United States Patent

Lake

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[45] Sept. 5, 1972

[54] **SNOW AND WATER SKIMMING DEVICE**

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[21] Appl. No.: **77,293**

[52] **U.S. Cl.**.....**280/11.13 R,** 9/310 R, 280/11.37 R

[51] **Int. Cl.**.....**A63c 5/00**

[58] **Field of Search**.....280/11.13 T, 11.13 R, 12, 18, 280/19, 11.37 J, 11.37 R, 11.13 S, 11.13 W; 188/8; 9/310

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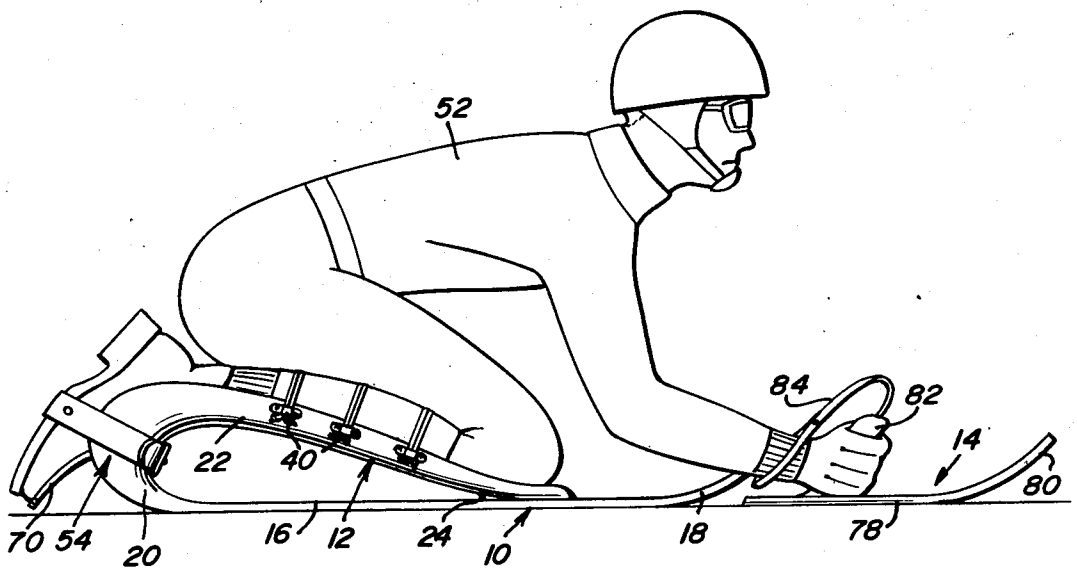
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Assistant Examiner—Milton L. Smith
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[57] **ABSTRACT**

A planing assembly adapted for use on snow or water and including a pair of elongated ski-like members including means for attachment to the lower leg portions of the user of the planing assembly. When attached to the lower legs of the user the ski-like members include upwardly curved forward ends which project beyond the knees of the user and the assembly is adapted to be used with the wearer in a head forward kneeling position with the upper portions of his legs closely overlying and resting upon the lower portions of his legs to which the elongated ski-like members are attached. The planing assembly further includes a pair of hand supported planing members to be disposed forward of the leg attached ski-like members and utilized by the user to assist in maintaining his balance and to steer himself.

