CLAIMS

1. A running tool for a casing hanger, the running tool comprising:

securement means to secure a casing hanger to the running tool, the securement means being movable between a secured position in which a casing hanger is secured to the running tool and an unsecured position in which a casing hanger is unsecured to the running tool; wherein, in the secured position, a casing hanger is suspendable from the running tool and the running tool supports a suspension weight of the casing hanger;

activation means in order to enable the securement means to move from a secured position to an unsecured position, wherein the activation means is axially moveable between the secured position and the unsecured position; and

release prevention means in order to prevent the movement of the securement means from the secured position to the unsecured position whilst the suspension weight of the casing hanger is suspended from the running tool.

2. A running tool for a casing hanger according to Claim 1 in which the securement means projects radially outwardly from the running tool.

3. A running tool for a casing hanger according to Claim 1 or Claim 2 in which the securement means is radially moveable between the secured position and the unsecured position.

4. A running tool for a casing hanger according to Claim 3 in which the securement means is radially moveable from an outer secured position to an inner unsecured position.

5. A running tool for a casing hanger according to any preceding claim in which the activation means is arranged to prevent movement of the securement means from the secured position to the unsecured position and the activation means locks the securement means in a radially projecting position relative to an outer surface of the running tool.

6. A running tool for a casing hanger according to any preceding claim in which the securement means comprises a securement member which may comprise an annular securement member and wherein the securement member comprises a locking ring.

7. A running tool for a casing hanger according to any preceding claim in which the securement member provides an outer engaging surface which is arranged to engage in a corresponding engagement groove provided in the casing hanger and, wherein, the casing hanger provides an engagement groove in an inner surface.

8. A running tool for a casing hanger according to any preceding claim in which the securement means is retained in the secured position by thrust means, the thrust means comprising thrust pins which are arranged to bear against the activation means and, wherein, the activation means retains the thrust means in the secured position.

9. A running tool for a casing hanger according to any preceding claim in which the activation means provide a recess and in which the recess enables the securement means to move from the secured position to the unsecured position.

10. A running tool for a casing hanger according to Claim 9 in which the recess is axially moveable in the running tool.

11. A running tool for a casing hanger according to any preceding claim in which the recess is axially moveable from a secured position at which the thrust means bears against the activation means to an unsecured position at which the thrust means is moveable into the recess and the securement member is radially inwardly moveable.

12. A running tool for a casing hanger according to any preceding claim in

which the activation means is activated by a downward axial pressure applied to the running tool and, in which, the downward pressure is applied by a fluid located in an annulus located on the upper side of the running tool.

13. A running tool for a casing hanger according Claim 12 in which the pressurised fluid is introduced into the annulus through choke lines located above the running tool.

14. A running tool for a casing hanger according to any preceding Claim 12 or Claim 13 in which the fluid comprises drilling mud.

15. A running tool for a casing hanger according to any preceding claim in which the activation means comprises a sleeve member which is axially moveable in the running tool, wherein the sleeve member comprises a collet and, in which, the collet is axially moveable from a secured position to an unsecured position.

16. A running tool for a casing hanger according to Claim 15 in which a recess is provided on the collet and the recess is provided on an outer surface of the collet and wherein the recess comprises an annular groove provided on an outer surface of the collet.

17. A running tool for a casing hanger according to any preceding claim in which the activation means comprises retaining means to prevent axial movement of the activation means within the running tool and wherein the retaining means may comprise a plurality of retaining members, in which, the retaining members comprise shear pins which are arranged to shear to enable axial the activation means to move from the secured position to the unsecured position.

18. A running tool for a casing hanger according to Claim 17 in which the shear pins are arranged to shear in reaction to a pressure applied to the running tool.

19. A running tool for a casing hanger according to Claim 18 in which the shear

pins are arranged to shear in reaction to a fluid pressure applied within an annulus located on an upper side (or first side) of the running tool.

20. A running tool for a casing hanger according to any preceding claim in which the release prevention means is arranged to prevent unintentional activation of the activation means, in which, the release prevention means is arranged to prevent release of the casing hanger prior to the casing hanger being secured within a well bore.

