it to open up sufficiently for attachment over the marginal edge of the seat panel. Once the clamp assembly is positioned over the seat panel the tool 256 is removed thus causing the spring 214 to return to its original

position to pinch against the inner and outer surface of the panel. Thereafter, the receptacle 212 as previously described can be inserted over the male locking element 222, to retain the receptacle proximate to the seat panel.

Referring to Figure 10 a partial perspective view of a waste receptacle assembly according to the teachings of the present invention provided. The waste receptacle 12 is provided with an integrally attached lid 264 having a raised boundary 266 about the periphery 268 to assist in precluding items from sliding off the face 270 the lid. According to this lid embodiment a recess 272 is provided on the face 270 for receiving a beverage container (not shown) if desired. Typically anything to be inserted into the waste receptacle 12 can be done so by inserting it through the aperture 274 provided on a side wall 276. Under Figure 11 the lid is 264A provided with a dual purpose aperture 272A for receiving both items inserted into the receptacle 12 and retaining beverage containers (not shown). Preferably this lid assembly includes a web 276 extending downwardly about the periphery 278 of the receptacle which fits over the top edge 280 of the receptacle thereby retaining the lid in a snap fit relationship. Alternatively, the lid of Figure 12 can be modified to include a single downwardly extending skirt 276A about the periphery 268 of the lid 264B which snaps over the exterior surface 282 of the receptacle along the top edge 280 of the receptacle to thereby retain the lid in a press fit relationship.

Referring to Figure 13 yet another lid embodiment is illustrated in accordance with the teachings of the present invention. The lid 264C of Figure 13 is connected along one edge 284 to the corresponding top edge 280 of the receptacle via a living hinge 286. The downwardly extending skirt as described with reference to Figure 12 is disposed about the periphery 268 of the lid 264A fits over the other top edges 280 of the receptacle 12 to thereby retain the lid in a press fit relationship. Thus, debris can be inserted into the receptacle 12 by merely rotating the lid about living hinge 286, inserting the debris and thereafter pressing the lid tightly closed over the edges of the receptacle. Again, the lid 264C can be provided with one or more recesses 272 for retaining a beverage container.

When it is desired to empty the receptacle 12, as shown in Figures 10-13, the receptacle can be removed from the mount otherwise referred to herein as the anchor plate and opening the lid thereby allowing for removal of the debris contained therein.

While the above description constitutes the preferred embodiments of the present invention, it is to be appreciated that the invention is susceptible to modification, variation and change without departing from the proper scope and the fair meaning of the accompanying claims.

**WHAT IS CLAIMED IS:**

1. A waste receptacle assembly for attachment to a panel having inner and outer surfaces, comprising:
  - 5 a waste receptacle having a bottom and at least one side wall, said at least one side wall including an engagable member; and
  - clamping means for retaining said waste receptacle proximately against said panel, said clamping means including:
    - 10 (a) a top piece having a base portion and an upwardly extending back portion disposed adjacent the outer surface of said panel and including means for engaging the engagable member or said waste receptacle,
    - (b) a bottom piece,
    - (c) fastening means for securing said top and bottom pieces together, and
    - 15 (d) a spring member having a first leg adjustably maintained between the base portion of said top piece and the bottom piece and a second upwardly extending leg disposed adjacent the inner surface of said panel;
- whereby, tightening the fastening means to thereby maintain the spring member and top piece upon tightly against the panel the waste receptacle can be attached to the clamping means by bringing the engagable member of the waste receptacle into the  
20 engagable contact with the means for engaging the engagable member of said top piece.
2. The waste receptacle assembly of Claim 1 further comprising means  
25 disposed on the first leg of said spring member for lockably engaging the base portion of said top piece.
3. The waste receptacle assembly of Claim 2 wherein said means for  
lockably engaging the base portion includes a plurality of serrations which nest against the  
30 base portion of said top piece.
4. The waste receptacle assembly of Claim 2 wherein said spring member  
is L-shaped.

5. The waste receptacle assembly of Claim 1 wherein said engagable member includes a T-shaped male locking element having an anchor plate and said means for engaging the engagable member include a slot of receiving the anchor plate.

