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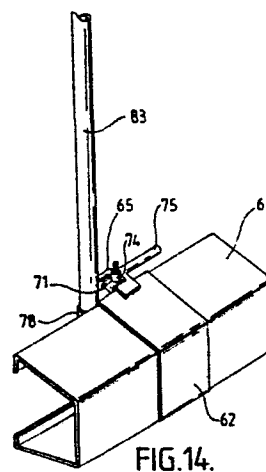
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54 Road barriers and road signs.

57 Support means 62, 78 are provided which are releasably attachable to a crash barrier 63 at any desired point along the length of the crash barrier. The support means enable devices such as signs and road barriers to be connected to the crash barrier at any desired point. For example the post 83 of a sign may be inserted in a tube 78 forming part of the support means.



ROAD BARRIERS AND ROAD SIGNS

5 This invention relates to road barriers and
road signs and is particularly, although not exclusively,
concerned with road barriers and road signs for use on
motorways.

0 Hitherto, motorway signs have mostly been restricted
to verges or immediate attachment to crash barriers and
cones have been used to close off required lanes. Known
temporary signs that are attached to crash barriers may
be mounted thereon only at certain positions, usually
defined by support posts of the barrier. Any temporary
5 barriers and signs that are displayed away from the
verges and crash barriers on the motorway lane are
free standing, for example in a tripod fashion or
supported by sandbags. These barriers and signs are
vulnerable in motoring accidents and poor weather conditions
0 such as high winds.

Preferred embodiments of the present invention aim
to provide means for supporting road barriers and
road signs which may be improved in these respects.

5 More generally, according to a first aspect of
the present invention, there is provided a barrier adapted
to be placed across a roadway and provided at one end with
support means which is adapted to be mounted on a crash
0 barrier extending along side the roadway.

Preferably the support means is movable along
the length of a crash barrier, enabling the road barrier
to be positioned at any desired point.



The barrier may be telescopic, allowing it to span one or more lanes of a motorway. The barrier may comprise extension pieces with opposing spigot and socket ends which interengage, and may be adapted to engage the support means. The number of extension pieces used may be varied as desired.

The manner in which the barrier engages the support means may be pivotal, allowing movement either in the horizontal plane only, or in any plane. This enables the barrier to be placed across the roadway at any desired angle.

If required, a sign post may be secured to the support means or at any desired position along the barrier. Preferably, the means for supporting the sign post on the crash barrier comprises a T- or cross-shaped piece secured at the extremity of, or between, the said extension pieces. A support leg may also be secured to the barrier in this fashion. Lights and/or warning signs may be attached along the barrier if required.

According to a second aspect of the present invention, there is provided a sign post provided with a support means which is adapted to be mounted on a crash barrier extending alongside a roadway, such that the support means is moveable along the crash barrier to any desired position.

Preferably the support means comprises a quick release mechanism by which it may be attached to a crash barrier. The quick release mechanism may comprise a rod, which is pivotally secured at one end to the support means, and is provided at its other end with a catch member for releasable engagement with the support member.

At said one end, the rod is threaded and carries a nut and a spring constrained between the nut and a part of the support member. The catch means may comprise a cross bar which is disposed at said other end of the rod and engages a recess in the support means.

Preferably, the sign post is removably mounted on the support means and it may be mounted thereon by securing the post in a hollow member carried on the support means.

By way of example, specific embodiments of the invention will now be described, with reference to the accompanying drawings, in which:-

Figure 1 is a perspective view of typical arrangements embodying the invention;

Figure 2 is a perspective view of a mounting bracket attached to a crash barrier;

Figure 3 is a cross section of the mounting bracket of Figure 2, attached to a crash barrier;

Figures 4A to 4D illustrate various parts of the arrangement shown in Figure 1;

Figure 5 is a cross section of a mounting bracket attached to an alternative form of crash barrier;

Figure 6 is a transverse cross section through a crash barrier fitted with an embodiment of my invention;

Figure 7 is a rear view of the crash barrier shown in Figure 6;

Figure 8 is a side view of a securing bracket of yet another embodiment of my invention;

5 Figure 9 is a rear view of the bracket shown in Figure 8;

Figure 10 is an underplan of the bracket shown in Figure 8;

10 Figure 11 is a side view of a quick release device for use with the bracket of Figure 8;

Figure 12 is a rear view of the device shown in Figure 11;

15 Figure 13 is an underplan view of the device shown in Figure 11; and

Figure 14 is a perspective view showing the bracket and quick release device being attached to a crash barrier.

20 Figure 1 shows one lane of a dual carriage way with a central crash barrier 20, supported on posts 196. Various arrangements 300, 301, 302, embodying the invention, are shown at different positions across
25 the carriage way.

The arrangement 300 comprises a sign 200 which is displayed next to the crash barrier 20 and is attached by a mounting bracket 1 to the crash barrier 20. Details of the mounting bracket 1 are shown in Figures 2 and 3.

As shown in Figure 2, the member 1 is adapted to co-operate with the crash barrier 20. The upper edge 11 (as seen in Figure 2) of the member 1 is hooked onto the upper edge of the crash barrier 20. The lower edge of the member 1 is formed with a lip 12, situated underneath the lower edge of the crash barrier 1.

A securing mechanism 29 comprises a threaded rod 2 which passes through a horizontal flange 17 extending from the upper edge 11 of the member 1. A cross bar 3 is attached to the bottom of the threaded rod 2. The cross bar 3 engages with the lip 12 of the mounting bracket 1 and a wing nut 4 bears via a washer 5 against one end of a spring 6, the other end of which abuts the flange 17. By pulling the cross bar 3 downwards against the spring 6 as shown in Figure 3, it can be secured into the lip 12 of the mounting bracket 1, and subsequently released as a quick release mechanism.

As shown in Figure 3, a hollow member 7 is welded to the mounting bracket 1. A T-shaped member 18 is rotatably mounted within the hollow member for rotation about a vertical axis. It can be secured in any desired position, by means of a bolt 8 which threadedly engages the hollow member 7 and is adapted to bear against the outer surface of the T-shaped member 8.

A horizontal arm 19 of the T-shaped member 18 forms a spigot which is inserted into a hollow socket 15 of a

T-piece 9, which is illustrated in Figure 4A. The T-piece 9 as shown in Figure 4A comprises two vertical sockets 30 and 40, each provided with a locking bolt 8 similar to that of Figure 3. The sign 200 is mounted on a post 10 which is then secured in the upper vertical socket of the T-piece 9.