17 Claims, 16 Drawing Figures



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3 Sheets-Sheet 1

Fig. 1

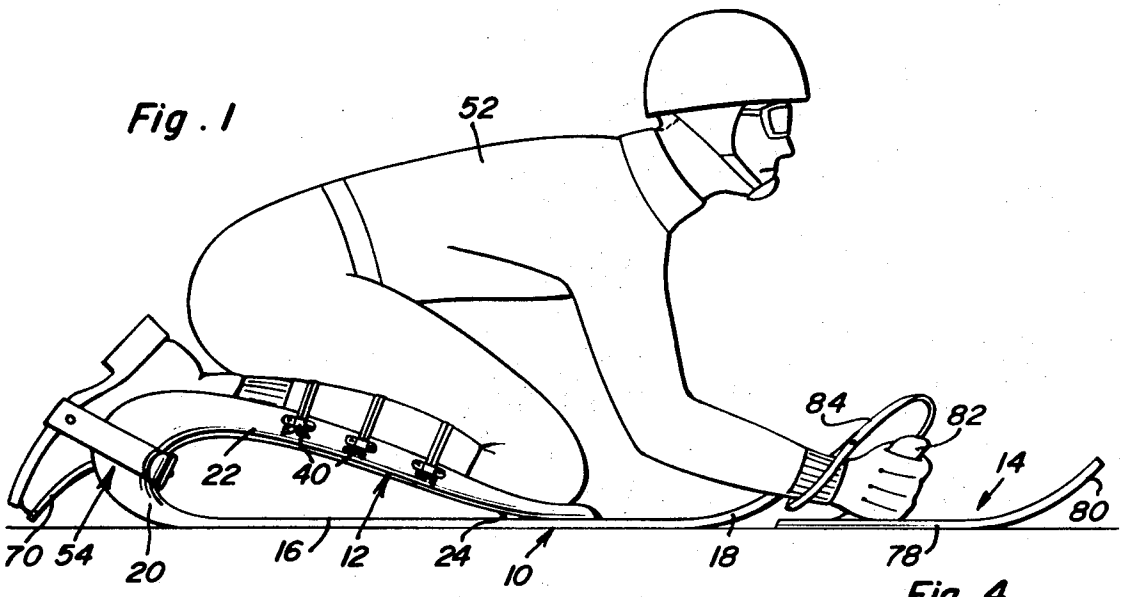


Fig. 4

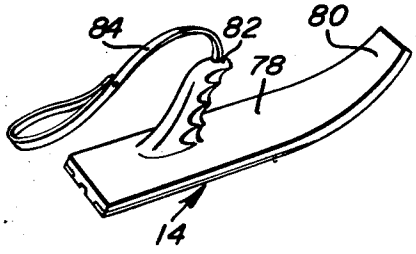


Fig. 2

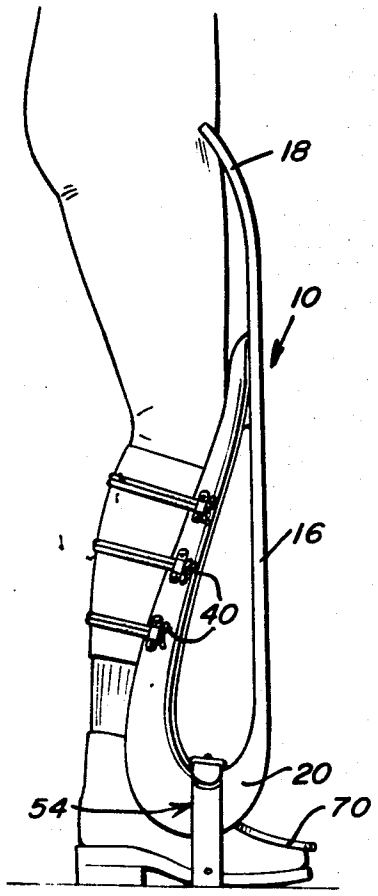
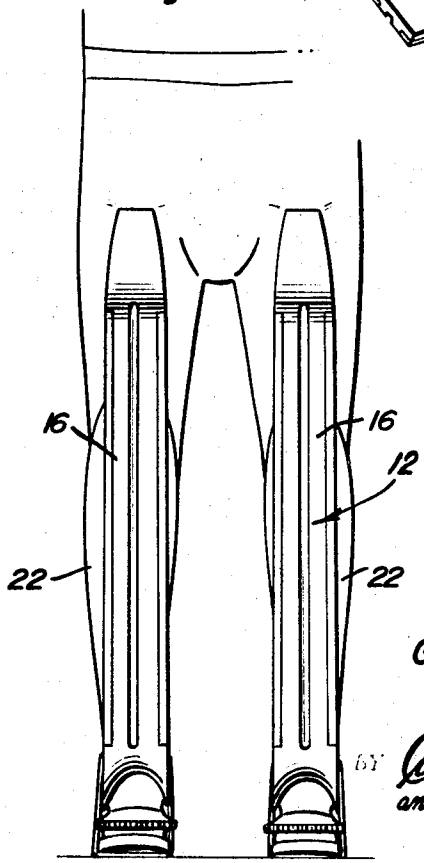


