Claims:

1. A method for indirectly determining an extension length (1) of at least one telescopic push arm (2) of a telescopic jib (3) relative to a further telescopic push arm (4) or to a main arm (20) of the telescopic jib (3), in particular at least part of the telescopic jib (3), of a hoist (5), characterized by the following method steps:
   - at least one first sensor (6), which is different from a possibly present direct extension length sensor, ascertains at least one first parameter of the at least one telescopic push arm (2) and/or telescopic jib (3), in particular over a time interval, wherein a first virtual extension length (7) is determined and/or calculated via the at least one first parameter, preferably via a physical model,
   - the at least one first sensor (6) and/or at least one further sensor (8), which is different from a possibly present direct extension length sensor, ascertains at least one further parameter of the at least one telescopic push arm (2) and/or telescopic jib (3), in particular over a time interval, wherein at least one further virtual extension length (9) is determined and/or calculated via the at least one further parameter, preferably via a physical model,
   - the extension length (1) of the at least one telescopic push arm (2) or of the telescopic jib (3) is determined and/or calculated by the first virtual extension length (7)is weighted and the at least one further virtual extension length (9)is weighted.

2. The method according to claim 1, wherein the first virtual extension length (7) is weighted and/or the at least one

further virtual extension length (9) is weighted, preferably wherein the weighting

- is present in the form of a predefined static weighting value, and/or
- is determined and/or calculated via a history of the first virtual extension length (7) and/or the at least one further virtual extension length (9), and/or
- is determined and/or calculated by a statistical evaluation of the first virtual extension length (7) and/or the at least one further virtual extension length (9), and/or
- is determined and/or calculated in dependence on a quality class and/or a quality value of the first virtual extension length (7) and/or the at least one further virtual extension length (9), and/or
- is determined and/or calculated in dependence on a predefined and/or definable weighting parameter.

3. The method according to claim 2, wherein at least one of the following criteria is taken into consideration in the weighting: a hoist type, an embodiment of the telescopic jib (3), a number of telescopic push arms (2) and/or telescopic jibs (3), a type of the at least one first sensor (6) and/or of the at least one further sensor (8), a type of the at least one first parameter and/or of the at least one further parameter, a number of parameters used, a current operating position of the telescopic jib (3), requirements placed on the extension length (1), intended use of the extension length (1), operating parameters of the hoist (5).

4. The method according to claim 2 or 3, wherein the weighting is adjusted during operation of the hoist (5), preferably

of the telescopic jib (3) and/or dynamically in each sampling cycle of a, preferably mobile, control and/or regulating apparatus (10).

5. The method according to one of the preceding claims, wherein the first virtual extension length (7) and/or the at least one further virtual extension length (9) is classified, preferably into quality classes and/or by a quality value, wherein it is preferably provided that a quality class and/or a quality value of the extension length (1) is determined and/or calculated.

6. The method according to claim 5, wherein the quality class and/or the quality value is adjusted during operation of the hoist (5), preferably of the telescopic jib (3) and/or dynamically in each sampling cycle of a, preferably mobile, control and/or regulating apparatus (10), wherein it is preferably provided that the quality class and/or the quality value

- of the first virtual extension length (7) and/or of the at least one further virtual extension length (9) is adjusted in dependence on at least one of the following criteria: an operating position of the telescopic jib (3), a possibly present weighting, a history of a hoist movement, a duration of a telescoping movement, further hoist movements, operating parameters of the hoist (5), and/or
- of the extension length (1) is adjusted in dependence on, preferably the quality class and/or the quality value of, the first virtual extension length (7) and/or on, preferably the quality class and/or the quality value of, the at least one further virtual extension length (9).

7. The method according to one of the preceding claims, wherein at least one margin of error, preferably taking into consideration a possibly present weighting, is determined and/or calculated for the first virtual extension length (7), the at least one further virtual extension length (9) and/or the extension length (1).

8. The method according to one of the preceding claims, wherein the first virtual extension length (7), the at least one further virtual extension length (9) and/or the extension length (1), preferably together with at least one possibly present margin of error, are visualized via a visualization device (11).

9. The method according to one of the preceding claims, wherein the first virtual extension length (7), the at least one further virtual extension length (9) and/or the extension length (1) is determined and/or calculated in a substantially time-continuous or time-discrete manner.

