Claims

The claims defining the invention are as follows:

1. **A mould positioning arrangement suitable for use in a multi-core injection moulding process, the mould positioning arrangement comprising**:
    a. at least one supporting member configured for supporting at least one part-mould, the at least one part-mould being configured for moulding an item to be moulded in combination with a complementary part-mould; and
    b. a moving arrangement including a gearing arrangement configured for linearly moving the at least one part-mould between at least two positions.

2. The mould positioning arrangement of claim 1, wherein the at least one part-mould is configured for moulding a plurality of items to be moulded in combination with the complementary part-mould.

3. The mould positioning arrangement of claim 1, wherein the mould positioning arrangement includes a plurality of mould parts.

4. The mould positioning arrangement of claim 1, wherein the at least one part-mould defines a part-mould cavity.

5. The mould positioning arrangement of claim 1, wherein the at least one part-mould defines a plurality of part mould cavities.

6. The mould positioning arrangement of claim 1, wherein the at least one supporting member is configured for supporting a plurality of part-moulds.

7. The mould positioning arrangement of claim 1, wherein the at least one part-mould is configured for engagement with the complementary part-mould to define at least one mould cavity between the at least one part-mould and the complementary part-mould.

8. The mould positioning arrangement of claim 1, wherein the moving arrangement includes a hydraulic moving mechanism.

9. The mould positioning arrangement of claim 8, wherein the hydraulic moving mechanism is a hydraulic ram.

10. The mould positioning arrangement of claim 1, wherein the gearing arrangement includes one or more selected from a worm gear, a helical gear, a cam arrangement and a rack and pinion arrangement.

11. The mould positioning arrangement of claim 1, wherein the moving arrangement includes a pneumatic moving mechanism.

12. The mould positioning arrangement of claim 1, wherein the moving arrangement includes a lever mechanism.

13. The mould positioning arrangement of claim 1, wherein the moving arrangement includes a rotating threaded shaft.

14. The mould positioning arrangement of claim 13, wherein the rotating threaded shaft is receivable into a complementary threaded member.

15. The mould positioning arrangement of claim 1, wherein the at least one part-mould is configured for receiving a first injected material in a first position, and a second injected material in a second position.

16. The mould positioning arrangement of claim 1, wherein the mould positioning arrangement includes an ejector plate.

17. The mould positioning arrangement of claim 16, wherein the ejector plate includes ejector pins.

18. A method of moulding items to be moulded in a multicore moulding process, the method comprising the steps of:

a. supporting at least one part-mould in a first position, the at least one part-mould including at least a first part-mould cavity and a second part-mould cavity;
b. engaging a complementary part-mould defining a first configuration with a periphery of the first part-mould cavity to present a first mould cavity;
c. injecting settable material into the first mould cavity to form a partially moulded item;
d. disengaging the complementary part-mould defining a first configuration from engagement with the at least one part-mould;
e. moving the at least one part-mould linearly to a second position;
f. engaging the complementary part-mould defining a second configuration with a periphery of the first part-mould cavity to present a second part-mould cavity;
g. injecting settable material into the second part-mould cavity to form a moulded item; and
h. engaging the complementary part-mould defining a third configuration with the second part-mould cavity of the at least one part-mould to present a third mould cavity which is identical in configuration to the second part-mould cavity.

19. The method of claim 18, wherein the at least one part-mould is a single part-mould that defines a plurality of part-mould cavities.

20. The method of claim 18, wherein the at least one part-mould comprises a plurality of part-moulds, together defining a plurality of part mould cavities.

21. The method of claim 18, wherein the method includes the step of allowing a first material in the first mould cavity to set as the part-moulded item.

22. The method of claim 18, wherein the method comprises the step of allowing a second settable material in the first mould cavity to set as a moulded item.

23. The method of claim 18, wherein the method comprises the step of disengaging the complementary part-mould defining a second configuration from the at least one part-mould defining a first part-mould cavity.

24. The method of claim 18, wherein the method comprises the step of ejecting the moulded item from one or more selected from the first part-mould cavity and the complementary part-mould defining a second configuration.

25. The method of claim 18, wherein the method comprises the step of moving the at least one part-mould defining a first part-mould cavity back to the first position.

26. The method of claim 18, wherein the step of moving the at least one part-mould defining a first part-mould cavity linearly to a second position includes the step of moving the at least one part-mould defining the second part-mould cavity to a first position.

27. The method of claim 18, wherein the step of engaging a complementary part-mould defining a second configuration with a periphery of the first part-mould cavity to present a second mould cavity, includes the step of engaging a complementary part-mould defining a first configuration with the periphery of the second part-mould cavity, to present a first mould cavity.

28. The method of claim 18, wherein the method includes the step of injecting settable material into the first mould cavity formed by the engagement of the complementary part-mould defining a first configuration with the periphery of the second part-mould cavity, to form a partially moulded item.

29. The method of claim 18, wherein the method includes the step of disengaging the complementary part-mould defining a first configuration from engagement with the at least one part-mould defining the second part-mould cavity.

30. The method of claim 18, wherein the step of moving the at least one part-mould defining a first part-mould cavity linearly back to a first position includes the step of

moving the at least one part-mould defining the second part-mould cavity to a second position.

31. The method of claim 18, wherein the method includes the step of engaging a complementary part-mould defining a third configuration with the second part-mould cavity of the at least one part-mould to present a third mould cavity.

32. The method of claim 18, wherein the third mould cavity is identical in configuration to the second mould cavity.

33. The method of claim 18, wherein the third mould cavity varies in configuration from the second mould cavity.

34. The method of claim 18, wherein the method includes the step of injecting settable material into the third mould cavity formed by the engagement of the at least one part-mould defining the second part-mould cavity with the complementary part-mould defining a third configuration to form a moulded item.

35. The method of claim 18, wherein the method comprises the step of ejecting the moulded item from one or more selected from the second part-mould cavity and the complementary part-mould defining a third configuration.