5 6. The waste receptacle assembly of Claim 1 wherein said engagable member includes a slot and said means for engaging the engagable member includes a T-shaped male locking element having an anchor plate which is inserted into the slot.

10 7. A waste receptacle assembly for attachment to a panel having inner and outer surfaces, comprising:

a waste receptacle having a bottom and at least one side wall, said at least one side wall including an engagable member;

15 clamping means for retaining said waste receptacle proximately against said panel, said clamping means including a backing plate attached adjacent the inner surface of said panel and a male locking element extending from the outer surface of said panel including means for engaging the engagable member;

20 whereby the receptacle is attached to the clamping means by bringing the engagable member of the waste receptacle into engagable contact with the means for enjoining the engagable member.

8. The waste receptacle assembly of Claim 1 wherein said engagable member includes a T-shaped male locking element having an anchor plate and said means for engaging the engagable member include a slot of receiving the anchor plate.

25 9. The waste receptacle assembly of Claim 1 wherein said engagable member includes a slot and said means for engaging the engagable member includes a T-shaped male locking element having an anchor plate which is inserted into the slot.

30

10. A waste receptacle assembly for attachment to a panel having inner and outer surfaces, comprising:

a waste receptacle having a bottom and at least one side wall including a slot; and

5 a selectively removable clamping means for retaining said waste receptacle proximately against said panel, said clamping means including a substantially U-shaped steel spring having a backing plate attached along a first end which is disposed against the inner surface of the panel and a male locking element attached along a second end, said male locking member including an anchor plate which seats within the slot of the  
10 receptacle to retain the receptacle proximate to the panel.

11. The waste receptacle assembly of Claim 10 wherein said backing plate includes a slot for receiving the first leg of said spring.

12. The waste receptacle assembly of Claim 11 wherein said backing plate  
15 includes a locating pin which extends through an aperture contained on the first end of the spring to cooperate with the slot in attaching the backing plate to the spring.

13. The waste receptacle assembly of Claim 12 wherein a pad extends from  
20 the backing plate, said pad being disposed between the backing plate and the inner surface of said panel to limit wear and tear on the panel.

14. The waste receptacle assembly of Claim 11 wherein said male locking  
25 element includes a slot for receiving the second end of said spring.

15. The waste receptacle assembly of Claim 15 wherein a stop pin extends  
from the second end of the spring into the slot for limiting the insertion of the second end of the spring within the slot.

16. The waste receptacle assembly of Claim 14 wherein said male locking  
30 element includes a locating pin which extends through an aperture contained on the second end of the spring to cooperate with the slot in attaching the male locking element to the spring.

17. The waste receptacle assembly of Claim 10 further comprising a prying tool for separating the first and second ends of the U-shaped spring such that the clamping means can be positioned over the panel to utilize the waste receptacle assembly or removed from the panel to detach the waste receptacle assembly from the panel.

