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GB 1120224 A EP 0718155 A1 US 5713498 A
US 5667116 A US 5096107 A US 4274569 A

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(54) Abstract Title
Luggage carrying system

(57) A luggage storage and transport system includes a framework 8 for mounting on a vehicle 7 and a container 9 e.g. a suitcase for containing luggage arranged to cooperate with the framework 8 to enable it to be releasably mounted on the vehicle 7. The framework 8 may take the form of an open rectangle which is closed by means of a spring loaded expanding bar 10, to retain the container in place. The container 9 is provided with either a groove or a projecting shoulder that cooperates with the framework 8.

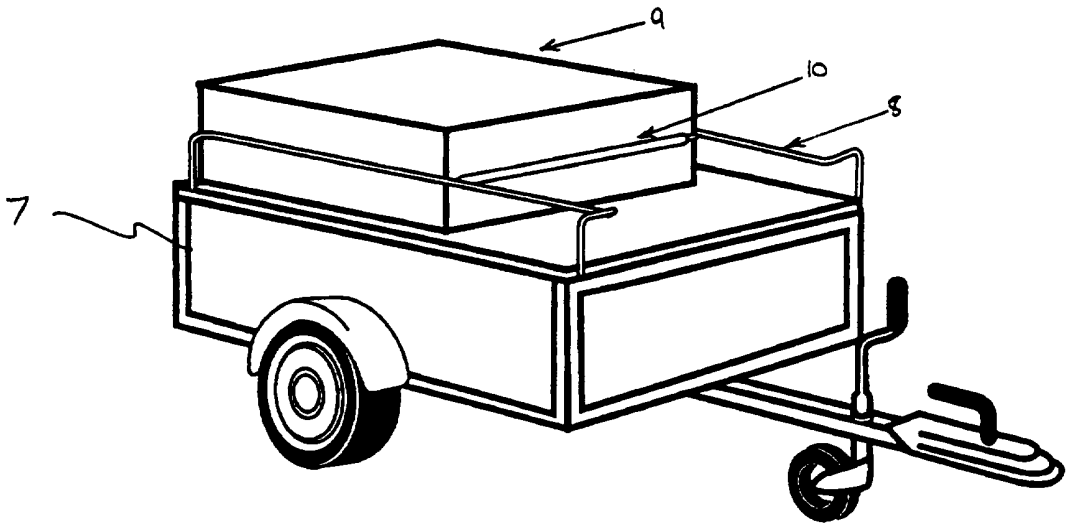

Fig2

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The claims were filed later than the filing date but within the period prescribed by Rule 25(1) of the Patents Rules 1995.