Fig. 3



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Fig. 5

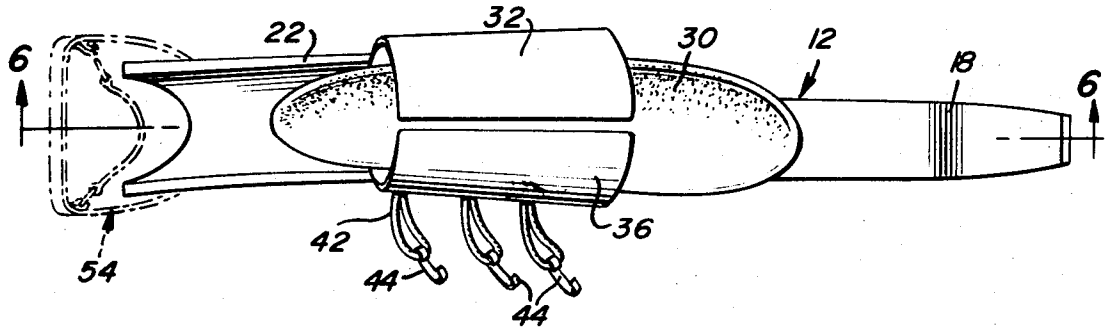


Fig. 6

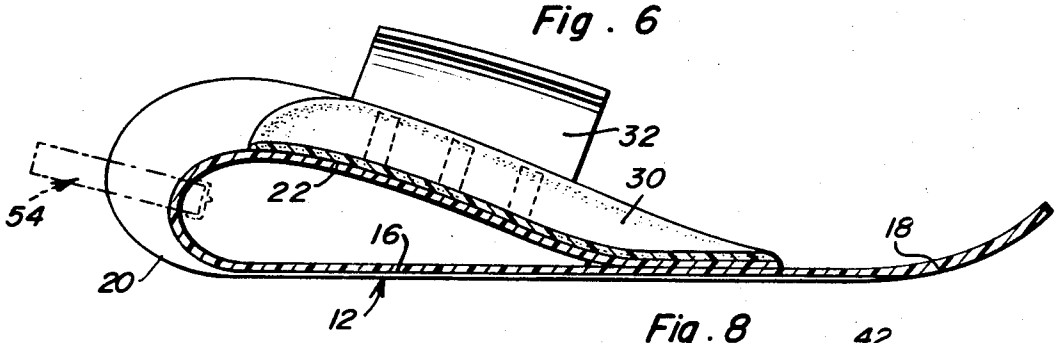


Fig. 7

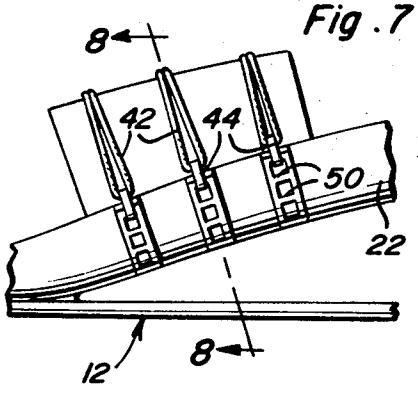


Fig. 8

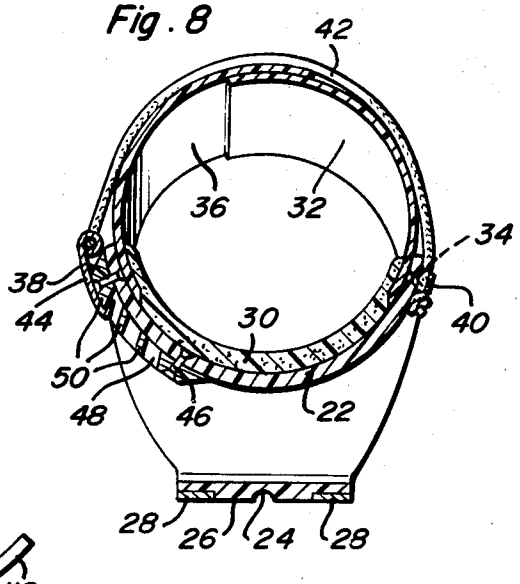


Fig. 15

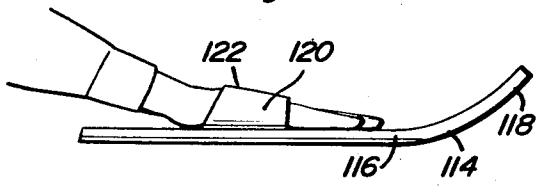
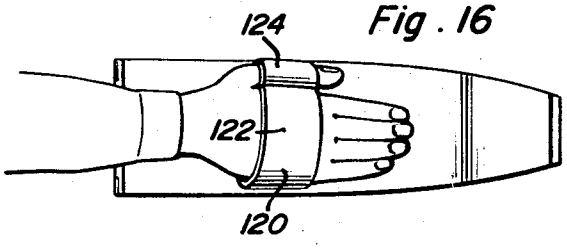


