United States Patent

Struble, Jr.

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[54] **SKI CONCEPT**

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Related U.S. Application Data

[63] Continuation of Ser. No. 696,581, Jan. 9, 1968, abandoned.

[52] **U.S. Cl.**.....**280/11.37 B**, 180/1 G, 180/3 R, 280/11.13 K, 280/11.35 R

[51] **Int. Cl.**.....**A63c 11/02**, A63c 11/22, A63c 5/08

[58] **Field of Search**.....280/11.37, 11.35 N, 11.35 S, 280/11.35 E, 11.13 K, 11.13 T, 11.35 R, 12.1; 180/1 G, 3 R, 3 A, 6 R, 6

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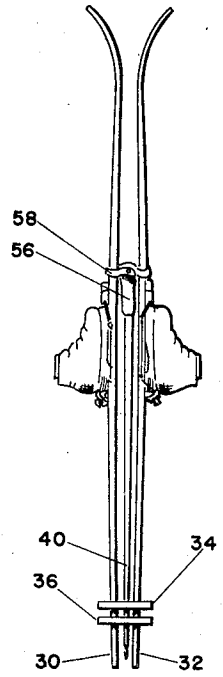
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Primary Examiner—Benjamin Hersh
Assistant Examiner—Milton L. Smith
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[57] **ABSTRACT**

A new and improved equipment for skiers comprising a pair of ski poles having snow engaging elements adapted to be connected together to hold a pair of skiis and means to fasten the ski poles and the skiis into a compact unit for carrying by a skier. The ski pole handles may include portions of the fastening means and the ski poles and the skiis may be provided with equipment carrying means on the ski poles or the skiis. The skiis may be folding skiis or may be provided with power drive means and the ski poles may have receptacles in their upper ends and may have removable handles.