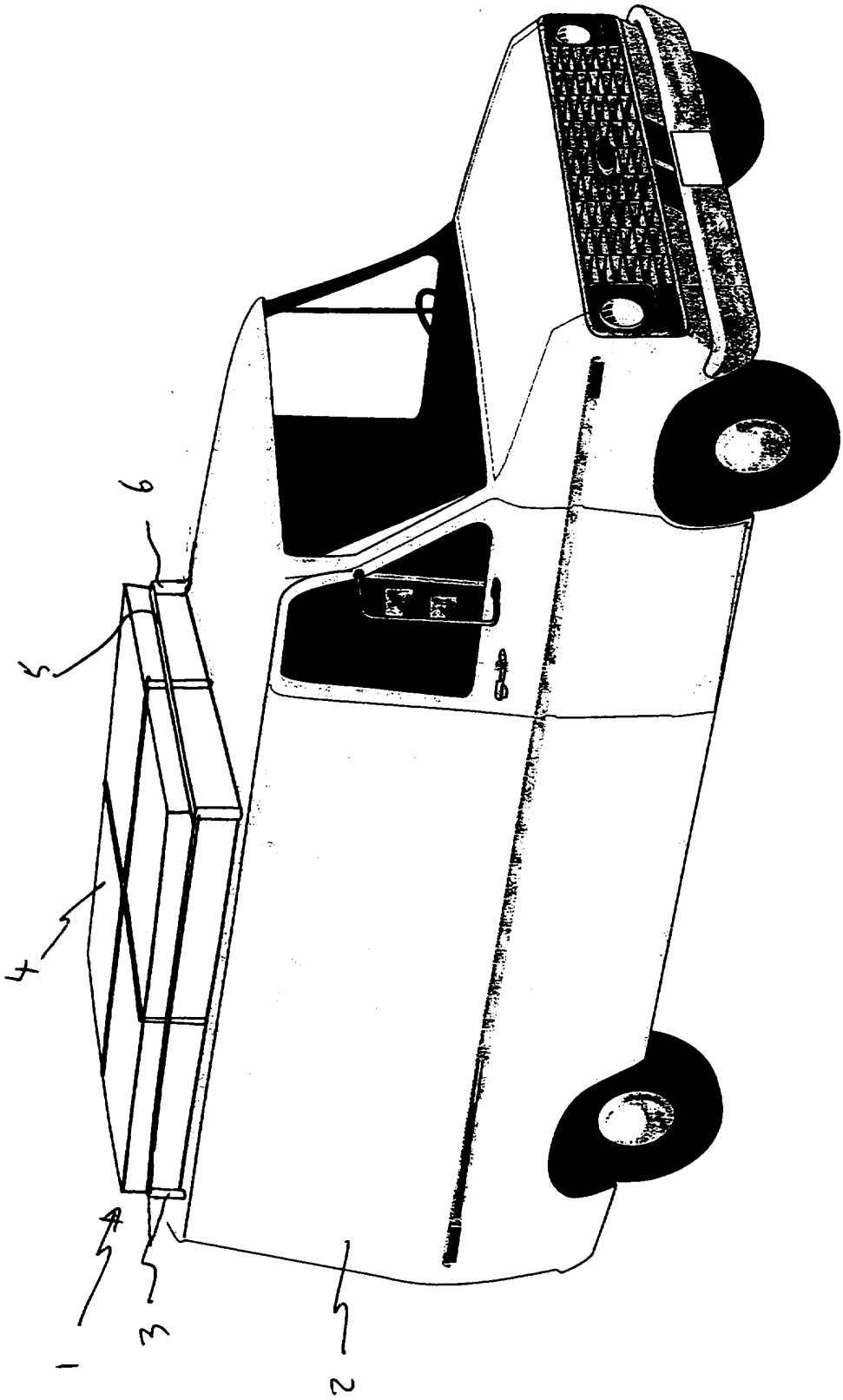

Fig 1

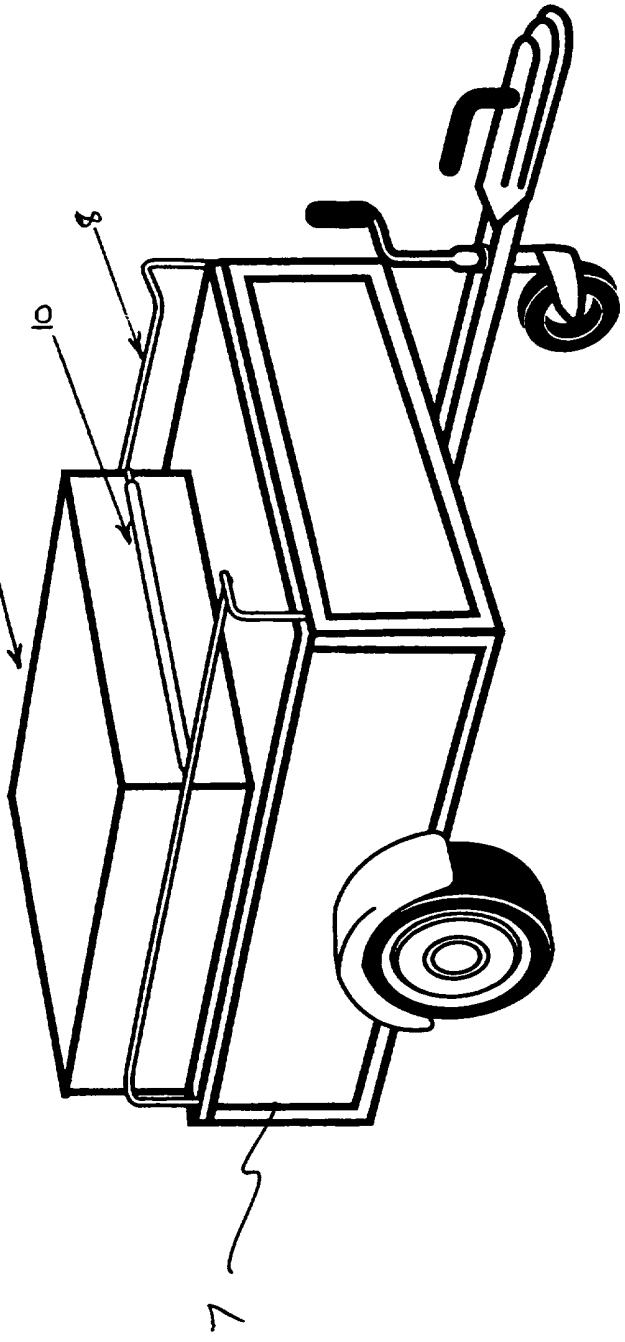

Fig 2

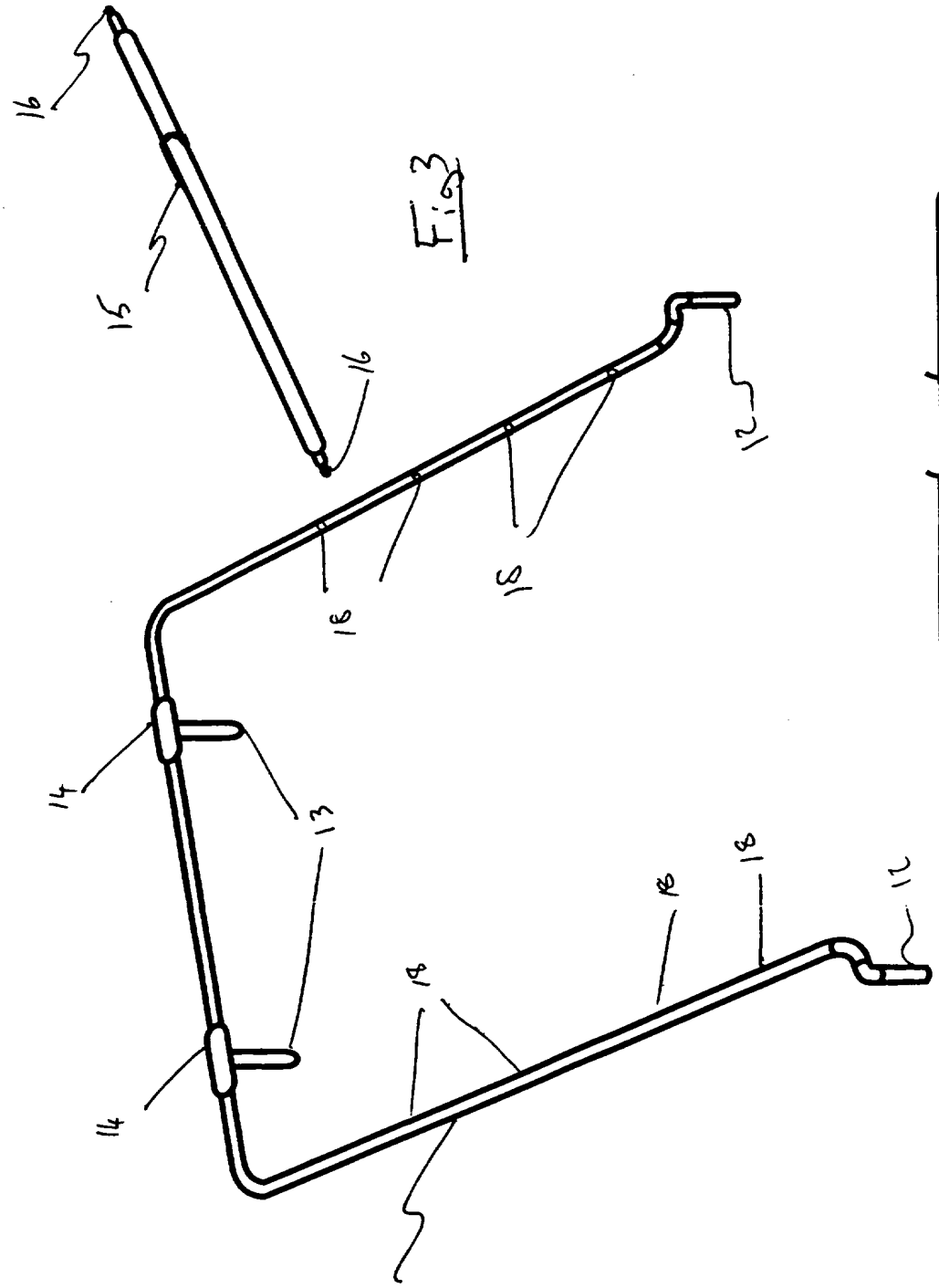

Fig 3

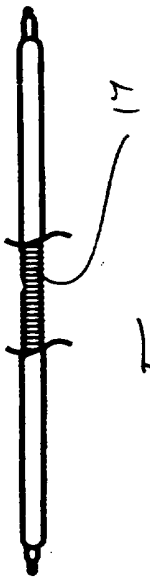

Fig 4

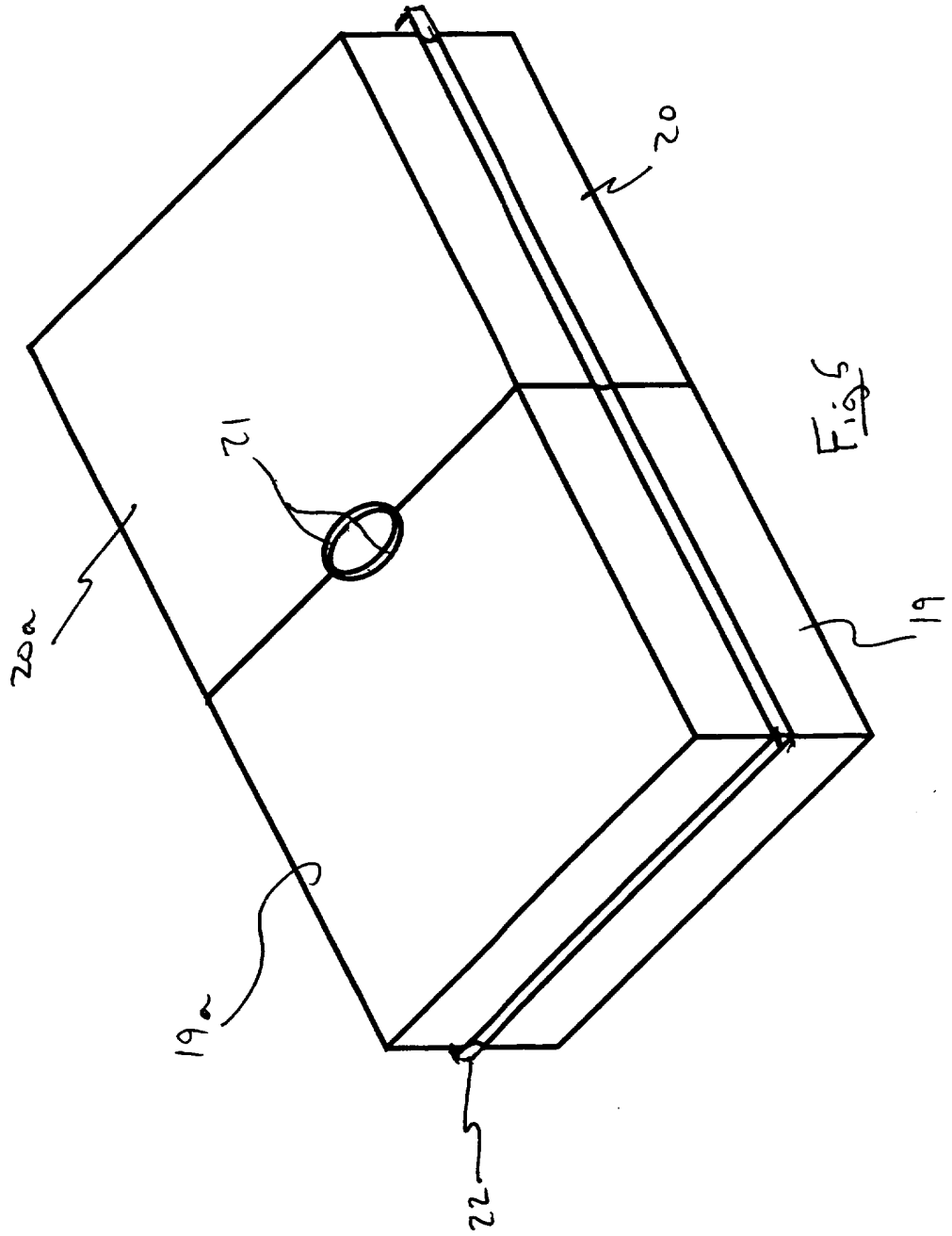

Fig. 5

LUGGAGE CARRYING AND TRANSPORT SYSTEM

The present invention relates to a luggage carrying and transport system for fitment to a vehicle.

Roof racks are a well known existing type of luggage carrier for fitment to vehicles. A problem with roof racks is that luggage or other items to be carried on the rack must be carefully secured to the rack to prevent them coming loose during transit. This is inconvenient. Also, any luggage must be carefully wrapped to protect it from exposure to outside conditions, for example to rain, wind and sun. This is also inconvenient.

