

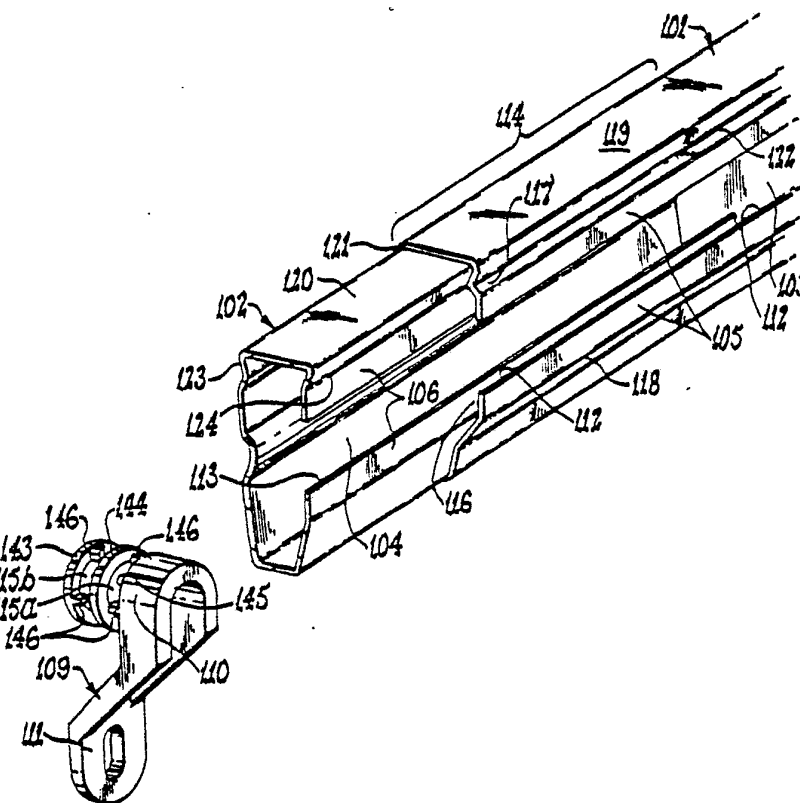


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(21) International Application Number: PCT/AU82/00029 (22) International Filing Date: 17 March 1982 (17.03.82) (31) Priority Application Number: PE 8088 (32) Priority Date: 20 March 1981 (20.03.81) (33) Priority Country: AU (71) Applicant (for all designated States except US): PETER BAYLY ASSOCIATES AUSTRALIA PTY. LTD. [AU/AU]; 462 William Street, Melbourne, Vic. 3000 (AU). (72) Inventor; and (75) Inventor/Applicant (for US only): BAYLY, Peter, K. [AU/AU]; 176 Progress Road, Eltham North, Vic. 3095 (AU).		(74) Agent: COLLINS, Terrence, John; Phillips Ormonde and Fitzpatrick, 367 Collins Street, Melbourne, Vic. 3000 (AU). (81) Designated States: AT (European patent), BE (European patent), CH (European patent), DE (European patent), FR (European patent), GB (European patent), LU (European patent), NL (European patent), SE (European patent), US. Published <i>With international search report.</i>

(54) Title: TRACK AND TRAVELLER SUPPORT**(57) Abstract**

A support track system for curtains and the like including two telescoped track sections (101 and 102) each of which has a longitudinally extending slot (103, 104) in a rear wall (105, 106) thereof. The slotted walls (105, 106) are arranged so as to be laterally spaced immediately above and immediately below the slots (103, 104) in the telescoped portion (114) of the track sections (101, 102). A plurality of travellers (109) are slidably located in the slots (103, 104) and each has two cylindrical tracking portions (115a and 115b) separated by a circumferential guide flange (144). Each tracking portion (115a, 115b) engages with a lower edge (112, 113) of the slot (103, 104) of a respective one of the track sections (101, 102) and the guide flange (144) locates in the aforementioned space (116) between the rear walls (105, 106) thereby ensuring that each tracking portion (115a, 115b) remains aligned with its respective slot edge (112, 113). Additional guide means (143, 145) is provided on each traveller (109) to ensure that it remains in co-operation with the track sections (101, 102) during movement therealong and each traveller (109) can move into the telescoped portion (114) of the track sections (101, 102) and beyond either end of that portion (114).



