## Claims

1. Locking device (21) for an anchor bar (2) of an anchor system of a concrete wall formwork with a formwork element (6) having a formwork facing (7), having
- an annular sealing element (15) for sealing an anchor penetration hole (13) in the formwork facing (7),
- a threaded nut element (24) for threading the anchor bar (2) into a threaded nut thread of the threaded nut element (24), and
- a cap plate (27), which can be fastened to the rear face of the formwork element (6) of the concrete wall formwork and a spherically designed plate region having an opening in which the threaded nut element (24) is disposed having radial clearance,
wherein the threaded nut element (24) has a groove-like radial circumferential receptacle (40) in which the edges of the opening in the spherical plate region are received and wherein
a tubular guiding device (45) flush with the threaded nut thread of the threaded nut element (24) is provided on the end of the threaded nut element (24) to be located at the concrete formwork side
characterized in that
the sealing element (15) has an inner sealing ring (46) exhibiting rubber elasticity or viscoelasticity and that the free end (51) of the guiding device (45) to be located at the formwork element side sealingly protrudes into the inner sealing ring (46).

2. Locking device according to the claim 1, characterized in that the free end (51) of the guiding device (45) to be provided on the formwork element side is flush with an outside edge of the inner sealing ring to be disposed on the formwork facing side or protrudes beyond the outside edge on the formwork facing side.

3. Locking device according to either one of the claims 1 to 2, characterized in that
the sealing element (15) has a metal sleeve (47), wherein the inner sealing ring (46) is sealingly disposed in the metal sleeve (47).

4. Locking device according to the claim 3, characterized in that
the metal sleeve (47) has a radial circumferential and radially outwardly projecting widening (49) to be disposed on the formwork facing side.

5. Locking device according to the either one of the claims 3 or 4, characterized in that
the sealing element (15) has an outside ring (48) preferably made of rigid plastic, wherein the outside ring (48) is plugged or threaded onto the metal sleeve (47).

6. Locking device according to any one of the claims 1 to 5, characterized in that
the free end (51) of the guiding device (45) to be located at the formwork element side rests against a radial circumferential widened sealing lip (46') of the inner sealing ring (46).

7. Locking device according to any one of the claims 1 to 6, characterized in that
the spherically designed plate region constitutes a spherical cup region with a sphere center on the formwork element side, and wherein surface regions of the circumferential receptacle (40) of the threaded nut element (24), which rest against the spherically designed plate region are constituted such that they are complementarily shaped with respect to the spherically designed plate region.

8. Locking device according at least one of the claims 1 to 7, characterized in that
an anti-rotation lock (60) is provided on the threaded nut element (24), preferably wherein
the anti-rotation lock (60) has a stop element preferably constituted as a wing, wherein the stop element can prevent rotation of the threaded nut element (24) by stopping against a stop, preferably against fastening elements (30).

9. Concrete wall formwork with a first and a second formwork element (5,6) each having a formwork facing (7) and an anchor system with an anchor bar (2) and a locking device (21) according to any one of the claims 1 to 8, wherein the formwork elements (5,6) are disposed opposite each other with their formwork facings (7),
characterized in that
the locking device (21) is disposed in the region of an anchor penetration hole (13) in the formwork facing (7) of the second formwork element (6) at the rear, preferably by means of fastening means (30), and that the sealing element (15) of the locking device (21) is provided to seal the anchor penetration hole (13) in the formwork facing (7) of the second formwork element (6), wherein the anchor bar (2) is inserted from the rear face of the formwork facing (7) of the first formwork element (5) through an anchor penetration hole (13) in the formwork facing (7) of the first formwork element (5) and through the sealing element (15) and can be threaded into the threaded nut thread of the threaded nut element (24) of the locking device (21).

10. Concrete wall formwork according to the claim 9,
characterized in that

the anchor bar (2) has a rounded anchor bar tip (50) and a first thread (71) in the end region of the anchor bar (2) facing away from the anchor bar tip and a second thread (70) in the end region of the anchor bar (2) near to the anchor bar tip.

11. Concrete wall formwork according to the claim 10, characterized in that
anchor bar (2) conically tapers between the first and the second thread (70, 71) toward the anchor bar tip (50), and/or that the thread shape of the first thread (71) differs from the thread shape of the second thread (70) and/or that a thread stop (52) is constituted on the anchor bar (2) at the end of the second thread (70) that faces away from the anchor bar tip, wherein the second thread (70) of the anchor bar (2) can be threaded fully, against a stop, into the threaded nut element (24) of the locking device (21).

12. Concrete wall formwork according to any one of the claims 9 to 11, characterized in that
the free end (51) of the guiding device (45) of the locking device (21) located at the formwork element side is flush with the outside edge of the inner sealing ring (46) located at the formwork element side or projects or protrudes beyond the outside edge on the formwork element side, wherein the outside edge of the inner sealing ring (46) of the sealing element (15) constituted on the formwork element side is essentially flush with the front face of the formwork facing (7) of the second formwork element (6).