The present invention has been made in consideration of these and other problems.

According to the present invention there is provided a luggage storage and transport system comprising a framework adapted to be mounted on a vehicle and a container for containing luggage arranged to cooperate with the framework to enable it to be releasably mounted on a vehicle on which the framework is mounted.

Luggage and other items may be placed into the container which can then be mounted safely on a vehicle using the framework. The container will

protect its contents during a journey at the end of which it can be easily removed from the vehicle.

Preferably the container includes a lid, or some other closure means. For example, the container may be in the form of a closed box which may be split into two portions to insert or remove items. The container preferably includes a handle which is preferably mounted in a recess so as to be flush with the surface of the container. This enables the container to be easily handled away from a vehicle. The container is preferably formed from fibreglass, although any other suitable material could be used. The container may take the form of a suitcase.

The framework preferably includes one or more bars arranged to be mounted above and generally parallel to a surface of a vehicle. The container preferably includes a projection, arranged to project under a bar of the framework when both container and framework are mounted on a vehicle so as the framework constrains movement of the container on the vehicle.

More preferably the framework includes bars arranged generally in the shape of an open ended rectangle and legs for supporting the bars on a surface of a vehicle. The bars are preferably tubular. In this arrangement the container preferably has two generally parallel sides with projections arranged to cooperate with the two generally parallel bars of the framework. The

projections may be provided by forming a channel in the container which can cooperate with the bars of the framework.

Thus, the container will be constrained by the framework. To further constrain the container it is preferred that a means is provided for closing the open ended rectangle formed by the framework. This means preferably comprising an expanding bar adapted to engage with the framework to close the rectangle. The expanding bar preferably comprises two telescopically engaged tubular members and a spring for urging the two members apart.

