

Jan. 3, 1967

G. R. VON HOVEN
SKI AND SKI TIP ATTACHMENT

3,295,860

Filed Sept. 28, 1964

2 Sheets-Sheet 1

FIG. 1.

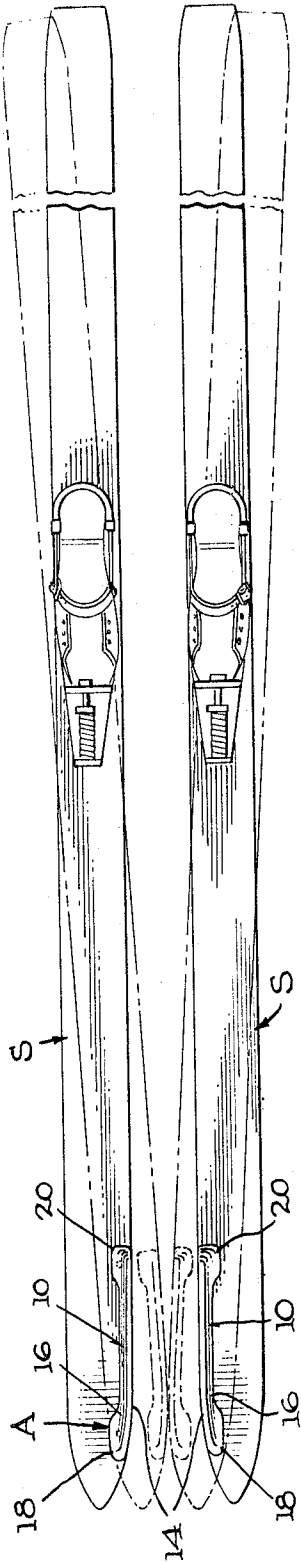


FIG. 2.

