

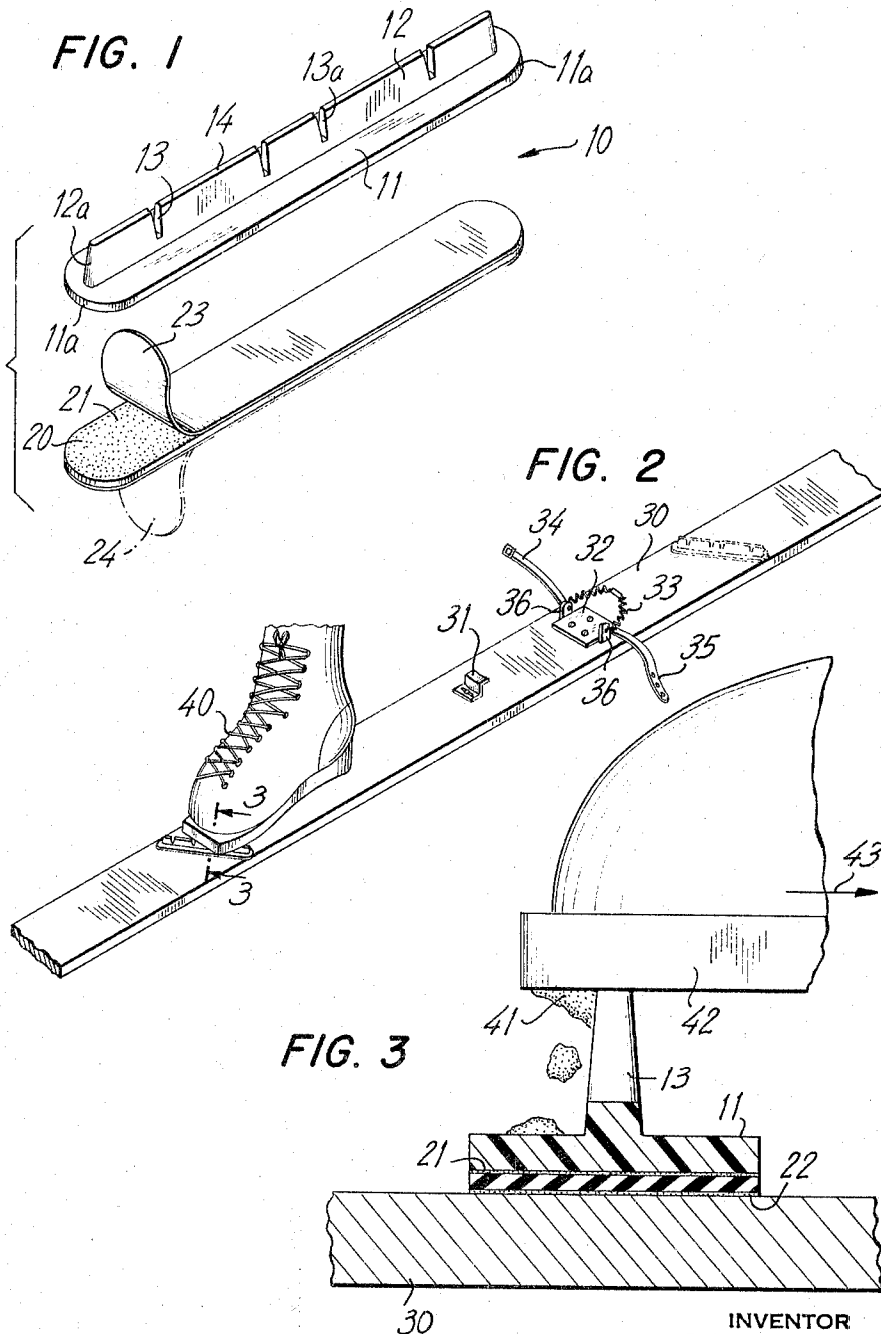
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BOOT SCRAPER FOR APPLICATION TO A SKI

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BOOT SCRAPER FOR APPLICATION TO A SKI

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This invention relates to an improved boot scraper for application to a ski.

The skier frequently finds it necessary to remove snow from the soles of his boots, and this has commonly required the use of the hands, or of improvised means, with resulting frequent discomfort and inconvenience. Furthermore, new ski bindings require removal of snow from the boot in order to seat the boot properly within the binding.

