CLAIMS:

1. A mooring device for mooring a first structure to a second structure, the device comprising:
an engagement member for releasably engaging the first structure;
a dampener having a first portion movably connected to a second portion, the first portion being connected to the engagement member and the second portion being connected to the second structure; and
an electro-mechanical drive mechanism for driving the engagement member into engagement with the first structure,
wherein the dampener is configured to damp load transfer between the first and second portions of the dampener and thereby damp relative motion between the first and second structures.

2. The mooring device of claim 1, wherein the dampener includes a damping mechanism configured to move the first portion of the dampener relative to the second portion of the dampener.

3. The device of claim 2, wherein the damping mechanism comprises a tensioner, the tensioner being in resilient communication with opposing ends of the first portion of the dampener such that movement of the tensioner urges the first portion of the dampener to move relative to the second portion of the dampener.

4. The device of claim 3, wherein a first end of the first portion of the dampener is operably engaged with the tensioner via a first resilient member and a second end of the first portion of the dampener is operably engaged with the tensioner via a second resilient member.

5. The device of claim 4, wherein the tensioner includes opposing faces acting as surfaces against which the first and second resilient members are respectively supported.

6. The device of any one of claims 3 to 5, wherein the drive mechanism is configured to drive the tensioner toward or away from the second portion of the dampener.

7. The device of claim 6, wherein the drive mechanism includes a worm drive directly engaged with the tensioner.

8. The device of any one of claims 3 to 7, wherein motion of the tensioner within the first portion of the dampener, in a first direction, pushes on the first end of the first portion of the dampener via the first resilient member, thereby moving the first portion of the dampener toward the first structure.

9. The device of any one of claims 2 to 8, wherein the damping mechanism is sealingly housed within the first portion of the dampener.

10. The device of any one of the preceding claims, wherein the first portion is telescopically movable within the second portion.

11. The device of claim 4, wherein the first and second resilient members comprise at least one of the following: a resilient member, a spring, a series of springs, an air bellow, a plurality of rubber balls or an air cylinder.

12. A method of engaging an engagement member on a mooring device to a vessel, comprising:

storing a negative pressure in a vacuum storage cavity in the engagement member, wherein the negative pressure is generated before the engagement member contacts a vessel;

contacting a vacuum pad of the engagement member with the vessel so to create a suction cavity; and

transferring air from the suction cavity into the vacuum storage cavity to create a vacuum pressure in the suction cavity thereby holding the engagement member to the vessel,

wherein the engagement member is driven into engagement with the vessel by an electro-mechanical mechanism.

13. A mooring unit comprising:

a mooring device according to any one of claims 1 to 11; and

a support,

wherein the second portion of the dampener is mounted to the support, the support being connected to the second structure.

14. The mooring unit of claim 13, wherein the second portion of the dampener is pivotally connected to the support such that the dampener can pivot relative to the second structure in at least one direction.

15. An adjustable mooring unit for mooring a vessel to a dock, the adjustable mooring unit comprising:

a guide extending on the dock;

a mooring device mounted on the guide, the mooring device having an engagement member for releasably engaging a vessel and a dampener, the dampener having a first portion movably connected to a second portion, the first portion being connected to the engagement member and the second portion being connected to the mooring device, wherein the dampener is configured to damp load transfer between the first and second portions of the dampener and thereby damp relative motion between the vessel and the dock;

an electro-mechanical drive mechanism for driving the engagement member into engagement with the vessel; and

an adjustment system for moving the mooring device relative to the guide.

16. The adjustable mooring unit of claim 15, wherein the engagement member is a vacuum pad.

17. A ship mounted mooring unit, for mooring a ship to a structure, the mooring unit comprising:

a mooring device having an engagement member for releasably engaging the structure;

a support for mounting the mooring unit within a cavity of the ship; and

an electro-mechanical drive mechanism for driving the engagement member into engagement with the structure,

wherein the mooring device selectively moves between an operative condition, where the engagement member is oriented to engage the structure, and a stowage condition, where the engagement member is retracted to be stowed within the cavity.

18. The ship mounted mooring unit of claim 17, wherein the support comprises a dampener having a first portion movably connected to a second portion, the first

portion being connected to the engagement member and the second portion being connected to the ship, wherein the dampener is configured to damp load transfer between the first and second portions of the dampener and thereby damp relative motion between the ship and the structure.

19. The ship mounted mooring unit of claim 17 or claim 18, wherein the engagement member is rotatable between the operative condition and the stowage condition.

20. A portable mooring device for mooring a vessel to a structure, the device comprising:
a guide configured to detachably engage with the structure;
an engagement assembly movably mounted to the guide such that the engagement assembly can be moved to a predetermined position along the guide; and
an electro-mechanical drive mechanism for driving the engagement assembly into engagement with the vessel,
such that the engagement assembly releasably engages the vessel to moor the vessel to the structure.

21. The portable mooring device of claim 20, wherein the engagement assembly comprises an engagement member and a dampener connected to the engagement member.