The arrangement 301 of Figure 1 also comprises a sign 201, which is similar to the sign 200, but is positioned at one end of a barrier, which spans one lane of the dual carriageway.

The barrier is formed from three interengaging extension pieces 11, each of which comprises an elongate member having a spigot at one end and a socket at the opposite end. As shown in Figure 4A, the socket end of one extension piece 11 engages the spigot 19 of a T-shaped member 18, which is rotatably mounted in a hollow member 7 on a mounting bracket 1, as for the arrangement 300.

In Figure 1 arrangement 302 shows the extension rods 11 extending across both lanes of the dual carriageway. It will be appreciated that any length of carrier can be obtained by varying the number of extension rods 11 used.

The spigot end of the outermost extension piece 11 engages the horizontal socket 15 of a T-piece 9, which carries a post 10 for the sign 201, in a manner similar to that of the arrangement 300. However, in this case, a support leg 12 is secured in the lower vertical socket 40 of the T-piece 9, (Figure 4A), to support the weight of the barrier 11 and the sign 201. The support leg 12, shown in Figure 4B, has a wheel 13 at the foot thereof. The portion of the wheel 13 below the leg 12 is adjustable. As

an alternative to the leg 12, there may be used a leg 14 having a flat base 24, as shown in Figure 4C. This may be of particular advantage on soft ground, such as a grass verge, or adjacent the crash barrier 20.

Lights 15 and/or warning signs 16 are advantageously attached to the extension pieces 11.

The arrangement 302 shown in Figure 1 is essentially the same as the arrangement 301, except that a greater number of extension pieces 11 has been used, to give a barrier extending across two lanes of the carriageway. It will be appreciated that any number of extension pieces 11 may be used to give any desired length of barrier.

Figure 1 also shows in chain lines the arrangement 302 pivoted about the mounting bracket 1, to any required angle, and is secured in that position by means of the bolt 8 as shown in Figure 3.

The wheeled support leg 12 allows the arrangements shown in Figure 301 and 302 to be wheeled back to the verge when not required. Also in the event of an impact the locking bolt 8 is likely to give and the arrangement will move freely.

Figure 4D shows a cross member 117 which has horizontally opposing spigot and socket arms 118, 119 which may be attached to the extension pieces 11, to a T-piece 9, or to a T-shaped member 18. The vertical arms 120 and 121 of the cross member 117 may secure a support such as 12 or 14 or a sign post 10. Cross members such as 117 may be used between any two extension pieces 11 to provide further support and/or display a further sign.

It will be appreciated that the arrangements shown in Figure 1 may be secured to the crash barrier 20 at virtually any desired position (particularly if the crash barrier 20 is spaced from the support posts 196).

5

Figure 5 shows a mounting bracket 1 which corresponds to the mounting bracket 1 of Figure 3, but which is adapted to co-operate with a crash barrier 21 of different section to the crash barrier 20.

10

The crash barrier shown in Figures 6 and 7 comprises a length of steel 50 which is formed into a generally W-shaped cross-section in a conventional manner.

15

Attached to the crash barrier is a signpost in the form of a hollow tube 51. The tube 51 is secured by two spacer blocks 52 to a generally rectangular metal plate 53. The plate 53 has a hooked lip 54 at its lower end and to its upper end is welded a vertically extending screw-threaded stud 55.

20

The plate 53 is positioned on the side of the crash barrier remote from the side which faces motor vehicles. The side 56 of the crash barrier which does face motor vehicles travelling past the barrier has a piece of metal 57 extending over it, the piece of metal being generally C-shaped in cross-section so that it neatly mates with the crash barrier as shown in Figure 6. The lower end of the piece of metal 57 has a downwardly extending flange 58 over which the lip 54 is hooked. The other end of the piece of metal 57 has a bracket 59 welded thereto. The bracket 59 has a hole therethrough which receives the stud 55 and a nut 60 is screwed on to the free end of the stud 55.

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Thus the plate 53 and piece of metal 57 form a clamp which surrounds the crash barrier and holds the signpost 51 securely in position in the vertical position. The support leg 61 of a roadsign may thus be
5 attached to the crash barrier by dropping the support leg into the post 61 as shown in Figure 6 and the leg may be fixed in position by screwing a bolt 62 having a butterfly head into a threaded hole in the post 51 so that the inner end of the bolt presses firmly against
10 the leg 61.

If desired the sign can readily be moved to a new position by removing the nut 60, unhooking the lip 54 from the flange 58, moving the clamp to a new location,
15 re-engaging the lip 54 with the flange 58, and replacing the bolt 60.

The invention is not restricted to the details of the foregoing embodiment. For instance the stud 55 may
20 engage in a slot in the bracket 59 instead of a hole.

The shape of the piece of metal 57 may be altered to suit the profile of differing crash barriers, for example it may be shaped to suit a crash barrier of
25 the form shown in Figure 5.

Turning now to the embodiment shown in Figures 8 to 14, there is shown a bracket 62 made from metal plate bent into a shape suitable to engage around the
30 form of crash barrier 63 shown in Figure 14.

Projecting downwardly from the lower edge of the bracket 62 are two spaced-apart lugs 64 and welded to the upper part of the bracket 62 is a latch plate 65

which, as shown in Figure 10, has two slots 66 therein.

5 The bracket shown in Figures 8, 9, 10 and 14 co-operates with the quick release device shown in Figures 11, 12 and 13. This quick release device comprises a plate 67 which has a flange 68 at its lower edge in which are formed three pairs of slots 69.

10 Welded to the upper edge of the plate 67 is a length of threaded bar 70. Fitted over this bar is a small plate 71 having a downwardly extending flange 72, then a spring washer 73 and finally a nut 74 having a handle 75. The upper end of the threaded bar 70 is
15 enlarged at 76 so that the plate 71, washer 73 and nut 74 are all captive.

 Two support members 77 are welded to the plate 67 and welded to these support members is a tube 78. A stop member is provided at the bottom of the tube in the
20 form of a pin 79 welded into the tube. There is a hole in the side of the tube and welded around this hole is a nut 80. A screw-threaded rod 81 having a handle 82 can be screwed into the nut 80 to project into the
 tube 78.