One object of this invention is to provide a scraper which can be permanently fixed to the ski so that it will always be available for use.

Another object of this invention is to provide a scraper for application to the ski which is sufficiently rigid to accommodate the scraping action of the boot, while at the same time capable of flexing in order to accommodate to the flexing of the ski during normal use of the ski. In this connection, it is desirable to provide a scraper which can be of dimension greater than the width of the ski, so as to provide maximum surface for the scraping action. This means that the scraper must be applied to the top of the ski at an angle to the axis of the ski other than ninety degrees, which makes the desired flexing property of the scraper essential. The angular relationship of the scraper to the ski is further desired so as to facilitate use of the scraper, whether it is mounted on the ski in front of or behind the foot binding. Put in other terms, the skier will often wish to have one foot secured in the binding on the ski, with the skier then drawing his other foot over the scraper. If the scraper is located behind the foot binding, the scraping action is then facilitated by applying the scraper to the ski at an angle.

Another object of the invention is to provide a scraper which can be molded unitarily out of plastic, having sufficient rigidity for scraping use to couple with sufficient flexibility to accommodate to the flexing of the ski, and at the same time having simple means for application of the scraper to the ski.

In accordance with a preferred embodiment of the invention, I provide a boot scraper for application to a ski comprising a flat molded plastic bar which is axially elongated. The bar is substantially rigid except that it can be flexed crosswise to its axis. I further provide a flat foam backing, for example, made of vinyl foam, on the bottom of the bar, having a pressure-sensitive adhesive for adherence to the top of the ski. The bar has an upstanding axially elongated flange on its upper surface which is also generally resistant to flexing. However, the flange has a plurality of axially extending slots extending downwardly from its upper edge, so that the flange can accommodate flexing of the bar in the regions thereof below the slots.

The axial dimension of the scraper is preferably greater than the width of the ski, so that the scraper is applied angularly to the ski. It will be readily apparent that the flange is substantially rigid for scraping purposes and is highly efficiently used for such purposes. On the other hand, the scraper presents sufficient flexibility to accommodate to the flexing of the ski under normal conditions of use.

The scrapers are preferably applied with opposite angular orientations to the left and right skis, with the added

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advantage that this facilitates identification of the skis as left and right respectively.

Other objects and advantages of the invention will become apparent from the following description, in conjunction with the annexed drawings, in which a preferred embodiment of the invention is disclosed.

In the drawing,

FIG. 1 is an exploded perspective view of the scraper components, showing the backing sheet partially removed from the upper surface of the foam backing or pad prior to adherence thereof to the bottom of the scraper bar, and further showing the sheet on the bottom of the pad partially removed prior to securing the scraper to the ski.

FIG. 2 is a broken-away perspective view of a ski, showing the scraper secured thereto. FIG. 2 also shows a boot being drawn across the top of the scraper, and shows highly diagrammatically a ski binding on the top of the ski. FIG. 2 shows in broken lines an alternative position of the scraper upon the ski.

FIG. 3 is a fragmentary section on line 3—3 of FIG. 2, drawn to enlarged scale.

Upon reference to the drawing in detail, it will be noted that it shows a boot scraper 10 for application to a ski 30. Ski 30 may be any conventional ski, the main portion of which, in the fragmentary showing of FIG. 2, may be of uniform width. FIG. 2 shows a boot binding on the top of the ski 30, comprising a toe-receiving element 31, a heel-receiving plate 32, a heel-encircling spring element 33 and straps 34 and 35 for extension around the boot, these straps being secured to the plate 32 by means of ears 36. It will be understood that the showing of the boot-receiving means is highly diagrammatic and illustrative only, and forms no part of this invention. The reason that the boot-receiving elements are shown is to illustrate two possible positions of the scraper 10 upon the ski 30, respectively in front of (full lines) and behind (broken lines) the boot receiving elements.

The ski 30 may be considered as axially elongated, and as is well known the ski can be flexed in use, about lines extending crosswise to its axis.

