A motorcycle transport rack includes a pivotable crescent shaped channel cradling the front wheel of a motorcycle. The motorcycle front wheel is rolled into the channel causing the channel to pivot forward, lock in place and rearwardly preventing rearward exiting of the motorcycle while in place. The crescent shaped cradle holds the motorcycle in place without the need for raising the front or rear wheels of the motorcycle over an impediment blocking its removal. An optional guide base member is provided. The motorcycle transport rack can be used to tow disabled motorcycles or transport motorcycles in use.
MOTORCYCLE TRANSPORT RACK

FIELD OF THE INVENTION

The present invention relates to transportation racks for motorcycles.

BACKGROUND OF THE INVENTION

Transporting disabled motorcycles, the motorcycles are generally very heavy and difficult to maintain in an upright position unless fully strapped in place. This procedure is labor intensive requiring a person to maintain the motorcycle in an upright position while securing straps separately on either sides of the motorcycle. Devices to load and transport motorcycles are described in U.S. Pat. No. 6,630,849 of Clary for a ramp assembly in combination with a winch where in the front wheel of the motorcycle is held between two v-shaped members comprising each a horizontal member and an oblique forward member. However, in Clary ‘849 the device primarily prevents forward movement of the motorcycle and does not have a means for preventing the motorcycle from rolling rearward other then physical attachments and a horizontally extending transverse bar. However the horizontally transverse bar is fixed in place which then requires lifting the heavy motorcycle upward to advance up and over the transverse bar for release. In U.S. Pat. No. 6,730,823 of Shrivell a motorcycle loading and unloading apparatus includes a u-shaped member to prevent forward movement of the front motorcycle wheel. However, to stop the motorcycle from rolling rearward a transverse and upwardly extending wedge shaped rear stop is provided to prevent rolling of the motorcycle rearward. However, in order to remove the motorcycle, the motorcycle would be rolled over the upward extending wedge or the upwardly extending wedge must be removed.

In U.S. Pat. No. 6,695,565 of Frenchuk a motorcycle loading and support assembly for carrying a motorcycle on a truck includes a channeled ramp end portion which is angled upwardly relative to the horizontal main channel and a pivotable rear channel at the rear end winch moves the motorcycle up the ramp to the flatbed of a truck for transportation. The rear end of the channel and upwardly extending curved back portion is used for preventing rearward movement of the rear wheel. Fasteners are used for securing the motorcycle in place upon the bed of the truck.

In U.S. Pat. No. 6,109,494 of Pilmore describes a motorcycle transport system comprising a clamp for clamping the lower end of the frame of the motorcycle between the wheels to a bracket.

A motorcycle transport load for a flatbed truck is sold under the name Drag-on™ for a wheeled u-shaped channel having an upright member and a horizontal channel for inserting a front wheel of a motorcycle therein. However, in order to prevent rearward movement, the motors front wheel must be secured in place by supplementary fasteners. A further motorcycle wheel retainer known as MC100 of AW Direct Towing Accessories of Berlin, Conn. includes a winch shaped member including space plate and an obliquely extending tubular bar to prevent forward movement of the motorcycle wheel. Additional tie downs are required to secure the motorcycle in place such as motorcycle ratchet tie downs, motorcycle sling straps and motorcycle hooks.

Similar motorcycle dolly is described also in AW Direct as PD-300 which includes a ramped channel with an obliquely and upwardly extending front plate to prevent forward movement of the front wheel. However, this motorcycle dolly requires tie down straps for holding the motorcycle in place and preventing rearward rolling thereof.

OBJECTS OF THE PRESENT INVENTION

It is therefore an object of the present invention to provide a motorcycle transport rack which cradles the front wheel in a position which prevents rearward rolling while at the same time provides easy access for rolling the motorcycle in place.

It is further an object of the present invention to provide a motorcycle transport rack with a front cradle which moves from a wheel insertion position to a wheel securing system.

It is further an object of the present invention to provide a motorcycle transport rack which allows for rearward rolling of the motorcycle without lifting the motorcycle over a upwardly extending impediment.

