MAGNETIC EASY STEP IN/OUT SNOW BOARD BINDING

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ABSTRACT
This invention describes a magnetic boot binding for snowboards. The magnetic boot binding secures a person onto a snowboard by magnetically holding the person's snowboard boots onto the snowboard. The magnetic binding utilizes hard magnets, electromagnets and/or other magnetic materials imbedded into or physically attached to the snowboard and/or the boots. If an electromagnet is used it can be electronically controlled by a remote controller to apply magnetic force, apply varying amount of magnetic force, and to release the magnetic force for quick releasing.
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SUMMARY OF INVENTION

[0001] The recreational and competitive winter sport of snowboarding has become increasingly popular since its inception. The basic idea of snowboarding is to strap yourself onto a board and slide down an incline. Most of the snowboarding is performed at ski resorts which utilize a way for moving the boarders up the mountain either using a chair lift, J-bar, T-bar, rope tow, surface lifts or gondola car. For all of these lift options the snowboarder is required to detach one boot/foot from the board (usually the rear boot) so the rider can propel themselves forward to the lift by pushing with their rear foot. When the boarder has unloaded off the lift he/she must re-attach their boot to the board using the binding system. This process often requires the boarder to sit down to strap the boot in. Many boot and binding designs have been patented (over 270 U.S. patents for bindings as of the writing of this patent) and are optimized to maximize performance, comfort and ease of use. Even those bindings that are designed for quick release, U.S. Pat. No. 5,885,700, (Ross) require strapping the boot onto the board. Since this process of detaching and reattaching a boot to the board is required for each run up and down the mountain it is highly desirable to have an easy and quick binding release and attach system. It is also desirable to have the design allow the boarder to step into and out of the binding so that it can be performed while the boarder is standing up and therefore he/she does not need to sit down each time he/she needs to attach/detach one or both feet from the board.

[0002] There are two types of footwear used for snowboarding, hard boots and soft boots. Hard boots are rigid and evolved from ski boots. They include ridge portions extending from the toe and heel, which clip into plate bindings. Such plate bindings accept only boots specifically designed for them.

[0003] Soft boots are much more commonly used than hard boots because they are more comfortable than hard boots, and allow for a much wider range of motion in the ankles. The greater range of motion is an advantage because it provides for better steering and maneuvering by the snowboarder.

[0004] The binding system for the soft boots generally utilizes two adjustable straps which are tightened over the foot portion of the boot to secure the rider's boots to the board. The adjustability of the strap is usually provided by a ratcheted type mechanism to apply the desired amount of tension and holding force. To release a boot from the snowboard the snowboarder must un-strap both of the straps and then to re-secure the boot to the snowboard the rider must re-strap the boot. To accomplish this, the rider must use his/her hands and therefore usually must sit down to reach the straps.

[0005] The main advantage of snowboard binding systems for hard boots is that the boarder can attach and un-attach a boot/foot to the board in a much simpler and less time consuming way because the mechanical binding system can be described as step in and step out. This precludes the boarder from having to sit down.

[0006] The primary objective of this invention is to provide for a generic soft boot, a quick release, and easy step in step out snowboard binding that uses magnetic forces.

1. This invention describes a magnetic snowboard binding to magnetically hold a snowboard boot onto the snowboard while the boarder is boarding down the incline.
A step-in and step-out snowboard binding.
A holding means using magnets to hold boot onto snowboard.
A quick release magnetic snowboard binding.
Snowboard boots with imbedded magnets.
Snowboard boots with physically attached magnets.
Snowboards with imbedded magnets.
Snowboards with physically attached magnets.
Snowboard boots with imbedded electromagnets that use a portable source of electricity like a battery or solar cell but not exclusively a battery or solar cell.
Snowboard boots with physically attached electromagnets that use a portable source of electricity like a battery or solar cell but not exclusively a battery or solar cell.
Snowboards with imbedded electromagnets that use a portable source of electricity like a battery or solar cell but not exclusively a battery or solar cell.
An electronically operated and controlled electromagnetic snowboard binding system.
An electronically operated electromagnet attached to a snowboard boot.
An electronically operated electromagnet attached to a snowboard.
A wireless remotely operated electromagnet that is attached to the snowboard and/or snowboard boot.
A boot binding system that utilizes magnetic forces to hold the boot onto the snowboard.

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