Claims

1. A connector (1), comprising a plurality of latching fingers (5) arranged around a cylindrical body (9) having a central axis (X_c); each finger having a first end region (5a) extending beyond an end of the body (9) and comprising a first latching structure (4); each finger being pivotally supported at an intermediate region (5b) by a portion of the body and being movable between a non-latching position and a latching position in which the first end region (5a) is closer to the central axis (X_c) than in the non-latching position; the connector further comprising a first actuating member (14) arranged in contact with the plurality of fingers (5) and operable to move the fingers between the non-latching position and the latching position; **characterized by**
an actuating means (17) operable to force a second end region (5c) of each finger towards the body (9).

2. The connector of claim 1, wherein each finger (5) comprises a first seat (30) in which the first actuating member (14) is positioned when the finger is in a non-latching position; and wherein each finger furthermore comprises a first surface (31) in the first end region (5a) configured for interaction with the first actuating member when the finger is in a latching position.

3. The connector of claim 2, wherein the first seat (30) is closer to the body central axis (X_c) than the first surface (31) is.

4. The connector of any one of the preceding claims, wherein the actuating means (17) is configured for exerting a pressure onto at least a portion of the second end region (5c).

5. The connector of claim 4, wherein the actuating means (17) comprises a force-imparting member (21) and the second end region (5c) comprises a force-receiving region (25, 26, 33); said force-imparting member and force-receiving region being configured for mutual cooperation.

6. The connector of claim 5, wherein the force-receiving region comprises a second surface (33) which is curved radially outwardly in the finger longitudinal direction, with an apex (25), and comprises a trough (26) for accommodating the force-imparting member (21); said trough being arranged in a region towards the intermediate region (5b).

7. The connector of any one of claims 2 – 6, wherein the seat (30) comprises an abutment portion (38) configured for interaction with a portion (37) of the first actuating member (14) when the first actuating member is in a retracted, non-latching, position, and the body comprises a first finger-locking structure (35) configured for cooperation with a second finger-locking structure (34) on the finger,

whereby the finger is locked in a non-latching position when the first actuating member is in the retracted position.

8. The connector of claim 7, wherein the first finger-locking structure comprises a slant body surface (35) and the second finger-locking structure comprises a slant finger surface (34), said slant surfaces (34, 35) being configured for cooperation and arranged at a first rake angle (δ) with respect to a body cross-sectional plane and arranged such that the aft portion (5c) is forced towards the body central axis when the actuating member portion (37) is forced against the abutment portion (38).

9. The connector of claim 8, the body further comprising a shoulder (40) having a second rake angle (β) with respect to a body cross-sectional plane and configured for supporting interaction with a corresponding abutment face (39) on the finger.

10. The connector of claim 9, wherein the slant finger surface (34) and the finger abutment face (39) are substantially parallel.

11. The connector of any one of the preceding claims, wherein the body (9) comprises a connector face (27) configured for abutment against a face (28) on a hub (2), and the first latching structure (4) on each finger is configured for latching interaction with a corresponding second latching structure (3) on the hub; the body and the hub furthermore comprising respective through-going bores (7, 8).

12. The connector of claim 11, wherein the connector face is a conical connector face (27'), having a taper angle (γ) and the conical face (27') extending to an apex at the opening of the through-going body bore (7).

13. The connector of claim 11 or claim 12, further comprising an alignment control element (12) configured for abutment against a hub abutment member (10).

14. The connector of any one of the preceding claims, wherein the first actuating member (14) and the second actuating member (21) are respective actuating rings surrounding the fingers (5).

15. The connector of any one of the preceding claims, wherein the body support region (29) is in the region of said end of the body (9).

16. A method of connecting a connector (1) to a hub (2), the connector comprising a plurality of latching fingers (5) arranged around a cylindrical body (9) and having respective first latching structures (4), comprising the steps of

a) bringing a connector face (27) into contact with a hub face (28);

b) moving the latching fingers towards the connector until the first latching

structures (4) engage in corresponding second latching structures (3) on the hub, and then holding the latching structures (3, 4) together in a latching engagement; **characterized by**

c) effecting a pressure in the aft region (5c) of each finger, towards the body, following the completion of step b).