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This invention relates to supports of the kind comprising an elongate track in the form of a rail or beam and a plurality of travellers mounted on that track for movement therealong. The member or structure to be supported is connected to one or more of the travellers. Such supports are commonly used for curtains and the like and it will be convenient to hereinafter describe the invention with reference to a track particularly suited for that example use.

Curtain support tracks are generally supplied in telescopic form so that they can be readily adapted to a variety of use situations. For that purpose, such a track will include two tubular sections, one of which is slidable within the other. Each metal section is usually of "C" shape in cross-section so as to have a slot extending throughout its length and in the assembled condition of the track the two slots are aligned and are on the same side. Each traveller comprises a slider or roller unit having a bearing part which locates within the aforementioned slot and a hanger part depending downwardly from the bearing part for attachment to a curtain for example. The bearing part, whether it be a slider or roller, engages the lower edge of the longitudinal slot and tracks along that edge as the associated curtain is opened and closed.

A principal difficulty with such supports arises from the fact that the traveller is required to move from engagement with one track section to engagement with the other. The engaging edges of the respective track sections are of course not aligned because of the different sizes

of those sections and consequently a lateral step occurs at each end of the transition zone over which the traveller passes when being transferred from support by one track section to support by the other. The two track sections are telescoped in that transition zone so they provide simultaneous support for a traveller located in that zone.

The bearing part of the traveller must then have sufficient width to accept the double edge support of the transition zone. Consequently, when the bearing part engages a single edge support as provided beyond each end of the transition zone, it is able to move laterally relative to that edge to a substantial extent. The traveller then tends to foul with the lateral step at each end of the transition zone thereby disturbing smooth operation of the tracking system.

Another difficulty arises from the fact that the "C" section tracks do not lend themselves to accurate formation. That is, it is difficult to maintain the tolerances which are necessary to enable a well-fitting track assembly.

The "C" section track system described above is the type of system which is commonly used at this time. There have been other proposals such as those disclosed by US patents 2683890 and 2683891 in which the travellers are unable to move from one track section to the other, but such systems have not achieved popular adoption and suffer the disadvantage of limited application. That is, they cannot be used to support a single section of curtain or the like.



Australian patent 403238 discloses yet another proposal in which the travellers project through a slot in the lower wall of the track sections and are transferrable from one track section to the other in a relatively smooth manner. That proposal has also not achieved wide acceptance, presumably because of the substantial frictional resistance to movement of the travellers.

It is a principal object of the present invention to provide an improved track for a support system of the kind indicated. It is a further object of the invention to provide an improved system incorporating such a track.

According to the present invention, there is provided a support track assembly including a tubular guide track comprising an outer and an inner elongate track section, said inner track section telescopically locating within said outer track section and projecting beyond an end thereof, a slot formed through a side wall of each said track section and extending the full length thereof, said side walls being adjacent walls of said track sections and said slots being in substantial lateral alignment, a lower edge of each said slot forming a respective traveller support surface, adjacent portions of said side walls being laterally offset relative to one another so that a space exists between them over the telescoped length of said track sections, each said portion including an edge of the respective said slot and extending the length thereof, at least one traveller having a bearing part projecting transversely through at least one of said slots and a hanger part depending from said bearing part and located externally of said guide track, said bearing part having two tracking

portions each of which is engageable with a respective one of said traveller support surfaces for movement therealong, guide means on said traveller co-operating with said guide track to retain each said tracking portion in longitudinal alignment with its respective said traveller support surface at all positions of said traveller along the length of said guide track, and part of said guide means locating within said space when said traveller is positioned within said telescoped length.

The essential features of the invention, and further optional features, are described in detail in the following passages of the specification which refer to the accompanying drawings. The drawings however, are merely illustrative of how the invention might be put into effect, so that the specific form and arrangement of the features (whether they be essential or optional features) shown is not to be understood as limiting on the invention.

In the drawings:

Figure 1 is a semi-diagrammatic back view of a telescopic track assembly of the kind to which the invention is applicable.

Figure 2 is a perspective view of part of telescoped track sections of the kind commonly used prior to the present invention.

Figure 3 is an enlarged transverse cross-sectional view taken along line III-III of Figure 1 assuming that the track sections of Figure 1 are of the kind shown in Figure 2.

Figure 4 is a view similar to Figure 2 but showing track sections incorporating the present invention and



also showing a traveller of the kind usable with those track sections.

Figure 5 is a view similar to Figure 3 but showing track sections and a traveller incorporating the present invention.

Figure 6 is an enlarged transverse cross-sectional view taken along line VI-VI of Figure 1 but assuming that the track sections are of the kind shown in Figure 4.