The framework may be arranged to accommodate more than one container.

In order that the invention may be more clearly understood embodiments thereof will now be described, by way of example, and with reference to the accompanying drawings in which:-

Fig.1 shows a perspective view of an embodiment of a luggage transport system mounted on a vehicle;

Fig.2 shows a perspective view of another embodiment of a luggage transport system mounted on a vehicle;

Fig.3 shows a perspective view of a framework of a luggage transport system including an expanding bar;

Fig.4 shows a cut away view of the expanding bar shown in Fig.3; and

Fig.5 shows a perspective view of a container arranged to cooperate with the framework shown in Fig.3.

Referring to Fig.1 a luggage transport system, generally 1, is shown mounted on the roof of a van 2. The luggage transport system 1 comprises a framework 3, mounted on the roof of the van 2 and four containers 4 which cooperate with the framework 3. The framework 3 comprises a generally rectangular arrangement of tubular metal bars 5, secured above and generally parallel to the roof of the van 2 by legs 6. The containers 4 are produced from fibreglass and include a channel which cooperates with the tubular metal bars 5, allowing a portion of the containers to project between the tubular bars 5 and the roof of the van 2. Thus the containers are constrained by the framework against height-wise, width-wise and length-wise movement relative to the van, that is they are secured to the van.

Fig.2 shows an alternative arrangement, in this case mounted on top of a trailer 7. Again, the luggage transport system comprises a framework 8 and a container 9. The framework 8 is of generally open rectangular shape (the

closed end of the rectangle being obscured by the container 9). The container 9 is a generally cuboid fibreglass box and includes a channel with which the framework 8 cooperates to constrain the container 9 relative to the trailer 7. The open end of the rectangle formed by the framework 8 is closed by an expanding bar 10 which is engaged with the framework 8.

The construction and function of the expanding bar 10 will be further described in relation to the example illustrated in Figs.3 and 4 which illustrate a framework similar to that shown in Fig.2.

Referring to Figs.3 and 4 a framework 11 is formed from metal tube, steel and aluminium both being suitable materials. The tube is formed generally into the shape of an open rectangle. The framework 11 includes four legs 12,13 for mounting it onto the roof of a vehicle. Any suitable mounting technique may be employed. Legs 12 are formed by the tubing itself. Legs 13 are attached to sleeves 14 secured to the tubing. Also provided is a telescopic expanding bar 15 comprising two telescopically engaged tubular members. Pins 16 are disposed at opposite ends respectively of the bar. The pins 16 are arranged to engage with holes 18 in the tubular framework 11, to secure the bar 15 to the framework in a number of positions to close the rectangle.

Referring to Fig.4 which shows a cut away view of the bar 15 of Fig.4, the bar includes a helical spring 17, although any other resilient biassing means

could be used, for example a pneumatic cylinder. The spring acts to urge the two ends of the bar 14 apart. The spring is manually compressible so that the two ends of the bar 6 may be urged together to insert pins 16 into holes 18 in the framework. When released the spring 17 will urge the bar into an expanded position to engage the pins 16 in holes 18 and secure the bar to the framework 11.

Referring to Fig.5 there are shown two containers suitable for use with the framework illustrated in Fig.3. The containers are produced from fibreglass and are generally in the form of a suitcase each having a base portion 19,20 and a hinged lid 19a, 20a. Each container includes a handle 21 mounted in a recess on the opposite side of the container to which the lid and base are jointed by a hinge (not shown). As for a conventional suitcase roughly half the depth of the container is formed by the base and half by the lid. The containers each include a projecting shoulder 22 around three sides of their periphery. The projecting shoulder may be formed on either the lid or base. The containers are so dimensioned as to fit closely within the confines of the framework 11 illustrated in Fig.3 and so that the projecting shoulder 22 passes under the framework 11. The expanding bar 15 may be installed into the framework 11 to prevent removal of the containers. Thus, the framework can be used to releasably mount the containers onto a surface of a vehicle. Alternatively a single, larger, container could be accommodated.

