(12) UK Patent Application (19) GB (11) 2 225 299 (13) A

(43) Date of A publication 30.05.1990

(21) Application No 8820745.1

(22) Date of filing 02.09.1988

(51) INT CL⁴
B60R 9/06 9/10 9/12

(52) UK CL (Edition J)
B7J J64

(56) Documents cited
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(58) Field of search
UK CL (Edition J) B7J
INT CL⁴ B60R
Online Database: WPI

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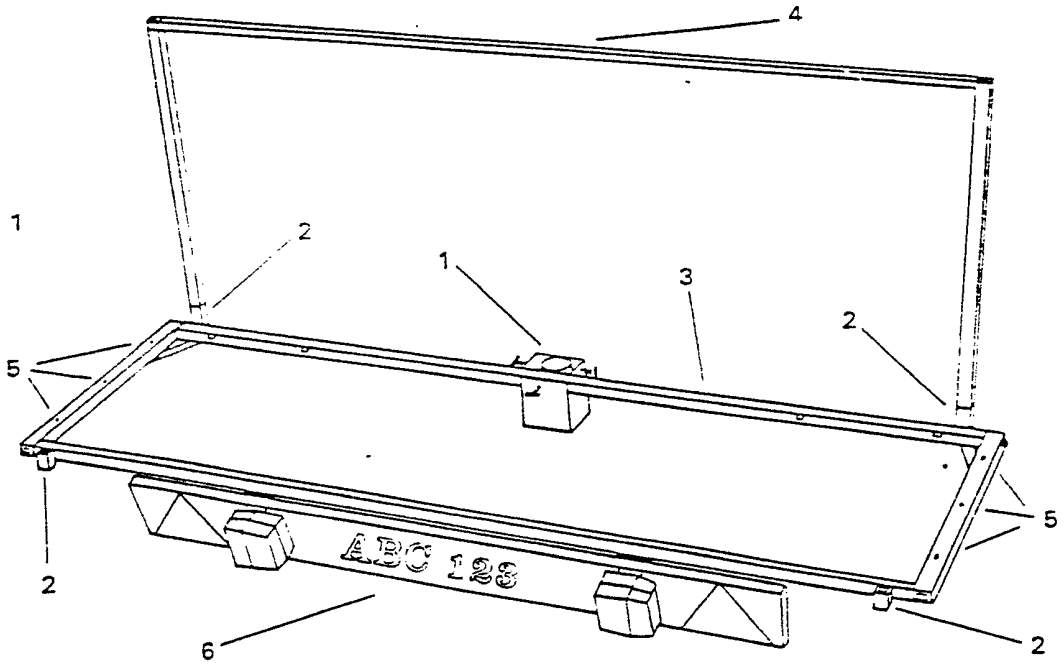
(54) Multi-purpose tow ball rack

(57) A multi-purpose tow ball rack has a removable vertical frame 4 and a horizontal frame 3 which can be folded and can accommodate up to three bicycle frames as shown in Fig. 2. It can also be used as a transporting platform, or to carry a ski-box with two baskets and is attached to the tow ball of a motor vehicle by a bracket.

