The invention relates to a ski transport device (1) for transporting skis, having at least one ski holder (10) for accommodating a ski end (901) of a single ski (90) or of a pair of skis (90). Each ski (90) is oriented in the ski holder (10) approximately vertically in the ski longitudinal direction (R). The ski holder (10) has two retaining walls (101) which converge downwardly and together form an acute angle α. The ski holder (10) has a fixation element (20) situated at or above upper ends (1010) of the retaining walls (101), having fixation points (201) for engaging at various cross-sectional points (902) of the ski (90) or the pair of skis (90).
SKI TRANSPORT DEVICE

[0001] The present invention relates to a ski transport device according to the preamble of independent Claim 1.

[0002] Stands for skis, snowboards, etc. are known from the prior art. Thus, skis are hung on forked hooks, for example on walls of buildings. Other stands or ski holders have a frame or retaining element which is designed with at least one opening for accommodating skis or their ends. In both cases, skis may be stored on a short-term or long-term basis in an approximately vertical direction in a space-saving manner. These types of stands are used in particular in sporting goods stores, warehouses, or ski locker rooms.

[0003] A stand for skis, snowboards, or the like is known from patent specification EP 1 083 974 B1, in which a retaining body is designed as a frame which has a plurality of strip-like, elastically bendable retaining elements which are aligned parallel to one another, and which may be elastically bent aside by inserting the objects, the width of the retaining elements being substantially smaller than the width of the skis or snowboards to be inserted.

[0004] One of the disadvantages of this stand is that it is provided for stationary use, for example in a ski locker room or changing room. Individual skis or pairs of skis are stabilized by the plurality of retaining elements situated at a distance from one another. Due to the flexibility of the retaining elements, which are narrower than the width, an impact to the held ski or an impact to the frame of the device would result in lateral tilting of the ski.

[0005] The object of the present invention, therefore, is to propose a modular ski transport device which does not have the disadvantages of the prior art. In particular, the ski transport device is intended to stabilize skis to be transported in order to ensure efficient and safe transport of the objects. For the simultaneous transport of persons and objects, the aim is to exclude hazards to persons to the greatest extent possible, in that skis are secured by the ski transport device. In addition, the aim is to prevent interfering noise generation on account of the skis to be transported.

[0006] The object is achieved in particular by a ski transport device for transporting skis, having at least one ski holder for accommodating a ski end of a single ski or of a pair of skis, each ski being oriented in the ski holder approximately vertically in the ski longitudinal direction, and the ski holder including two retaining walls which converge downwardly and together form an acute angle α. The acute angle α is preferably between 15 and 45 degrees, particularly preferably between 20 and 40 degrees. An angle α of essentially 25 degrees is very particularly preferred.

[0007] One of the advantages of the invention is that when a ski to be transported is inserted into the ski holder, it is held and fixed in the ski holder, preferably in the vertical orientation, by its own weight. Another advantage of the invention is that movable means for fastening or fixing a ski may be dispensed with. The elastic property of the ski of being twistable in its longitudinal direction is utilized for stabilizing the ski in the ski holder. Due to its small overall height, the ski transport device according to the invention is particularly suited for flat installation in cableway cabins. The transport capacity of a cableway system may thus be increased, since the loading and unloading time in a cableway station is shorter compared to cableway cabins having externally mounted ski holders. A ski transport device may be assembled from one or a plurality of ski holders, and forms a modular system. Depending on the spatial conditions in the interior of a cableway cabin, for example, individual ski holders may be optimally situated, for example on a straight line between seat benches of the cabin, on a circular arc around a pillar of the cabin, or close to a window or in the respective corners of a cabin.

[0008] Another advantage of the invention is that the individual ski holders of the ski transport device are composed of component parts which are screwed, glued, riveted, welded, or otherwise joined to one another in such a way that none of the component parts is loose, thus minimizing or preventing noise generation during transport. Noise could arise from loose or movable parts, for example, when the cabin which is suspended by a cable pole on a cable travels over the cable pulleys. However, this is prevented by the described fixed connection of component parts of the ski holder to a ski holder adjacent to same, or, for example, to a frame part of the ski transport device.

[0009] In one embodiment variant of the invention, the ski holder has a fixation element, situated at or above the upper ends of the retaining walls, having fixation points for engaging at various cross-sectional points of the ski or the pair of skis.

[0010] One of the advantages of the invention is that the fixation element is able to stabilize the ski, accommodated by the ski holder, with respect to lateral motions of the ski. The fixation element preferably engages at two fixation points on the cross section of the ski. The ski is thus stabilized for transport, in both the vertical and horizontal directions of motion.