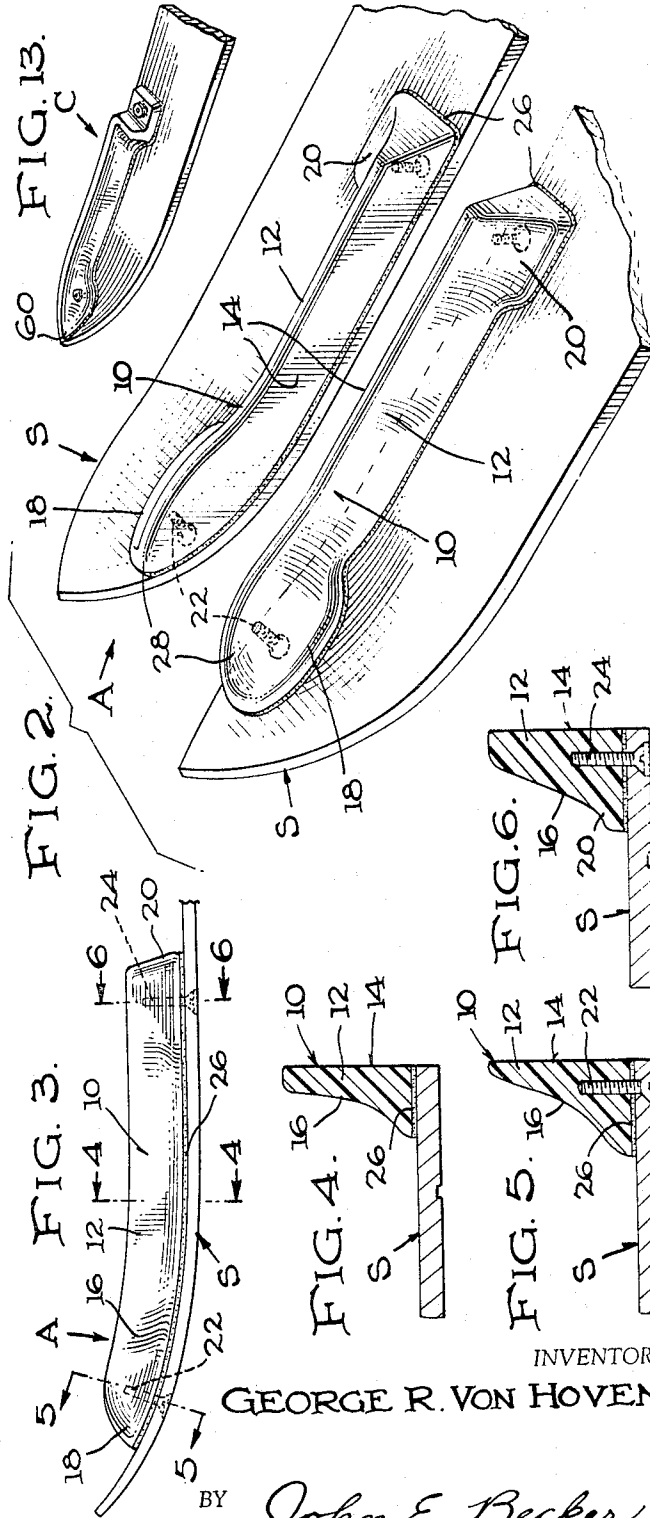


FIG. 3.

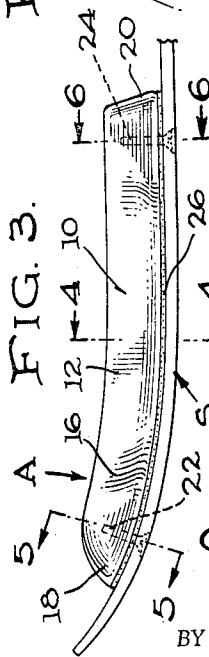


FIG. 4.

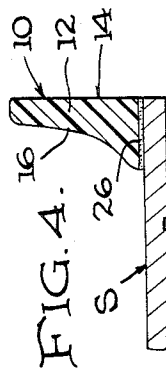
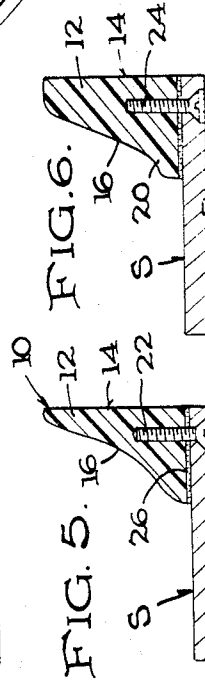


FIG. 5.



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FIG. 7.

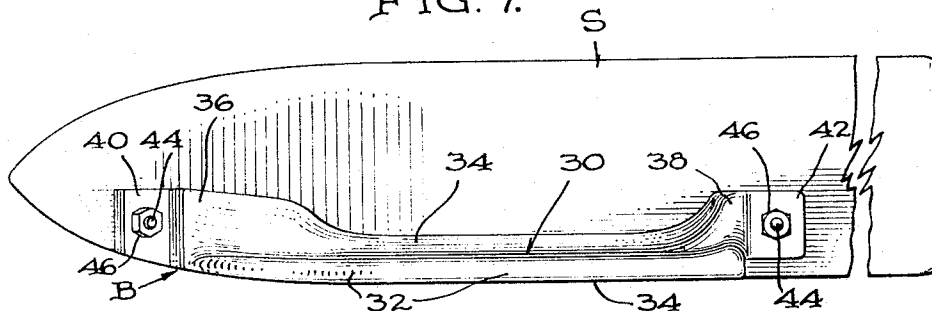


FIG. 8.

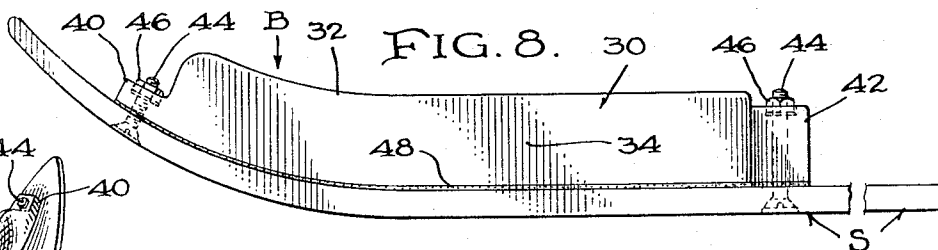


FIG. 9.

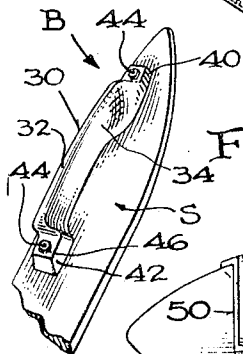


FIG. 10.