13. Concrete wall formwork according to any one of the claims 9 to 12, characterized in that
a further sealing element (15) identical with the sealing element (15) of the locking device (21) for sealing the anchor penetration hole

~~(13) in the formwork facing (7) of the first formwork element (5) is~~ provided in the anchor penetration hole (13) in the formwork facing (7) of the first formwork element (5), wherein the anchor bar (2) can be inserted through the further sealing element (15) and is inserted through the further sealing element (15) in the settled state of the ~~anchor bar (2).~~

Claims

1. Formwork element (5,6) with a formwork facing (7) and a locking device (21) for an anchor bar (2) of an anchor system of a concrete wall formwork (6), wherein the locking device comprises:
- an annular sealing element (15) for sealing an anchor penetration hole (13) in the formwork facing (7),
- a threaded nut element (24) for threading the anchor bar (2) into a threaded nut thread of the threaded nut element (24), and
- a cap plate (27), which is fastened to the rear face of the formwork element (6) of the concrete wall formwork and having a spherically designed plate region having an opening in which the threaded nut element (24) is disposed with radial clearance, wherein
the threaded nut element (24) has a groove-like radial circumferential receptacle (40) in which the edges of the opening in the spherical plate region are received, wherein
the end of the threaded nut element (24) to be located at the concrete formwork side has a tubular guiding device (45) which is integral with the threaded nut element (24), the tubular guiding device (45) being flush with the threaded nut thread of the threaded nut element (24), the guiding device (45) having a free end into which the anchor bar (2), which is to be screwed into the threaded nut element (24), can be introduced,
characterized in that
the sealing element (15) has an inner sealing ring (46) exhibiting rubber elasticity or viscoelasticity and that the free end (51) of the guiding device (45) to be located at the formwork element side sealingly protrudes into the inner sealing ring (46).

2. Formwork element according to claim 1,

characterized in that
the free end (51) of the guiding device (45) to be provided on the formwork element side is flush with an outside edge of the inner sealing ring to be disposed on the formwork facing side or protrudes beyond the outside edge on the formwork facing side.

3. Formwork element according to claim 1 or 2,
characterized in that
the sealing element (15) has a metal sleeve (47), wherein the inner sealing ring (46) is sealingly disposed in the metal sleeve (47).

4. Formwork element according to claim 3,
characterized in that
the metal sleeve (47) has a radial circumferential and radially outwardly projecting widening (49) to be disposed on the formwork facing side.

5. Formwork element according to the either one of the claims 3 or 4,
characterized in that
the sealing element (15) has an outside ring (48) preferably made of rigid plastic, wherein the outside ring (48) is plugged or threaded onto the metal sleeve (47).

6. Formwork element according to any one of the claims 1 to 5,
characterized in that
the free end (51) of the guiding device (45) to be located at the formwork element side rests against a radial circumferential widened sealing lip (46') of the inner sealing ring (46).

7. Formwork element according to any one of the claims 1 to 6,
characterized in that

the spherically designed plate region constitutes a spherical cup region with a sphere center on the formwork element side, and wherein surface regions of the circumferential receptacle (40) of the threaded nut element (24), which rest against the spherically designed plate region are constituted such that they are complementarily shaped with respect to the spherically designed plate region.

8. Formwork element according at least one of the claims 1 to 7, characterized in that
an anti-rotation lock (60) is provided on the threaded nut element (24), preferably wherein
the anti-rotation lock (60) has a stop element preferably constituted as a wing, wherein the stop element can prevent rotation of the threaded nut element (24) by stopping against a stop, preferably against fastening elements (30).

9. Concrete wall formwork comprising:
a first and a second formwork element (5,6) each having a formwork facing (7), wherein the formwork elements (5,6) are disposed opposite each other with their formwork facings (7),
and an anchor system having an anchor bar (2),
characterized in that
the second formwork element is structured according to one of the claims 1 to 8, wherein
the anchor bar (2) is inserted from the rear face of the formwork facing (7) of the first formwork element (5) through an anchor penetration hole (13) in the formwork facing (7) of the first formwork element (5) and through the sealing element (15) and the anchor bar (2) can be threaded into the threaded nut thread of the threaded nut element (24) of the locking device (21).

10. Concrete wall formwork according to the claim 9,
characterized in that
the anchor bar (2) has a rounded anchor bar tip (50) and a first thread (71) in the end region of the anchor bar (2) facing away from the anchor bar tip and a second thread (70) in the end region of the anchor bar (2) near to the anchor bar tip.

11. Concrete wall formwork according to the claim 10,
characterized in that
anchor bar (2) conically tapers between the first and the second thread (70, 71) toward the anchor bar tip (50), and/or that the thread shape of the first thread (71) differs from the thread shape of the second thread (70) and/or that a thread stop (52) is constituted on the anchor bar (2) at the end of the second thread (70) that faces away from the anchor bar tip, wherein the second thread (70) of the anchor bar (2) can be threaded fully, against a stop, into the threaded nut element (24) of the locking device (21).

12. Concrete wall formwork according to any one of the claims 9 to 11,
characterized in that
the free end (51) of the guiding device (45) of the locking device (21) located at the formwork element side is flush with the outside edge of the inner sealing ring (46) located at the formwork element side or projects or protrudes beyond the outside edge on the formwork element side, wherein the outside edge of the inner sealing ring (46) of the sealing element (15) constituted on the formwork element side is essentially flush with the front face of the formwork facing (7) of the second formwork element (6).

13. Concrete wall formwork according to any one of the claims 9 to 12, characterized in that

a further sealing element (15) identical with the sealing element (15) of the locking device (21) for sealing the anchor penetration hole (13) in the formwork facing (7) of the first formwork element (5) is provided in the anchor penetration hole (13) in the formwork facing (7) of the first formwork element (5), wherein the anchor bar (2) can be inserted through the further sealing element (15) and is inserted through the further sealing element (15) in the settled state of the anchor bar (2).