Adaptive Equipment Designed and Constructed for Samantha Gillard:

Alternative Designs of Assisted Skiing Device

By

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Project for Client #14: Samantha Gillard

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Assisted Skiing Device: Alternative Design 1

Alternative design 1 for the Assisted Skiing Device has a pair of skis connected to the main frame by a rocker arm. This allows for movement and some shock absorption. The seat, which is a commercial car seat, is mounted directly to the frame using the appropriate hardware.

In order for the device to be ski lift compatible, the top portion must lift up from the bottom portion so that the user can sit on the lift in her seat while the skis hang below. Alternative design 1 makes this happen using an “X” mechanism, as detailed in Figure 5, below.

Figure 5. Alternative design 1, Assisted Skiing Device. View from back of device. Left: position of function, right: chair lift compatible, via “X” mechanism.

Assisted Skiing Device: Alternative Design 2

Alternative design 2 sits on fixed snowboard. This means that there is only one edge on the snow at a time which makes stopping slightly more difficult than alternative design 1. In this design, the chair opens up to be placed on the ski lift via a scissoring action. This can be seen in Figure 6.
Figure 6. Opening of Assisted Skiing Device via scissor action.

**Assisted Skiing Device: Alternative Design 3**

Alternative design 3 is mounted on a teleboard (monoski). This is something like a thinner version of a snowboard, or it can be thought of as a wider, single ski. This will allow for a smoother ride than a snowboard, but it will not be as stable. In this design the seat will be held in place by an imitation seatbelt made of nylon. This holds the car seat to the main frame in the way it was designed to be held in place. Safety-wise, this design takes into consideration the fact that cold weather causes plastic to become more brittle, something that could complicate mounting it with hardware (as outlined for alternative design 1).

In this design, the chair opens up to be placed on the ski lift via a “Z” action. This is best explained with a diagram, which can be seen in Figure 7.

Figure 7. Assisted Skiing Device, Alternative design 3. Left: position of function, right: chair lift compatible, via “Z” mechanism.