21. A running tool for a casing hanger according to Claim 20 in which the release prevention means comprises abutment means to prevent movement of the activation means from the secured position to the unsecured position whilst the casing hanger is supported from the running tool and the suspension weight of the casing hanger is being transferred to the running tool.

22. A running tool for a casing hanger according to any preceding Claim 20 or Claim 21 in which the release prevention means comprises abutment means to prevent axial movement of the activation means to the unsecured position and the abutment means prevents the movement of the recess into axial alignment with the securement member.

23. A running tool for a casing hanger according to any preceding claim in which the running tool comprise auxiliary release means to activate the release of the casing hanger from the running tool.

24. A running tool for a casing hanger according to Claim 23 in which the auxiliary release means comprises anti-rotation means to prevent rotation between the running tool and the casing hanger and the auxiliary release means comprises a rotatable member on the running tool which is rotatable in order to cause the axial movement of the activation means from the secured position to the unsecured position.

25. An assembly comprising a running tool and a casing hanger, the running tool comprising:

securement means to secure the casing hanger to the running tool, the securement means being movable between a secured position in which the casing hanger is secured to the running tool and an unsecured position in which the casing hanger is unsecured to the running tool; wherein, in the secured position, the casing hanger is suspendable from the running tool and the running tool supports a suspension weight of the casing hanger;

activation means in order to enable the securement means to move from a secured position to an unsecured position wherein the activation means is axially moveable between the secured position and the unsecured position; and

release prevention means in order to prevent the movement of the securement means from the secured position to the unsecured position whilst the suspension weight of the casing hanger is suspended from the running tool.

26. A method of positioning a casing hanger within a well bore, the method comprising securing a running tool to the casing hanger wherein the running tool comprises:

securement means to secure a casing hanger to the running tool, the securement means being movable between a secured position in which a casing hanger is secured to the running tool and an unsecured position in which a casing hanger is unsecured to the running tool; wherein, in the secured position, a casing hanger is suspendable from the running tool and the running tool supports a suspension weight of the casing hanger;

activation means in order to enable the securement means to move from a secured position to an unsecured position wherein the activation means is axially moveable between the secured position and the unsecured position; and

release prevention means in order to prevent the movement of the securement means from the secured position to the unsecured position whilst the suspension weight of the casing hanger is suspended from the running tool;

the method comprising releasing the running tool from the casing hanger by axially moving the activation means.

27. A running tool for a casing hanger substantially as herein described, with reference to, and as shown in, any of the accompanying Figures.

28. An assembly comprising a running tool and a casing hanger substantially as herein described, with reference to, and as shown in, any of the accompanying Figures.

29. A method of positioning a casing hanger within a well bore substantially as herein described, with reference to, and as shown in, any of the accompanying Figures.

CLAIMS

1. A running tool for a casing hanger, the running tool comprising:

securement means to secure a casing hanger to the running tool, the securement means being movable between a secured position in which a casing hanger is secured to the running tool and an unsecured position in which a casing hanger is unsecured to the running tool; wherein, in the secured position, a casing hanger is suspendable from the running tool and the running tool supports a suspension weight of the casing hanger;

activation means in order to enable the securement means to move from a secured position to an unsecured position, wherein the activation means is axially moveable between the secured position and the unsecured position; and

release prevention means in order to prevent the movement of the securement means from the secured position to the unsecured position whilst the suspension weight of the casing hanger is suspended from the running tool.

2. A running tool for a casing hanger according to Claim 1 in which the securement means projects radially outwardly from the running tool and in which the securement means is radially moveable from an outer secured position to an inner unsecured position and in which the activation means is arranged to prevent movement of the securement means from the secured position to the unsecured position and the activation means locks the securement means in a radially projecting position relative to an outer surface of the running tool.

3. A running tool for a casing hanger according to Claim 1 or Claim 2 in which the securement means comprises a securement member which may comprise an annular securement member and wherein the securement member comprises a locking ring and in which the securement member provides an outer engaging surface which is arranged to engage in a corresponding engagement groove provided in the casing hanger and, wherein, the casing hanger provides an engagement groove in an inner surface.

4. A running tool for a casing hanger according to any preceding claim in which the securement means is retained in the secured position by thrust means, the thrust means comprising thrust pins which are arranged to bear against the activation means and, wherein, the activation means retains the thrust means in the secured position and in which the activation means provide a recess and in which the recess enables the securement means to move from the secured position to the unsecured position.