Fig 1



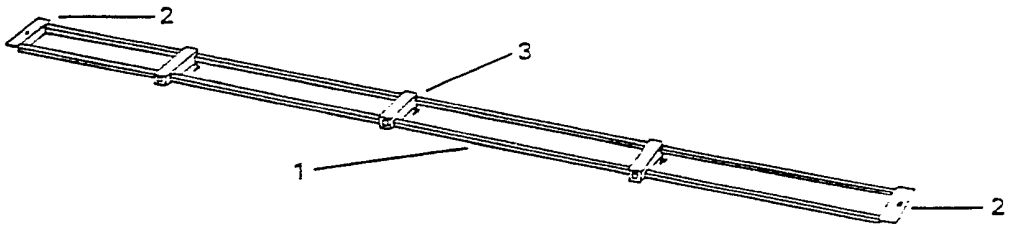


Fig 2

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Fig 1

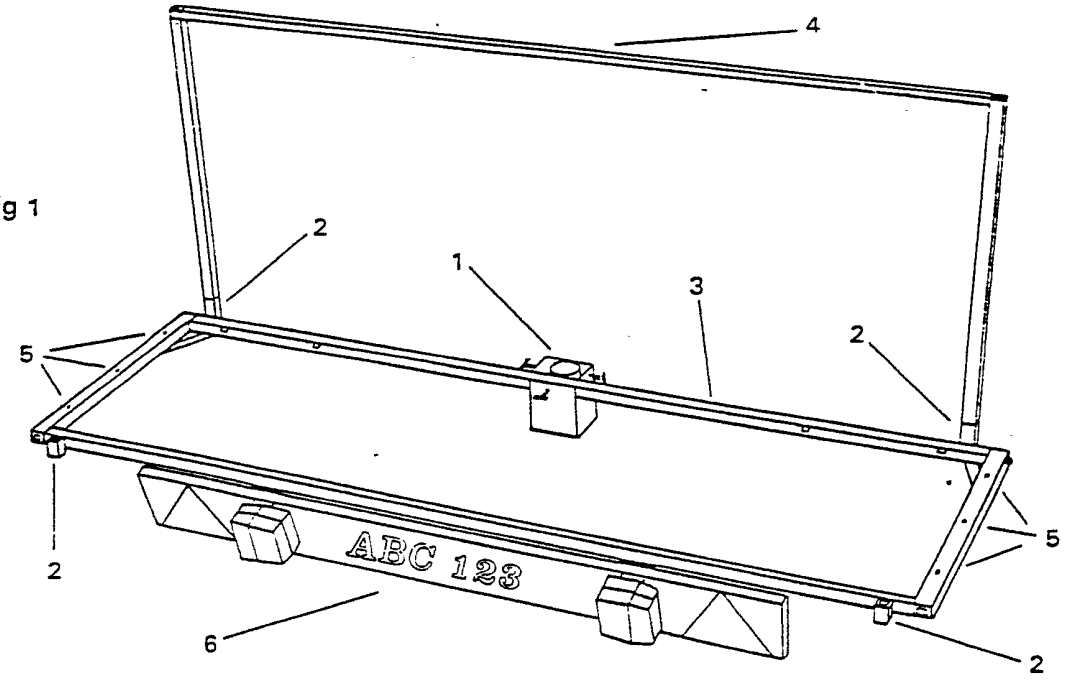


Fig 2

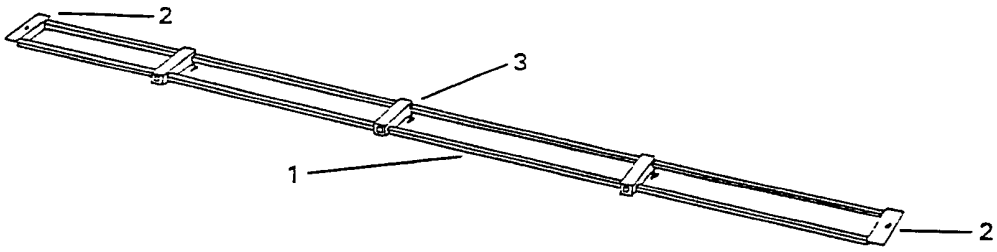