10. The method according to one of the preceding claims, wherein in no working cycle of the hoist (5) and/or at no time is the extension length (1) determined and/or calculated exclusively via the first virtual extension length (7).

11. The method according to one of the preceding claims, wherein the first virtual extension length (7), the at least one further virtual extension length (9) and/or the extension length (1) is determined and/or calculated taking into consideration at least one additional parameter, preferably at least one of the following additional parameters: a telescopic jib geometry, a hoist geometry, an operating position of the telescopic jib (3),

a load mass arranged on the telescopic jib (3), an operating parameter of the hoist (5), a history of a hoist movement, a current hoist movement, operating states of hydraulic consumers of the hoist (5), a duration of a telescoping movement.

12. The method according to one of the preceding claims, wherein the at least one telescopic push arm (2) comprises a hydraulic drive unit (12) with at least one diaphragm (13), wherein the at least one diaphragm (13) comprises a plurality of diaphragm positions for controlling a hydraulic oil flow in the hydraulic drive unit (12), wherein the at least one parameter in the form of a current diaphragm position is ascertained by the at least one first or the at least one further sensor (6, 8), wherein a volumetric flow rate in the hydraulic drive unit (12) is deduced using the at least one parameter, preferably via a physical model.

13. The method according to one of the preceding claims, wherein the at least one telescopic push arm (2) comprises a hydraulic drive unit (12) with at least one position-dependent diaphragm (13), wherein a flow of hydraulic oil in the hydraulic drive unit (12) can be controlled via the at least one diaphragm (13), wherein the at least one parameter in the form of a position of the at least one diaphragm (13) and/or a pressure difference at the at least one diaphragm (13) is ascertained by the at least one first or the at least one further sensor (6, 8), wherein a volumetric flow rate in the hydraulic drive unit (12) is deduced using the at least one parameter, preferably via a physical model.

14. The method according to one of the preceding claims, wherein the at least one telescopic push arm (2) comprises a hydraulic drive unit (12) with a hydraulic oil tank (14) for supplying hydraulic oil to the hydraulic drive unit (12), wherein the at least one parameter in the form of a fill level of the hydraulic oil tank (14) is ascertained by the at least one first or the at least one further sensor (6, 8), wherein it is preferably provided that further hydraulic drive units (12) connected to the hydraulic oil tank (14) are taken into consideration, preferably via a physical model.

15. The method according to one of the preceding claims, wherein the at least one telescopic push arm (2) comprises a hydraulic drive unit (12) with a piston cylinder unit (15), wherein the at least one parameter in the form of a natural frequency of the at least one telescopic push arm (2) and/or of the telescopic jib (3) is ascertained on the piston cylinder unit (15), preferably via a physical model, by the at least one first or the at least one further sensor (6, 8).

16. The method according to one of the preceding claims, wherein the at least one telescopic push arm (2) comprises a hydraulic drive unit (12) with a piston cylinder unit (15), wherein the at least one parameter in the form of an oscillation amplitude of the at least one telescopic push arm (2) and/or of the telescopic jib (3) is ascertained on the piston cylinder unit (15), preferably via a physical model, by the at least one first or the at least one further sensor (6, 8).

17. The method according to one of the preceding claims, wherein the at least one telescopic push arm (2) comprises

a hydraulic drive unit (12) with a piston cylinder unit (15), wherein the at least one parameter in the form of an extreme value of a pressure in the piston cylinder unit (15) is ascertained by the at least one first or the at least one further sensor (6, 8), preferably via a physical model.

18. The method according to one of the preceding claims, wherein the at least one parameter in the form of a lifting moment is ascertained by the at least one first or the at least one further sensor (6, 8), preferably via a physical model.

19. The method according to one of the preceding claims, wherein the at least one telescopic push arm (2) comprises a cable guide roller (16), wherein the at least one parameter in the form of a rotational speed of the cable guide roller (16) is ascertained by the at least one first or the at least one further sensor (6, 8).

20. The method according to one of the preceding claims, wherein at least one, preferably precisely one, virtual extension length (7, 9) is chosen from a plurality of virtual extension lengths (7, 9) manually or automatically, preferably by virtue of a history of at least one virtual extension length (7, 9), and is used as the first virtual extension length (7) or as the at least one further virtual extension length (9).