18 Claims, 39 Drawing Figures



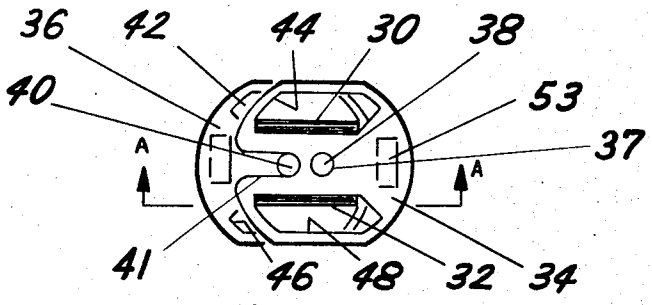


FIG. 1

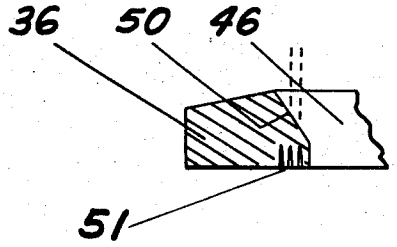


FIG. 4

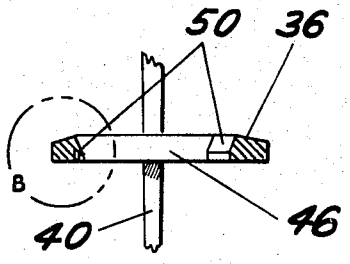


FIG. 2

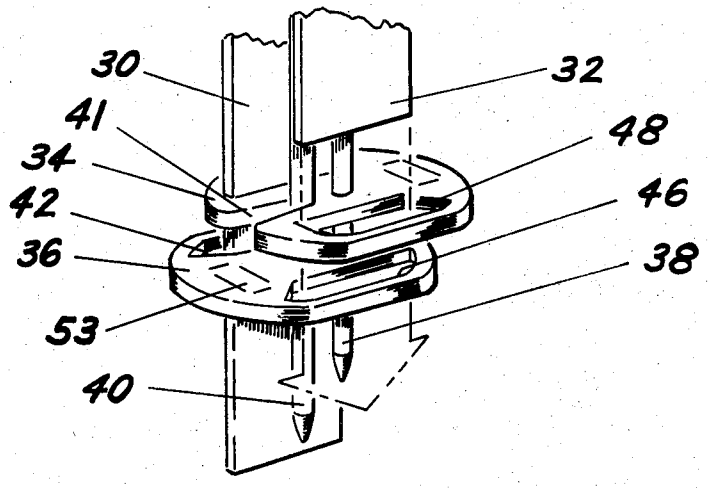


FIG. 3

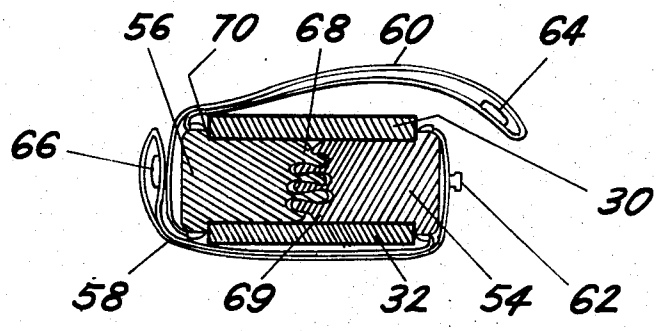


FIG. 5

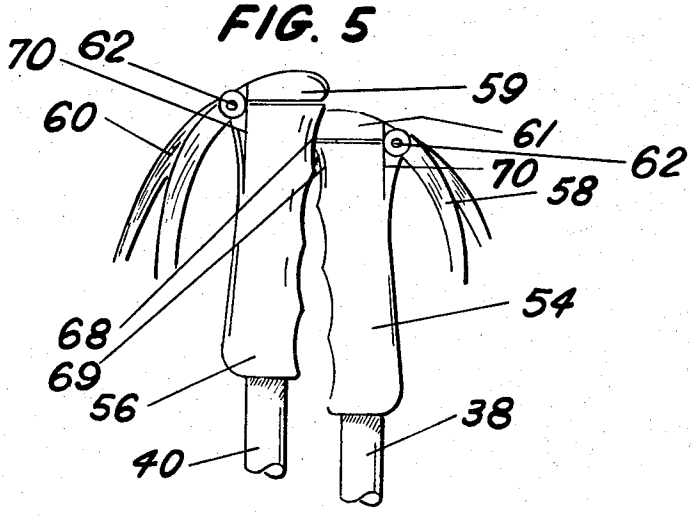