5

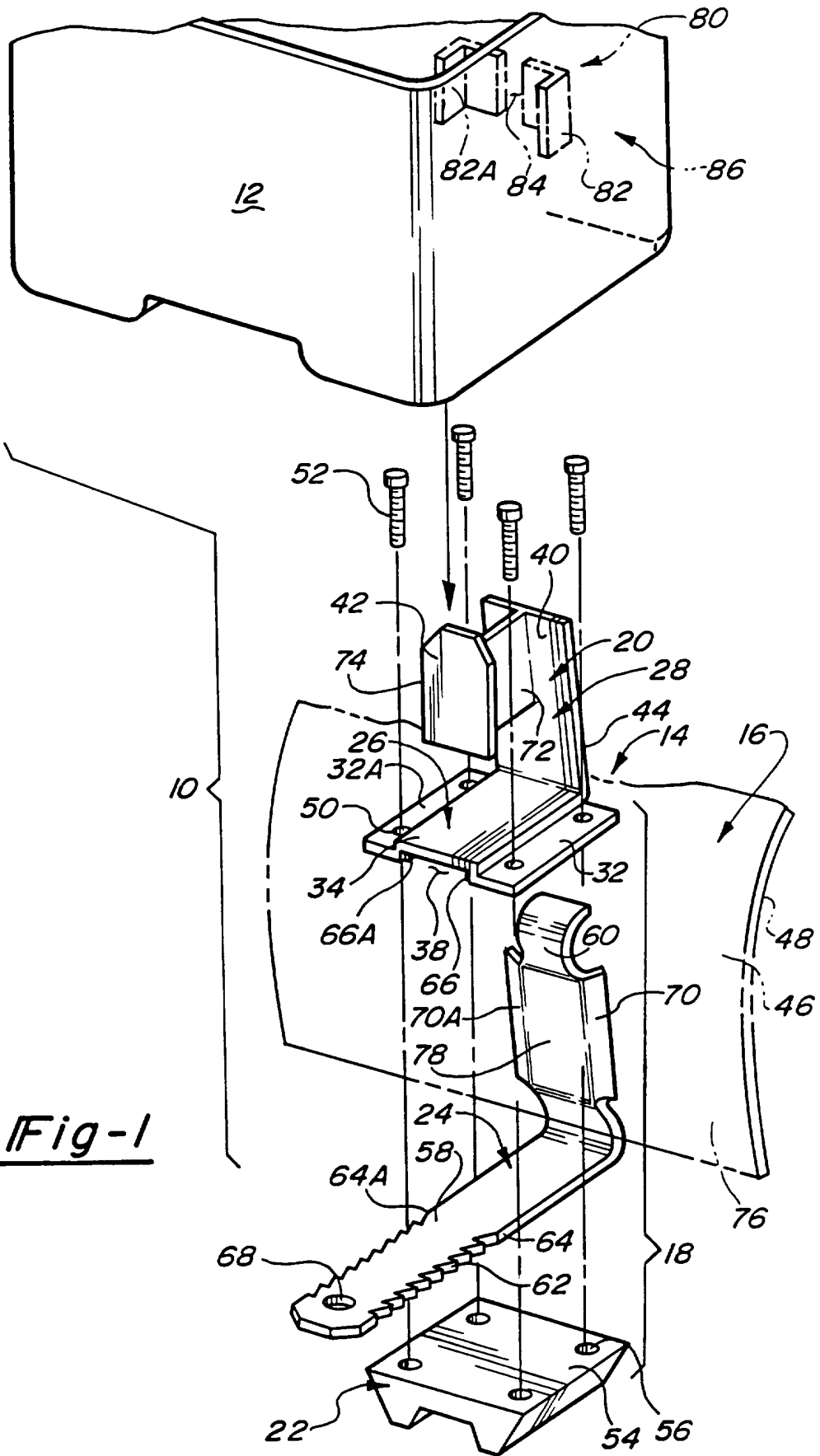


Fig-1



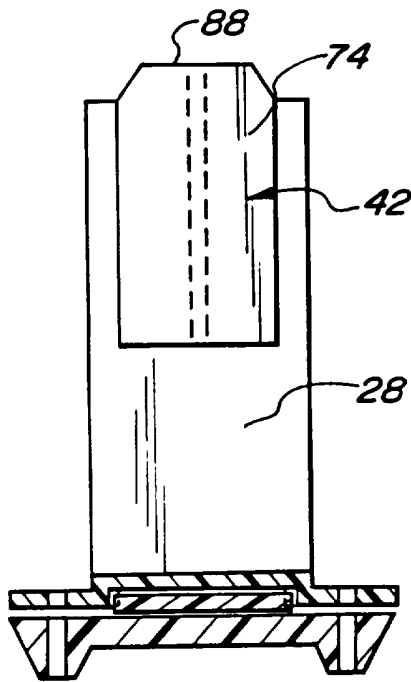


Fig-2

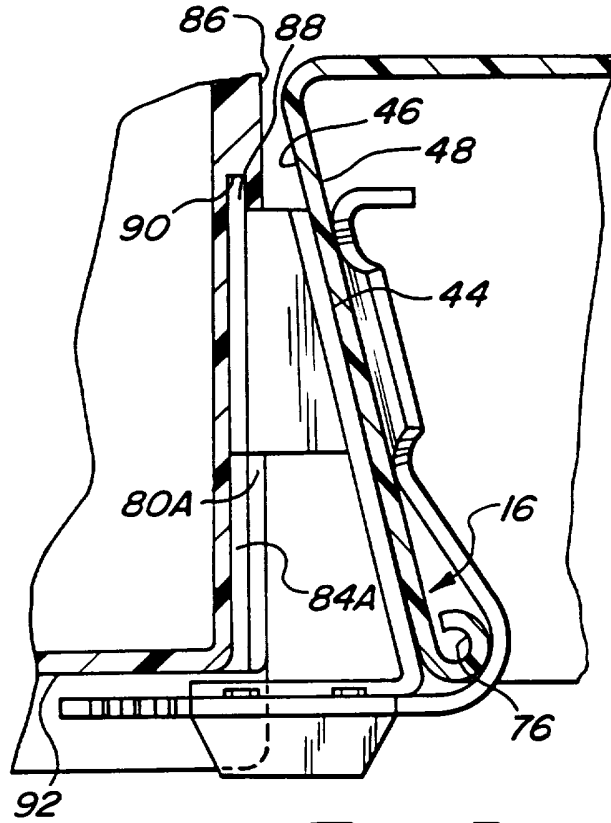