SUMMARY OF THE INVENTION

In keeping with these objects and others, which may become apparent, the present invention includes a motorcycle transport rack which includes a longitudinally extending bar having a pivotable crescent shaped channelled cradle which pivots upon a forward movement of a motorcycle in place from a flat wheel insertion position to a rotated locking position wherein a forward portion of the crescent prevents forward movement of the wheel and the rearward portion of the crescent holds the wheel in place preventing rearward movement in place.

Although the motorcycle can be held in place with just the rear of the front wheel being cradled by the crescent shape channeled cradle, preferably a rear guide base member is provided for the rear wheel to provide additional support. The bar upon which the motorcycle sits may be moved longitudinally forward or rearward depending on the length of the motorcycle being transported.

Hence it is possible to move the motorcycle in place without having to lift it over impediment and to secure it in place and then for release to merely roll the motorcycle rearward without having to also lift it over an impediment.

Auxiliary straps can be used for further securing.

However, the motorcycle does not need to be supported during the crisp insertion by auxiliary means, since it is held in place within the crescent shaped channel securing the front wheel thereof.

The crescent shaped channel preferably has a maximum an arc of 180° to permit the front wheel to be inserted therein. Any degree of arc may be employed so long as the portion of the tire is held in place upon pivotable rotation of the crescent shaped channel. The channel is between 10° of arc and 180° degrees of arc, preferably between 90° and 120°.

The crescent shaped channel may be a smooth arcuate curve or it may be a series of welded flat base members joined together to form a relatively curved ark. The
side channel extends upward preferably about 2 to 6 inches to secure the wheel in place to prevent lateral movement thereof.

[0017] The motorcycle transport rack of the present invention can be adapted to a tow truck wrecker tow bar assembly wherein the pivotal crescent channel member pivots from an open position on the longitudinally extending horizontal bar (which is pivoted, slanted downward for upward rolling of the motorcycle in place); the crescent-shaped member then pivots into a transport position forwardly against a oblique or other forward extending member of the motorcycle wrecker assembly, where it is securely latched.

[0018] However, it is also known that the motorcycle transport rack can be a self enclosed unit for a routine transportation of motorcycles wherein the longitudinally extending bar includes a hitch assembly for attachment to a standard hitch attached at the rear end to a vehicle such as a pick-up truck, sports utility vehicle or truck or automobile.

[0019] It is further known that other two wheeled vehicles can be transported such as bicycles, moto-cross racing bicycles, or rough terrain dirtbike bicycles.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The present invention can best be understood in connection with the accompanying drawings. It is noted that the invention is not limited to the precise embodiments shown in drawings, in which:

[0021] FIG. 1 is a Perspective view of a segmented crescent shaped channel member of this invention;
[0022] FIG. 2 is a Perspective view of a rear guide base member of this invention;
[0023] FIG. 3 is a Perspective detail showing the segmented crescent shaped channel member attached to boom extension and set in upright loading position;
[0024] FIG. 4 is a Perspective detail of a pin lock mechanism of this invention;
[0025] FIG. 5 is a Side perspective view of a motorcycle attached to the rack of this invention on a tow truck boom extension;
[0026] FIG. 6 is a Perspective view of an alternate embodiment of a front tire holder including two straight channel members attached at an angle;
[0027] FIG. 7 is a Perspective view of an alternate embodiment rear guide base member with a slight ridge; and,
[0028] FIG. 8 is a Side elevation detail view showing the fit of a front motorcycle wheel being held in place by the tire holder of FIG. 6 in a locked position.

DETAILED DESCRIPTION OF THE INVENTION

[0029] Although a pivoted smooth crescent channel segment is perhaps the ideal shape for the front motorcycle tire holder, this is difficult to fabricate in practice. The preferred material of these accessories for this invention is aluminum or steel diamond plate which is cut, bent, and welded to form the desired shapes. However, smoothly curved front tire retaining channel members may also be used.

[0030] In the drawings, the parts are shown as if fabricated of a smooth plate for clarity.