FIG. 6

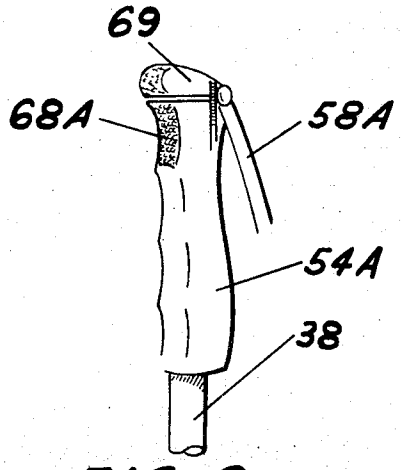


FIG. 8

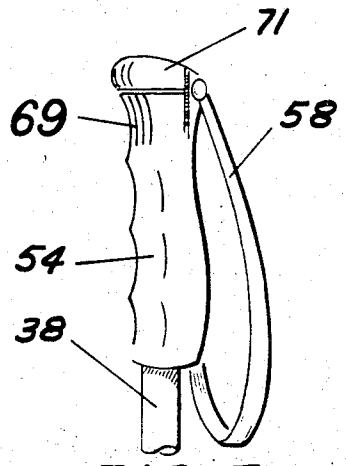


FIG. 7

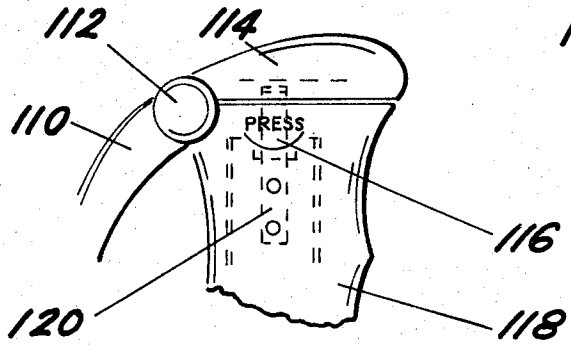


FIG. 18

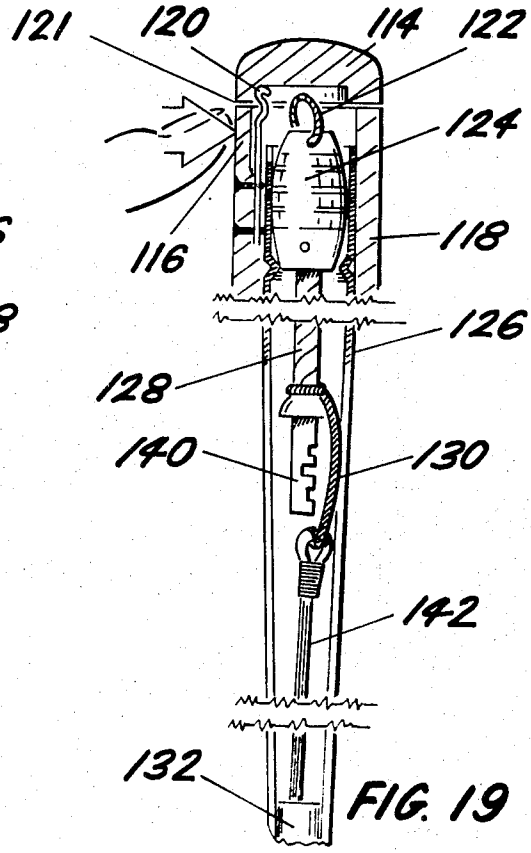


FIG. 19

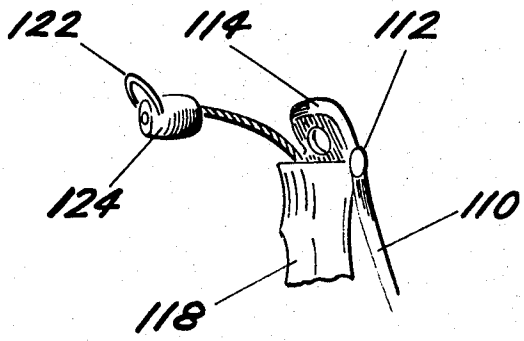


FIG. 20

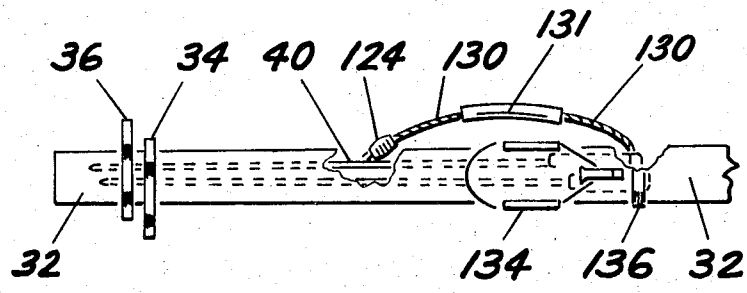