Fig. 16



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Fig. 9

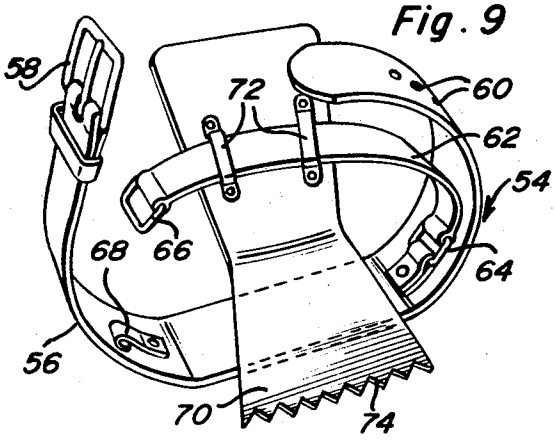


Fig. 10

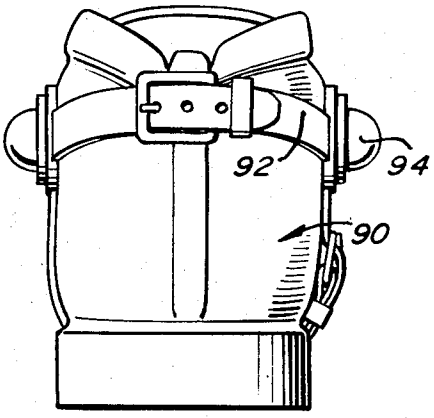


Fig. 11

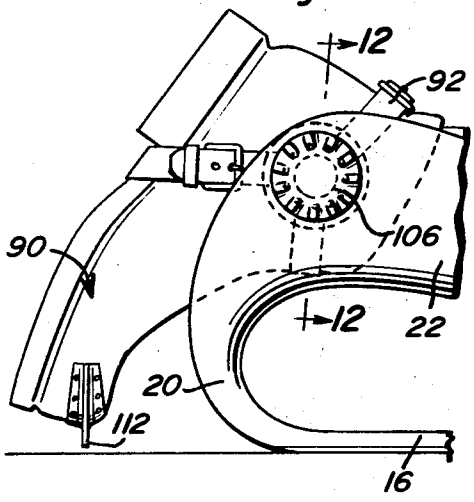


Fig. 12

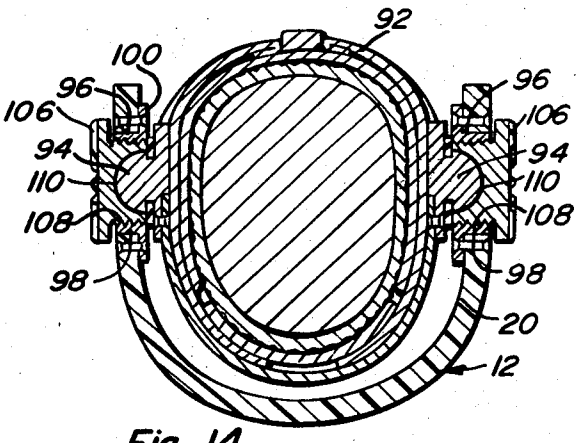


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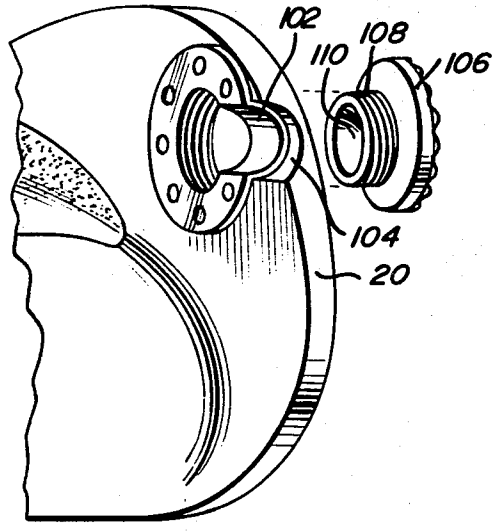
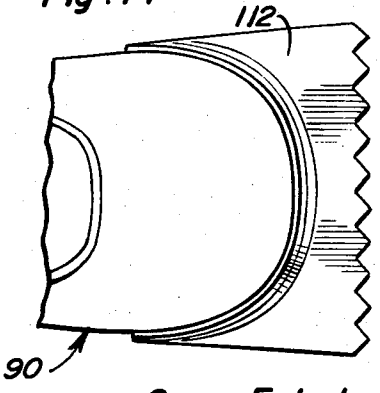


Fig. 14



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SNOW AND WATER SKIMMING DEVICE

The planing assembly of the instant invention has been specifically designed to provide a novel planing device which may be utilized both on snow and on water and which offers a maximum of four points of support for the user whereby at least fundamental use of the planing assembly may be readily accomplished.

Another object of this invention, in accordance with the immediately preceding object, is to provide a planning assembly which when used will position the user with his eyes much closer to the surface over which he is planing than could be achieved by the user of a pair of snow skis or water skis and which will therefore have a tendency to give the illusion of greater speed and thus excitement and pleasure to the user of the planing assembly.

Another object of this invention is to provide a planing assembly designed to be utilized in a manner which that the user is in at least a semi-kneeling position and which therefore subjects the user to less chance of injury in the case of a fall inasmuch as the user's body will be at least half way in a tuck position.

A final object of this invention to be specifically enumerated herein is to provide a planing assembly in accordance with the preceding objects which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble-free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a side elevational view of a first form of the snow and water skimming device in use;

FIG. 2 is a side elevational view of the leg worn ski-like members of the water skimming device illustrating their position relative to the upper and lower leg portions of a user of the planing assembly when the user is in a standing position and thus illustrating that a person wearing the elongated ski-like members of the planing assembly may walk about on his shoes in a substantially conventional manner;

