Claims

1. Extendable lattice type crane boom for a crane, the boom comprising a lattice type base boom section and at least one lattice type telescopic boom section, wherein the at least one telescopic boom section is adjustable with respect to the base boom section between a retracted position, in which the telescopic boom section is substantially inside of the base boom section, and an extended position, in which the telescopic boom section is at least partly outside of the base boom section,
wherein a distal end of the base boom section comprises a first guiding system, the guiding system being configured to guide a movement of the telescopic boom section along the base boom section;
wherein a proximal end of the telescopic boom section comprises a second guiding system configured to guide a movement of the telescopic boom section along the base boom section;
wherein the base boom section comprises a third guiding system configured to guide a movement of the telescopic boom section along the base boom section, said third guiding system being spaced-apart from the first guiding system at a distance corresponding to a length of the telescopic boom section part remaining inside of the base boom section in the extended position of the telescopic boom section.

2. Extendable lattice type crane boom according to claim 1, wherein the first, second and/or third guiding system comprises guide rails and guide elements, wherein the guide elements are configured to be guided along the guide rails, wherein the guide rails are provided on one of the base boom section and the telescopic boom section and the guide elements are provided on the other one of the base boom section and the telescopic boom section.

3. Extendable lattice type crane boom according to claim 1 or 2, wherein the base boom section comprises a first collar to which the first guiding system is mounted and/or wherein the base boom section comprises a second collar to which the third guiding system is mounted.

4. Extendable lattice type crane boom according to any of the preceding claims, wherein the second guiding system includes at least one rail mounted to at least one chord of the base boom section, wherein a length of said rail is substantially shorter than a length of the telescopic boom section part configured to extend from the base boom section in the extended position of the telescopic boom section.

5. Extendable lattice type crane boom according to any of the preceding claims 2 - 4, wherein the first guiding system and/or the third guiding system comprise guide elements on each of the chords of the base boom section, wherein the guide elements of the first guiding system and/or of the third guiding system are provided at the same axial distance along the base boom section.

6. Extendable lattice type crane boom according to any of the preceding claims, wherein the first guiding system is a x-y guide system.

7. Extendable lattice type crane boom according to any of the preceding claims, wherein the third guiding system is a x-y guide system.

8. Extendable lattice type crane boom according to claim 6, respectively claim 7, wherein the first guiding system, respectively the third guiding system includes at least one rail mounted to or integrated into at least one chord of the telescopic boom section, said rail being shaped such as

to guide both an x-guide roller as well as an y-guide roller of a x-y guide system.

9. Extendable lattice type crane boom according to any of the preceding claims, wherein the telescopic boom section includes chords having a substantially rectangular cross-section.

10. Extendable lattice type crane boom according to any of the preceding claims, wherein the base boom section includes chords having a substantially circular cross-section.

11. Extendable lattice type crane boom according to any of the preceding claims, wherein the second guiding system is a radial guiding system, provided on a chord of the base boom section and/or the telescopic boom section under an angle of substantially 45˚ with respect to an upper or a lower side of the boom.

12. Extendable lattice type crane boom according to any of the preceding claims, further comprising a locking system configured to lock the at least one telescopic boom section with respect to the base boom section in at least the extended position.

13. Extendable lattice type crane boom according to claim 12, wherein the locking system includes a plurality of pins, each pin being configured to extend, in at least the extended position of the boom, at least partly through a corresponding pin receiving aperture provided in one of the first collar and the telescopic boom section, wherein a size of the pin receiving aperture is at least 10 mm larger than a cross-sectional dimension of the corresponding pin.

14. Extendable lattice type crane boom according to claim 13, wherein the locking system includes as many pins as the telescopic boom section has chords, each chord being configured to receive only one pin.

15. Extendable lattice type crane boom according to any of the preceding claims, further comprising a telescopic system arranged to adjust the at least one telescopic boom section between said retracted position and said extended position, wherein said telescopic system comprises at least one reeving system.

16. Extendable lattice type crane boom according to claim 15, wherein the telescopic system comprises two reeving systems, each provided on an opposite side of the base boom section, preferably on lateral sides of the base boom section.

17. Crane comprising:

- an extendable lattice type crane boom according to any of the preceding claims; wherein said lattice type crane boom is movable between a transit position, in which said lattice type crane boom is in a substantially retracted and substantially horizontal position, and a working position, in which a load is hoistable;
- a crane base to which said extendable lattice type crane boom is pivotably connected;
- a boom hoisting system arranged to move the extendable crane boom between said transit position and said working position;
- a load hoisting system configured to hoist a load.

18. Crane according to claim 17, wherein the boom hoisting system is connected to a distal end of the base boom section as well as to a distal end of the telescopic boom section.

19. Crane according to any of the preceding claims 17-18, wherein the crane base is mountable around a leg of a jack up platform.

20. Jack up platform including a crane according to any of the preceding claims 17-19.

21. Jack up platform according to claim 20, wherein the crane base is mounted around a leg of the jack up platform.

22. Method of operating a crane, the crane including an extendable lattice type crane boom according to any of the preceding claims 1-16, wherein the extendable lattice type boom comprises a lattice type base boom section and at least one lattice type telescopic boom section, the method comprising the steps of:

- bringing the extendable lattice type boom from a transit position to a working position;
- operating a telescopic system to adjust the at least one telescopic boom section with respect to the base boom section from a retracted position, in which the telescopic boom section is substantially inside of the base boom section, to an extended position, in which the telescopic boom section is substantially outside of the base boom section;

wherein the operating of the telescopic system and the operation of bringing the extendable lattice type boom from a transit position to a working position is done at least partly simultaneously.

23. Method of operating a crane according to claim 22, wherein the operating of the telescopic system is started when the extendable lattice type boom has reached a boom angle of at least substantially 30 degrees, preferably at least substantially 50 degrees, more preferably at least substantially 55 degrees, with respect to a substantially horizontal position.

24. Method of operating a crane according to claim 22 or 23, wherein a length of boom hoisting wires of the boom hoisting system is fixated, preferably when the extendable lattice type boom has reached a boom angle of at least substantially 30 degrees, preferably at least substantially 50 degrees, more preferably at least substantially 55 degrees, with respect to a substantially horizontal position.

25. Method of operating a crane according to any of the preceding claims 22 - 24, further comprising the step of locking the telescopic boom section with respect to the base boom section in the extended position of the telescopic boom section by inserting substantially simultaneously a plurality of pins through corresponding pin receiving apertures provided in chords of one of the telescopic boom section and the base boom section.