FIG. 9

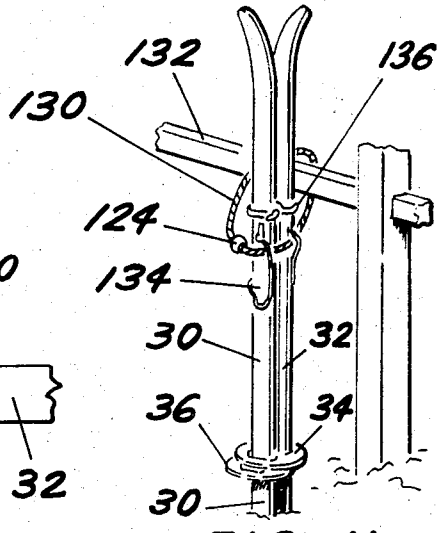


FIG. 11

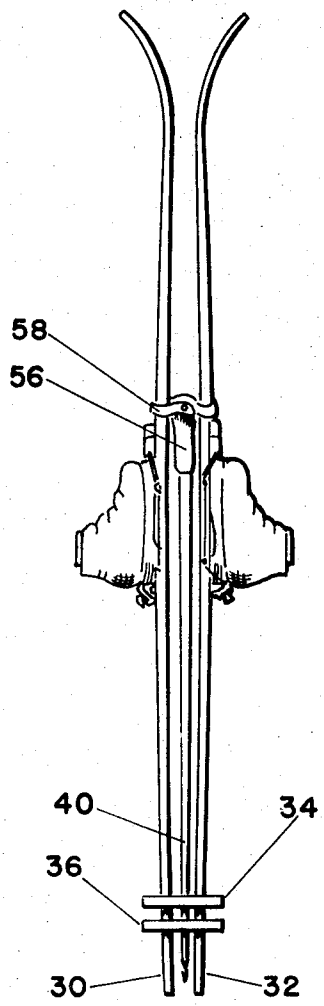


FIG. 10

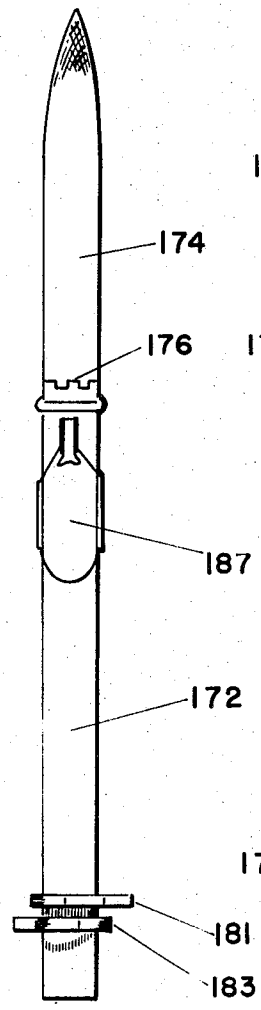


FIG. 23

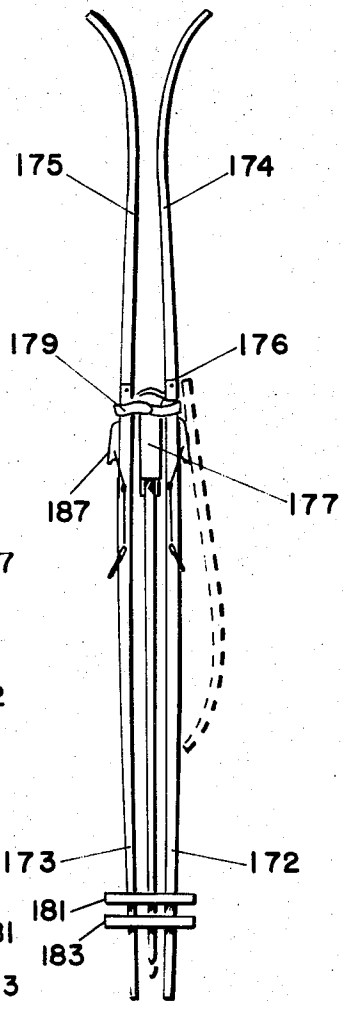


FIG. 24

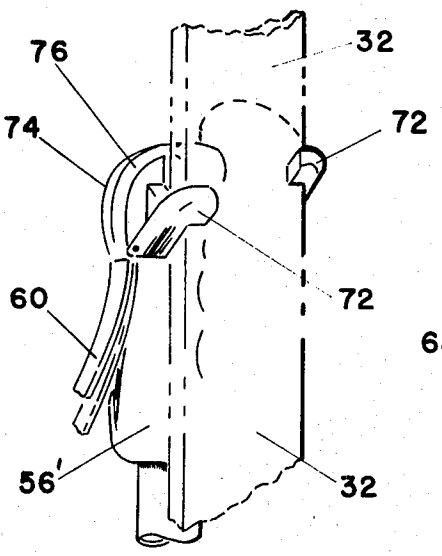


FIG. 13

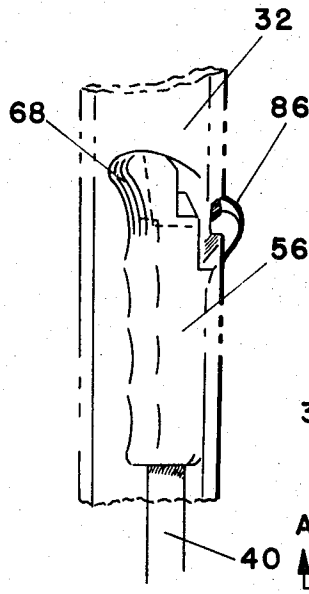


