CLAIMS

1. A lifting device for an offshore platform with a weight along at least one support leg ~~(2)~~ with a peripheral length with a specified number of ~~standardized~~ segments ~~(6)~~ connected to one another to form at least one closed locking chain ~~(3)~~, wherein the number of the segments ~~(6)~~ determines the lifting capacity of the lifting device ~~(1)~~ which is determined by the weight of the offshore platform, and with connecting plates ~~(16, 17)~~ connecting adjacent segments ~~(6)~~ to one another and having a length which is determined by the peripheral length of the at least one support leg ~~(2)~~ and the number of the segments ~~(6)~~, wherein the specified number of segments ~~(6)~~ and the connecting plates ~~(16, 17)~~ determined in their length are connected to one another to form the at least one locking chain ~~(3)~~, characterized by arms which are arranged on the inner sides of the segments and are pivotable about in each case one outer axis extending in the peripheral direction and on the inner ends of which one of the clamping jaws is arranged in each case, and in that the clamping cross-section is capable of varying by pivoting of the arms.

2. A lifting device according to Claim 1, characterized in that locking elements ~~(18, 19)~~ arranged along the periphery start from the segments ~~(6)~~.

3. A lifting device according to Claim 1 or 2, characterized in that clamping jaws ~~(18, 19)~~, which are arranged at a distance from each other along the periphery and are capable of moving in a reciprocating manner in the radial direction and which together form a clamping cross-section capable of varying in size, start from the segments ~~(6)~~.

4. A lifting device according to Claim 1, 2 or 3, characterized in that the segments ~~(6)~~ have in each case at least one resilient container which is capable of being filled with a flowable medium and is capable of being expanded by the filling and which presses the clamping jaw ~~(18, 19)~~ against the support leg ~~(2)~~ and, as a result, reduces the clamping cross-section.

5. A lifting device according to Claim 4, characterized in that the segments ~~(6)~~ have two parts ~~(70, 71)~~, which are movable towards each other in the radial direction and are U shaped in the clamping cross-section and which engage one in the other, and resilient hoses are arranged between the two segment parts ~~(70, 71)~~ engaging one in the other, and one of the clamping jaws ~~(18, 19)~~ is arranged on the segment part ~~(71)~~ radially on the inside.

6. A lifting device according to any one of Claims 1 to 5, characterized in that the clamping jaws ~~(18, 19)~~ are arranged in a movable manner on the segments ~~(6)~~ by means of a self-locking mechanism.

7. A device according to any one of Claims 1 to 6, characterized by at least one friction-increasing element ~~(50)~~ on the inner side of the clamping jaws ~~(18, 19)~~.

~~8. A lifting device according to any one of Claims 1 to 7, characterized by arms (21, 22) which are arranged on the inner sides of the segments and are pivotable about in each case one outer axis extending in the peripheral direction and on the inner ends of which one of the clamping jaws (18, 19) is arranged in each case, and in that the clamping cross-section is capable of varying by pivoting of the arms (21, 22).~~

~~9~~8. A lifting device according to at least one of Claims 1 to ~~8~~7, characterized by a centring device of the locking chain ~~(3)~~ relative to the support leg ~~(2)~~.

~~10~~9. A lifting device according to any one of Claims 1 to ~~9~~8, characterized by an actuator ~~(41)~~ which is allocated to one segment ~~(6)~~ in each case and which is operatively connected to the respective arm ~~(21, 22)~~ of the segment ~~(6)~~ and can pivot the arm ~~(21, 22)~~ in order to trigger an initial locking of the locking chain ~~(3)~~ on the support leg ~~(2)~~.

~~11~~10. A lifting device according to Claim ~~10~~9, characterized in that the actuator ~~(41)~~ comprises a safety mechanism which comprises a permanently acting spring which presses the clamping jaws ~~(18, 19)~~ radially inwards and has a mechanism which counteracts the spring and which deactivates the spring

force during operation and releases the spring in the event of failure of the control means.

~~12~~11. A lifting device according to at least one of Claims 1 to ~~11~~10, characterized by lifting cylinders ~~(9)~~ which act in the longitudinal direction (L) and are arranged on a platform side of each of the segments ~~(6)~~ and the end of which towards the platform has a fastening means for fastening to the platform.

~~13~~12. A lifting device according to at least one of Claims 1 to ~~12~~11, characterized by a further locking chain arranged along the at least one support leg ~~(2)~~ between the locking chain ~~(3)~~ and the platform, wherein the locking chain ~~(3)~~ and the further locking chain are movable relative to each other along the support leg ~~(2)~~.

~~14~~13. A lifting device according to Claim ~~13~~12, characterized in that one of the two locking chains ~~(3)~~ is arranged fixed in position relative to the platform during the lifting procedure.

~~15~~14. A lifting device according to Claim ~~13~~12 or ~~14~~13, characterized by a control means for the lifting cylinders ~~(9)~~ and the actuators ~~(41)~~ as well as further actuators allocated to segments ~~(6)~~ of the further locking chain.

~~16~~15. A method of producing a lifting device ~~(1)~~ according to any one of Claims 1 to ~~15~~14 with at least one closed locking chain ~~(3)~~ in order to move an offshore platform with a weight along at least one support leg ~~(2)~~ with a peripheral length, in that a lifting capacity of the lifting device ~~(1)~~ is determined with reference to the weight of the offshore platform and a number of ~~standardized~~ segments ~~(6)~~ of the locking chain ~~(3)~~ is determined therefrom, lengths of connecting plates ~~(16, 17)~~ which connect adjacent segments ~~(6)~~ to each other are determined from the number of the segments ~~(6)~~ of the locking chain ~~(3)~~ and the peripheral length of the at least one support leg ~~(2)~~, and the connecting plates ~~(16, 17)~~ determined in their lengths are connected to one another to form at least one locking chain ~~(3)~~ in a releasable manner.