25 In use, the bracket 62 is fitted around the crash barrier 63 as shown in Figure 14. The quick release device is then moved into a position in which the lugs 64 of the bracket engage in one of the pairs of slots 69
30 in the flange 68 of the quick release device. The quick release device is then tilted sideways slightly to engage one of the slots 66 with the threaded bar 70 underneath the plate 71. At this stage the nut 74

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is screwed upwardly so that the plate 71 and washer 73 are loose. The plate 71 is swivelled through 180° from the position shown in Figure 14 and dropped downwardly so that the flange 73 of the plate engages behind the catch plate 65 thus holding the bracket and quick release device together temporarily. To ensure a firm connection the handle 75 is used to screw the nut 74 down to firmly trap the catch plate 65 in position.

10

Once the device has been secured in position the post 83 of a sign can be dropped into the tube 78 until the bottom end of the post abuts the bar 79. The threaded bar 81 can then be rotated by means of its handle 82 to clamp the post of the sign in position.

15

Because three pairs of slots 69 are provided, and two slots 66, the spacing between the bracket 62 and quick release device can be adjusted to suit different dimensions of crash barrier.

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The invention is not restricted to the details of this particular embodiment and the bracket 62 may be shaped to fit around other forms of crash barrier, for example the bracket may be generally similar in shape to that shown in Figure 6.

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Claims

1. A road barrier adapted to be placed across a roadway, characterised in that the barrier (302) is provided at one end with support means (1) adapted to be mounted on a crash barrier (20) extending along the side of a roadway.
5
2. A road barrier as claimed in claim 1, in which the support means (1) is movable along the length of the crash barrier (20), enabling the road barrier to be positioned at any desired point.
10
3. A road barrier as claimed in claim 1 or claim 2, in which the barrier is telescopic, allowing it to span one or more lanes of a motor way.
15
4. A road barrier as claimed in any one of the preceding claims, in which the barrier comprises extension pieces (11) with opposing spigot and socket ends which interengage and may be adapted to engage the support means.
20
5. A road barrier as claimed in any one of the preceding claims, in which a signpost (201) can be secured to the support means or to the road barrier.
25
6. A signpost characterised in that it is provided with support means (1) adapted to be mounted on a crash barrier (20) extending along the side of a road way, such that the support means (1) is movable along the crash barrier to any desired position.
30

7. A signpost as claimed in claim 6, in which the support means (1) comprises a quick release mechanism by which the support means may be attached to the crash barrier.

5

8. A signpost as claimed in claim 7, in which the quick release mechanism comprises a member which has a connection with the support means at one end allowing pivotal movement, and is provided at its other end with a catch member for releasable engagement with the support member.

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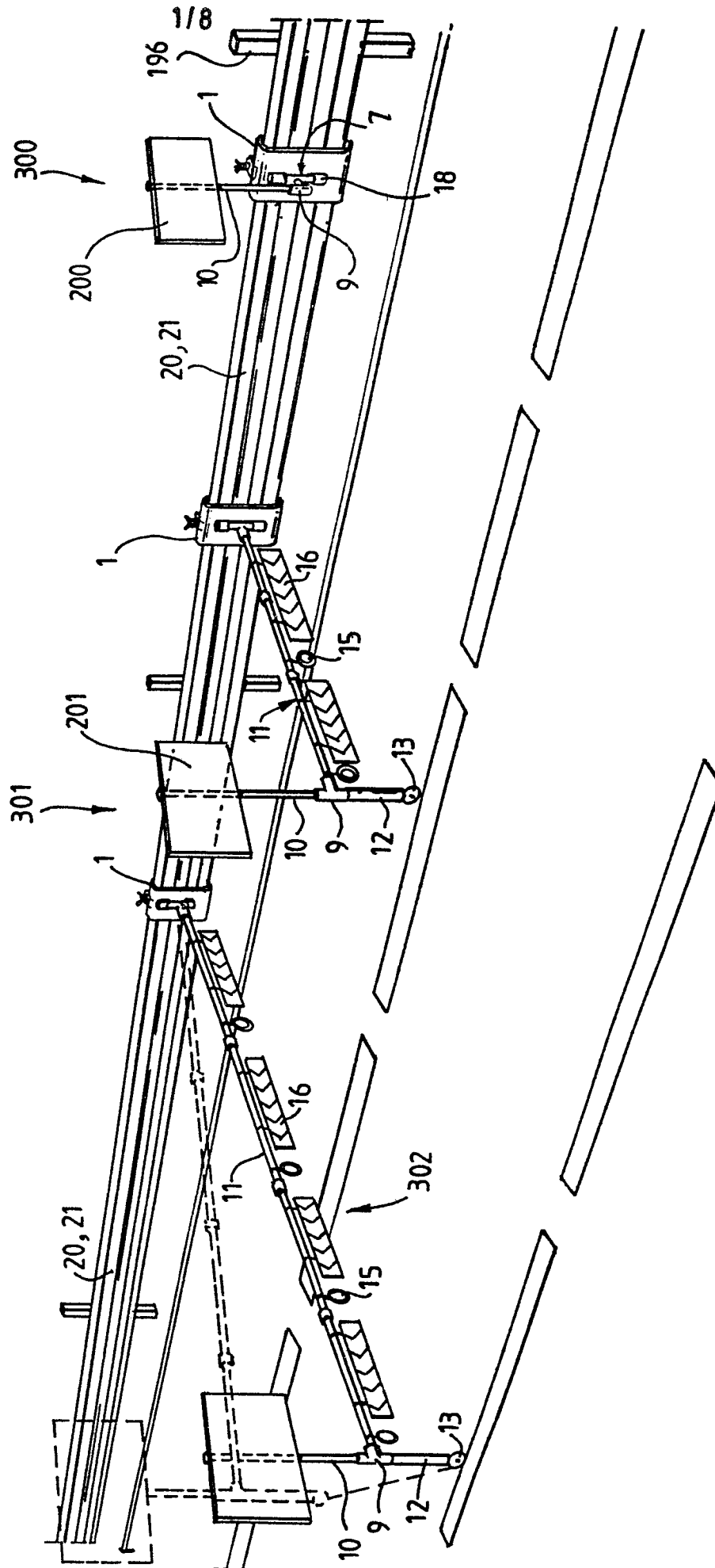
9. A signpost as claimed in any one of claims 6 to 8, in which the signpost is removably mounted in the support means.

15

10. A signpost as claimed in claim 9, in which the signpost is mounted by releasably securing the post in a hollow member carried on the support means.