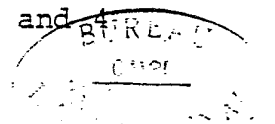
Figure 7 is an enlarged transverse cross-sectional view taken along VII-VII of Figure 1 but assuming that the track sections are of the kind shown in Figure 4.

Figure 8 is a rear side view of a pulley housing at one end of the track assembly as shown in Figure 4.

Figure 9 is a cross-sectional view taken along line IX-IX of Figure 8.

The typical track assembly shown in Figure 1 includes an outer track section 1 and an inner track section 2 having an end portion telescopically located within the outer section 1. Both sections 1 and 2 are elongate and they have a longitudinally extending slot 3 and 4 respectively formed through a rear side wall 5 and 6 respectively. Suitable mounting brackets 7 and 8 are provided at each end to support the track assembly and at least one intermediate bracket (not shown) may be also included. Travellers 9 of suitable construction are slidably located within the slots 3 and 4 and each has a bearing part 10 and a hanger part 11.

Figure 2 illustrates the general form of the track sections 1 and 2 as commonly used prior to the present invention. The lower edges 12 and 13 of the slots 3 and



respectively constitute traveller support surfaces and as shown, the edges 12 and 13 are in side by side engagement over the telescoped portion 14 of the track sections 1 and 2. As a result, the tracking portion 15 (Figure 3) of each traveller 9 which engages the support edges 12 and 13 must be sufficiently wide to accept the double edge support existing within the telescoped portion 14. In that regard, it is generally required that all travellers 9 be of the same form and capable of movement from one track section to the other.

The subsequent figures of the drawings show one form of track assembly incorporating the present invention, and as a matter of convenience, parts of that construction corresponding to those of the prior art construction described above will be given like reference numerals but in the number series 100 - 199.

Figure 4 shows part only of a preferred form of track assembly incorporating the present invention together with one form of traveller suitable for use with that track assembly. As shown, a support track according to the present invention includes two slotted and telescopic sections 101 and 102 as in the prior constructions, but is characterised in that the respective traveller engaging edges 112 and 113 of the two sections 101 and 102 are laterally spaced in the telescoped portion 114 rather than being located against one another as in the prior constructions. That is, a space 116 exists between the two edges 112 and 113 in the telescoped portion 114. Each section 101 and 102 is of consistent cross-section throughout its length so the space 116 will exist regardless of the

length of the portion 114. The bearing part 110 of a traveller 109 for use with the track sections 101 and 102 has two separated bearing portions 115a and 115b each of which is engageable with a respective one of the two track edges 112 and 113 as best seen in figures 5 to 7.

In the particular form of the invention shown, each track section 101 and 102 is substantially square or rectangular in cross-section. Such a "square" corner configuration lends itself to greater accuracy in manufacturing than does the conventional rounded or "C" configuration. That is, tolerances are easier to maintain so that suitable co-operation between the inner and outer sections 102 and 101 respectively, can be constantly achieved. As in prior tracks, a longitudinally extending slot 103, 104 is formed through a rear side wall 105, 106 of each of the two sections 101 and 102 and that slot 103, 104 is preferably located so that a portion of the respective side wall 105, 106 remains both below and above the slot 103, 104 as shown in Figures 5 to 7.

According to the embodiment of the invention shown, the rear side wall 106 of the inner track section 102 is substantially flat. The rear side wall 105 of the outer section 101 however, is stepped outwardly at locations 117 and 118 above and below respectively the slot 103 so that the slot 103 is formed in a part of the wall 105 which is spaced outwardly from the adjacent part of the wall 106. It then follows that the traveller engaging edges 112 and 113 of the two track sections 101 and 102 are spaced apart in the overlapped portion 114 of the two sections 101 and 102 when telescoped together. The slots 103 and 104 are

in substantial lateral alignment and may be of the same width.

Quite obviously, the result described above can be achieved with other configurations of the track section and in other ways. With regard to the last point, by way of example, the side wall 106 of the inner track section 102 may be stepped inwardly to achieve the desired spacing and that may be done as an alternative to, or additional to the outward recessing of the outer track section 101.