~~17~~16. A method according to Claim ~~16~~15, characterized in that the number of segments ~~(6)~~ keeps ready the lifting capacity required for lifting the offshore platform.

~~18~~17. A method according to Claim ~~16~~15 or ~~17~~16, characterized in that a further locking chain is produced in the same method steps as the locking chain ~~(3)~~.

~~19~~18. A method according to Claim ~~16~~15, ~~17~~16 or ~~18~~17, characterized in that lifting cylinders ~~(9)~~ are mounted on the segments ~~(6)~~ of the locking chain ~~(3)~~.

~~20~~19. A method of producing at least two lifting devices ~~(1)~~ for offshore platforms of different weight and/or with support legs ~~(2)~~ of different peripheral length, in that each of the at least two lifting devices ~~(1)~~ is produced according to any one of Claims ~~16~~15 to ~~19~~18, and the same ~~standardized~~ segments ~~(6)~~ are used in order to produce the locking chains ~~(3)~~ of each one of the at least two lifting devices ~~(1)~~ and the different lengths of the locking chains ~~(3)~~ adapted to the different peripheral lengths are formed by connecting plates ~~(16, 17)~~ of different length.

~~21~~20. A method of lifting an offshore platform with a lifting device ~~(1)~~ according to at least one of Claims 1 to ~~15~~14, in that a locking chain ~~(3)~~ is released in a first position on a supporting leg ~~(2)~~, lifting cylinders ~~(9)~~ are moved out and the locking chain ~~(3)~~ is initially locked on the support leg ~~(2)~~ in a second position at a distance further from the platform than the first position, a further locking chain is released in a third position along the support leg ~~(2)~~ and, as a result, the locking chain ~~(3)~~ is firmly clamped in the second position by self-locking, the lifting cylinders ~~(9)~~ are retracted, the further locking chain is initially locked in a fourth position at a distance further from the platform than the third position, the locking chain ~~(3)~~ is released in the second position and, as a result, the further locking chain is firmly clamped in the fourth position by self-locking.

~~22~~21. A method of lowering an offshore platform with a lifting device ~~(1)~~ according to at least one of Claims 1 to ~~15~~14, in that a locking chain ~~(3)~~ is released in a second position on a supporting leg ~~(2)~~, lifting cylinders ~~(9)~~ are retracted and

the locking chain ~~(3)~~ is initially locked on the support leg ~~(2)~~ in a first position situated closer to the platform than the second position, a further locking chain is released in a fourth position along the support leg ~~(2)~~ and, as a result, the locking chain ~~(3)~~ is firmly clamped in the first position by self-locking, the lifting cylinders ~~(9)~~ are moved out, the further locking chain is initially locked in a third position situated closer to the platform than the fourth position, the locking chain ~~(3)~~ is released in the first position and, as a result, the further locking chain is firmly clamped in the third position by self-locking.

~~23~~22. A method of lifting a support leg ~~(2)~~ with a lifting device ~~(1)~~ according to at least one of Claims 1 to ~~15~~14, in that a self-locking mechanism is tripped, a locking chain ~~(3)~~ is released in a second position on the supporting leg ~~(2)~~, lifting cylinders ~~(9)~~ are retracted and the locking chain ~~(3)~~ is initially locked on the support leg ~~(2)~~ in a first position situated closer than the second position to the platform, a further locking chain is released in a fourth position along the support leg ~~(2)~~ and, as a result, the locking chain ~~(3)~~ is firmly clamped in the first position by self-locking, the lifting cylinders ~~(9)~~ are moved out, the further locking chain is initially locked in a third position situated closer to the platform than the third position, the locking chain ~~(3)~~ is released in the first position and, as a result, the further locking chain is firmly clamped in the third position by self-locking.

~~24~~23. A method of lifting a support leg ~~(2)~~ with a lifting device ~~(1)~~ according to at least one of Claims 1 to ~~15~~14, in that a self-locking mechanism is tripped, a locking chain ~~(3)~~ is released in a first position on a supporting leg ~~(2)~~, lifting cylinders ~~(9)~~ are moved out and the locking chain ~~(3)~~ is initially locked on the support leg ~~(2)~~ in a second position at a distance further from the platform than the first position, a further locking chain is released in a third position along the support leg ~~(2)~~ and, as a result, the locking chain ~~(3)~~ is firmly clamped in the second position by self-locking, the lifting cylinders ~~(9)~~ are retracted, the further locking chain is initially locked in a fourth position at a distance further from the platform than the third position, the locking chain ~~(3)~~ is released in the second position and, as a result, the further locking chain is firmly clamped in the fourth position by self-locking.

~~25~~24. A method according to any one of Claims ~~21~~20 to ~~24~~23, characterized in that the locking chain ~~(3)~~ or the further locking chain is initially clamped or released respectively, in that the clamping jaws ~~(18)~~ or the further clamping jaws ~~(19)~~ are initially pressed or released respectively by means of actuators ~~(41)~~ or by means of further actuators on the outer wall of the support legs ~~(2)~~.