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FIG.1.



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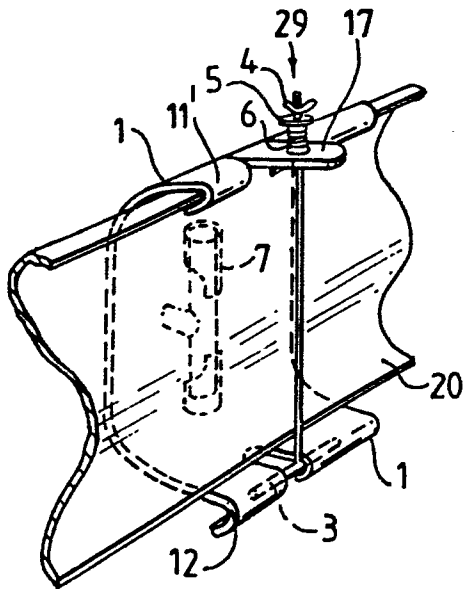


FIG. 2.

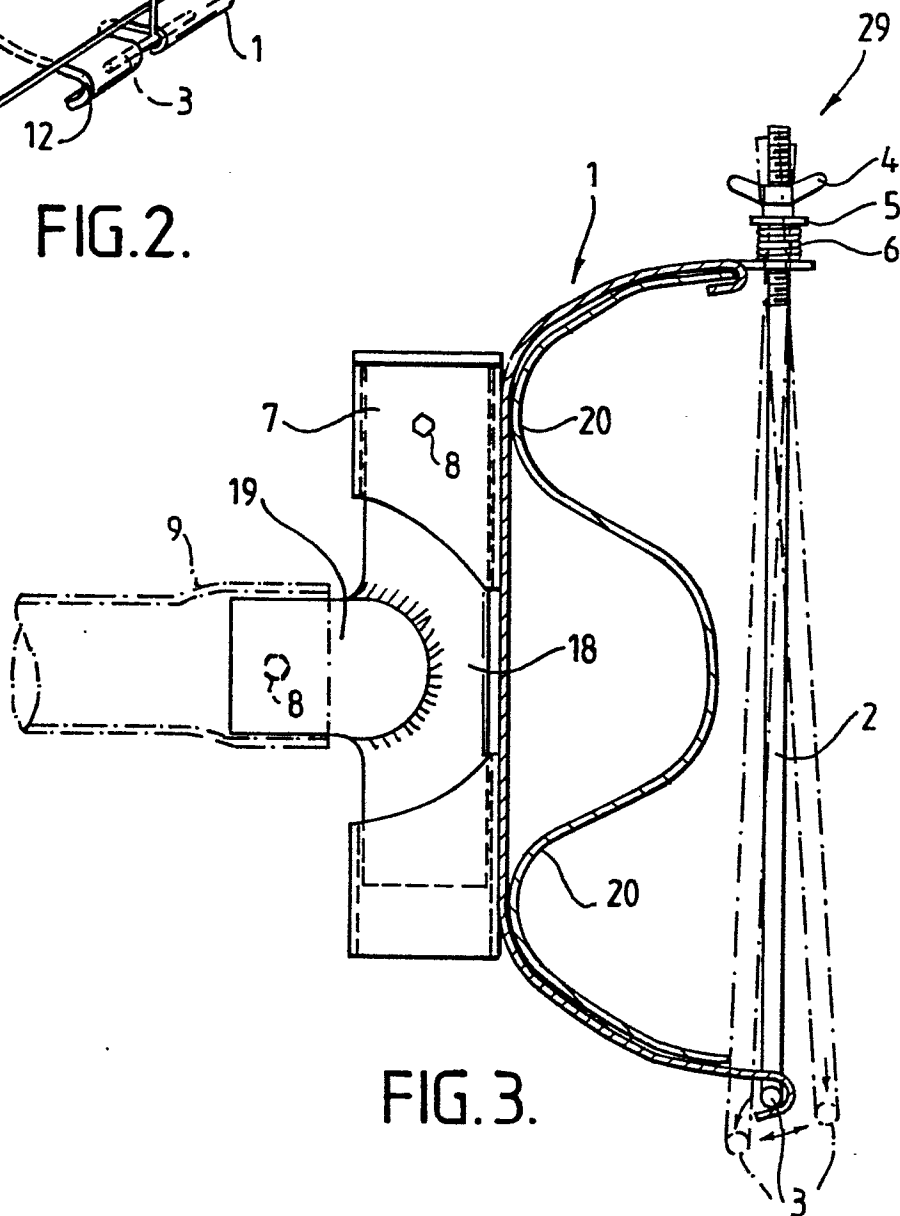


FIG. 3.

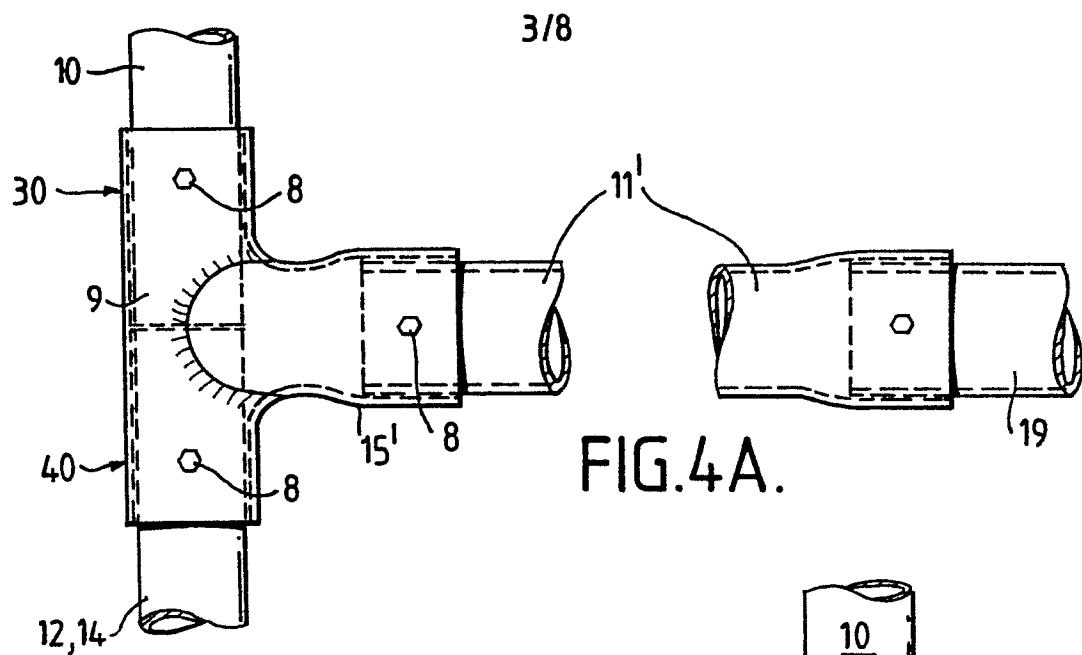


FIG. 4B.