[0031] FIG. 1 shows crescent channel member 1 fabricated of several sections of flat bent-up members. Wings 2, on either side of tire-contact flat bottom sections 8, hold the front motorcycle tire in place laterally. A pivoting mechanism is used to pivot crescent channel member 1. For example, the pivoting mechanism may include pivot tube 4, which allows channel member 1 to pivot, when engaged via pin 5 on brackets attached to a tow member of a motor vehicle. A flexible connector, such as lanyard 6, keeps pin 5 from getting lost, while a fastener, such as spring clip 7, engages in a small hole near the end of pin 5 to lock it within the pivot brackets. This arrangement makes crescent channel member 1 easily removable.

[0032] FIG. 2 is a perspective view of an optional rear guide base 10 with guide wings 12, roll-on/off ramp 13 and base surface 11 upon which the rear tire rests.

[0033] FIG. 3 shows a detail of crescent channel member 1 attached to a support surface, such as, for example, boom extension 19, via pin 5 in brackets 21 which are welded or otherwise attached to the support surface, such as boom extension 19. In FIG. 3, Crescent channel member 1 is shown in the upright position ready to receive the front tire of a motorcycle. When the motorcycle is moved forward, channel member 1 pivots to the left so that it engages and locks with a further support surface. For example, in one locking embodiment, lock loop 3 contacts boom surface 18 attached to tow truck 17. Pin lock 16 is then operated to deploy a lock pin through loop 3. Further boom extension 20 which supports the rear of the motorcycle is partially shown in cutaway.

[0034] FIG. 4 is a detail view showing pin lock 16 which is welded to boom 18 surface. While other locks may be employed, preferably pin lock 16 preferably includes base 26, barrel 27, operating handle 25 and locking pin 28 which either emerges from (as shown) or retracts back flush with the surface of base 26.

[0035] FIG. 5 shows motorcycle 30 secured to the motorcycle tow rack of this invention. Front tire 31 is cradled in crescent channel member 1, which is locked in the forward position via loop 3. Rear wheel 32 is supported within rear guide base member 10 attached to lateral extension 33. Auxiliary strap 34 optionally stabilizes motorcycle 30 to crossbar 35.

[0036] FIGS. 6, 7 and 8 show details of alternate embodiments of this invention.

[0037] For example, FIG. 6 shows a V-shaped channel member 40 including a weldment of two straight channel members at an obtuse angle. V-shaped channel member 40 serves the same purpose as crescent shaped channel member 1. Preferably, V-shaped channel member 40 has side wings 41, tire contact surface 44, pivot rings 43 and double pin lock bracket 42.

[0038] FIG. 8 shows front tire 31 being cradled at the vertex of channel member 40, when pin lock bracket 42 touches a support surface, such as boom 18. This embodiment requires less labor to fabricate.

[0039] FIG. 7 shows optional rear guide base 50, which is an alternative to guide base 10 previously described. Ramp
51 guides rear tire 32 over slight ridge 52 and onto depressed surface 54 between wings 53. This provides a an extra rollback impediment.

[0040] In the foregoing description, certain terms and visual depictions are used to illustrate the preferred embodiment. However, no unnecessary limitations are to be construed by the terms used or illustrations depicted, beyond what is shown in the prior art, since the terms and illustrations are exemplary only, and are not meant to limit the scope of the present invention.

[0041] It is further known that other modifications may be made to the present invention, without departing the scope of the invention, as noted in the appended Claims.

We claim:

1. A removable and portable motorcycle transport rack comprising:
   a channel member forming an arc of a circle along a length thereof and being crescent in cross-section, said channel member being adapted to a cradle a front wheel of said motorcycle;
   a pivot tube mounted on an outside of said channel member at right angles to the length of said channel member;
   attaching means for removably attaching said pivot tube to a platform, said channel member being pivoted between a first position wherein a proximal end of said channel member is flush with an upper surface of said platform allowing the front wheel of said motorcycle to roll onto said channel member and a second position wherein said proximal end of said channel member is raised thereby fixing said front wheel against movement; and
   locking means for locking said channel member in its second position with said motorcycle front wheel cradled in said channel member.

2. The motorcycle transport rack of claim 1 in which said channel member is fabricated from a plurality of flat bent-up members and wings forming sides of said channel member.

