longitudinal-edge arrangement one after another. Each of the at least two primary slats includes an elongated primary-slat-body having a longitudinal axis. The elongated primary-slat-body is integrally formed with a first interlockable longitudinal edge portion and a second interlockable longitudinal edge portion. The first interlockable longitudinal edge portion and the second interlockable longitudinal edge portion of the elongated primary-slat-body are opposite each other on opposite sides of the longitudinal axis of the elongated primary-slat-body. The first interlockable longitudinal edge portion of the elongated primary-slat-body of a first primary slat of the at least two primary slats is pivotally interlocked with the second interlockable longitudinal edge portion of the elongated primary-slat-body of a second primary slat of the at least two primary slats to form a pivotable joint between the at least two primary slats. A pivot axis of the pivotable joint is parallel to the longitudinal axis of the elongated primary-slat-body. The shutter curtain further including at least two secondary slats unconnected from each other, and at least two thermal insulating units respectively connected between the at least two primary slats and the at least two secondary slats to hold apart each of the at least two primary slats and a corresponding one of the at least two secondary slats in a manner so as to thermally separate said primary slat from said secondary slat.

[0006] According to various embodiments, there is provided a roller shutter. The roller shutter including a drum and the shutter curtain as described herein, wherein the shutter curtain is attached to the drum in a manner so as to be capable of being rolled on and off the drum when the drum is being rotated.

Brief description of the drawings

[0007] In the drawings, like reference characters generally refer to the same parts throughout the different views. The drawings are not necessarily to scale, emphasis instead generally being placed upon illustrating the principles of the invention. In the following description, various embodiments are described with reference to the following drawings, in which:

FIG. 1A shows a shows a shutter curtain according to various embodiments;

FIG. 1B shows two links of the shutter curtain of FIG. 1A pivoted with respect to each other according to various embodiments;

FIG. 1C shows a disassembled view of a link of the shutter curtain of FIG. 1A according to various embodiments;

FIG. 1D shows an assembled view of a link of the shutter curtain of FIG. 1A according to various embodiments;

FIG. 1E shows a front view of the link of FIG. 1D according to various embodiments;

FIG. 2 shows a roller shutter with the shutter curtain of FIG. 1A according to various embodiments;

FIG. 3A shows a shows a shutter curtain according to various embodiments;

FIG. 3B shows two links of the shutter curtain of FIG. 3A pivoted with respect to each other according to various embodiments;

FIG. 3C shows a disassembled view of a link of the shutter curtain of FIG. 3A according to various embodiments;

FIG. 3D shows an assembled view of a link of the shutter curtain of FIG. 3A according to various embodiments;

FIG. 3E shows a front view of the link of FIG. 3D according to various embodiments;

FIG. 3F shows a disassembled view of a primary-slat-support-frame, a secondary-slat-support-frame and a thermal insulating unit of the shutter curtain of FIG. 3A according to various embodiments;

FIG. 3G shows an assembled view of the primary-slat-support-frame, the secondary-slat-support-frame and the thermal insulating unit of FIG. 3F according to various embodiments

FIG. 4 shows a roller shutter with the shutter curtain of FIG. 3A according to various embodiments;

FIG. 5A shows a shutter curtain according to various embodiments;

FIG. 5B shows two links of the shutter curtain of FIG. 5A pivoted with respect to each other according to various embodiments;

FIG. 5C shows a disassembled view of a link of the shutter curtain of FIG. 5A according to various embodiments;

FIG. 5D shows an assembled view of a link of the shutter curtain of FIG. 5A according to various embodiments;

FIG. 5E shows a front view of the link of FIG. 5D according to various embodiments;

FIG. 5F shows a disassembled view of a primary-slat-support-frame, a secondary-slat-support-frame and a thermal insulating unit according to various embodiments;

FIG. 5G shows an assembled view of the primary-slat-support-frame, the secondary-slat-support-frame and the thermal insulating unit of FIG. 5F according to various embodiments

FIG. 6 shows a roller shutter with the shutter curtain of FIG. 5A according to various embodiments;

FIG. 7A shows a shutter curtain according to various embodiments;

FIG. 7B shows two links of the shutter curtain of FIG. 7A pivoted with respect to each other according to various embodiments;

FIG. 7C shows a disassembled view of a link of the shutter curtain of FIG. 7A according to various embodiments;

FIG. 7D shows an assembled view of a link of the shutter curtain of FIG. 7A according to various embodiments;

FIG. 7E shows a front view of the link of FIG. 7D according to various embodiments;

FIG. 7F shows a disassembled view of a primary-slat-support-frame, a secondary-slat-support-frame and a thermal insulating unit according to various embodiments;

FIG. 7G shows an assembled view of the primary-slat-support-frame, the secondary-slat-support-frame and the thermal insulating unit of FIG. 7F according to various embodiments; and

FIG. 8 shows a roller shutter with the shutter curtain of FIG. 7A according to various embodiments.

Detailed description

[0008] Embodiments described below in the context of the apparatus are analogously valid for the respective methods, and vice versa. Furthermore, it will be understood that the embodiments described below may be combined, for example, a part of one embodiment may be combined with a part of another embodiment.

[0009] It should be understood that the terms “on”, “over”, “top”, “bottom”, “down”, “side”, “back”, “left”, “right”, “front”, “lateral”, “side”, “up”, “down” etc., when used in the following description are used for convenience and to aid understanding of relative positions or directions, and not intended to limit the orientation of any device, or structure or any part of any device or structure. In addition, the singular terms “a”, “an”, and “the” include plural references unless context clearly indicates otherwise. Similarly, the word “or” is intended to include “and” unless the context clearly indicates otherwise.

[00010] Various embodiments generally relate to a shutter curtain. In particular, various embodiments generally relate to a shutter curtain for insulating heat. Various embodiments also relate to a roller shutter including the shutter curtain of the various embodiments.

[00011] According to various embodiments, the shutter curtain may include a first set of interconnected slats (or primary slats) which may be pivotably connected one after another. The shutter curtain may include a second set of unconnected slats (or secondary slats) which may be independent and not joined to each other. Each unconnected slat may be held apart from a corresponding slat of the first set of interconnected slats in a manner so as to be thermally insulated from the corresponding slat. The term “thermally insulated” used in the following description generally refers to reduction in thermal conduction, for example by creating a thermal break or thermal barrier, as well as preventing thermal conduction, for example via thermal isolation or thermal separation. According to various embodiments, a