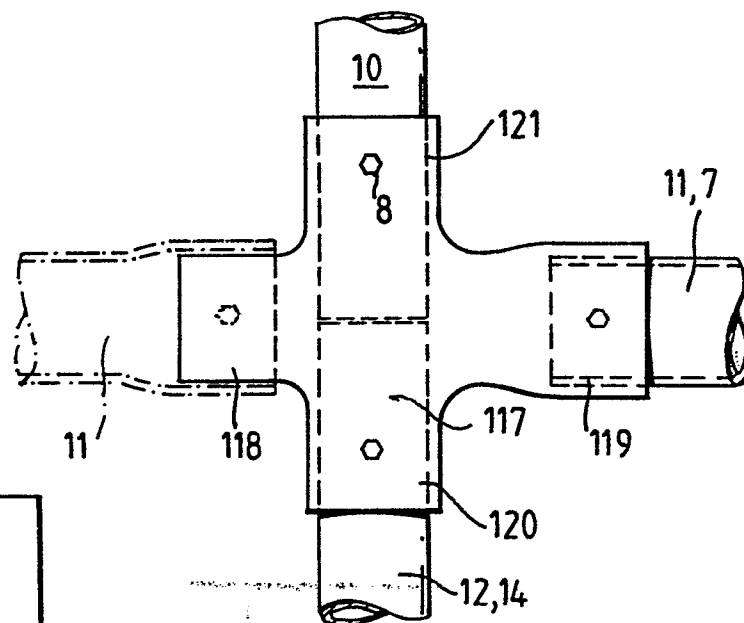
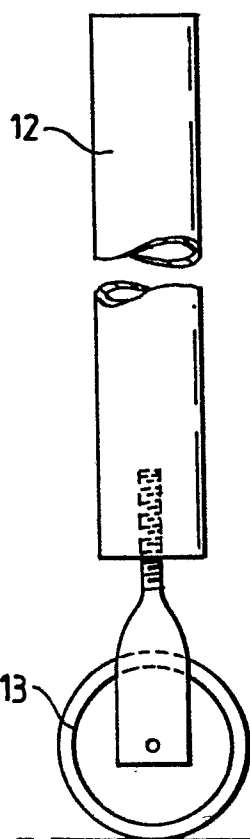
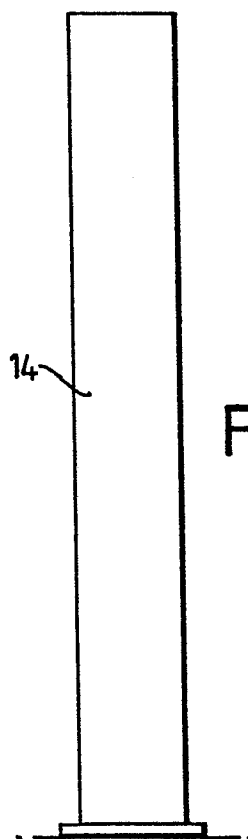
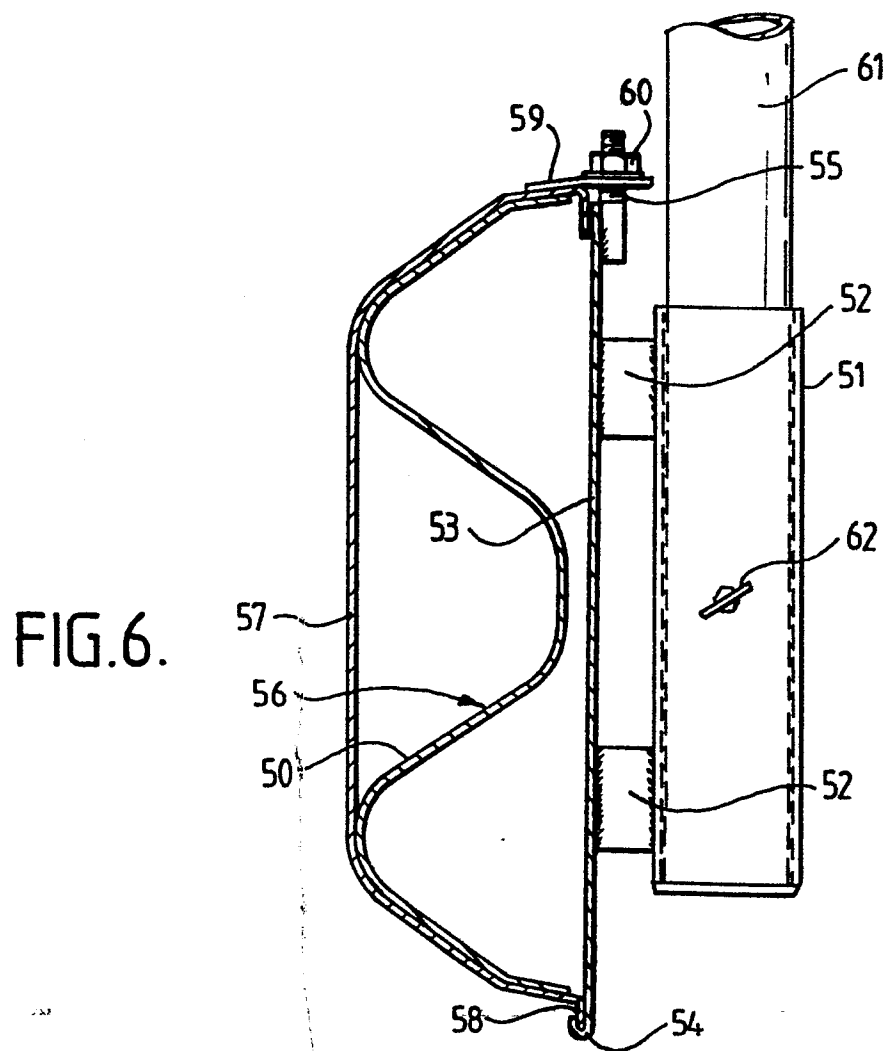
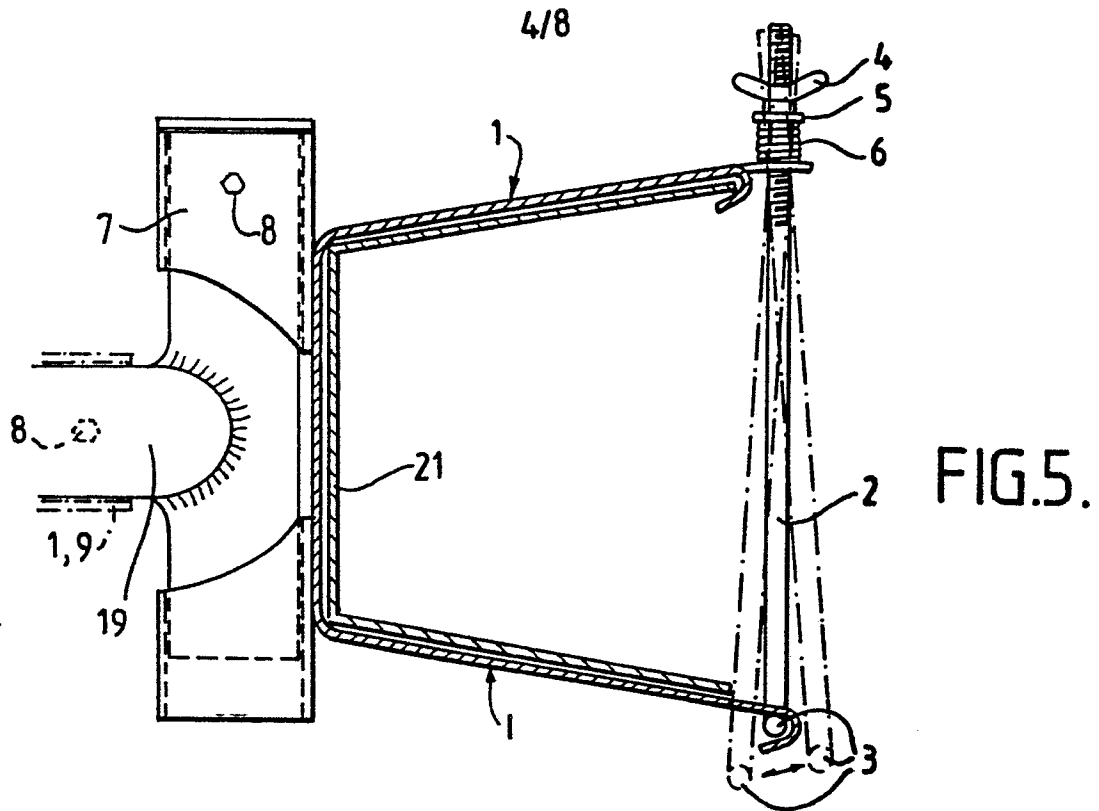