The particular track sections 101 and 102 as shown are each stepped inwardly on both sides immediately below the respective upper wall 119 and 120 to form front and back projecting lips 121 and 122 and 123 and 124 respectively. Those lips function as part of the attaching means for the track sections 101 and 102 whereby they can be attached to supporting brackets 125 as shown in Figures 6 and 7. Each bracket 125 has a plate 126 which overlies the track section top wall 119 or 120 and has an outer hooked portion 125 which engages beneath the front lip 121 or 123. A cam member 128 releasably secured beneath the plate 126 or another part of the bracket 125, has bevelled clamping edges 129 and 130 which are spaced differently from the centre line 131 of the means whereby the cam member 128 is secured to the bracket 125. That is, the distance L is greater than the distance S (Figures 6 and 7). The edges 129 and 130 are adapted to engage beneath the back lip 122 and 124 of the sections 101 and 102 respectively, and the cam member 128 is secured to the plate 126 or bracket

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125 in either of two positions depending upon which track section 101 or 102 it is to engage. The arrangement is such that the cam member 128 wedges against the back lip 122 or 124 so as to clamp the respective track section in position.

Other attaching means for the track sections may be adopted, but the foregoing is simple and effective in operation.

A pulley housing 132 is provided at one end (at least) of the track assembly 101, 102 and may be constructed as shown in Figures 8 and 9. The housing 132 contains a pair of pulleys 133 and 134 each of which is engaged by a respective section 135 and 136 of the track cord. The housing 132 may be manufactured from a suitable plastics material and comprises a body part 137 and a cover plate 138. In the example shown, the pulley axles 139 are formed integral with the cover plate 138 and are located correctly and firmly by respective tapered pins 140 formed integral with the body part 137. One or more sections 141 of the body part 137 snap engages within respective apertures 142 of the cover plate 138 so as to secure the bottom portion of the housing 132 in assembly, and the bracket hooked portion 127 and cam member 128 secure the top portion of the housing 132. The housing 132 is thereby secured in position by the same bracket as used to directly support the track sections 101 and 102 and the construction and mounting of the housing 132 is relatively simple.

A traveller 109 for use with the track sections 101, 102 described may comprise a slidable bearing part 110

formed integral with a hanger part 111 as shown in Figures 1 and 5 to 7. The bearing part 110 is substantially cylindrical and has two circumferential flanges 143 and 144 which are spaced axially relative to one another and also relative to an end surface 145 of the bearing part 110. The axial spacing between the flanges 143 and 144 and between the flange 144 and surface 145, is greater than the width of the traveller supporting edges 113 and 112 to be received therebetween. As shown, it is preferred to provide spacer rib 146 on the flange 143 and the surface 145 so as to minimize frictional resistance to traveller movement. A cylindrical tracking portion 115a and 115b is provided between the flange 144 and surface 145 and between the flanges 143 and 144 respectively. The diameter of each tracking portion 115a and 115b is less than the width of the slots 103 and 104 so as to allow free movement of the traveller 109 along the slots 103 and 104. The flanges 143 and 144 and the surface 145 constitute guide means for the traveller 109 which co-operate with the track sections 101 and 102 to keep the traveller 109 in place.

When a traveller 109 is assembled on the track 101, 102 the intermediate flange 144 is located in the space 116 between the slotted walls 105 and 106 of the two sections 101 and 102 and the flange 143 and surface 145 are located on the inside of the inner section 102 and the outside of the outer section 101 respectively. The tracking portions 115a and 115b bear on the support edges 112 and 113 respectively.

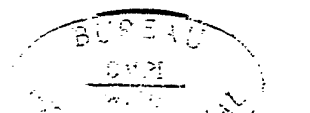
The traveller 109 is thereby restrained against



excessive movement transverse to the track regardless of whether it engages one or both of the track sections 101 and 102. That is, the traveller 109 has an independent tracking groove for co-operation with each of the track sections 101 and 102.

It will be appreciated that a roller - type traveller can be arranged in substantially the same manner as the sliding type described above. For example, a single roller may be provided with an intermediate flange and end flanges which functions as in the slider described. Alternatively, a separate end flanged roller may be provided for each track section 101 and 102.

Finally, it is to be understood that various alterations, modifications and/or additions may be introduced into the constructions and arrangements of parts previously described without departing from the spirit or ambit of the invention as defined by the appended claims.