FIG. 3 is a front elevational view of the assembly illustrated in FIG. 3 on somewhat of a reduced scale;

FIG. 4 is a perspective view of one of the hand-held planing members of the planing assembly;

FIG. 5 is a top plan view of one of the elongated ski-like members;

FIG. 6 is a longitudinal vertical sectional view taken substantially upon the plane indicated by the section line 6—6 of FIG. 5;

FIG. 7 is a fragmentary side elevational view of an intermediate portion of one of the ski-like members and with the leg attaching means thereof in active position;

FIG. 8 is an enlarged transverse sectional view taken substantially upon the plane indicated by the section line 8—8 of FIG. 7;

FIG. 9 is a perspective view of one of the shoe worn brake members to be utilized in conjunction with the planing assembly when the latter is used on snow and which is also utilized in securing the corresponding elongated ski-like member to the associated foot;

FIG. 10 is a rear elevational view of a boot construction designed specifically for use in conjunction with a modified form of elongated ski-like member;

FIG. 11 is a fragmentary side elevational view of the boot illustrated in FIG. 10 and in operative association with the modified form of ski-like member specifically adapted for use therewith;

FIG. 12 is an enlarged transverse vertical sectional view taken substantially upon the plan indicated by the section line 12—12 of FIG. 11;

FIG. 13 is a fragmentary exploded perspective view of the near side of the modified form of ski-like member illustrated in FIG. 11 and as seen from the inside thereof with the associated threaded journal plug in exploded position;

FIG. 14 is an enlarged fragmentary plan view of the toe portion of the boot illustrated in FIGS. 10 and 11 and adapted to be utilized in conjunction with the modified form of ski-like member; and

FIGS. 15 and 16 are side and top plan views, respectively, of a modified form of hand supported planing member to be used with the leg attached ski-like members illustrated in FIGS. 1 through 3 and 5 through 7.