Boot scraper 10 comprises a bar 11 with a flange 12, as well as a backing pad 20. Bar 11 and flange 12 are unitarily molded from any suitable plastic such as acrylonitrile butadiene styrene, of thickness so as to be generally rigid, with the exceptions to be indicated below. In one working model, the bar 11 had a length or axial dimension of approximately 12.7 centimeters, a width of approximately 2 centimeters and a thickness of approximately 0.2 centimeter. In such working model, flange 11 terminated slightly short of the ends of the bar 11, and had a height of approximately 1 centimeter. At its base, the thickness of flange 12 was approximately the thickness of bar 11. However, bar 11 was slightly tapered in the direction of its height.

The drawing is substantially to scale of such working model, and reference is made to the drawing to complete the disclosure herein.

It will be understood that while the above dimensions are generally suitable for a device of this type, such dimensions can be varied.

Bar 11 is substantially rigid except that it can be flexed about a line extending crosswise to its axis. Bar 11 has parallel sides and optionally has rounded ends 11a.

Flange 12 is of uniform height, and its ends 12a are slightly downwardly inclined away from each other. Flange 12 has a plurality of axially spaced slots 13 extending downwardly from its upper edge 14. Optionally, there are four such slots 13, as in the illustrated working model, two of such slots 13 being located close to and

equidistant from the center of the flange, and the other two slots 13 being located proximate to the ends 12a. Each such slot 13 extends downwardly a substantial proportion of the height of the flange. Thus, in the working model, the height of the slot is approximately two-thirds the height of the flange. Each slot 13 has an axial dimension at the top of approximately 0.3 centimeter, and an axial dimension at the bottom of approximately 0.2 centimeter, the slot walls 13a being correspondingly downwardly inclined toward each other. Again, these dimensions, while taken from the working model, can be varied.

Between the slots 13, flange 12 is substantially incapable of being flexed around a line extending crosswise to the axis of bar 11. However, below any of the slots 13, the height of the flange is sufficiently small so that the flange 12 can be there flexed so as to accommodate flexing of bar 11 around a crosswise line below the slot. The distance between the slot walls 13a is sufficiently great so as to accommodate the resulting flexing of the flange (assuming that the direction of flexing of the bar is such as to tend to bring the slot walls 13a towards each other, this being the flexing condition to be encountered with the scraper mounted upon the ski.

The backing pad 20 is preferably coextensive in dimension to the bar 11. Pad 20 may be made of any suitable foam or sponge material, preferably vinyl foam. In the working model, the thickness of pad 20 was approximately half of the thickness of bar 11.

In the manufacture, the pad 20 is supplied cut to size, and with a pressure-sensitive adhesive layer 21 applied to its upper face, and 22 applied to its lower face. These pressure-sensitive adhesive layers are preferably coextensive in area with the upper and lower surfaces of the pad, and it will be understood that the thickness of the layers 21 and 22 is exaggerated in FIG. 3 for purposes of illustration. Any suitable pressure-sensitive adhesive may be employed. In such initial stages of manufacture, a co-extensive backing sheet 23 is applied to the exposed face of the adhesive layer 21, and a coextensive backing sheet 24 is applied to the exposed surface of the adhesive layer 22. In manufacture, the backing sheet 23 is removed and the pad 20 is adhered by the adhesive 21 to the bottom surface of bar 11. The resulting scraper 10 may then be shipped as a separate article of commerce.

The user simply removes the backing layer 24 and adheres the lower adhesive layer 22 to the top surface of the ski 30. The scraper is then ready for use.

Normally, the axial dimension or length of the scraper will be greater than the width of the ski. Accordingly, the scraper is applied to the ski with the axis of the scraper at an acute angle, rather than crosswise to the axis of the ski, as clearly shown in FIG. 2. In this position, the ends of the scraper are located approximately at the side edges of the ski. FIG. 2 shows the scraper in full lines thus applied to the ski ahead of the toe element 31. However, FIG. 2 also shows, in phantom, an alternative mounting of the scraper, behind the binding elements.