FIG. 4C.





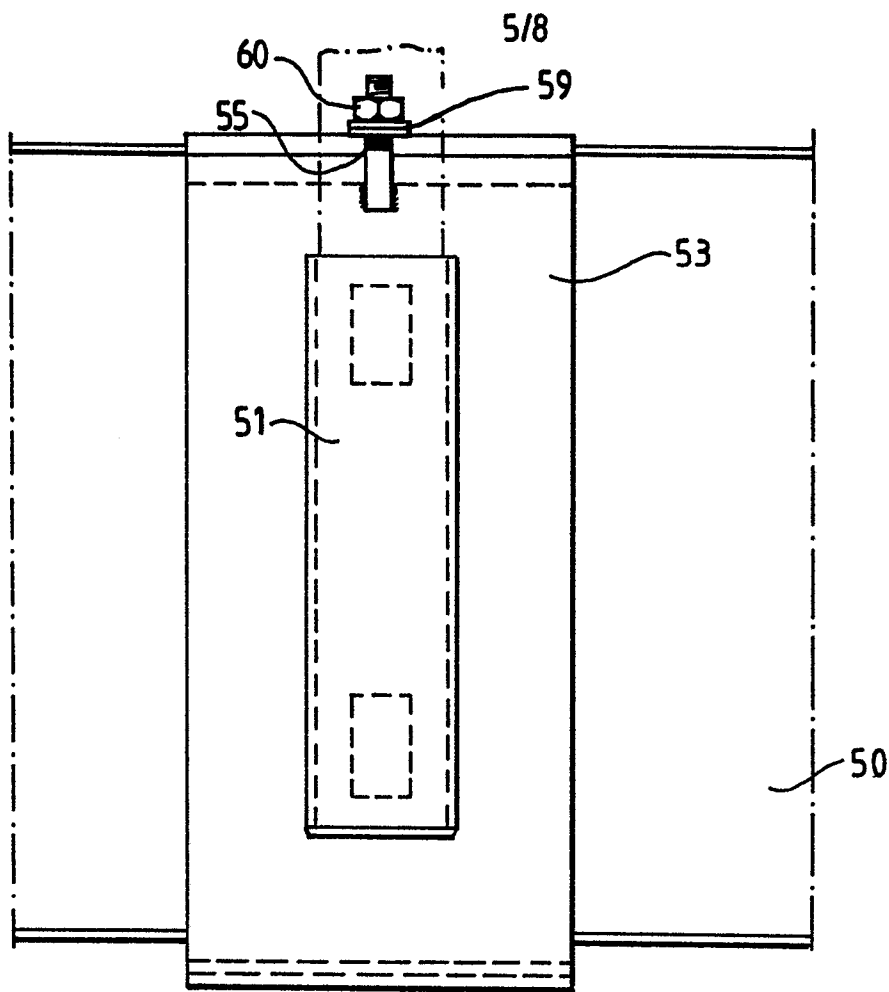
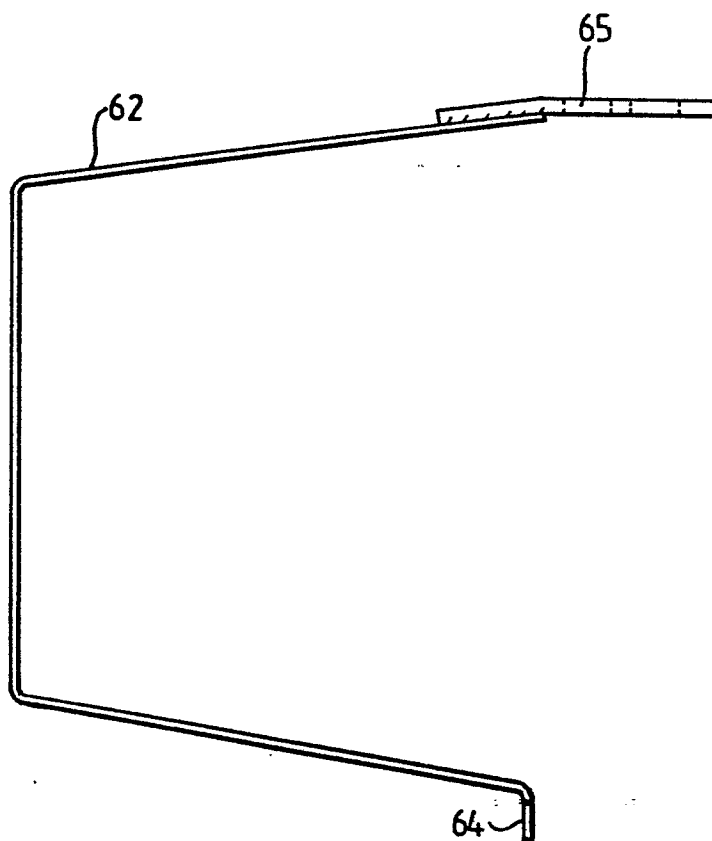


