

LOCKING DEVICE FOR A TELESCOPIC STEM OF A TROLLEY

The present invention relates to a locking device for a telescopic stem with handle, for a trolley, and especially a children's trolley such as described in Norwegian patent
5 315230. The trolley comprises a central stem wherein a seat or another module may be height adjusted along the stem, and the height of the handle may be regulated in that the stem may be lengthened telescopically.

Background of the invention

10 It is proposed in the above mentioned patent that the central stem of the trolley can be lengthened in that the stem consists of two parts, wherein the upper part may, for example, be moved within the lower part. In order to lock the stem parts in relation to each other, a locking sleeve
15 may for example be used at the transition between the parts.

The disadvantage of this solution is that the area around the transition is not easily accessible, since modules such as a children's seat which may be height adjusted all
20 the way up to just under the transition, hinder access to the lock.

A telescopic handle is known from US 4,302,029 on a golf trolley, wherein the inner and outer stems glide into each other and are locked by a locking pin, which penetrates
25 both stems in the upper part of the outer stem.

There therefore exists a need for a locking device which may be remotely controlled from a more accessible area on the trolley.

Object of the invention

The object of the invention is to provide a solution for the remote control of a telescopic stem on a trolley, especially a children's trolley.

5 Detailed description of the invention

The above objects are achieved by a remote controlled locking device wherein the stem comprises an inner stem (1) connected to a handle (1a) and an outer stem (2), wherein the inner stem can glide inside the outer stem, wherein a
10 blocking element is present which locks movement of the inner stem (1) in relation to the outer stem (2), characterised in that a friction element (3) is placed in the outer stem (2) and that the inner stem (1) is equipped with the blocking element (4) grasping into the friction
15 element (3) and locking the movement of the inner stem (1) in relation to the outer stem (2), in that the blocking element (4) is pressed against the friction element (3) of housing (5) with a conical groove (6) linked to a rod (7) stretching from the housing (5) to the upper end of the
20 inner stem (1) and connected to a handle (8) which actuate the position of the house (5).

Description of the figures

Figure 1 depicts a perspective view of a trolley as described over.

25 Figure 2 is a section of the stem of the trolley in Figure 1.

Figure 3 depicts an enlargement of the marked area in Figure 2.

Preferred embodiment

The present invention is achieved by an inner stem 1 and an outer stem 2 wherein the inner stem 1 may glide into the outer stem 2 as shown in Figure 1. The stems preferably
5 have about the same cross sectional shape in order to hinder slack between the stems. A sleeve 20 prevents dirt and particles from entering between the stems as shown in Figure 2.

The outer stem 2 is equipped with a friction element 3, as
10 shown in greater detail in Figure 3. The friction element 3 stretches over a large portion of the length of the outer stem 2. The inner stem 1 is equipped with a corresponding blocking element 4 which may lock into the friction element 3 and lock the movement of the inner stem 1 in relation to
15 the outer stem 2. In this embodiment the friction element 3 is arranged on an inner area of the outer stem 2 and the blocking element 4 is arranged on the lower end of the inner stem 1, opposite the friction element 3.

The blocking element 4 presses against the friction element
20 3, achieved by that spring-loaded housing with a cocked or conical area or track 6 contained within, is pressed against the blocking element 4. The housing 5 is linked to a rod 7 which extends from the lower end of the inner stem 1 to the upper end of the inner stem 1, where the rod is
25 linked to a handle 8, which tilts around an axis and is used to adjust the positioning of the housing.

In Figures 2 and 3, the house 5 is in the lower position such that the inner stem 1 may move up or down in the outer stem 2, by releasing the blocking element 4 in relation to
30 the friction element 3. The handle 8 is then in an elevated position, pressing the rod downwards in the lower position against the spring loading, provided by a spring 9, straining the housing 5 up from the end of the inner stem 1. When the handle 8 is pushed downward, the rod 7 is

thereby pulled up and the house 5 presses the blocking element 4 into the friction element 3 and locking the movement of the inner stem 1 in relation to the outer stem 2.

- 5 As shown in Figure 2, the end of the inner stem may move freely between an upper position limited by a sleeve 20, on the outer part of the upper end of the stem 2, and a lower position limited by an inner clamp 21 on the inside of the outer stem 2.

P a t e n t c l a i m s

1. Locking device for a telescopic stem for a trolley, wherein the stem comprises an inner stem (1) connected to a handle (1a), which may glide within an outer stem (2), a
5 handle (8) at the upper end of the inner stem (1) for controlling the locking of the inner stem (1) in relation to the outer stem (2), the handle (8) connected to a rod (7) running through the inner stem (1),
characterised in that a toothed friction element (3) is
10 arranged in the outer stem (2) and that the inner stem (1) is equipped with a toothed blocking element (4) locking into the friction element (3) and preventing movement of the inner stem (1) in relation to the outer stem (2) when the blocking element (4) is pressed into the toothed
15 friction element (3) by a conical groove (6) of a housing (5) connected to the rod (7) influencing the position of the housing (5).
2. Locking device according to claim 1,
characterised in that the friction element (3) is arranged
20 on an inner area of the outer stem (2).
3. Locking device according to any of the claims 1-2,
characterised in that the a blocking element (4) is arranged on the lower side of the stem (1), opposite the friction element (3).
- 25 4. Locking device according to any of the claims 1-3,
characterised in that the housing (5) and/or the blocking element (4) is spring-loaded by a spring (9), automatically affecting locking by the friction element (3).