3. The motorcycle transport rack of claim 1 in which said platform is a boom extension attached to a tow truck.

4. The motorcycle transport rack of claim 1 in which said channel member has a roll-on/off ramp for said front wheel.

5. The motorcycle transport rack of claim 1 in which said attaching means for removably attaching said pivot tube to said platform comprises brackets on said platform and a pin passing through said pivot tube and engaging said brackets.

6. The motorcycle transport rack of claim 5 in which said locking means for locking said channel member in its second position comprises a bracket mounted on a boom connecting said boom extension to a vehicle, a lock loop mounted on a distal end of said channel member, and a lock pin for engaging said lock loop with said bracket on said boom.

7. The motorcycle transport rack of claim 1 having an extension for supporting a rear wheel of said motorcycle.

8. The motorcycle transport rack of claim 1 having an auxiliary strap to stabilize said motorcycle.

9. A removable and portable motorcycle transport rack comprising:
   a channel member made up of straight sections at an obtuse angle to each other, said sections having wing members on sides of said straight sections, said channel member being adapted to cradle a front wheel of said motorcycle;
   mounting means on said channel member adapted to be removably attached to an upper surface of a platform for pivoting said channel member, said mounting means being located where said straight sections come together, permitting said channel member to be pivoted between a first position where a free end of a straight section is adjacent to said upper surface allowing the front wheel of said motorcycle to be rolled onto said channel member and a second position raising said free end of the straight section thereby immobilizing said motorcycle; and
   locking means for locking said channel member in its second position with said motorcycle front wheel cradled in said channel member.

10. The motorcycle transport rack of claim 9 having a ramp between said free end of said straight section and said upper surface.

11. A motorcycle transport rack comprising:
   a channel member forming an arc of a circle along a length thereof and being crescent in cross-section, said channel member being adapted to a cradle a front wheel of said motorcycle;
   a pivot mounted on an outside of said channel member;
   attachment means for attaching said pivot to a platform, said channel member being pivoted between a first position wherein a proximal end of said channel member is flush with an upper surface of said platform allowing the front wheel of said motorcycle to roll onto said channel member and a second position wherein said proximal end of said channel member is raised thereby fixing said front wheel against movement; and
   locking means for locking said channel member in its second position with said motorcycle front wheel cradled in said channel member.

12. The motorcycle transport rack of claim 11 in which said channel member is fabricated from a plurality of flat bent-up members and wings forming sides of said channel member.

13. The motorcycle transport rack of claim 11 in which said platform is a boom extension attached to a tow truck.

14. The motorcycle transport rack of claim 11 in which said channel member has a roll-on/off ramp for said front wheel.

15. The motorcycle transport rack of claim 11 in which said attaching means for removably attaching said pivot tube to said platform comprises brackets on said platform and a pin passing through said pivot tube and engaging said brackets.

16. The motorcycle transport rack of claim 15 in which said locking means for locking said channel member in its second position comprises a bracket mounted on a boom connecting said boom extension to a vehicle, a lock loop mounted on a distal end of said channel member, and a lock pin for engaging said lock loop with said bracket on said boom.
17. The motorcycle transport rack of claim 11 having an extension for supporting a rear wheel of said motorcycle.

18. The motorcycle transport rack of claim 11 having an auxiliary strap to stabilize said motorcycle.

19. A motorcycle transport rack comprising:

   a channel member made up of straight sections at an obtuse angle to each other, said sections having wing members on sides of said straight sections, said channel member being adapted to cradle a front wheel of said motorcycle;

   a pivot on said channel member attached to an upper surface of a platform for pivoting said channel member, said pivot permitting said channel member to be pivoted between a first position where a free end of a straight section is adjacent to said upper surface allowing the front wheel of said motorcycle to be rolled onto said channel member and a second position raising said free end of the straight section thereby immobilizing said motorcycle; and

   locking means for locking said channel member in its second position with said motorcycle front wheel cradled in said channel member.

20. The motorcycle transport rack of claim 19 having a ramp between said free end of said straight section and said upper surface.