[0011] In another embodiment variant of the invention, the fixation element is designed with fixation points for engaging at the cross-sectional points situated approximately diagonally opposite one another.

[0012] One of the advantages of the invention is that, due to the special design of the fixation element, the fixation points come to rest at the cross-sectional points on the ski which are typically the farthest distance apart. The force is greatest upon engagement of the fixation element with the ski or the pair of skis.

[0013] In another embodiment variant of the invention, the fixation element has a deformable design in order to fix the, or each, ski by means of static friction.

[0014] One of the advantages of the invention is that the lateral fixation is optimized by a deformable fixation element. When the ski is inserted into the ski holder, the ski is arrested or locked by a slight lateral twisting of the ski at the fixation points of the fixation element, which increases the stabilization during transport.

[0015] Embodiment variants of the present invention are described below with reference to examples. The examples of the embodiments are illustrated by the following appended figures:

[0016] FIG. 1 shows an exploded illustration of the ski transport device according to the invention, having a ski holder and two partially cutaway additional ski holders;

[0017] FIGS. 2a, 2b, and 2c show a ski transport device in a side view, a front view, and a top view, respectively;

[0018] FIG. 3 shows a cableway cabin in a simplified three-dimensional illustration with a ski transport device installed in the floor of the cableway cabin; and

[0019] FIGS. 4a, 4b, and 4c show the cableway cabin together with the ski transport device in a side view, a front view, and a top view, respectively.
FIG. 1 illustrates a design according to the invention of a ski transport device 1 for transporting skis, having at least one ski holder 10 for accommodating a ski end 901 of a single ski 90 or a pair of skis 90, each ski 90 being oriented in the ski holder 10 approximately vertically in the ski longitudinal direction R.

The ski holder 10 has two retaining walls 101 which converge downwardly and together form an acute angle α. The converging retaining walls 101 may be designed in such a way that they contact one another at the bottom. In the present case, the retaining walls 101 and side walls 102 are formed as a single piece. In a single-piece configuration, the ski holder 10 may be made of, for example, a sheet of steel, aluminum, or the like. Stainless sheet steel is preferably used. The ski holder 10 may also be made of fiber composites. The retaining wall 101 preferably has a flat design, or may also be corrugated or rippled. It is important that there are contact points with the end 901 of the ski 90.

Due to the funnel-like design of the ski holder 10, the ski or a pair of skis 90 is held in the ski holder by the inherent weight of each ski 90. Twisting of the ski 90 in the ski holder is prevented by the retaining walls 101 which increasingly converge in the downward direction. In the horizontal section, the retaining walls 101 in each case extend substantially in parallel. The design of the ski holder 10 may also be understood as a V-shaped or wedge-shaped hollow body having an essentially rectangular cross-sectional area. The downwardly decreasing cross-sectional area is preferably rectangular at all points, but may have an oval, circular, or polygonal design, at least in places.

The ski holder 10 also has a fixation element 20 situated at or above upper ends 1010 of the retaining walls 101. The fixation element 20 preferably engages at two different cross-sectional points 902 of the ski 90 or of the pair of skis 90, thus stabilizing and fixing each ski 90 during transport, in both the horizontal and the vertical directions of motion.

The fixation element is preferably made of a thermoplastic. The fixation element preferably has sawtooth-like projections in the area of the fixation points 201. The fixation element 20 is rubberized, at least in places, preferably in the area of the fixation points 201.

It is apparent from FIG. 1 that the ski holder 10 and the fixation element 20 are connected to one another, for example, by screws, rivets, etc.

The fixation element 20 may also be connected to the ski holder 10 by an ultrasonic weld joint. The ski transport device 1 also preferably has a cover and a floor, i.e., a shell or a tray, respectively, for encasing the ski holder 10 and the fixation element 20.

The ski transport device 1 may include one or more ski holders 10, having a fixation element 20. Multiple ski holders 10 are situated along a straight and/or curved positioning line. Thus, multiple ski holders 10 may be situated in a cableway cabin, for example, in the area of a center post, around same. Reference numerals 103, 104, and 105 denote frame parts or connecting parts. Each of these parts is designed for one or more ski holders as necessary, so that the ski transport device has a modular configuration. Retaining walls and side walls of the ski holder 10 are fixedly connectable to the particular frame parts 103, 104, and 105, so that no loose walls or parts are present that would contribute to interfering noise generation.

FIGS. 2a, 2b, and 2c illustrate a ski transport device 1 in a side view, a front view, and a top view, respectively.

FIG. 2a shows that the retaining wall 101 of the ski holder has multiple lateral openings at the bottom. These openings are used on the one hand for reducing the weight of the device, and on the other hand for ventilation and for drainage of melt water resulting from snow which adheres to skis.