21. The method according to claim 20, wherein the first virtual extension length (7) and/or the at least one further virtual extension length (9) is weighted and the chosen virtual extension length (7, 9) is the one with the highest weighting, and/or the first virtual extension length (7)

and/or the at least one further virtual extension length (9) is classified into quality classes and/or by a quality value and the chosen virtual extension length (7, 9) is the one with the highest quality class and/or highest quality value.

22. The method according to one of the preceding claims, wherein a plurality of virtual extension lengths (7, 9), preferably for minimizing a possibly present margin of error, are combined to ascertain the extension length (1), wherein it is preferably provided that the first virtual extension length (7) and/or the at least one further virtual extension length (9) is weighted and the plurality of virtual extension lengths (7, 9) are combined taking into account the respective weighting, and/or the first virtual extension length (7) and/or the at least one further virtual extension length (9) is classified into quality classes and/or by a quality value and the plurality of virtual extension lengths (7, 9) are combined taking into account the respective quality class and/or quality value.

23. The method according to one of the preceding claims, wherein at least one reference value of an extension length (1), preferably of a known extension length (1) and/or of an extension length (1) ascertained indirectly or directly by an additional sensor (17), is provided, with which the at least one first virtual extension length (7), the at least one further virtual extension length (9) and/or the extension length (1) is replaced by the at least one reference value or brought closer to the at least one reference value, preferably in a time-discrete or time-continuous manner, wherein it is preferably provided that the at least one reference value is given by an end

position of the at least one telescopic push arm (2) and/or of the telescopic jib (3).

24. The method according to claim 23, wherein the at least one reference value is present in the form of a virtual extension length (7, 9), wherein the virtual extension length (7, 9) is ascertained in a time-discrete manner by the at least one first sensor (6) or the at least one further sensor (8).

25. The method according to one of the preceding claims, wherein the at least one first virtual extension length (7) is ascertained in a time-discrete manner and the at least one further virtual extension length (9) is ascertained in a time-continuous manner, or vice versa, wherein a difference between the two virtual extension lengths (7, 9) is calculated, preferably in a time-continuous or time-discrete manner, and is stored in a buffer of a control and/or regulating apparatus (10).

26. The method according to claim 25, wherein
    - the difference is weighted, preferably via possibly present quality classes, quality values and/or weightings of the two virtual extension lengths (7, 9), and/or
    - the virtual extension length (7, 9) ascertained in a time-continuous and/or time-discrete manner is corrected by the buffer or a part of the buffer, preferably taking into consideration limiting parameters and/or the buffer.

27. The method according to one of the preceding claims, wherein the extension length (1) of a part of the telescopic jib (3) or the extension length (1) of the

telescopic jib (3) is determined and/or ascertained using the extension length (1) of at least one telescopic push arm (2).

28. A computer program product comprising commands which, when executed by a computing unit (18), prompt the latter to perform a method according to at least one of the preceding claims from a storage unit (19) which is in or can be brought into data connection with the computing unit (18).

29. A hoist (5) comprising

- at least one telescopic push arm (2) and/or at least one telescopic jib (3),
- at least one first sensor (6), which is different from a possibly present direct extension length sensor,
- possibly at least one further sensor (8), which is different from a possibly present direct extension length sensor, and
- at least one control and/or regulating apparatus (10),

characterized in that the control and/or regulating apparatus (10) is formed to carry out a method according to at least one of claims 1 to 27.

30. The hoist (5) according to claim 29, wherein at least one storage unit (19) is provided, which is in or can be brought into data connection with the at least one control and/or regulating apparatus (10), wherein at least one algorithm for, preferably time-discrete or time-continuous, determination and/or calculation of an extension length (1) via at least one first virtual extension length (7) and at least one further virtual extension length (9) is stored in the at least one storage unit (19), wherein it is preferably provided that

- the at least one first virtual extension length (7), the at least one further virtual extension length (9) and/or the extension length (1) can be provided with a quality class, a quality value and/or a weighting by the algorithm, and/or
- a buffer can be filled by the algorithm via a difference of the at least one first virtual extension length (7) and the at least one further virtual extension length (9), wherein the extension length (1) and/or a time-continuous virtual extension length (7, 9) can be adjusted via the buffer using reference values or time-discrete virtual extension lengths (7, 9), and/or
- at least one visualization device (11) is provided, via which the at least one first virtual extension length (7), the at least one further virtual extension length (9) and/or the extension length (1) can be visualized.