The drawing shows a conventional ski boot 40 applied across the upper edge 14 of the scraper, in order to scrape snow or other material 41 from the bottom of the boot sole 42. Since the width of the boot is ordinarily no greater than the width of the ski, it is simple to draw the entire width of the sole across the top edge of the scraper in one pass. This is true even if the boot is drawn rearwardly, in the direction of arrow 43, in a direction aligned with the axis of the ski, which direction may be preferred by some since it insures that the boot will cross the scraper at an angle. Furthermore, in the position of the scraper shown in phantom, it is possible for the operator to maintain one foot in the binding, while placing the other foot behind the secured foot and drawing it across the top of the scraper. Such action is facilitated by the shown angular position of the scraper. In the phantom position, the scraper axis can optionally be aligned with the ski axis.

It will be noted that the scraper flange 12 is sufficiently rigid so that the boot sole may be drawn along its upper edge without yielding of the flange, thereby facilitating removal of snow or the like from the boot sole. On the other hand, even though the scraper is applied angularly to the ski, the scraper can accommodate to flexing of the ski such as may be encountered under use conditions. Specifically, the foam pad or backing 20 accommodates to a certain amount of such flexing. Beyond such limit, the bar 11 will flex, with such flexing being accommodated by flexing of the flange 12 and resulting movement of the slot walls 13a toward each other. The resulting construction is highly advantageous, since the scraper can be applied to the ski merely by the adhesive, without the need for screws or other fastening means, while at the same time the scraper will remain adhered to the ski under normal conditions of use.

While I have disclosed a preferred embodiment of my invention, and have indicated various possible changes, omissions and additions which may be made therein, it will be apparent that various other changes, omissions and additions may be made in the invention without departing from the scope and spirit thereof.

What is claimed is:

1. Boot scraper for application to a ski comprising a flat molded plastic bar having an axis and a bottom surface and a top surface and elongated in its axial direction, said bar being generally rigid except that it can be flexed about a line crosswise to its axis, said bar having means on its bottom surface for adherence thereof to the ski, and an upstanding flange on the upper surface of said bar unitarily molded therewith, said flange extending axially and generally axially coextensive with said bar, said flange having a plurality of axially spaced slots extending downwardly from its upper edge and extending a substantial proportion of its height, said flange being generally rigid to flexing about a line crosswise to said axis except that said flange below a slot is of sufficiently little height so as to be able to flex to accommodate the flexing of said bar, each said slot having sufficient axial dimension to accommodate movement of its walls towards each other by flexing of said bar and flange.

2. Boot scraper for application to a ski comprising a flat molded plastic bar having an axis and a bottom surface and a top surface and elongated in its axial direction, said bar being generally rigid except that it can be flexed about a line crosswise to its axis, a flat foam pad on the bottom of said bar and generally co-extensive therewith, said pad having adhesive on its bottom surface for adherence thereof to the top of the ski, and an upstanding flange on the upper surface of said bar unitarily molded therewith, said flange extending axially and generally axially co-extensive with said bar, said flange of uniform height, said flange having a plurality of axially spaced slots extending downwardly from its upper edge and extending a substantial proportion of its height, said flange being generally rigid to flexing about a line crosswise to said axis except that said flange below a slot is of sufficiently little height so as to be able to flex to accommodate the flexing of said bar, each said slot having sufficient axial dimension to accommodate movement of its walls towards each other by flexing of said bar and flange.

3. In combination with a ski having a ski axis and axially elongated, a boot scraper mounted upon the upper surface of said ski, said boot scraper comprising a flat molded plastic bar having a scraper axis and a bottom surface and a top surface and elongated in its axial direction, said bar being generally rigid except that it can be flexed about a line crosswise to said scraper axis, a flat foam pad on the bottom of said bar and generally co-extensive therewith, said pad being adhesively mounted upon the top of said ski, the axial dimension of said scraper being greater than the width of said ski, the axis of said boot scraper being at an angle other than ninety

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degrees to said ski axis, the ends of said boot scraper being adjacent to the side edges of said ski, and an upstanding flange on the upper surface of said bar unitarily molded therewith, said flange extending axially and generally axially co-extensive with said bar, said flange of uniform height, said flange having a plurality of axially spaced slots extending downwardly from its upper edge and extending a substantial proportion of its height, said flange substantially rigid to flexing about a line crosswise to said scraper except that said flange below a slot is of sufficiently little height so as to be able to flex to accommodate the flexing of said bar, each said slot having sufficient axial dimension to accommodate movement of its walls towards each other by flexing of said bar and flange.

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