FIG. 7.

FIG. 8.



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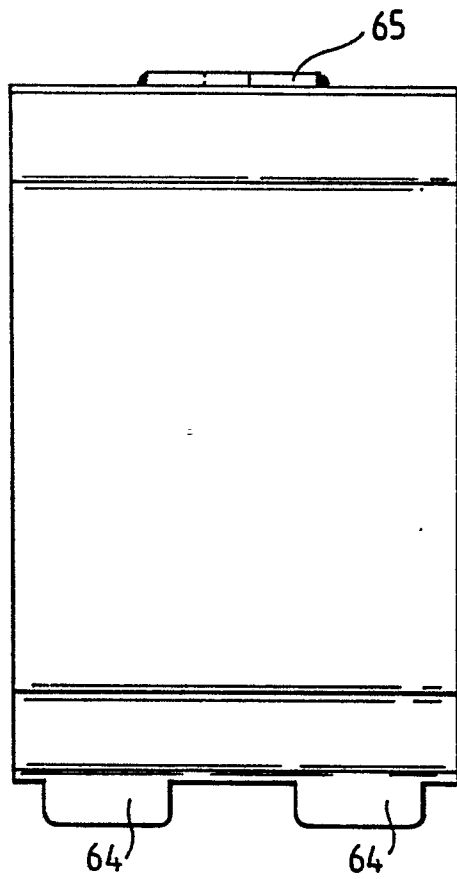


FIG. 9.

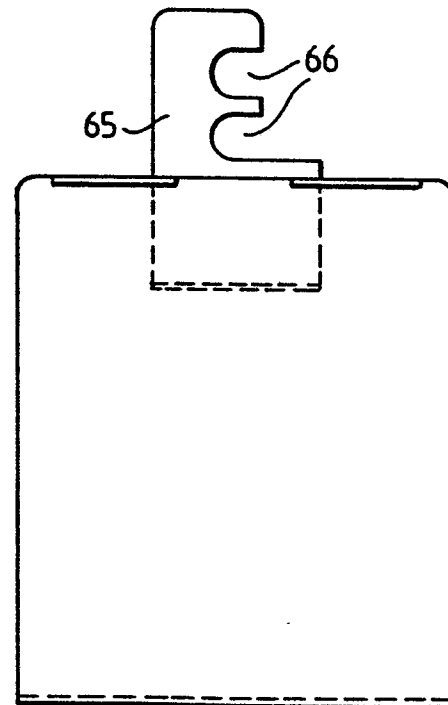


FIG. 10.

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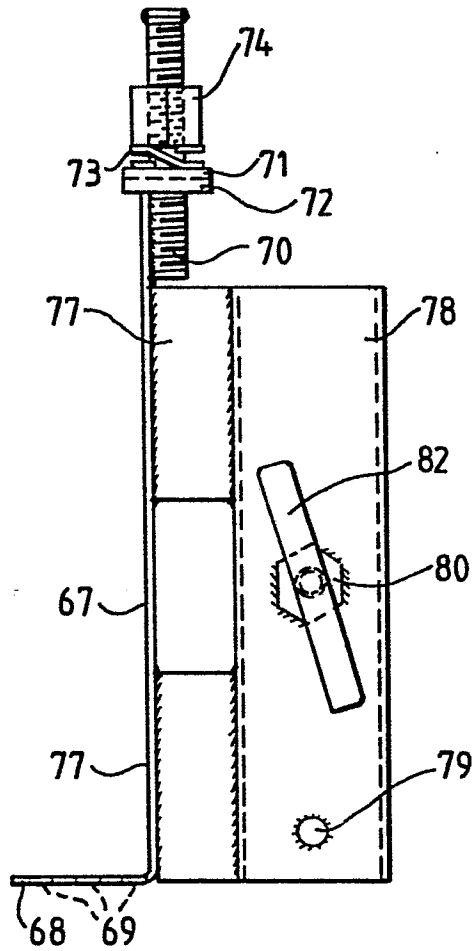


FIG. 11.