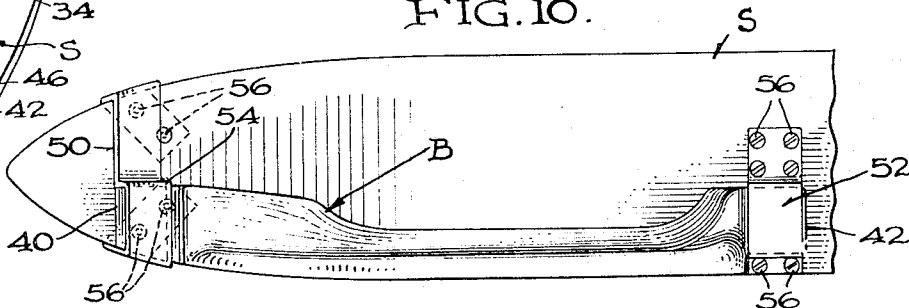


FIG. 11.

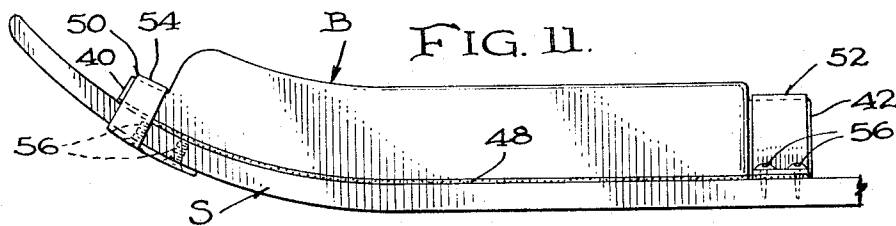


FIG. 12.

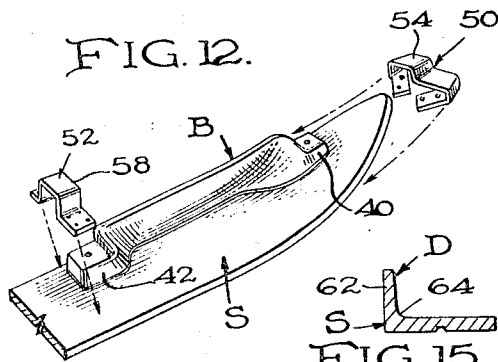


FIG. 14.

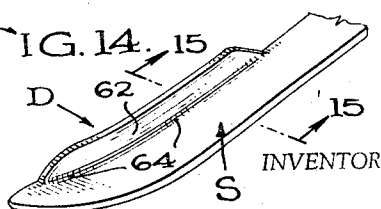
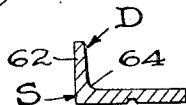


FIG. 15.



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SKI AND SKI TIP ATTACHMENT

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10 Claims. (Cl. 280—11.13)

The present invention relates to an improved form of ski and, more particularly, to improved ski tip attachments adaptable to be either readily attached to a conventional pair of skis or fabricated integrally with the skis at the time of manufacture, said attachments serving to considerably assist in maintaining the skis in substantially parallel or non-crossed condition to avoid ski entanglement and subsequent falls which are potentially very dangerous to the skier.

The greatest problem perhaps which plagues a novice skier is to keep the skis from crossing. The execution of various skiing maneuvers, such as "snow plows," and other turns, require the turning of the ski tips inwardly slightly towards one another for short periods of time during which the ski tips may become crossed. Even the more skilled skiers have difficulty sometimes, as during parallel and high speed ski racing, when an edge of the ski may catch in the snow and throw it across the other. Falls resulting from skis crossing, whether at high or slow speed, are usually responsible for a majority of the more serious injuries and broken bones.

An object of the invention, therefore, is to provide attachments in the form of relatively short light weight rails which can be readily mounted on conventional ski tips flush with the inside edge of the skis to improve the controllability of the skis, thus automatically reducing or eliminating the cross-over of ski tips and thereby lessen a large percentage of injuries caused by falls resulting therefrom.

