CLAIMS

1. A fluid storage facility containing a fluid-tight and insulating tank, in which a bottom wall of the tank contains a housing, and a loading or unloading pipe arranged in the tank, one end of the pipe being accommodated in the housing, the facility containing in addition a securing device for securing the pipe in the housing, the securing device containing:

a cylindrical collar mounted on the end of the pipe,

at least three securing arms, each securing arm containing

a proximal arm portion containing a first end mounted on the cylindrical collar, the proximal arm portion being capable of rotation about a first axis of rotation parallel to a generatrix direction of the cylindrical collar,

a distal arm portion containing a first end bearing a bearing pad, the bearing pad being mounted on said first end of the distal arm portion, the bearing pad being capable of rotation about a second axis of rotation parallel to the generatrix direction of the cylindrical collar, the bearing pad containing a bearing surface facing away from the collar and collaborating with a wall of the housing,

in which at least one of said securing arms contains a guideway coupling the proximal arm portion to the distal arm portion and capable of translationally guiding the distal arm portion with respect to the proximal arm portion in an axis of displacement perpendicular to the generatrix direction of the collar,

an elastic member being coupled to the guideway so as to be able to apply a return force that pushes the distal arm portion away from the proximal arm portion in the axis of displacement in response to a stress aimed at moving the distal arm portion closer to the proximal arm portion.

2. The fluid storage facility as claimed in claim 1, in which the securing arms extend perpendicularly to the generatrix direction of the collar.

3. The fluid storage facility as claimed in claim 1, in which the guideway of said at least one of the securing arms contains:

a hollow guide tube secured to a second end of one or other of the distal arm portion and the proximal arm portion, said guide tube developing in the alignment of said one or other of the distal arm portion and the proximal arm portion,

a guide rod secured to a second end of the other of the distal arm portion and the proximal arm portion, the guide rod developing in the alignment of said other of the

distal arm portion and the proximal arm portion, the guide rod being slidably mounted in the guide tube in the axis of displacement.

4. The fluid storage facility as claimed in claim 3, in which the elastic member of said at least one of the securing arms contains a plurality of elastic washers engaged on the guide rod and bearing, on the one hand, on an end surface of the guide tube and, on the other hand, on an abutment surface that said other of the distal arm portion and the proximal arm portion contains.

5. The fluid storage facility as claimed in claim 1, in which the elastic member of said at least one of the securing arms contains a first elastic element and a second elastic element mounted in series between the distal portion and the proximal portion of said securing arm, and in which the first elastic element exhibits a first rigidity and the second elastic element exhibits a second rigidity that is higher than the first rigidity.

6. The fluid storage facility as claimed in claim 1, in which the cylindrical collar is made from metal, the securing device containing in addition a sliding block made from a polymer material mounted on an internal face of the cylindrical collar and supported on the end of the pipe.

7. The fluid storage facility as claimed in claim 6, in which the internal face of the cylindrical collar exhibits a groove developing in the radial thickness of the cylindrical collar perpendicularly to the generatrix of the cylindrical collar, the sliding block being accommodated in said groove and projecting radially towards the interior beyond the internal face of the cylindrical collar.

8. The fluid storage facility as claimed in claim 7, in which the groove develops in an annular manner about the generatrix direction of the cylindrical collar.

9. The fluid storage facility as claimed in claim 1, in which the bearing pad of at least one of the securing arms contains:

a first plane bearing surface developing in a first plane parallel to the director of the cylindrical collar, and

a second plane bearing surface developing in a second plane parallel to the director of the cylindrical collar, the first plane and the second plane being secant.

10. The fluid storage facility as claimed in claim 1, in which the cylindrical collar contains a first half cylinder and a second half cylinder secured together and jointly forming the cylindrical collar.

11. The fluid storage facility as claimed in claim 1, in which the collar contains a shoulder projecting radially towards the exterior from an external face of the cylindrical collar, each securing arm being mounted on the shoulder.

12. The fluid storage facility as claimed in claim 1, containing in addition a pump housed in the pipe, said pump being capable of loading or unloading a fluid respectively into or from the housing.

13. A ship for the transport of a cold liquid product, the ship containing a double hull and a fluid storage facility as claimed in claim 1, in which the tank is disposed in the double hull.

14. A method of loading or unloading a ship as claimed in claim 13, in which a cold liquid product is conveyed through the pipe from or towards a second floating or shore-based storage facility towards or from the tank of the ship.

15. A transfer system for a cold liquid product, the system containing a ship as claimed in claim 13, the pipe being so arranged as to connect the tank installed in the hull of the ship to a second floating or shore-based storage facility and a pump for conveying a flow of cold liquid product through the pipe from or towards the second floating or shore-based storage facility towards or from the tank of the ship.