Fig 3

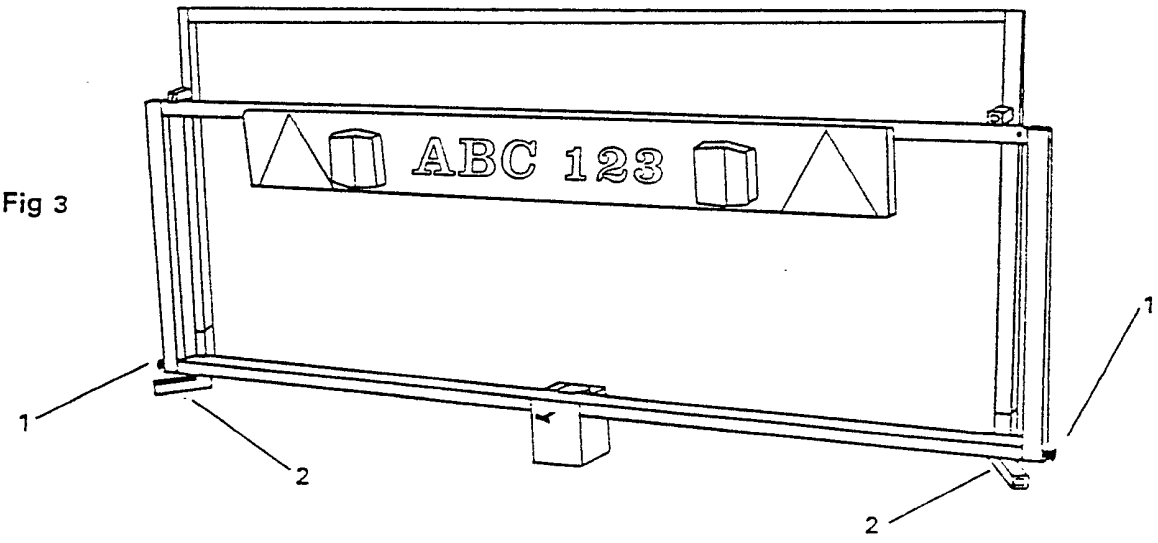


Fig 4

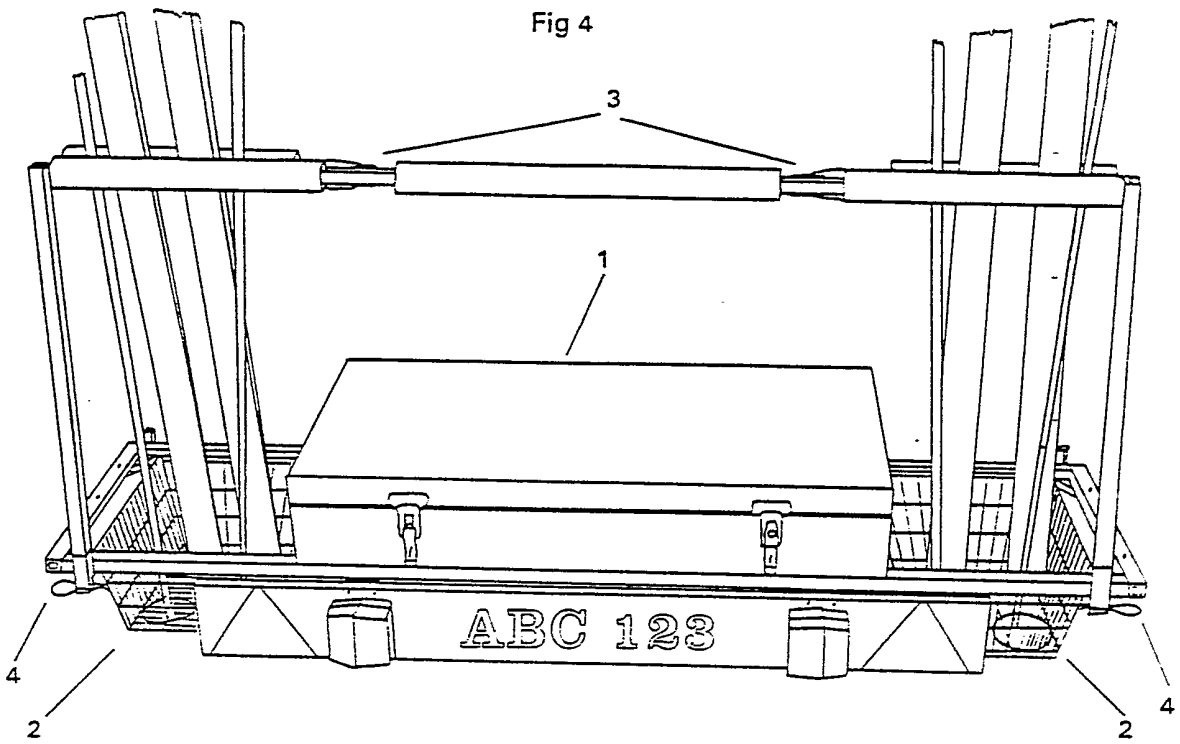


Fig 5

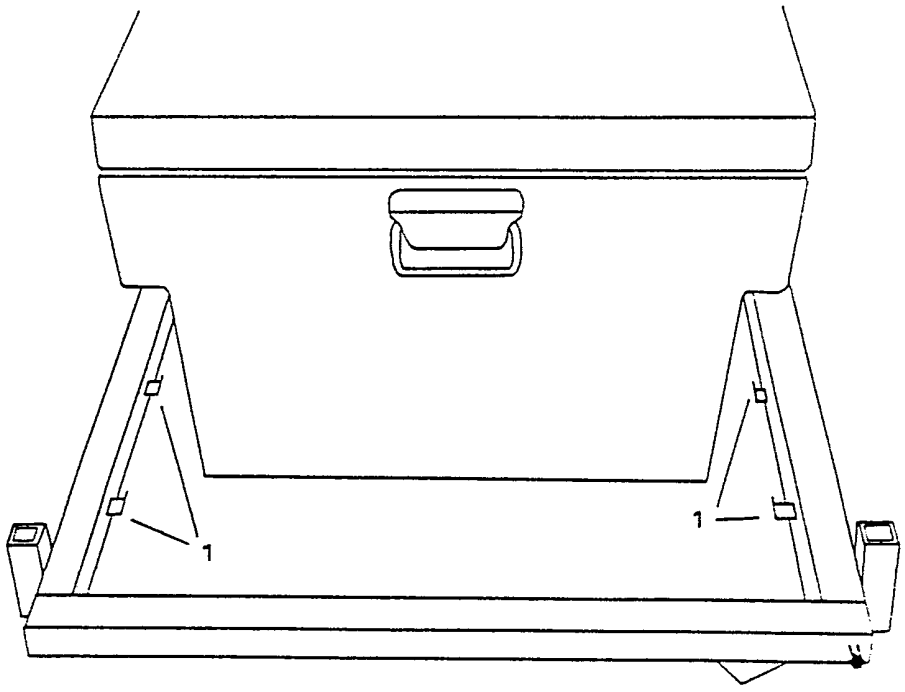


Fig 6

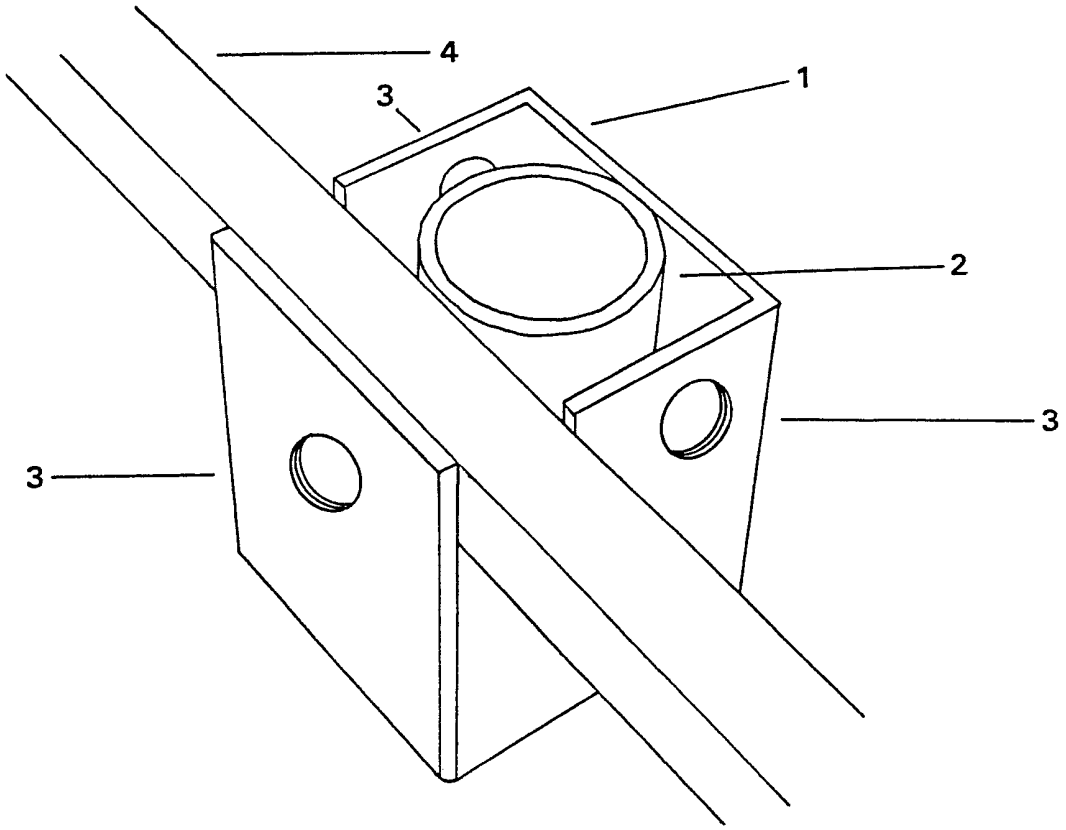
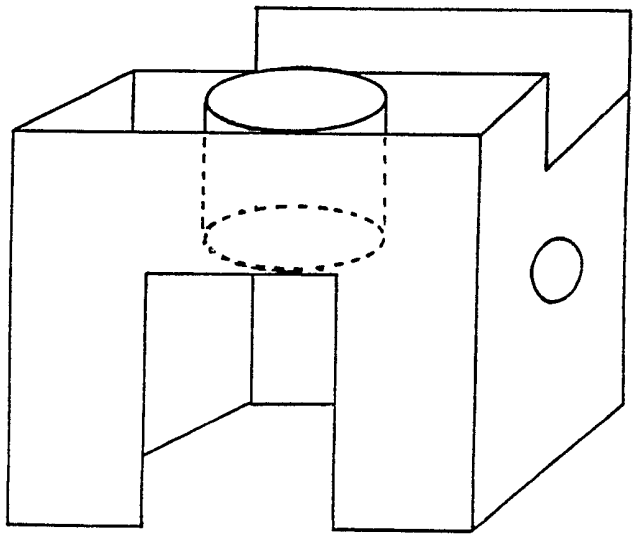


Fig 7



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Multi-purpose Tow Ball Rack

This invention relates to a multi-purpose tow ball rack.