Another object of the invention is to provide a non-cross rail or bar attachment which is fabricated of particularly very light weight, but high strength, slightly flexible pliable material, such as plastics and aluminum or magnesium alloys, or the like, so as not to unbalance the skis and to be able to flex therewith when in use.

It is a further object to provide a non-cross ski attachment according to the preceding objectives which can be manufactured and sold at relatively low prices, is constructed and adapted for easy mounting and demounting, and is of non-injurious character in the event the skier should fall.

While I am aware of certain prior efforts along these lines, which have embodied enlarged hollow prow-like and thimble shaped, post-like attachments projecting upward from the tip end of the ski, or means mounted on the skis adjacent the boot bindings, these previous devices have not proven to be completely satisfactory or commercially successful for a variety of reasons which may include impractical design and/or location on the ski body.

The objects hereof are achieved by providing for either the removable or integral mounting of my improved non-cross rails or bars, which may have the general dimensions of approximately 11½" long, 1½" high and 1½" at its widest portions where secured at the forward end of the skis adjacent and flush with the inner edges thereof approximately 1½ inches behind the tips of the skis, in most of the illustrative forms. When mounted accordingly, the non-cross rails or bars are disposed substantially in parallel, and perhaps touching relationship at times, when the skis are maintained in the usual close parallel relationship during use. This arrangement and style combine to provide the skier, particularly the novice, with more safety, pleasure and confidence, thereby making it possible to become a better skier more quickly and easily

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with less chance for injuries due to falls caused by crossing of the ski tips.

The foregoing and other objects and advantages will become more apparent from the following detailed description when taken in conjunction with the accompanying illustrative drawings in which:

FIG. 1 is a top plan view of a pair of skis having my improved non-cross ski bar attachments affixed thereto;

FIG. 2 is perspective view of the tip ends of a pair of skis having the non-cross attachments of FIG. 1 shown thereon;

FIG. 3 is a side elevational view of the bar attachment of FIGS. 1 and 2, shown mounted on the forward end of a ski;

FIG. 4 is an enlarged cross-sectional view taken on line 4—4 of FIG. 3;

FIG. 5 is an enlarged cross-sectional view taken on line 5—5 of FIG. 3;

FIG. 6 is an enlarged cross-sectional view taken on line 6—6 of FIG. 3;

FIG. 7 is an enlarged top plan view of a slightly modified form of attachment shown mounted on the tip end of a ski;

FIG. 8 is a side elevation view on the same relative scale and of the embodiment shown in FIG. 7;

FIG. 9 is a perspective view on a reduced scale of the embodiments shown in FIGS. 7 and 8;

FIGS. 10 and 11 are top plan and side elevational views of the same general form shown in FIGS. 7 and 8, respectively, but shown attached to the tip end of the ski by different mounting means;

FIG. 12 is a perspective view on a reduced scale of the embodiments of FIGS. 10 and 11, showing the mounting clamp means in exploded relation;

FIG. 13 is a perspective view of a slightly different embodiment extending all the way to the tip of the ski;

FIG. 14 is a perspective view of a non-cross ski bar integrally formed on the tip end of a ski; and

FIG. 15 is a cross-sectional detail view taken substantially on line 15—15 of FIG. 14.

Referring now to the drawings, wherein like reference numerals designate like parts throughout the specification, one form of my improved non-cross ski bar is depicted in FIGS. 1-6 and designated generally as form A.

Form A is preferably an integrally formed elongated rail or bar having a body 10 approximately 11½" long and including an upstanding wall or rail-like portion 12 which projects approximately 1½" above the upper surface of a ski S and being somewhat thinner in thickness along its upper edge than at its lower edge. The wall or rail portion 12 has one straight face 14 adapted for vertical disposition and flush mounting with the inner edge of each ski, as more clearly shown in FIGS. 4-6, and one irregular face 16, which is generally concave in nature. The bar A is provided with a widened portion along the lower or base area, and particularly at its forward end 18 and at its rearward end 20, which are each provided with threaded mounting apertures to receive complementary mounting screws 22 and 24, respectively. The widened base and base ends obviously provide extra strength to protect against breakage and for a more stable mounting of the bar attachment, which is formed of a very light weight material having inherent flexing characteristics so as to be able to give or flex without breaking under strain when in use. Such materials may include various plastic or rubber compositions, aluminum or magnesium alloys, wood or fiberglass and the like as desired.