Fig-3

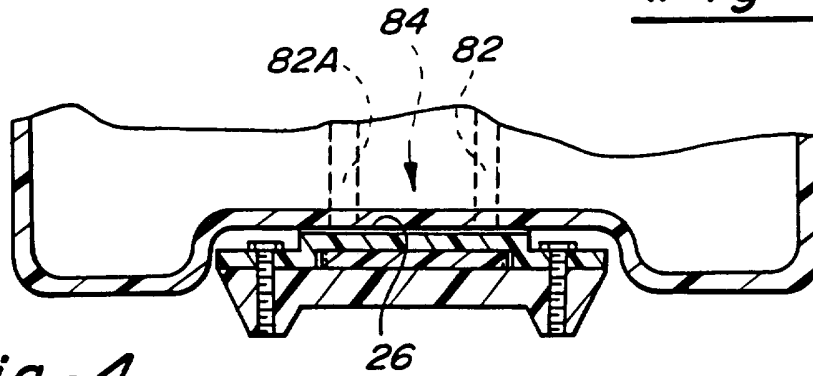


Fig-4

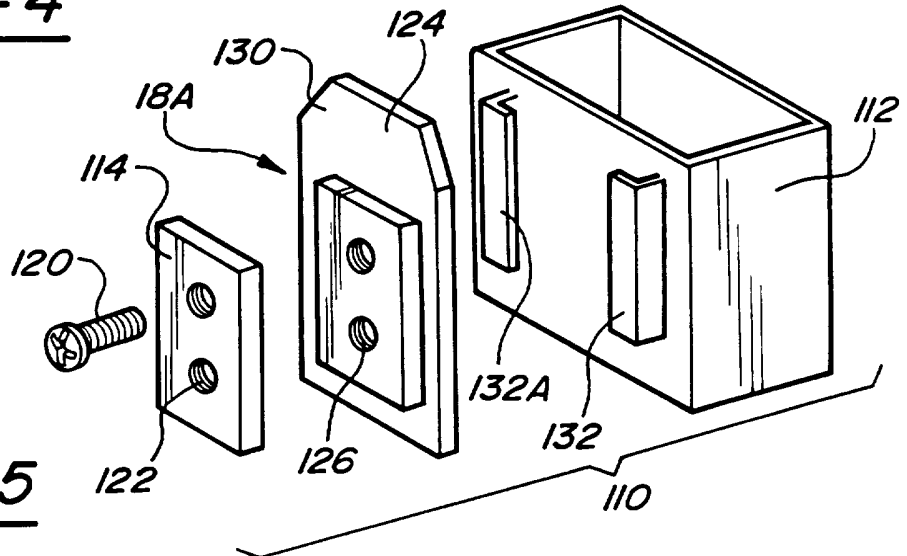
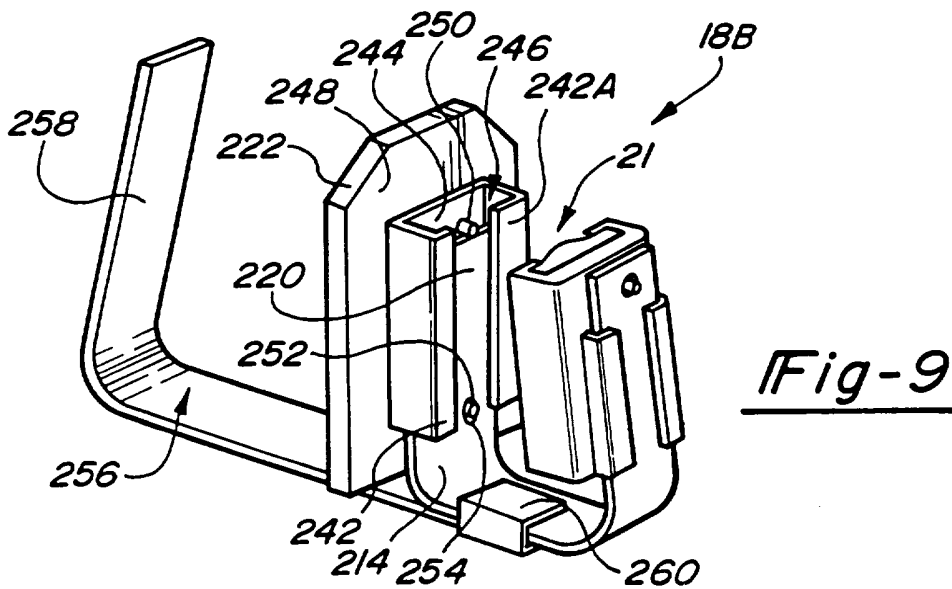