The transporting of luggage, skis, bicycles, wheelchairs and other bulky items in a motor vehicle is usually by roofrack or seperate trailer. Bicycles are often carried upright but upside down on a roofrack which significantly increases both the clearance height and wind resistance of the vehicle.

Skis can be carried by dedicated roofracks or more recently in large aerodynamically styled boxes which are also secured to the roof and usually fitted for the season. These boxes are expensive, loading is difficult and can even be problematic for persons of a small stature.

According to the present invention there is provided a multi-purpose rack that has a base frame which can accommodate various attachments and is coupled to the tow bar of a motor vehicle enabling a wide range of items to be transported.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawings in which :

Figure 1 shows in perspective the base frame with tow ball coupling and tailplate.

Figure 2 shows one of three identical bicycle supports which can be inserted into the base frame.

Figure 3 shows the frame folded when not in use or detached.

Figure 4 illustrates the frame into which the ski-box and ski-baskets are fitted.

Figure 5 shows a side view of the ski-box and basket lugs.

Figure 6 shows the bracket which enables the frame to be coupled to the tow ball of the vehicle.

Figure 7 is a schematic illustration of the bracket viewed from the rear of the vehicle showing the entry and location site of the tow ball.

With reference to Fig. 1 the tow ball rack comprises a base frame 3, hinged tailplate 6, detachable upright frame 4, and coupling bracket 1. The bracket is positioned over the vehicle tow ball and secured in place with three bolts.

To facilitate the folding of the rack either whilst coupled to the tow ball or detached, the frame hinges at the locking bolt 1 as shown in Fig. 3. The base frame is secured to the upright frame with a clip (not shown). When open the base frame rests on the supports 2 shown in Fig. 3.

Up to three bicycle support frames as shown in Fig 2. can be inserted into the base frame (Fig. 1.) and are secured by bolts fitted through holes 2 into nutserts 5. The adjustable sliding bars 3 are positioned to suit the wheel diameter and the bicycle placed within the frame.

The ski-box 1 and ski-baskets 2 as shown in Fig. 4. are placed into the base frame. The upright frame 4 Fig. 1. is slotted into recepticles on the tailplate end and locked in place with two R clips 4 Fig. 4. Skis are positioned on the padded upright frame and secured in place with padded hinge clamps 3. The ski-baskets are held in place with right angled lugs 1 as shown in Fig. 5.

The tow ball coupling bracket Fig. 6 is made from a short length of square hollow section tube with a 65 mm length of 50 mm diameter circular tube 2 welded on to the face plate. (Also shown Fig. 7.) The rack frame 4 is recessed as shown and welded to the bracket.

The bracket has a slot in the face plate as shown in Fig. 7 to enable the tow ball to be inserted.

The bracket is located over the tow ball and secured by three bolts which screw into nutserts 3 Fig. 6. The ends of the bolts tighten in opposition under the ball of the tow ball thus firmly locking the rack.

Claims

1. A multi-purpose rack comprising a foldable horizontal frame with a removable vertical frame which can transport bulky items, luggage, up to three bicycle support frames, skis and sticks, a ski-box with two ski-baskets and which can be located on to the tow ball of a motor vehicle.

2. A multi-purpose tow ball rack as claimed in Claim 1 wherein up to three bicycles can be inserted into the bicycle support frame attachment.

3. A multi-purpose tow ball rack as claimed in Claim 1 or Claim 2 wherein the bicycle support frame attachments have slideable lockable cross bars which can be adjusted to accommodate wheels of different diameters.

4. A multi-purpose tow ball rack as claimed in Claim 1 wherein a ski-box and two ski-baskets can be fitted.

5. A multi-purpose tow ball rack as claimed in Claim 1 or Claim 4 wherein skis and ski poles are secured to a padded vertical frame by a hinged padded clamp.

6. A multi-purpose tow ball rack as claimed in Claim 1 wherein the bicycle support frames can be used as a base to transport bulky items.

7. A multi-purpose tow ball rack as claimed in Claim 1 or Claim 2 or Claim 4 wherein the rack is coupled to the tow ball of a motor vehicle by means of a bracket.

8. A multi-purpose tow ball rack substantially as described herein with reference to Figs. 1-7 of the accompanying drawings.

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