The bars of form A are mounted preferably about 1½"-2" behind the tip of each ski and have interposed between the base of the bar A and the ski S a layer of resilient adhesive material 26, which may be similar to a rubber cement composition or a separate thin sheet of

compressible rubber-like material glued and affixed therebetween, to both help reduce undue stress, strain or shock to the bars as well as to aid pliability and snugness of fit to skis which may have slight tip curvature variations. Of course, where there is considerable variation in the curve characteristic of the ski tips of various manufacturers, it is to be understood that the non-cross bar attachments will be made in variations also to conform more closely to the different shapes of the various manufacturers' ski articles.

Both of the leading edges of the rail or web 12 and enlarged base 18 blend into streamlined, curved portions which intersect as designated at 28 (FIG. 2).

Referring next to a slightly modified form designated B, shown in FIGS. 7, 8 and 9, respectively, it is seen to embody a generally similar elongated body member 30, including an upstanding elongated bar or rail portion 32 projecting also approximately $1\frac{1}{2}$ " above the ski's surface, said rail portion 32 having one straight face 34 disposed vertically flush with the inside edge of each ski and the opposite face 34 being irregular and generally sloping and somewhat concave in nature with a widened base area for extra mounting stability as in the form A. Form B also embodies enlarged and widened fore and aft portions 36 and 38, respectively, which terminate in stepped, generally rectangular mounting flanges, pads or blocks 40 and 42, respectively. Each mounting pad or flange is apertured and preferably countersunk to receive a fastening screw 44 and lock nut 46, with the screws 44 having their heads countersunk into and flush mounted with the bottom of the ski, as shown in FIG. 8. A resilient layer of rubber and/or cement 48 is interposed between body 30 and the ski, as in Form A. The upstanding rail portion 32 is rounded at the top edge throughout its length and curved downward at the forward end to help reduce the chance for scrapes or cuts in the event the rails are fallen upon.

FIGS. 10, 11 and 12 show the same non-cross bar B mounted to the ski in a slightly modified manner by means of a pair of clamps or strap brackets 50 and 52. Forward clamp 50 comprises a length of rigid strap material which conforms to the surface of the ski and is stepped up appropriately at 54 to embrace the rectangular shaped mounting pad or block 40, and has its ends turned under the curved tip end and secured to the ski by means of flush mounted screws or rivets 56. It is to be understood that the bracket 50 may be formed without the under-turned ends, but instead may be secured at the inside edge directly into the edge of the ski, and by flush mounted screws or rivets entering through the top of the strap body into the ski rather than from the bottom thereof.

Rear mounting bracket 52 is also of bent or preformed strap material having a stepped or inverted U-shaped portion 58 to embrace the rear mounting block 42, and laterally extended wings, one of which is shorter than the other, having apertures therein through which a plurality of mounting screws or rivets are inserted to secure both bracket 52 and bar B to the ski. While specific types of brackets have been shown and described, it is to be understood that other suitable bracket means may be utilized to complete the fastening of the non-cross bar to the ski.

Referring to FIG. 13, there is shown a perspective view of a non-cross bar attachment designated C similar in most respects to forms A and B, but differing slightly therefrom by having an elongated forward end which blends completely into the curvature and tip of the ski as shown at 60.

As previously mentioned, the rail or bar may be integrally formed with the ski body during its manufacture. FIGS. 14 and 15 depict representations of such integrally fabricated rail or bar structures designated generally as D, and due to the integral formation thereof, it merely includes an upturned elongated web portion 62, without the enlarged forward and rearward

mounting pads, and having a slightly thicker root area 64 where it blends into the body of the ski S.

Accordingly, it is apparent from the foregoing that an improved and more strategically located non-cross ski bar attachment has been evolved which achieves all of the objectives and advantages as set forth in the preamble thereof.

While several specific forms of the non-cross ski bar attachments have been described and shown in detail, it is to be understood that other variations in form and mounting will suggest themselves to those skilled in the art without departing from the inventive concept, and reference should be had to the appended claims for a definition of the invention concept herein described.