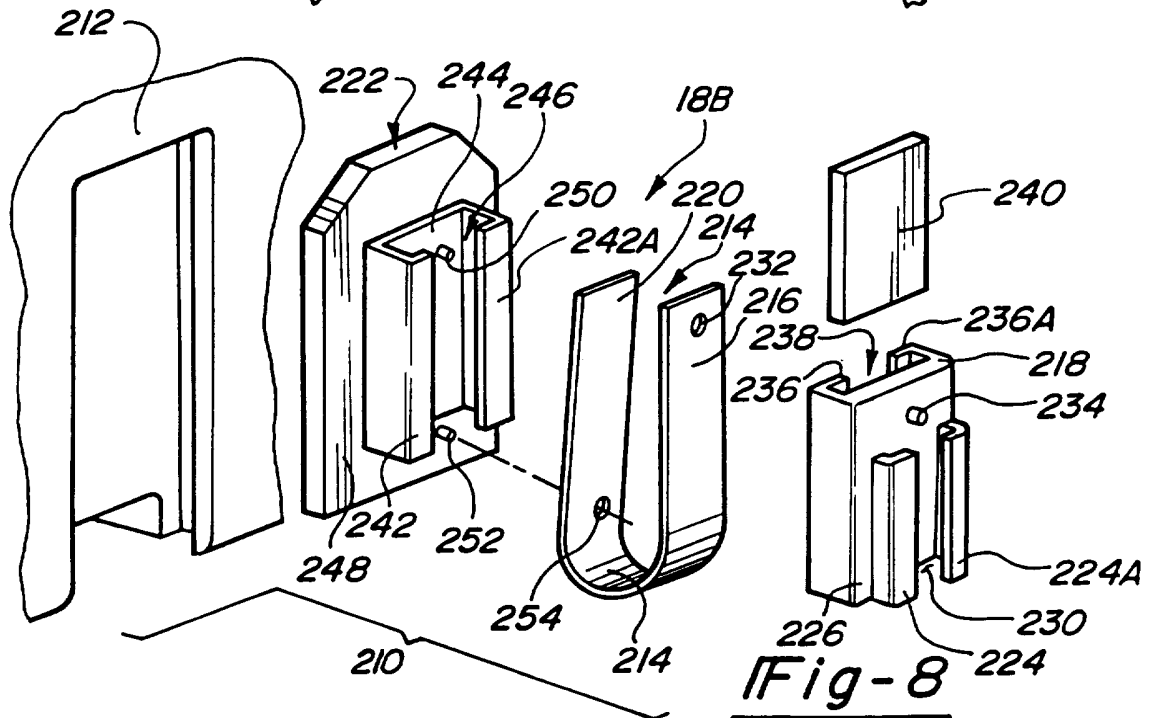
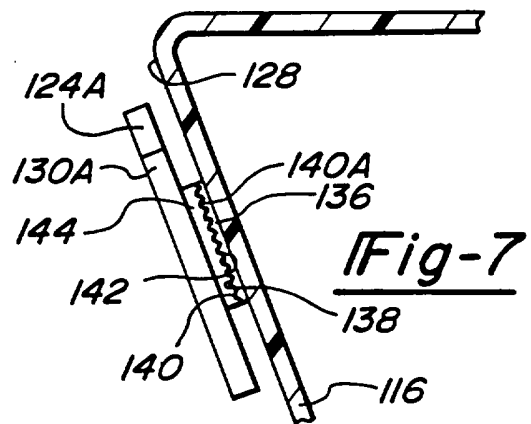
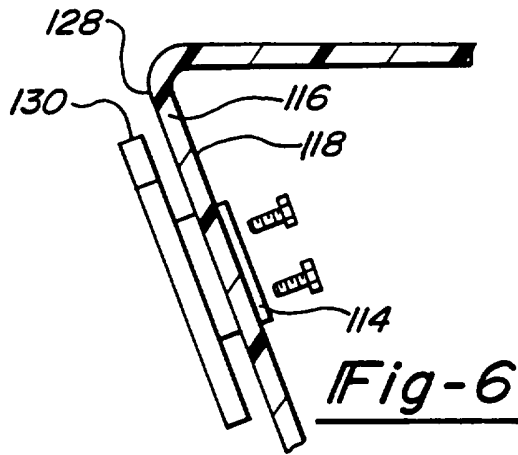
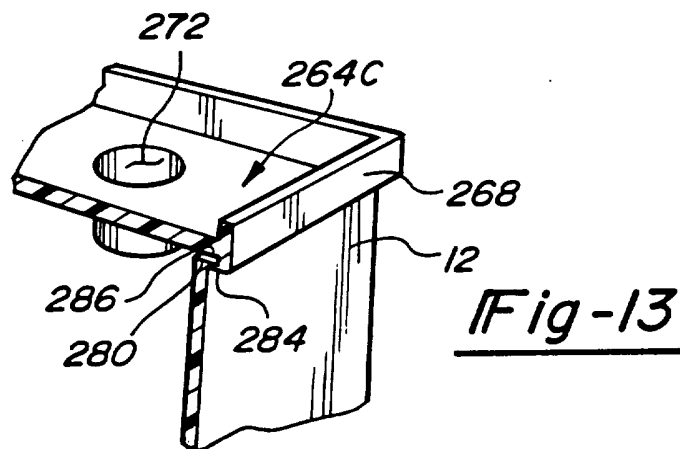