Referring now more specifically to the drawings, the numeral 10 generally designates the planing assembly of the instant invention which includes a pair of substantially identical leg worn ski-like members referred to in general by the reference numeral 12 and a pair of substantially identical hand-held planing members referred to in general by the reference numeral 14.

The elongated ski-like members 12 include elongated ski body portions 16 including forwardly and upwardly curving front ends 18 and upwardly curving and transversely concaved rear ends 20 whose upper ends include forwardly and downwardly inclined extensions 22. The extensions 22 are transversely concave so as to define elongated troughs and the front ends of the extensions 22 meet with and are joined to the elongated ski body portions 16 as at 24 a spaced distance rearward of the front ends 18.

The elongated ski body portions 16 include conventional longitudinally extending center grooves 24 in their under surfaces 26 and removable and replaceable opposite side edge members 28, as is conventional with snow skis. However, the grooves 24 and edge members 28 may be eliminated if the ski-like members 12 are to be utilized solely for planing over the surface of the body of water and a depending skeg (not shown) may be utilized at the rear end of each elongated ski body portion 16 of ski-like members 12 designed specifically for use on water.

The ski-like members 12 may be constructed of any suitable material such as glass fiber impregnated plastic and the upper troughed surface of each extension 22 is provided with a resilient pad panel 30 constructed of any suitable material such as foam rubber. Also, one marginal edge portion of each extension 22 has a partial sleeve member 12 secured thereto in any convenient manner by means of fasteners 34 and the other longitudinal marginal edge portion of each extension 22 has an opposing partial sleeve member 36 secured thereto by means of suitable fasteners 38. In addition, the fasteners 34 are utilized to secure a plurality of clamp members 40 to the extensions 22 and the clamp members 40 are utilized to anchor the free ends of a plurality of looped resilient flexible tension members

42 to the corresponding sides of the extensions 22. The looped ends of the tension members 42 include strap type hooks 44 and the fasteners 38 as well as further fasteners 46 are utilized to secure anchor members 48 to the longitudinal sides of the extensions 20 remote from the fasteners 40. The anchor members each define a plurality of anchor points 50 with which the associated hook 44 may be engaged.

As may best be seen from FIG. 1 of the drawings, the user 52 applied the ski-like members to his lower leg portions with the forward surfaces of his lower leg portions cradled in the channel-shaped extensions and the partial sleeve members 32 and 36 encircled about the calf of his leg. The looped tension members 42 are then stretched over the partial sleeve members 32 and anchored to corresponding anchor members 48 in proper tensioned condition by means of the strap hooks 44.

With attention now invited more specifically to FIG. 9 of the drawings there may be seen a boot attaching assembly referred to in general by the reference numeral 54 and which includes an elongated adjustable length strap 56 having a buckle 58 on one end and a plurality of longitudinally spaced coacting apertures 60 formed in its other end. A secondary strap element 62 is also included in the assembly 54 and has one end thereof secured to one end portion of the strap as at 64 and loop 66 carried by the other end thereof releasably engageable with a hook anchor 68 carried by the other end of the strap. An angulated toe protecting and skid plate 70 is also provided and has a pair of loops 72 secured to one angulated end portion thereof through which the strap element 62 passes and the free end of the other end portion of the plate 70 is serrated as at 74.

In attaching the member 12 to the leg of the user, the boot attaching assembly 54 has the strap portion thereof encircled about the sole of the user's boot and the reversely bent portion of the member 12 connecting the rear end 20 of the elongated ski-like body portion 16 and the rear end of the extension 22. Further, the strap element 62 is passed over the upper portion of the boot of the user 52 disposed within the reversely bent portion and in this manner the user's boot is attached to the member 12 and the plate 70 is further attached to the boot of the user.

With attention now invited more specifically to FIG. 1 of the drawings it may be seen that the user 52 utilizes the the ski-like members 12 in a head forward kneeling position and that the user 52 holds the planing members 14 with his hands. Each planing member 14 comprises a short ski body 78 with an upwardly curving front end 80 and each body 78 includes an upstanding contoured handgrip 82 provided with a wrist strap 84. Thus, it may be seen that the user 52 may traverse a snow covered slope while being disposed very close to the surface over which he is traveling. Of course, the planing members may be canted to one side or the other so as to enable the user 52 to steer his progress down the slope.