CLAIMS

1. A support track assembly including a tubular guide track comprising an outer and an inner elongate track section, said inner track section telescopically locating within said outer track section and projecting beyond an end thereof, a slot formed through a side wall of each said track section and extending the full length thereof, said side walls being adjacent walls of said track sections and said slots being in substantial lateral alignment, a lower edge of each said slot forming a respective traveller support surface, adjacent portions of said side walls being laterally offset relative to one another so that a space exists between them over the telescoped length of said track sections, each said portion including an edge of the respective said slot and extending the length thereof, at least one traveller having a bearing part projecting transversely through at least one of said slots and a hanger part depending from said bearing part and located externally of said guide track, said bearing part having two tracking portions each of which is engageable with a respective one of said traveller support surfaces for movement therealong, guide means on said traveller co-operating with said guide track to retain each said tracking portion in longitudinal alignment with its respective said traveller support surface at all positions of said traveller along the length of said guide track, and part of said guide means locating within said space when said traveller is positioned within said telescoped length.

2. A support track assembly according to claim 1, wherein

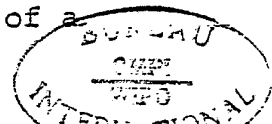
each said slot is formed in a rear side wall of the respective said track section and longitudinal portions of said rear side walls located above and below said adjacent portions are in face to face engagement within said telescoped length.

3. A support track assembly according to claim 1 or 2, wherein said traveller bearing part includes two cylindrical said tracking portions separated by a circumferential flange which forms said guide means part, said guide means also includes a further flange which is engageable with the inside surface of said inner track section rear wall and a traveller surface which is engageable with the outside surface of said outer track section.

4. A support track assembly according to claim 3, wherein said further flange and said traveller surface have spacer ribs thereon which are engageable with the respective said track section surface.

5. A support track assembly according to any preceding claim wherein each said track section has a laterally outwardly projecting lip at front and rear sides thereof adjacent a top wall of the respective track section, said lips extending the length of the respective track section and forming part of attaching means whereby said track sections are attached to a support bracket.

6. A support track system including a track assembly according to claim 5, wherein at least one said support bracket is attached to said track assembly intermediate its ends, each said support bracket includes a hooked plate which extends transversely across the top wall of a



said track section and engages around the said front side lip thereof, and a cam member secured to an under-surface of said bracket engages beneath the said rear side lip, said cam member being secured to said bracket in either of two positions according to whether it is to engage the inner or outer said track section.

7. A support track system according to claim 6, wherein a pulley housing is located at least at one end of said track assembly and is supported by a said support bracket, said pulley housing includes a body part and a face plate, said body part and face plate being snap engaged together at a lower portion of said housing and being secured together at an upper portion thereof by the hooked plate and cam member of said support bracket, said housing having front and rear lips corresponding substantially to those of said track sections.

8. A support track system according to claim 7, wherein the or each said pulley is rotatably supported within said housing by an axle formed integral with said body part or said cover plate, and a locating pin formed integral with said cover plate or body part respectively engages within a hollow end of said axle.

9. A support track assembly substantially as herein particularly described with reference to what is shown in Figures 4 to 9 of the accompanying drawings.

10. A support track system substantially as herein particularly described with reference to what is shown in Figures 4 to 9 of the accompanying drawings.