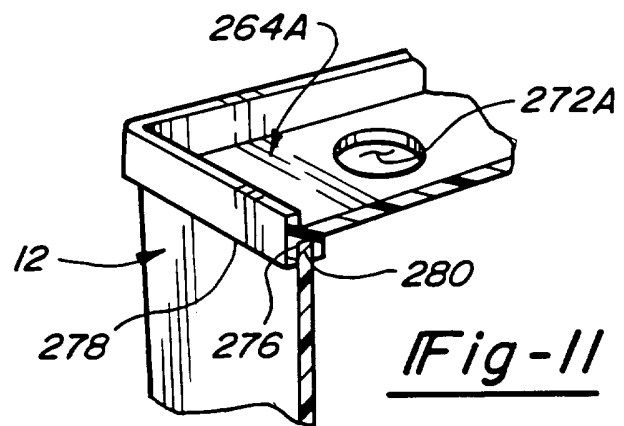
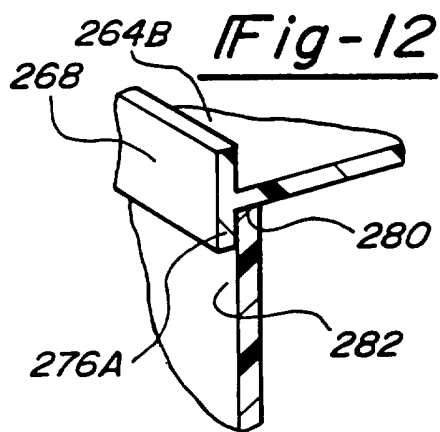
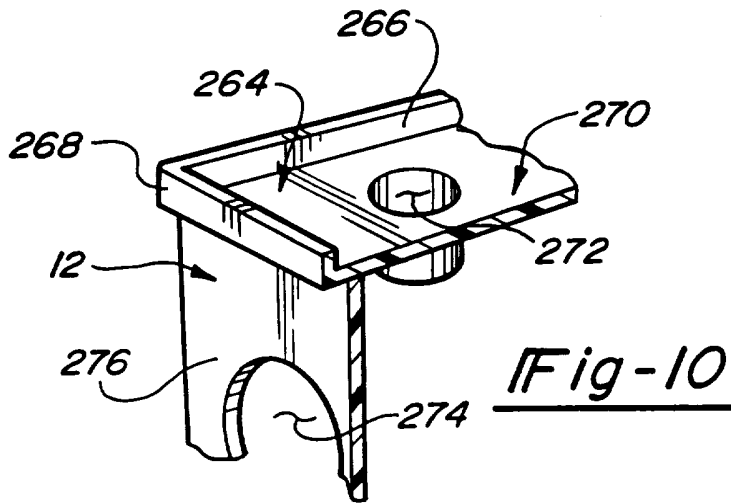