Rather than a projection 22, the containers 19 could include a channel, arranged to cooperate with the framework 11.

Of course, the framework could be used to accommodate containers of different size, secured by affixing the expanding bar in different positions relative to the framework. Alternatively, the framework could be used to accommodate more than one container at once.

Clearly it is desirable that the framework and any containers are so dimensioned that when mounted on the surface of a vehicle the framework can restrain movement of the container in all three dimensions so that it can be securely mounted for transit.

The present invention represents a considerable improvement over known luggage transport systems. Items may be easily placed into a container, for example in the home, this can then be carried to a vehicle on which a framework is mounted and slid into the framework. An expanding bar is then fitted to the framework to secure the container. No rope or other inconvenient fastening is required. The container will protect its contents from the elements during transit. At the end of a journey the expanding bar is removed and the container slid out of the framework.

The above embodiments are described by way of example only, many

variations are possible without departing from the invention.

CLAIMS

1. A luggage storage and transport system comprising a framework adapted to be mounted on a vehicle and a container for containing luggage arranged to cooperate with the framework to enable it to be releasably mounted on a vehicle on which the framework is mounted.

2. A system as claimed in claim 1, wherein the container includes a lid.

3. A system as claimed in either claim 1 or 2, wherein the container includes a handle.

4. A system as claimed in any preceding claim, wherein the container takes the form of a suitcase.

5. A system as claimed in any preceding claim, wherein the framework includes one or more bars arranged to be mounted above and generally parallel to a surface of a vehicle.

6. A system as claimed in any preceding claim, wherein the container includes a projection, arranged to project under a bar of the framework when both container and framework are mounted on a vehicle so the framework constrains movement of the container relative to the vehicle.

7. A system as claimed in any preceding claim, wherein the framework includes two generally parallel bars.

8. A system as claimed in claim 7, wherein the container has two generally parallel sides with projections arranged to cooperate with

the two generally parallel bars of the framework.

9. A system as claimed in claim 8, wherein the projections are provided by a channel in the container which can cooperate with the bars of the framework.

10. A system as claimed in claim 8 or 9, wherein an end of the parallel bars is closed to prevent passage of the container therethrough.

11. A system as claimed in claim 10, wherein the framework includes bars arranged generally in the shape of an open ended rectangle and legs for supporting the bars on a surface of a vehicle.

12. A system as claimed in claim 11, wherein there is provided a means for closing the open ended rectangle formed by the framework.

13. A system as claimed in claim 12, wherein the means comprises an expanded bar adapted to engage with the framework to close the rectangle.

14. A system as claimed in claim 13, wherein the expanding bar comprises two telescopically engaged tubular members and a spring for urging the two members apart.

15. A system as claimed in any of claims 5 to 14, wherein the bar or bars are tubular.

16. A luggage storage and transport system substantially as herein described with reference to any of Figure 1, Figure 2 or Figures 3 to 5 of the accompanying drawings.

Application No: GB 9819697.5 **Examiner:** Keith Kennett
Claims searched: 1-16 **Date of search:** 17 December 1999

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): B7J (J64)

Int Cl (Ed.6): B60R 9/04, 9/042, 9/055, 9/058, 9/06

Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	GB 1120224	(SEFTON) see Figures 1 & 4	1-7
X	EP 0718155 A1	(FIAT) see Figures 2-4, 12-14 & 19	1-8
X	US 5713498	(CUCCI) see Figure 1 and column 5 lines 32-43	1-3,5-8,11
X	US 5667116	(REINHART) see Figures 1, 2 & 4	1,2,5-12
X	US 5096107	(VANSON) see Figure 5	1,2,5,7
X	US 4274569	(WINTER) see Figure 1	1-7

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.