CLAIMS

1. An attachment mechanism suitable for securing a remotely operated vehicle (ROV) to a subsea structure, comprising:

a rigid holder having at first end mounted to the ROV and a second end that is free, the rigid holder having a mechanical stop disposed at the second end and a pivot point adjacent to the second end;

a swing arm coupled to the rigid holder at the pivot point, the swing arm having a rolling element contactable with the subsea structure, the swing arm having a rest orientation; and

a spring means disposed between the mechanical stop and the swing arm, thereby providing a tension force to the swing arm,

in which the swing arm is configured to rotate inward toward the ROV and away from the rest orientation in response to a reaction force due to the rolling element moving across the subsea structure until the tension force overcomes a reaction force generated from contact with the subsea structure to return the swing arm to the rest orientation.

2. An attachment mechanism according to Claim 1, in which the rigid holder extends from its first end to the second end along a circular arc of 0 to 180 degrees.

3. An attachment mechanism according to Claim 1, in which the mechanical stop includes a lip, the lip having an underside surface that is opposite to a leading surface of the second end that the swing arm cannot rotate beyond.

4. An attachment mechanism according to Claim 1, in which the rolling element comprises one or more rollers, one or more ball bearings, or one or more wheels.

5. An attachment mechanism according to Claim 1, in which the rigid holder extends from its first end to the second end without a bend.

6. An attachment mechanism according to Claim 1, in which the second end of the rigid holder is rounded.

7. An attachment mechanism according to Claim 1, in which the mechanical stop includes one or more flanges.

8. An attachment mechanism according to Claim 1, in which the rest orientation orients the swing arm substantially perpendicular to a seabed.

9. An attachment mechanism according to Claim 1, in which the spring means is a compression spring.

10. An attachment mechanism according to Claim 1, in which the spring means is a tension spring.

11. A method of attaching a remotely operated vehicle to a surface of a subsea structure, the remotely operated vehicle initially in a rest orientation, the remotely operated vehicle being of the type having a rigid holder coupled to a swing arm with a rolling element embedded therein and a spring means disposed between the rigid holder and the swing arm, the method comprising:

contacting a first portion of the subsea structure with a first face of the rolling element;

advancing the remotely operated vehicle in the direction of the subsea structure such that the first face of the rolling element contacts a second portion of the subsea structure and generates a reaction force that causes the swing arm to pivot toward the rigid holder and increase a tension force in the spring means;

advancing the remotely operated vehicle in the direction of the subsea structure such that the first face of the rolling element passes an apex of the subsea structure and the tension force stored in the spring means is greater than the reaction force exerted on the swing arm; and

pivoting the swing arm away from the rigid holder back toward the rest orientation by releasing the tension force in the spring means.

12. A method according to Claim 11, in which pivoting the swing arm away from the rigid holder back toward the rest orientation causes the swing arm to contact a third portion of the subsea structure that is approximately diametric to the first portion of the subsea structure.

13. A method according to Claim 11, in which the steps of advancing the remotely operated vehicle further comprise activating one or more horizontal thrusters.

14. A method according to Claim 11, in which the steps of advancing the remotely operated vehicle further comprise activating one or more vertical thrusters.

15. A method according to Claim 11, in which the steps of advancing the remotely operated vehicle further comprise activating one or more motorized treads.