An attachment that when added to a hard shelled snowboard binding converts the binding to a semi step-in binding. The step-in binding allows the rider to exit the ski lift chair with complete control because the rear boot can be placed and held in the rear binding rather than on the stomp pad which is normal in snowboarding.

Stepping into and locking the binding down is greatly facilitated when the rider is ready to make a run.
SEMI STEP IN BINDING ATTACHMENT

[0001] This utility patent application is based on a provisional application filed on Jan. 1, 2001 and having Serial No. 60/266,103.

BACKGROUND OF THE INVENTION

[0002] (a) Field of the Invention

[0003] This invention relates to ski and snowboard bindings and more particularly, but not by way of limitation, to a snowboard hard shell boot binding attachment.

[0004] (b) Discussion of Prior Art

[0005] Snowboarding has been around since the mid-sixties but the sport didn’t catch on or start to grow until the mid-eighties. This was when the two million or so skateboarders discovered they could strap a snowboard to their feet and do skateboard tricks on the snow rather than on concrete or wood. Almost every ski resort now features a skateboard park and pipe—they simply call it a snowboard park and pipe. Growth of the sport was rapid but it seemed to be pretty much restricted to skateboarders who use soft boots enabling them to perform skateboard tricks while using a snowboard. The problem with soft boots is that the center of gravity is 4 inches above the board when the rider is maneuvering.

[0006] Hard shelled boots and bindings correct this problem but present another problem when getting off the chair lift. Hard shelled boots have a hard plastic sole and provide very little traction when placing the rear boot on the stomp pad for balance when dismounting from the chair lift.

[0007] An attachment to the hard shelled boot binding solves this problem by allowing the rider to place their boot in the rear binding and have it held in place until reaching the bottom of the incline after exiting the chair. Snowboarders normally get off the ski lift chair with only the lead foot attached to the board. One foot must remain free so the rider can push or flat terrain since they do not use poles like skiers do. This attachment also greatly facilitates the locking down of the binding when the rider is ready to make a run. No prior art showed a way of stepping into a binding when exiting the chair lift while wearing a hard shelled (ski) boot.

SUMMARY OF THE INVENTION

[0008] In view of the foregoing, it is a primary object of the subject invention to provide a hard shelled boot binding attachment that will allow the rider of a board to be able to exit the ski lift chair under complete control by having both feet attached to the board.

[0009] Another object of the invention is to allow the rider to freely step out of the binding after exiting the chair lift and use the freed foot to push themselves to an area where they may wish to start a run.

[0010] Still another object of the invention is to allow the rider to reset the toe locking clip and step into the binding heel first, making sure the heel lug (extension) is inserted under the heel bale and lowering the toe of the boot so it engages the barrels on the toe clip causing the clip to rotate to a partially closed position. A slight additional tug on the cam locking toe clip locks it in place.

[0011] These and other objects of the present invention will become apparent to those familiar with ski bindings and binding for snowboards from the following detailed description, showing novel construction, combination and elements as herein described and more particularly defined by the appended claims, it being understood that changes in the precise embodiment to the herein disclosed invention are meant to be included as coming within the scope of the claims, except insofar as they may be precluded by the prior art.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The accompanying drawings illustrate complete preferred embodiments of the present invention according to the best modes presently devised for the practical application of the principles thereof and in which:

[0013] FIG. 1 is a side view showing how the attachment is affixed to the binding cups, the bales and the cam lever locking clip. The sole of the boot is shown for clarity. Only one side of the binding attachment is shown because sides are alike.

[0014] FIG. 2 shows the toe of the boot inserted into the toe bale area of the attachment on the binding.

[0015] FIG. 3 shows how the rear bale locks the boot in but down when the heel of the boot is lowered.

[0016] FIG. 4 shows the heel of the of the boot inserted under the heel bale while the toe locking clip is preset in the open position. Lowering the toe of the boot on the barrels causes the toe clip to rotate and partially close on the boot.