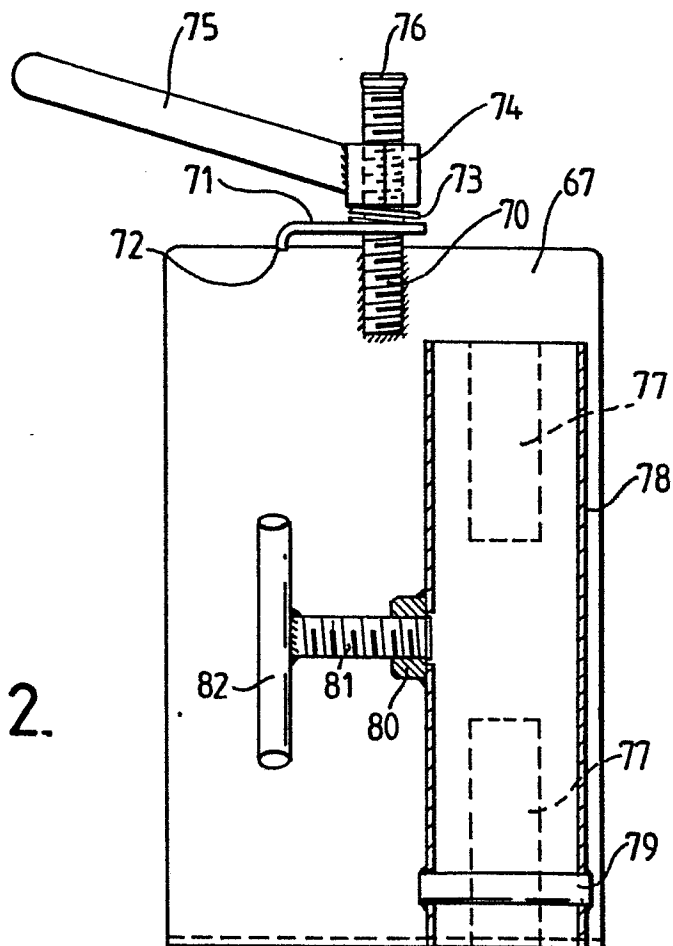


FIG. 12.

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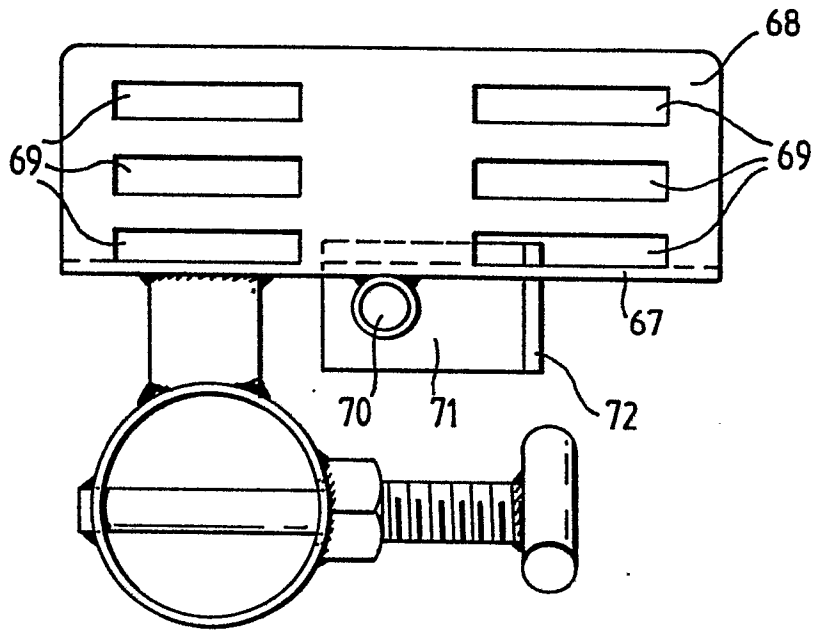


FIG.13.

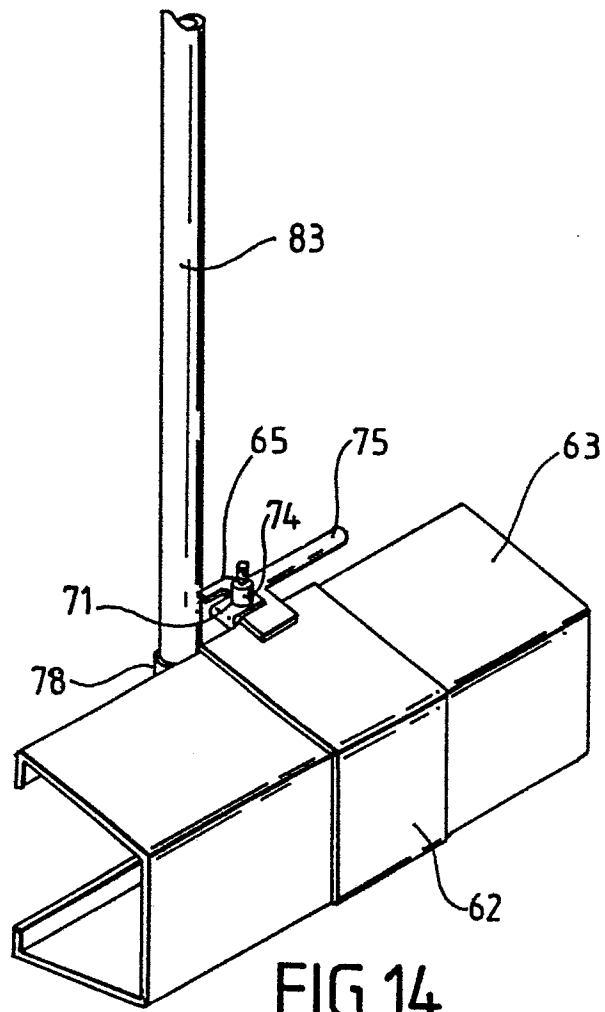


FIG.14.



European Patent
Office

EUROPEAN SEARCH REPORT

0083983

Application number

EP 83 30 0101

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 3)
A	US-A-4 181 292 (HUBEL) * Figures 1, 2 *	1,2	E 01 F 9/01 E 01 F 13/00
A	FR-A- 785 810 (HAEMMERLIN) * Figures 1, 2 *	3	
A	US-A-3 482 820 (J.A. ANGELLO) * Figures 1-5 *	4,5	
A	FR-A- 909 250 (LES SPECIALITES INDUSTRIELLES ROUTIERES) * Page 1, lines 22-39 ; page 2, lines 30-61 *		
X	FR-A-2 230 804 (BOURQUIN) * Complete document *	6-10	TECHNICAL FIELDS SEARCHED (Int. Cl. 3)
X	DE-U-1 803 126 (KAHLBACHER) * Pages 8-11 ; figures 1-11 *	6-9	E 01 F 9/00 E 01 F 13/00 E 01 F 15/00
X	DE-U-1 802 149 (KAHLBACHER) * Complete document *	6-9	
A	DE-U-6 604 153 (NEUGART)		
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 09-03-1983	Examiner PAETZEL H-J
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