If the ski-like members are constructed so as to be specifically adapted for use in water, the aforementioned grooves 24 and edge members 28 may be eliminated in favor of depending rearwardly mounting skegs or rudders and the planing members 14 may have the upper ends of the handgrips 82 interconnected by any suitable crossbar to which a water ski tow rope may be attached. Further, if the ski-like members 12 are to be utilized on water, the planing members 14 need not be provided and the user 52 may assume a more upright position than that illustrated in FIG. 1 of the drawings and hold the handle of a water ski tow rope in his hands in lieu of the handgrips 82 of the planing members 14.

With attention now invited more specifically to FIGS. 10 through 14, there may be seen a modified boot construction to be utilized in conjunction with the ski-like members 12 when the the latter are specifically adapted for use on snow. The modified boot structure is referred to in general by the reference numeral 90 and includes an adjustable strap construction 92 by which a pair of oppositely horizontally outwardly projecting hemispherical bearing elements 94 are secured over opposite side portions of the boot construction 90. Bearing elements 94 are positioned so that a line extending between the centers of the bearing elements generally coincides with the pivotal movement of the foot of the user 52 relative to his lower leg portion. In addition to being secured to the boot construction 90 by means of the strap construction 92, the bearing elements 94 may be provided with suitable mounting flange portions capable of being sewn to the opposite side wall portions of the boot construction 90.

In any event, when the bearing elements 94 are utilized, the opposite side portions of the rear end portion 20 of each member 12 are provided with aligned transverse bores 96 in which internally threaded sleeves 98 are secured by means of fasteners 100 secured through the opposite side portions of the rear end portions 20 and mounting flange portions carried by the inner ends of the sleeves 98. Each of the sleeves 98 includes a rearwardly opening semi-cylindrical entranceway portion 102 and the opposite sides of the rear end portions 20 are relieved as at 104, see FIG. 13, to provide clearance for the entranceway portions 102. In addition, threaded journal caps 106 have their threaded neck portions 108 removably threadedly engaged in the sleeves 98 and the inner ends of the neck portions 108 having hemispherical sockets 110 formed therein.

Accordingly, when the user 52 wishes to operatively connect his boot construction 90 to the ski-like member 12, the journal caps 106 are removed and the bearing elements 94 are received into the sleeves 98 through the entranceway portions 102 from the rear. Then, the journal caps 106 are screw-threaded into the outer ends of the threaded bores formed through the sleeves 98 so as to anchor the bearing elements 94 within the hemispherical recesses 110. Of course, inasmuch as the journal caps 106 are secured to the opposite side wall portions of the rear ends 20 of the ski-like members 12, the boot construction 90 is secured to the rear end portion 20 against removal therefrom.

When the modified boot construction 90 is utilized, the toe of the boot construction 90 is provided with a serrated plate 112 to serve the braking function of the serrated end portion of the plate 70 when the user 52 cams the toes of his boot constructions 90 downwardly into the snow surface over which he is riding.

As may be seen from FIGS. 2 and 3 of the drawings, the user 52 may readily, walk in an upright position

while wearing the ski-like members **12**. Further, the partial sleeve members **32** and **36**, the resilient pad panel **30** and the tension members **42** all coact together to secure the ski-like members **12** to the lower leg portion of the user **52** in a comfortable manner. Of course, the reversely curing end portions of the ski-like members **12** are constructed in a manner whereby the feet of the user **52** may be readily cammed downwardly into the snow surface over which he is moving.

