Claims

1. Guiding device (1) for a sliding element (10), such as a sliding door provided with a door leaf (11), with which a room opening (9) of a building part (90) can be closed at least approximately tightly, with a running rail (4) having a longitudinal axis (x), and with at least one carriage (3) guided along a running rail (4) with a carriage body (33) that is connected to a coupling device (2) that is coupled or can be coupled with the sliding element (10), **characterised in that** the running rail (4) comprises a first and a second track (41, 42) that run in parallel and that are inclined towards one another and that the carriage body (33) holds first and second running elements (31; 32) that are inclined towards one another and that are supported by the corresponding first or second track (41; 42), whereby at least one of said first and second tracks (41, 42) comprises a first track section (411; 421) running in parallel to the longitudinal axis (x) and a second track section (412; 422), along which the carriage (3) can be driven into a terminal position, running inclined to the longitudinal axis (x).

2. Guiding device (1) according to claim 1, **characterised in that** the running rail (4), above or below of the sliding element (10),

   a) is connected directly to the building part (90), or

   b) is held in a mounting profile (7), or

   c) is arranged in a building channel (910).

3. Guiding device (1) according to claim 2, **characterised in that** the carriage body (33) comprises a first wheel channel (310), in which one or two first running elements (31) are held and a second wheel channel (320), in which one or two second running elements (32) are held.

4. Guiding device (1) according to claim 3, **characterised in that** the first and second running elements (31, 32) are track rollers, that the first track rollers (31), which are aligned in parallel to the and are seated on the first track (41), are held by first shafts (331) that are extending from the carriage body (33) or that are held in the first wheel channel (310), and that the second track rollers (32), which are aligned in parallel to the and are seated on the second track (42), are held by second shafts (332) that are extending from the carriage body (33) or that are held in the second wheel channel (320).

5. Guiding device (1) according to one of the claims 1 - 4, **characterised in that** the carriage body (33) and the coupling device (2) are pivotally connected with one another and that the coupling device (2), that is arranged below or above of the carriage body (33), is coupled pivotally or firmly with a fitting (6) that holds the sliding element (10).

6. Guiding device (1) according to one of the claims 1 - 5, **characterised in that** the running rail (4) comprises at least two rail segments (4A, 4B) held by the mounting profile (7) or unitary connected with one another, which rail segments (4A, 4B) are provided each with the first track (41) and the second track (42) and supporting each one of the carriages (3A, 3B).

7. Guiding device (1) according to claim 6, **characterised in that** the first and second track are directed towards the ceiling and that the first track (41) is inclined relative to the vertical line (s) with an angle in the range of 22.5° - 90° or that the first and the second track (41, 42) of the running rail (4) enclose an angle of at least approximately 90°.

8. Guiding device (1) according to one claim 6 or 7, **characterised in that** the running rail (4) or the rail segments (4A, 4B) comprises a common first track (41A, 41B) and an individual second track (42A, 42B) for each of the carriages (3A, 3B), which second tracks (42A, 42B) are arranged side by side or behind one another.

9. Guiding device (1) according to one of the claims 1 - 8, **characterised in that** the inclination of the second track section (412) versus the first track section (411) of the first track (41) and/or the inclination of the second track section (422) versus the first track section (421) of the second track (42) are selected in such a way, that the sliding element (10), within a closing path (Sxc) that corresponds to the length of the second track section (422), traverses on the one hand a distance (Sy) between the front side of the sliding element (10) and the frame (911) of the room opening (9) and on the other hand a distance (Sz) between the lower side of the sliding element (10) and the floor (92) bordering the room opening (9).

10. Guiding device (1) according to one of the claims 1 - 9, **characterised in that** a guide rail (6) is provided on the side of the sliding element (10) that is opposite to the side of the sliding element (10) where the running rail (4) is installed, which guide rail (6) slidably holds at

least one guide carriage (5, 5A, 5B) that is connected to the sliding element (10) and which guide rail (6) comprises a first guide segment (61) that runs in parallel to the first track section (411; 421) of the running rail (4) and a second guide segment (62) that runs at least approximately in parallel to the second track section (412; 422) of the running rail (4).

11. Guiding device (1) according to one of the claims 1 - 10, **characterised in that** the front side (111) of the sliding element (10) facing the room opening (9) or the edge (91, 93) of the room opening (9) is provided at least partially with a sealing gasket (12), which in the closing position of the sliding element (10) is held between the sliding element (10) and the edge (91) of the room opening (9) or a limiting strip (93).

12. Guiding device (1) according to claim 11, **characterised in that** the sealing gasket (12) consists of one or a plurality segments or that the sealing gasket (12) forms a closed loop.

13. Carriage (3) for a guiding device (1) according to one of the claims 1 - 12, with a running rail (4) comprising a first and a second track (41, 42), which are running in parallel and inclined towards one another, **characterised in that** and that the carriage (3) comprises at least one first running element (31), such as a track roller, that corresponds to the first track (41) and that the carriage (3) comprises at least one second running element (32), such as a track roller, that corresponds to the second track (42).

14. Running rail (4) for a guiding device (1) according to one of the claims 1 - 12, **characterised in that** the

running rail (4) comprises a first and a second track (41, 42), that run in parallel and inclined towards one another, and with at least one of the first or second track (41, 42) comprising a first track section (411; 421) running in parallel to the longitudinal axis (x) and, on at least one end of the running rail (4), a second track section (412; 422) running inclined to the longitudinal axis (x).