FIG. 2c shows the downwardly converging retaining wall 101 of the ski holder 10 which define a straight bisecting line G, fixation points 201 being situated on a fixation line F, and the fixation line G forming an acute angle β. This angle is between 0 and 15 degrees, for example, depending on the turning capability of a ski or pair of skis. The fixation points 201 of the fixation element 20 are situated approximately diagonally opposite one another in relation to the cross section of the ski 90.

The angle γ relates to the configuration of the retaining wall 101 of a ski holder 10 with respect to the positioning line A. The angle γ is preferably between 0 and 90 degrees, particularly preferably between 30 and 60 degrees, very particularly preferably between 40 and 50 degrees.

The angle δ relates to the orientation of one, or each, retaining wall 101 of a ski holder 10 with respect to the fixation point 201 of the fixation element 20. The longitudinal axis of the fixation element 20 and the retaining wall 101 are offset relative to one another by the angle δ, resulting in wedging of the, or each, ski when the ski(s) is/are inserted. The angle δ is preferably between 20 and 40 degrees, particularly preferably between 25 and 35 degrees, very particularly preferably essentially 30 degrees.

FIG. 3 shows a cableway cabin 50 in a simplified three-dimensional illustration, with a ski transport device 1 installed in the floor 501 of the cableway cabin.

FIG. 4a, 4b, and 4c illustrate the cableway cabin 50 together with the ski transport device 1 in a side view, a front view, and a top view, respectively. The small overall height of the ski transport device 1 allows installation of same in existing cableway cabins or cableway cabins to be manufactured. The ski transport device 1 may include a protective tray or cover tray, which preferably has openings for discharging dirt, dust, or melt water from the cabin to the outside.

LIST OF REFERENCE NUMERALS

1. Ski transport device
2. Ski holder
3. Retaining wall
4. Side wall
5. End
6. Frame part, connecting part
7. Frame part, connecting part
8. Frame part, connecting part
9. Fixation element
10. Fixation point
11. Ski
12. Ski end
13. Cross-sectional point
14. Angle
15. Angle
16. Angle
17. Angle
18. Positioning line
19. Ski longitudinal direction
20. Bisecting line
21. Fixation line
1. A ski transport device for transporting skis comprising at least one ski holder for accommodating a ski end of a single ski (90) or of a pair of skis, each ski being oriented in the ski holder approximately vertically in a ski longitudinal direction (R) wherein the ski holder has two retaining walls which converge downwardly and together form an acute angle α, and the ski holder has a fixation element situated at or above upper ends of the retaining walls, having fixation points for engaging at various cross-sectional points of the ski or the pair of skis.

2. The ski transport device according to claim 1 wherein the fixation element is designed with fixation points for engaging at the cross-sectional points situated approximately diagonally opposite one another.

3. The ski transport device according to claim 1 wherein the fixation element has a deformable design in order to fix the, or each, ski by means of static friction.

4. The ski transport device according to claim 1 wherein the fixation element is made of a thermoplastic.

5. The ski transport device according to claim 1 wherein the fixation element has sawtooth-like projections in an area of the fixation points.

6. The ski transport device according to claim 1 wherein the fixation element is rubberized.

7. The ski transport device according to claim 1 wherein the downwardly converging retaining walls of the ski holder define a straight bisecting line (G), the fixation points being situated on a fixation line (F) which together with the bisecting line (G) forms an acute angle β.

8. The ski transport device according to claim 1 wherein the ski holder has two side walls for laterally stabilizing each ski (90).

9. The ski transport device according to claim 1 wherein the ski transport device has a plurality of ski holders.

10. The ski transport device according to claim 1 wherein multiple ski holders of the ski transport device are situated at a lateral distance from one another on a straight and/or curved positioning line (A).

11. The ski transport device according to claim 1 the acute angle α is preferably between 15 and 45 degrees.

12. A cableway cabin comprising a floor and a ski transport device according to claim 1 wherein the ski transport device is situated on the floor and is connected to same.

13. The cableway cabin according to claim 12 wherein the ski transport device is permanently connected to the floor.

14. A method for fixing and stabilizing an essentially perpendicularly transportable ski comprising the step of providing a ski holder of a ski transport device which accommodates the end of the ski, wherein retaining walls of the ski holder which downwardly converge at an acute angle α engage with the end of the ski, the ski being fixed and stabilized in the ski holder by its own weight.

15. The ski transport device according to claim 6 wherein the fixation element is partially rubberized in the area of the fixation points.

16. The ski transport device according to claim 11 the acute angle α is between 20 and 30 degrees.

* * * * *