With attention now directed more specifically to FIGS. **15** and **16** of the drawings, there will be seen a modified form of planing member referred to in general by the reference numeral **114**. Each of the planing members **114** includes a ski body **116** having a forwardly and upwardly curving front end **118** and a hand loop or strap **120** is secured to the upper surface of the rear end portion of the ski body **116** and includes a wide stall for receiving the hand at the base of the four fingers of the user **52** and a second narrow stall **124** for receiving the thumb of the user. Of course, either of the planing members **14** or **114** may be utilized in conjunction with the ski-like members **12**.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A snow and/or water planing assembly comprising a pair of generally horizontal and relatively short ski-like members including upwardly curving forward ends and whose rear ends curve sharply upwardly and forwardly and terminate in forwardly and downwardly inclined extensions anchored at their forward end portions to the forward end portions of said ski-like members, said extensions being adapted to snugly underlie the lower leg portions of a person disposed on his knees and with said lower leg portions supported from said extensions and the feet of said person projecting downwardly closely behind the upwardly and forwardly curving rear ends of said ski-like members, and means carried by said extensions for securing the latter to said lower leg portions.

2. The combination of claim **1** wherein said extensions are upwardly opening trough-shaped in configuration.

3. The combination of claim **2** wherein the last-mentioned means includes elongated flexible tension members having one set of corresponding ends anchored to one pair of longitudinal edge portions of said extensions and coacting means carried by the other set of corresponding ends of said tension members and the other pair of longitudinal edge portions of said extensions removably anchoring the latter tension member ends to said other edge portions.

4. The combination of claim **3** including partial cylindrical resilient sleeve means extending between the longitudinal edge portions of said extensions, opening toward the latter and underlying said tension members.

5. The combination of claim **1** wherein said ski-like members include replaceable opposite side downwardly facing edge members.

6. The combination of claim **1** including a pair of still shorter ski-like planing members each provided with centrally disposed means adapted to be utilized in anchoring one of said person's hands thereto.

7. The combination of claim **6** wherein said centrally disposed means comprises an upstanding handgrip.

8. The combination of claim **6** wherein said centrally disposed means comprises a horizontal sleeve assembly anchored to and extending longitudinally of the lengthwise central portion of each of said ski-like planing members, said sleeve assembly being adapted to receive the hands of said person therein.

9. The combination of claim **8** wherein said sleeve assembly includes first and second wide and narrow rearwardly opening stall defining portions.

10. The combination of claim **1** including a pair of boots to be worn by said person, means oscillatably supporting said boots from the upwardly and forwardly curving rear ends of said ski-like members between opposite side portions thereof and for oscillation about horizontal transverse axes extending through the ankle enclosing portions of said boots.

11. The combination of claim **10** wherein the last-mentioned means includes coacting boot mounted and ski-like member mounted portions.

12. The combination of claim **11** wherein said boot mounted portions are removably supported from said boots.

13. The combination of claim **10** wherein said boot mounted portions include oppositely outwardly facing hemispherical members carried by the opposite side portions of each of said boots.

14. The combination of claim **13** wherein said ski-like member mounted portions define inwardly opening and opposing hemispherical socket defining members carried by opposite side portions of each of said upwardly and forwardly curving rear ends, the socket defining members of each ski-like member being supported for relative adjustable positioning toward and away from each other.

15. The combination of claim **14** including a pair of still shorter ski-like planing members each provided with centrally disposed means adapted to be utilized in anchoring one of said person's hands thereto.

16. A snow and/or water planing assembly comprising a pair of generally horizontal and relatively short ski-like members including elongated trough-shaped upper portions extending longitudinally thereof forwardly from the rear end portions of said ski members to points spaced forward of the longitudinal center points of said ski members, said trough-shaped members being adapted to underlie and snugly embracingly cradle substantially the full length of the lower leg portions of a person disposed in a generally kneeling position, the rear ends of said trough-shaped upper portions curving sharply downwardly for closely receiving the depending feet of said person therebehind, said upper portions including means for securing said upper portions to said lower leg portions and said downwardly curving rear ends of said upper portions comprising the rearmost extremities of said ski-like members.

17. A snow and/or water planing assembly comprising a pair of generally horizontal and relatively short ski-like members including upwardly curving forward ends and whose rear ends curve sharply upwardly and

forwardly and terminate in forwardly and downwardly inclined extensions, said extensions being adapted to snugly underlie the lower leg portions of a person disposed on his knees and with said lower leg portions supported from said extensions and the feet of said person projecting downwardly closely behind the upwardly and forwardly curving rear ends of said ski-like members, and means carried by said extensions for securing the latter to said lower leg portions.

* * * * *