15. Running rail (4) according to claim 14, **characterised in that** at least two rail segments (4A, 4B) are provided behind one another or side by side, that comprise each a second track (42A, 42B) and that comprise a common first track (41) or separate first tracks (41) each.

Claims

1. Guiding device (1) for a sliding element (10), such as a sliding door provided with a door leaf (11), with which a room opening (9) of a building part (90) can be closed at least approximately tightly, with a running rail (4) having a longitudinal axis (x), and with at least two carriages (3A, 3B) guided along a running rail (4), each having a carriage body (33) that is connected to a coupling device (2) that is coupled or can be coupled with the sliding element (10),

wherein the running rail (4) comprises at least two rail segments (4A, 4B) arranged one behind the other and supporting each one of the carriages (3A, 3B);

wherein each rail segment (4A, 4B) comprises an angular part with a first track (41) on one side of the angular part and a second track (41, 42) on the other side of the angular part, which first and a second track (41, 42) run in parallel and that are inclined towards one another;

wherein each carriage body (33) holds at least two first and at least two second running elements (31; 32) that are inclined towards one another and that are supported by the corresponding first or second track (41; 42) and between which the angular part of the corresponding rail segment (4A, 4B) is held below the carriage (3A or 3B),

whereby at least one of said first and second tracks (41, 42) comprises a first track section (411; 421) running in parallel to the longitudinal axis (x) and a second track

section (412; 422), along which the carriage (3) can be driven into a terminal position, running inclined to the longitudinal axis (x);

wherein each carriage body (33) comprises on one side a wing element (331) with a pivot (25), which pivotally holds the coupling device (2), and

wherein the coupling device (2) is holding a connecting element (23), on which the sliding element (10) can be mounted, below the carriage (3A, 3B).

2. Guiding device (1) according to claim 1, **characterised in that** the running rail (4), above or below of the sliding element (10),

a) is connected directly to the building part (90), or

b) is held in a mounting profile (7), or

c) is arranged in a building channel (910).

3. Guiding device (1) according to claim 2, **characterised in that** the carriage body (33) comprises a first wheel channel (310), in which one or two first running elements (31) are held and a second wheel channel (320), in which one or two second running elements (32) are held.

4. Guiding device (1) according to claim 3, **characterised in that** the first and second running elements (31, 32) are track rollers, that the first track rollers (31), which are aligned in parallel to the and are seated on the first track (41), are held by first shafts (331) that are extending from the carriage body (33) or that are held in the first wheel channel (310), and that the second track

rollers (32), which are aligned in parallel to the and are seated on the second track (42), are held by second shafts (332) that are extending from the carriage body (33) or that are held in the second wheel channel (320).

5. Guiding device (1) according to one of the claims 1 - 4, **characterised in that** the coupling device (2) is arranged below or above of the carriage body (33).

6. Guiding device (1) according to one of the claims 1 - 5, **characterised in that** the at least two rail segments (4A, 4B) are held by the mounting profile (7) or are unitary connected with one another.

7. Guiding device (1) according to claim 6, **characterised in that** the first and second track are directed towards the ceiling and that the first track (41) is inclined relative to the vertical line (s) with an angle in the range of 22.5° - 90° or that the first and the second track (41, 42) of the running rail (4) enclose an angle of at least approximately 90°.

8. Guiding device (1) according to one claim 6 or 7, **characterised in that** the running rail (4) or the rail segments (4A, 4B) comprises a common first track (41A, 41B) and an individual second track (42A, 42B) for each of the carriages (3A, 3B), which second tracks (42A, 42B) are arranged side by side or behind one another.

9. Guiding device (1) according to one of the claims 1 - 8, **characterised in that** the inclination of the second track section (412) versus the first track section (411) of the first track (41) and/or the inclination of the second track section (422) versus the first track section (421)

of the second track (42) are selected in such a way, that the sliding element (10), within a closing path (Sxc) that corresponds to the length of the second track section (422), traverses on the one hand a distance (Sy) between the front side of the sliding element (10) and the frame (911) of the room opening (9) and on the other hand a distance (Sz) between the lower side of the sliding element (10) and the floor (92) bordering the room opening (9).

10. Guiding device (1) according to one of the claims 1 - 9, **characterised in that** a guide rail (6) is provided on the side of the sliding element (10) that is opposite to the side of the sliding element (10) where the running rail (4) is installed, which guide rail (6) slidably holds at least one guide carriage (5, 5A, 5B) that is connected to the sliding element (10) and which guide rail (6) comprises a first guide segment (61) that runs in parallel to the first track section (411; 421) of the running rail (4) and a second guide segment (62) that runs at least approximately in parallel to the second track section (412; 422) of the running rail (4).

11. Guiding device (1) according to one of the claims 1 - 10, **characterised in that** the front side (111) of the sliding element (10) facing the room opening (9) or the edge (91, 93) of the room opening (9) is provided at least partially with a sealing gasket (12), which in the closing position of the sliding element (10) is held between the sliding element (10) and the edge (91) of the room opening (9) or a limiting strip (93).

12. Guiding device (1) according to claim 11, **characterised in that** the sealing gasket (12) consists of one or a plurality segments or that the sealing gasket (12) forms a closed loop.