5. A running tool for a casing hanger according to Claim 4 in which the recess is axially moveable in the running tool and in which the recess is axially moveable from a secured position at which the thrust means bears against the activation means to an unsecured position at which the thrust means is moveable into the recess and the securement member is radially inwardly moveable.

6. A running tool for a casing hanger according to any preceding claim in which the activation means is activated by a downward axial pressure applied to the running tool and, in which, the downward pressure is applied by a fluid located in an annulus located on the upper side of the running tool.

7. A running tool for a casing hanger according Claim 6 in which the pressurised fluid is introduced into the annulus through choke lines located above the running tool.

8. A running tool for a casing hanger according to Claim 6 or Claim 7 in which the fluid comprises drilling mud.

9. A running tool for a casing hanger according to any preceding claim in which the activation means comprises a sleeve member which is axially moveable in the running tool, wherein the sleeve member comprises a collet and, in which, the collet is axially moveable from a secured position to an unsecured position.

10. A running tool for a casing hanger according to Claim 9 in which a recess is

provided on the collet and the recess is provided on an outer surface of the collet and wherein the recess comprises an annular groove provided on an outer surface of the collet.

11. A running tool for a casing hanger according to any preceding claim in which the activation means comprises retaining means to prevent axial movement of the activation means within the running tool and wherein the retaining means may comprise a plurality of retaining members, in which, the retaining members comprise shear pins which are arranged to shear to enable axial the activation means to move from the secured position to the unsecured position, in which the shear pins are arranged to shear in reaction to a pressure applied to the running tool and in which the shear pins are arranged to shear in reaction to a fluid pressure applied within an annulus located on an upper side (or first side) of the running tool.

12. A running tool for a casing hanger according to any preceding claim in which the release prevention means is arranged to prevent unintentional activation of the activation means, in which, the release prevention means is arranged to prevent release of the casing hanger prior to the casing hanger being secured within a well bore, in which the release prevention means comprises abutment means to prevent movement of the activation means from the secured position to the unsecured position whilst the casing hanger is supported from the running tool and the suspension weight of the casing hanger is being transferred to the running tool and in which the release prevention means comprises abutment means to prevent axial movement of the activation means to the unsecured position and the abutment means prevents the movement of the recess into axial alignment with the securement member.

13. A running tool for a casing hanger according to any preceding claim in which the running tool comprise auxiliary release means to activate the release of the casing hanger from the running tool, in which the auxiliary release means comprises anti-rotation means to prevent rotation between the running tool and the

casing hanger and the auxiliary release means comprises a rotatable member on the running tool which is rotatable in order to cause the axial movement of the activation means from the secured position to the unsecured position.

14. An assembly comprising a running tool and a casing hanger, the running tool comprising:

securement means to secure the casing hanger to the running tool, the securement means being movable between a secured position in which the casing hanger is secured to the running tool and an unsecured position in which the casing hanger is unsecured to the running tool; wherein, in the secured position, the casing hanger is suspendable from the running tool and the running tool supports a suspension weight of the casing hanger;

activation means in order to enable the securement means to move from a secured position to an unsecured position wherein the activation means is axially moveable between the secured position and the unsecured position; and

release prevention means in order to prevent the movement of the securement means from the secured position to the unsecured position whilst the suspension weight of the casing hanger is suspended from the running tool.

15. A method of positioning a casing hanger within a well bore, the method comprising securing a running tool to the casing hanger wherein the running tool comprises:

securement means to secure a casing hanger to the running tool, the securement means being movable between a secured position in which a casing hanger is secured to the running tool and an unsecured position in which a casing hanger is unsecured to the running tool; wherein, in the secured position, a casing hanger is suspendable from the running tool and the running tool supports a suspension weight of the casing hanger;

activation means in order to enable the securement means to move from a secured position to an unsecured position wherein the activation means is axially moveable between the secured position and the unsecured position; and

release prevention means in order to prevent the movement of the

securement means from the secured position to the unsecured position whilst the suspension weight of the casing hanger is suspended from the running tool;

the method comprising releasing the running tool from the casing hanger by axially moving the activation means.