I claim:

1. In combination with a pair of conventional skis having upturned forward ends, a pair of ski bar attachments adapted to be affixed one on the upper surface of each ski at the forward tip end adjacent the inside edge only of each ski, and each attachment comprising an elongated rigid body having an upstanding flat faced rail portion and disposed substantially flush with said inside edge of each ski, said bar projecting longitudinally back from the tip end a relatively short distance compared to the overall length of the ski, to prevent the skis from assuming a crossed tip condition.

2. In combination with a pair of conventional skis having upturned forward ends, a pair of demountable ski bar attachments as defined in claim 1, and means for removably attaching the bar to each ski.

3. In combination with a pair of conventional skis having upturned forward ends, a pair of ski bar attachments adapted to be affixed one on the upper surface of each ski at the forward tip end, and each attachment comprising an elongated rigid body having an upstanding flat faced rail portion projecting no higher than the upturned tip end of the ski and disposed flush with the inside edge of each ski, said bar projecting longitudinally back from the tip end a relatively short distance compared to the overall length of the ski, to prevent the skis from assuming a crossed tip condition.

4. In combination with a pair of conventional skis having upturned forward ends, a pair of ski bar attachments adapted to be affixed one on the upper surface of each ski at the forward tip end, and each attachment comprising an elongated rigid body having an upstanding flat faced rail portion projecting no higher than the upturned tip end of the ski and disposed flush with the inside edge of each ski, said bar projecting longitudinally back from the tip end a relatively short distance compared to the overall length of the ski, to prevent the skis from assuming a crossed tip condition; and means for removably securing said bar attachments to said skis.

5. A demountable ski bar attachment adaptable for mounting on the upper surface of the forward end of a conventional ski comprising:

- (a) an elongated body member having an upstanding flat faced wall adaptable to be mounted with the flat wall flush with the inside edge of a ski;
- (b) said body member including a base portion which is slightly thicker throughout its length than is the upper portion of the upstanding wall; and
- (c) means for removably fastening said attachment to the forward end of said ski.

6. A demountable ski bar attachment adaptable for mounting on the upper surface of the forward end of a conventional ski comprising:

- (a) an elongated body member having an upstanding flat faced wall adaptable to be mounted with the flat wall flush with the inside edge of a ski;
- (b) said body member including a base portion which is slightly thicker throughout its length than is the upper portion of the upstanding wall;

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- (c) the base portion including laterally widened areas at least at its opposite ends to provide increased mounting stability for the attachment; and
- (d) mounting means cooperable with the laterally widened opposite end areas for removably securing said attachment to the forward end of said ski.
7. A demountable ski bar attachment adaptable for mounting on the upper surface of the forward end of a conventional ski comprising:
- (a) an elongated body member having an upstanding flat faced wall adaptable to be mounted with the flat wall flush with the inside edge of a ski;
- (b) said body member including a base portion which is slightly thicker throughout its length than is the upper portion of the upstanding wall;
- (c) the base portion including laterally enlarged mounting flanges at least at its opposite ends to provide increased mounting stability for the attachment;
- (d) resilient means adhesively interposed between the base portion and the ski mounting surface; and
- (e) means cooperable with the laterally enlarged ends for removably securing the attachment to the ski.
8. A ski bar attachment as defined in claim 7 wherein the means for removably securing said attachment to the ski include a pair of screw fasteners each having its head mounted flush with the bottom surface of the ski and its screw shank projecting through said ski and into a complemental aperture formed in each of the enlarged ends of the attachment.

9. A ski bar attachment as defined in claim 7 wherein the means for removably securing said attachment to the ski include a pair of mounting brackets each of which is preformed to complementally seat over the enlarged end mounting flanges and engage the flat surface of the ski adjacent thereto; and screw fastener means for removably securing the mounting brackets to the ski.

10. In combination with a pair of conventional skis having upturned forward tip ends and ski-boot receiving area substantially mid-way of each ski, a pair of ski bar attachments integrally fabricated one with each ski on the upper forward surface thereof adjacent the inside edge only of each ski; each bar comprising an elongated rigid body having an upstanding flat face rail portion disposed substantially flush with the inside edge of each ski with the flat face of each bar in opposed relation to that on the other ski, said rail portion projecting longitudinally back from adjacent the tip end of each ski a relatively short distance and terminating substantially forward of the boot-receiving area, to prevent the skis from assuming a crossed tip condition.

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