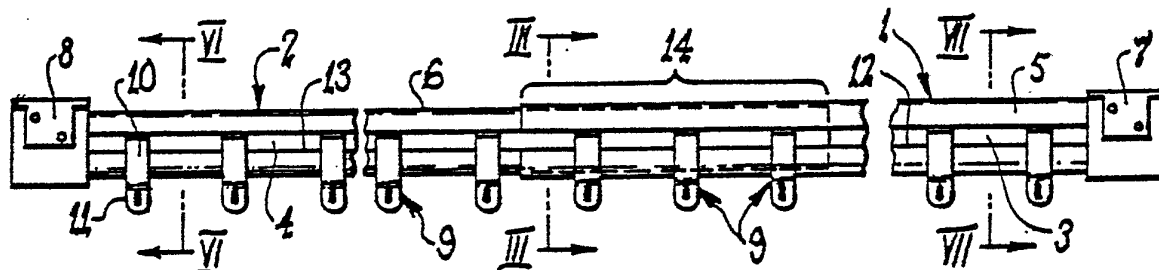


Fig 1

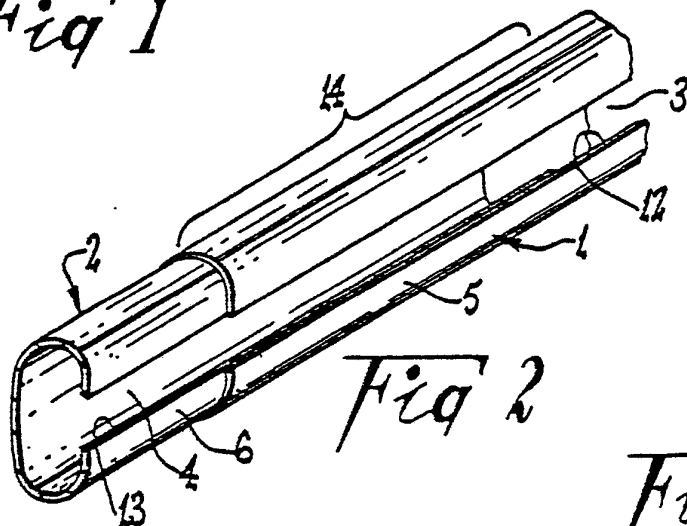


Fig 2

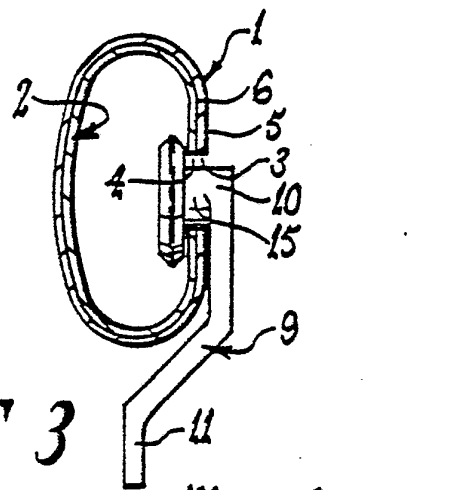


Fig 3

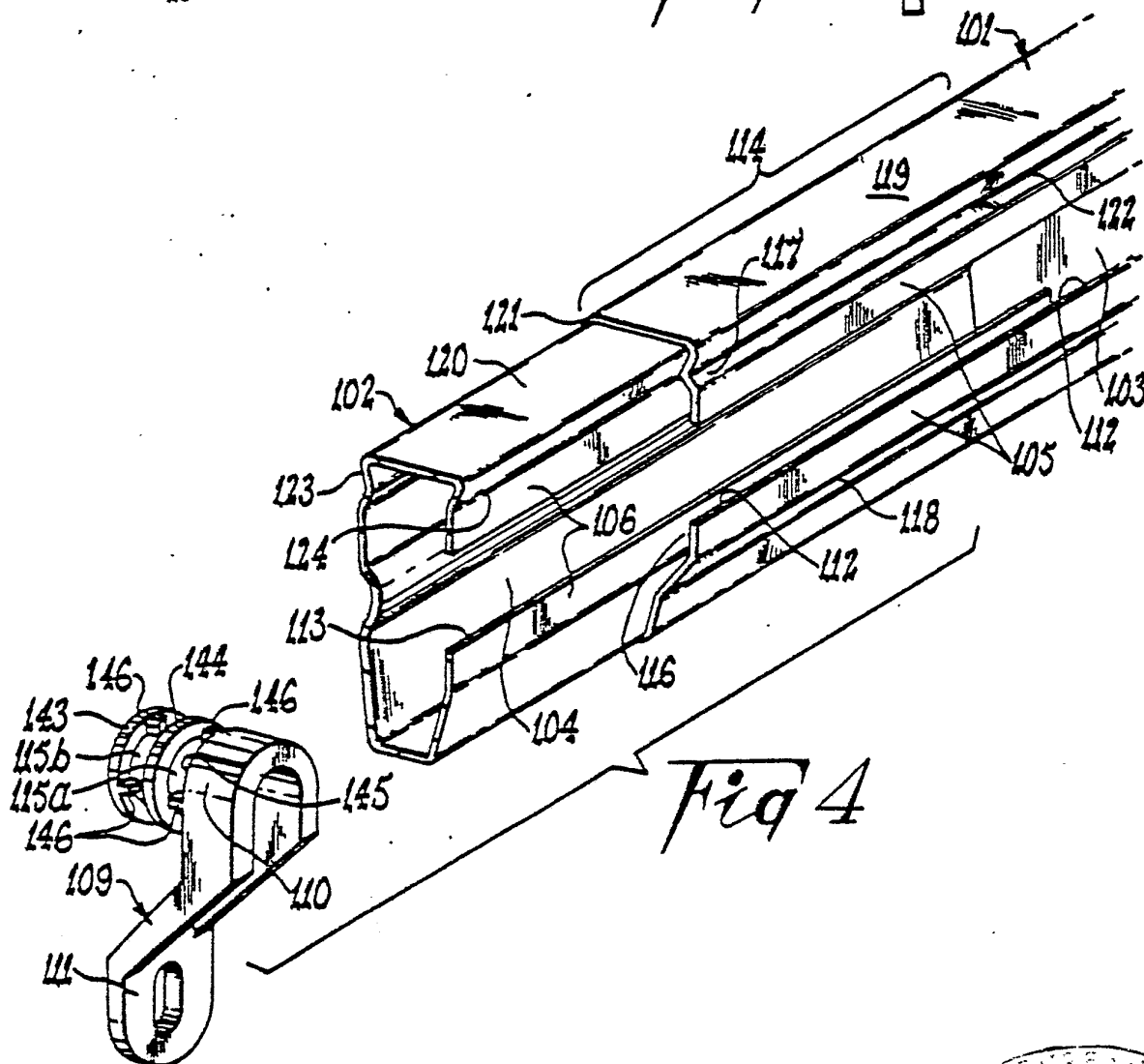
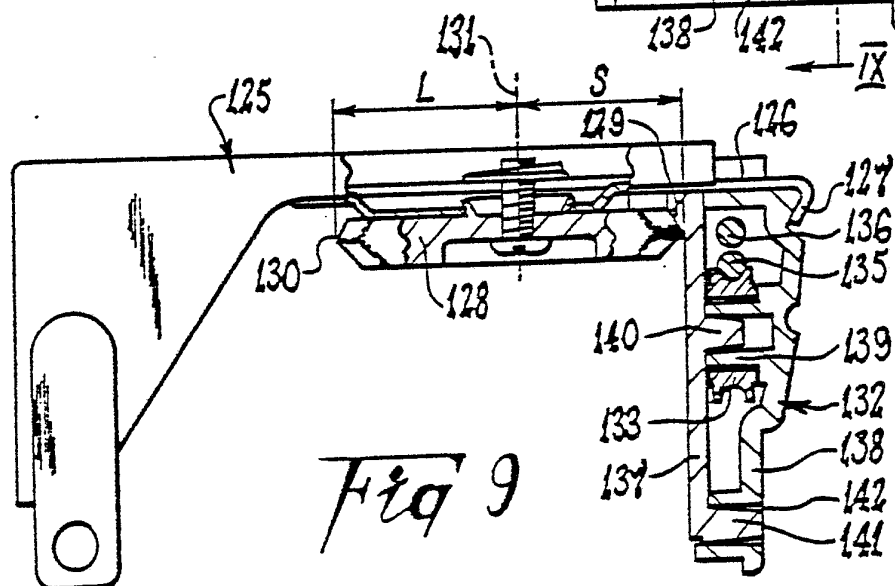
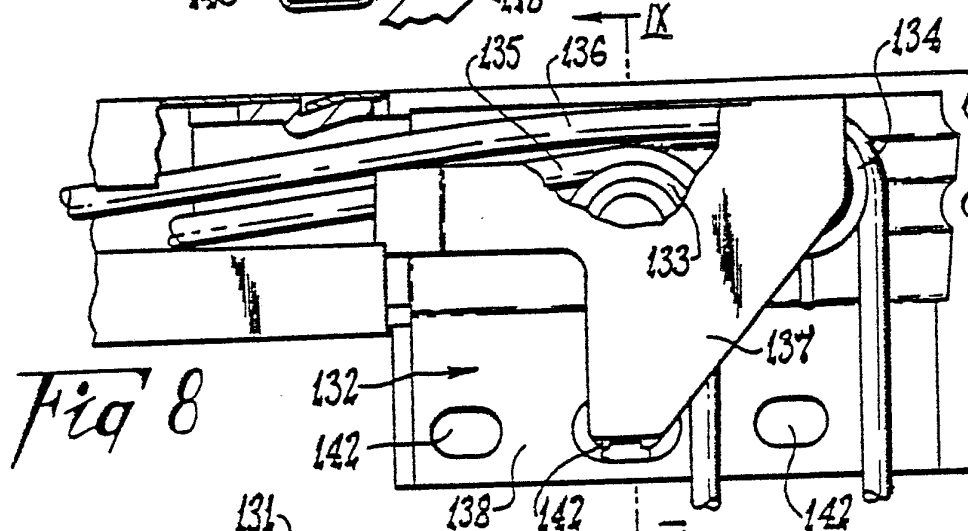
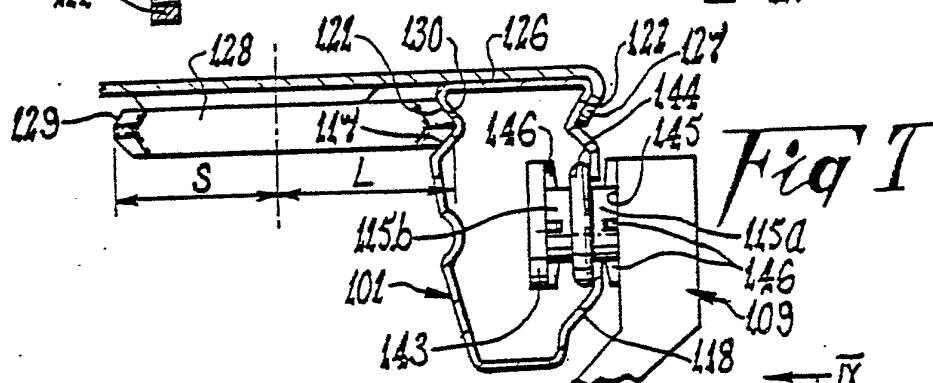
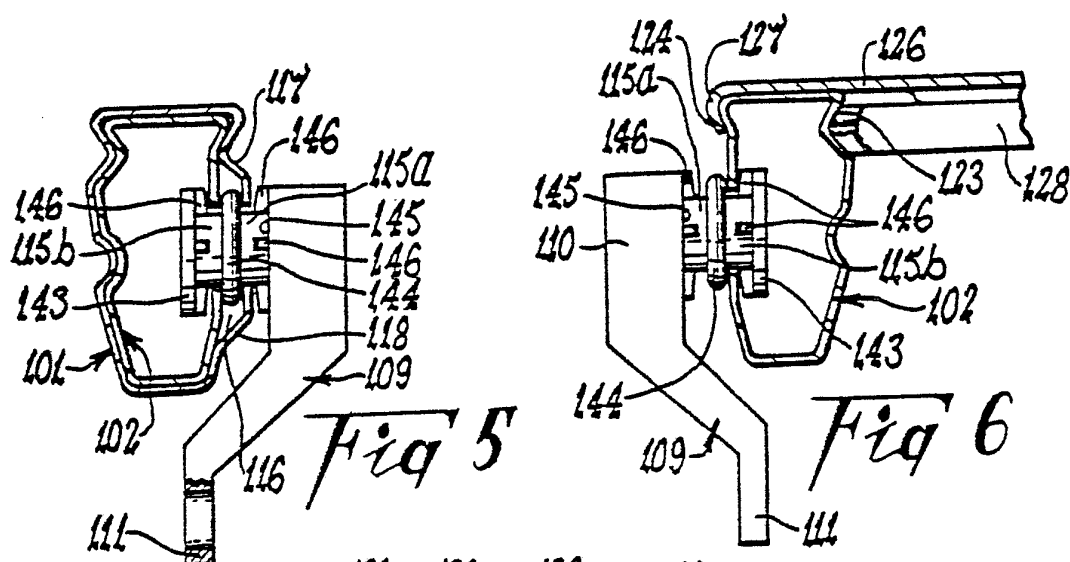


Fig 4



INTERNATIONAL SEARCH REPORT

International Application No PCT/AU82/00029

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ¹		
According to International Patent Classification (IPC) or to both National Classification and IPC		
Int. Cl ³ A47H 1/08, 15/04		
II. FIELDS SEARCHED		
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Classification System	Classification Symbols	
IPC	A47H 1/08, 15/04	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁵		
AU : IPC as above; Designs 0899		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ¹⁴		
Category ⁶	Citation of Document, ¹⁵ with indication, where appropriate, of the relevant passages ¹⁷	Relevant to Claim No. ¹⁸
X	GB,A, 1058364 (THOMAS FRENCH AND SONS LTD) 8 February 1967 (08.02.67)	(1)
X	US,A, 2683890 (ROSENBAUM) 20 July 1954 (20.07.54)	(1-3)
X	US,A, 2683891 (ROSENBAUM) 20 July 1954 (20.07.54)	(1)
X	DE,B, 1165234 (KRULL) 12 March 1964 (12.03.64)	(1)
A	AU,B, 292536 (KIRSH COMPANY) 9 March 1967 (09.03.67)	
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IV. CERTIFICATION		
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