Fig-5





INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US94/13849

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC(6) : B60N 3/08  
 US CL : 224/42.45R, 275; 248/223.4, 225.1  
 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)  
 U.S. : 224/42.45R, 275, 311, 312, 42.46; 248/223.4, 224.3, 224.4, 225.1

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 practicable, 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.
X	US, A, 3,526,314 (TRAMMEL, JR.) 01 September 1970, see entire document.	7
X	US, A, 3,504,830 (TRAMMEL, JR.) 07 April 1970, see entire document.	7
X	US, A, 3,632,029 (SONNER) 04 January 1972, see entire document.	7
X	US, A, 3,625,347 (TRAMMEL, JR.) 07 December 1971, see entire document.	7
X	US, A, 4,825,590 (CULLINANE) 02 May 1989, see entire document.	7, 10
Y		11, 14, 17
Y	US, A, 2,721,718 (WAGNER) 25 October 1955, see entire	11

Further documents are listed in the continuation of Box C.  See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search: 09 MAY 1995  
 Date of mailing of the international search report: 25 MAY 1995

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks, Box PCT, Washington, D.C. 20231  
 Facsimile No. (703) 305-3230  
 Authorized officer: *Henry J. Recla*  
 Henry J. Recla  
 Telephone No. (703) 308-1382

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US94/13849

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US, A, 5,098,054 (DYER) 24 March 1992, see entire document.	7
Y	US, A, 3,508,732 (TRACHTENBERG ET AL.) 28 April 1970, see entire document.	7
A	US, A, 2,843,301 (WORTHEN) 15 July 1958, see entire document.	1-7, 10-14, 16, and 17
A	US, A, 2,708,062 (POYER) 10 May 1955, see entire document.	1-7, 10-14, 16, and 17
A	US, A, 4,942,993 (DELGADO) 24 July 1990, see entire document.	1-7, 10-14, 16, and 17
A	US, A, 3,913,810 (SHAW) 21 October 1975, see entire document.	1-7, 10-14, 16, and 17
A	US, A, 1,866,107 (HIERING) 05 July 1932, see entire document.	1-7, 10-14, 16, and 17
A	US, A, 3,176,950 (HITTESDORF) 06 April 1965, see entire document.	1-7, 10-14, 16, and 17
A	US, A, 4,984,722 (MOORE) 15 January 1991, see entire document.	1-7, 10-14, 16, and 17
A	US, A, 4,114,158 (VERINI) 12 September 1978, see entire document.	1-7, 10-14, 16, and 17
A	US, A, 5,154,385 (LINDBERG ET AL) 13 October 1992, see entire document.	1-7, 10-14, 16, and 17
A	US, A, 3,305,200 (AVERY) 21 February 1967, see entire document.	1-7, 10-14, 16, and 17