REFERENCE NUMERALS OF ITEM NUMBERS

<table>
<thead>
<tr>
<th>Reference Number</th>
<th>Item Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Semi Step In Binding Attachment</td>
<td>11 Cam Lever Locking Toe Clip</td>
</tr>
<tr>
<td>12 Hold Down Plate</td>
<td>12 Bolt</td>
</tr>
<tr>
<td>14 Not</td>
<td>15 Raised Cam Lever Balance Point</td>
</tr>
<tr>
<td>16 Split Tubing</td>
<td>17 Bolt</td>
</tr>
<tr>
<td>18 Barrel</td>
<td>19 Toe Bale</td>
</tr>
<tr>
<td>20 Toe Bail Spring</td>
<td>21 Toe Binding Cap Guide Bar</td>
</tr>
<tr>
<td>22 Bolt</td>
<td>23 Not</td>
</tr>
<tr>
<td>24 Heel Binding Cap Guide Bar</td>
<td>25 Bolt</td>
</tr>
<tr>
<td>26 Nut</td>
<td>27 Heel Bale</td>
</tr>
<tr>
<td>28 Heel Bail Spring</td>
<td>29 Toe Binding Cap</td>
</tr>
<tr>
<td>30 Heel Binding Cap</td>
<td>31 Heel Bail Spring Anchor</td>
</tr>
<tr>
<td>32 Toe Bale Spring Anchor</td>
<td>33 Boot</td>
</tr>
</tbody>
</table>

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0017] In FIG. 1, the subject semi step-in binding attachment for a hard shelled boot is designated by general reference number 10. The cam lever locking toe clip 11 is held in place at a preset position by the hold down plate 12. Bolt 13 and nut 14 attach plate 12 at the top and also provide tension. The expanded section 15 is the cam lever balance point and houses the front of the toe bale 19 as well as split tube 16. Bolt 17 and barrel 18 attach the bottom of plate 12 to clip 11 and provide the required tension. Toe bale spring 20 holds toe bale 19 in a fixed position. The open tab 32 on the binding cap 29 anchors toe bale spring 20 which is wrapped around the toe bail 20 at the center and at the bottom. Toe guide bar 21 is flared at the top and is attached
to the toe binding cap 29 by bolt 20 and nut 23. Bolt 25 and
nut 26 attach heel binding guide bars 24 which are flared at
the top to heel binding cap 30. Spring 28 is wrapped around
the center and bottom of bale 27 and anchored by tab 31 on
binding cap 30. Spring 28 holds bale 27 in a preset forward
biased position. A length of split tubing 16 is fitted over the
center section of bale 19 and under the raised part 15 of hold
down plate 12 to help provide the friction required to hold
the toe cam lever locking clip 11 in an open or a closed
position. The toe guide bars 21 are flared at the top and are
attached to the toe binding cap 29 by bolts 21 and nuts 22.
Toe guide bars 21 guides the boot 31 onto cap 29. Heel bale
27 is held in a forward position by heel bale spring 28. Boot
31 sits on binding toe cap 28 and binding heel cap 30.

[0018] While the invention has been particularly shown,
described and illustrated in detail with reference to the
preferred embodiments and modifications thereof, it should
be understood that those skilled in the art that equivalent
changes in form and detail may be made therein without
departing from the true spirit and scope of the invention as
claimed, except as precluded by the prior art.

[0019] The embodiment of the invention for which an
exclusive privilege and property right is claimed are
defined as follows:

[0020] 1. A semi step-in binding attachment for mounting
on a hard shelled boot binding cap receiving a hard shelled boot,
the attachment comprising:

[0021] a toe bail spring adapted for mounting on the
toe bale and anchored on said binding cap. Said spring
holding said bale in a fixed position,

[0022] a cam lever locking toe clip mounted on said
toe bale including means for rotating said clip to an
open or a closed position,

[0023] a hold down plate to provide attachment
means for attachment and tensioning,

[0024] a pair of barrels mounted on said locking clip
to provide rotation means, and

[0025] a pair of guide bars mounted on said binding
cap to guide boot.

[0026] 2. A semi step-in binding attachment for mounting
on a hard shell (ski) boot binding cap, receiving a hard shelled boot, the attachment comprising:

[0027] a heel bale spring adapted for mounting on the
heel bale and anchored on the heel binding cap
providing means for holding said heel bale in a
forward position when said cam lever locking toe
clip is in a closed position, and

[0028] a pair of guide bars positioned on said heel
binding cap providing boot guide means.

1. A semi step-in binding attachment for mounting on a
hard shelled boot binding cap receiving a hard shelled boot,
the attachment comprising:

a toe bail spring adapted for mounting on the toe bail and
anchored on said binding cap. Said spring holding said
bale in a fixed position,
a cam lever locking toe clip mounted on said toe bale
including means for rotating said clip to an open or a
closed position,
a hold down plate to provide attachment means for
attachment and tensioning,
a pair of barrels mounted on said locking clip to provide
rotation means, and
a pair of guide bars mounted on said binding cap to guide
boot.

2. A semi step-in binding attachment for mounting on a
hard shell (ski) boot binding cap, receiving a hard shelled boot, the attachment comprising:
a heel bale spring adapted for mounting on the heel bale
and anchored on the heel binding cap providing means
for holding said heel bale in a forward position when
said cam lever locking toe clip is in a closed position, and
a pair of guide bars positioned on said heel binding cap
providing boot guide means.