17. The method of claim 16, wherein step b) comprises a sliding movement of a first actuating member (14) from an intermediate region (5b) towards a first end region (5a) of each latching finger.

18. The method of claim 16 or claim 17, wherein step c) comprises a sliding movement of a force-imparting member (21) onto a second end region (5c) of each latching finger.

19. The method of claim 18, further comprising the movement of the force-imparting member (21) into a recession (26) on a surface (33) on the finger.

CLAIMS

1. A connector, comprising a plurality of latching fingers arranged around a cylindrical body having a central axis; each finger having a first end region extending beyond an end of the body and comprising a first latching structure; each finger being pivotally supported at an intermediate region by a portion of the body and being movable between a non-latching position and a latching position in which the first end region is closer to the central axis than in the non-latching position; the connector further comprising a first actuating member arranged in contact with the plurality of fingers and operable to move the fingers between the non-latching position and the latching position; an actuating means operable to force a second end region of each finger towards the body by exerting a pressure onto at least a portion of the second end region, and wherein the actuating means comprises a force-imparting member and the second end region comprises a force-receiving region; said force-imparting member and force-receiving region being configured for mutual cooperation, **characterized by** that the force-receiving region comprises a second surface which is curved radially outwardly in the finger longitudinal direction, with an apex, and comprises a trough for accommodating the force-imparting member; said trough being arranged in a region towards the intermediate region.

2. The connector of claim 1, wherein each finger comprises a first seat in which the first actuating member is positioned when the finger is in a non-latching position; and wherein each finger furthermore comprises a first surface in the first end region configured for interaction with the first actuating member when the finger is in a latching position.

3. The connector of claim 2, wherein the first seat is closer to the body central axis than the first surface is.

4. The connector of any one of the preceding claims, wherein the seat comprises an abutment portion configured for interaction with a portion of the first actuating member when the first actuating member is in a retracted, non-latching, position, and the body comprises a first finger-locking structure configured for cooperation with a second finger-locking structure on the finger, whereby the finger is locked in a non-latching position when the first actuating member is in the retracted position.

5. The connector of claim 4, wherein the first finger-locking structure comprises a slant body surface and the second finger-locking structure comprises a slant finger surface, said slant surfaces being configured for cooperation and arranged at a first rake angle with respect to a body cross-sectional plane and

arranged such that the aft portion is forced towards the body central axis when the actuating member portion is forced against the abutment portion.

6. The connector of claim 5, the body further comprising a shoulder having a second rake angle with respect to a body cross-sectional plane and configured for supporting interaction with a corresponding abutment face on the finger.

7. The connector of claim 6, wherein the slant finger surface and the finger abutment face are substantially parallel.

8. The connector of any one of the preceding claims, wherein the body comprises a connector face configured for abutment against a face on a hub, and the first latching structure on each finger is configured for latching interaction with a corresponding second latching structure on the hub; the body and the hub furthermore comprising respective through-going bores.

9. The connector of claim 8, wherein the connector face is a conical connector face, having a taper angle and the conical face extending to an apex at the opening of the through-going body bore.

10. The connector of claim 8 or claim 9, further comprising an alignment control element configured for abutment against a hub abutment member.

11. The connector of any one of the preceding claims, wherein the first actuating member and the second actuating member are respective actuating rings surrounding the fingers.

12. The connector of any one of the preceding claims, wherein the body support region is in the region of said end of the body.

13. A method of connecting a connector to a hub, the connector comprising a plurality of latching fingers arranged around a cylindrical body and having respective first latching structures, comprising the steps of
a) bringing a connector face into contact with a hub face;
b) moving the latching fingers towards the connector until the first latching structures engage in corresponding second latching structures on the hub, and then holding the latching structures together in a latching engagement;
characterized by
c) effecting a pressure in the aft region of each finger, towards the body, following the completion of step b).

14. The method of claim 13, wherein step b) comprises a sliding movement of a first actuating member from an intermediate region towards a first end region of each latching finger.

15. The method of claim 13 or claim 14, wherein step c) comprises a sliding movement of a force-imparting member onto a second end region of each latching finger.

16. The method of claim 15, further comprising the movement of the force-imparting member into a recession on a surface on the finger.