FIG. 15

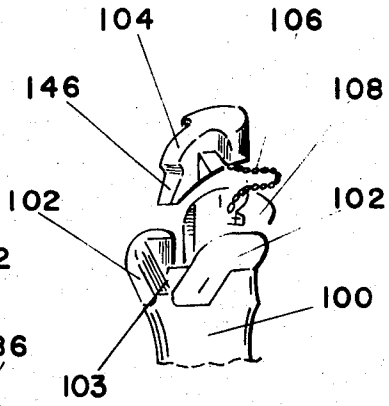


FIG. 17

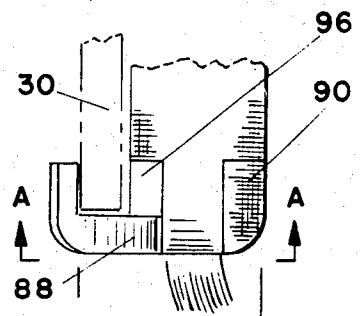


FIG. 16

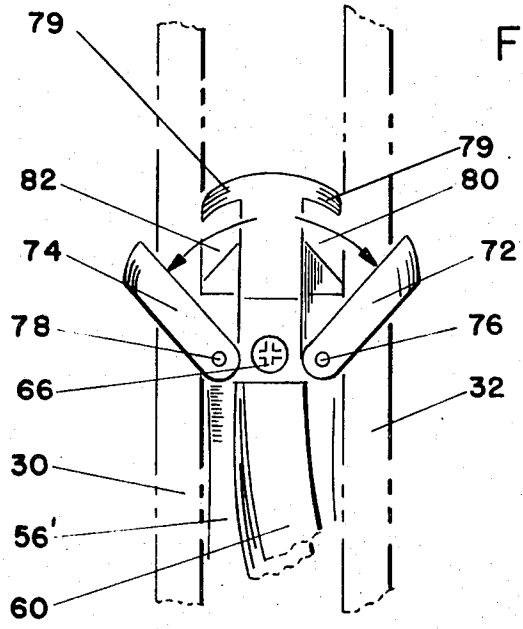


FIG. 12

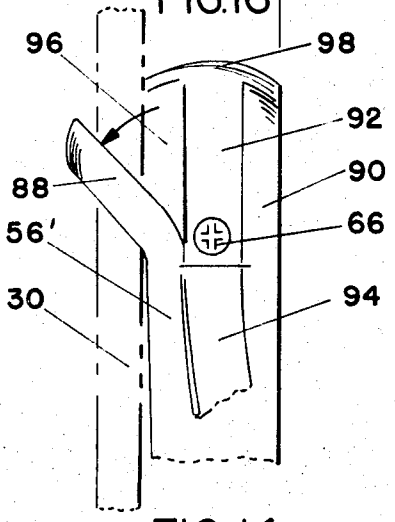


FIG. 14

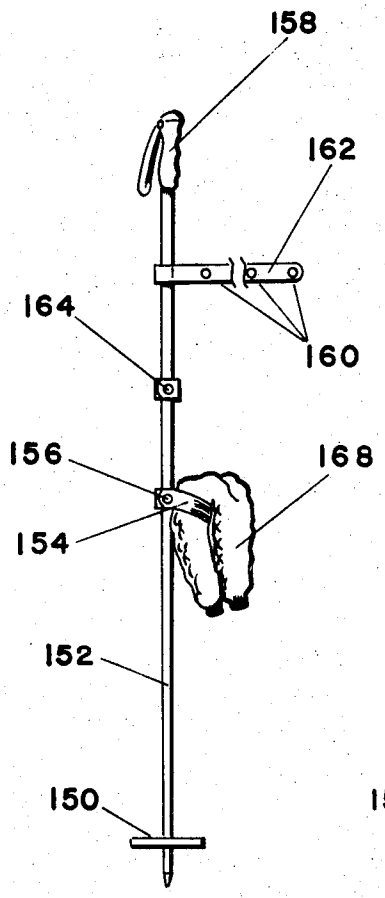


FIG. 20-A

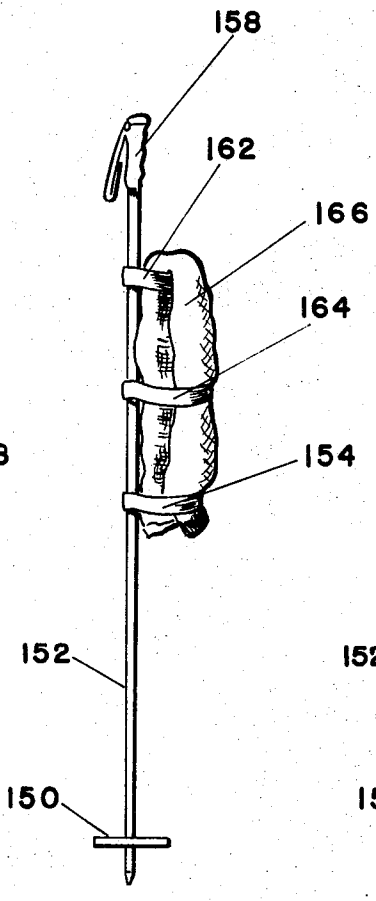


FIG. 21

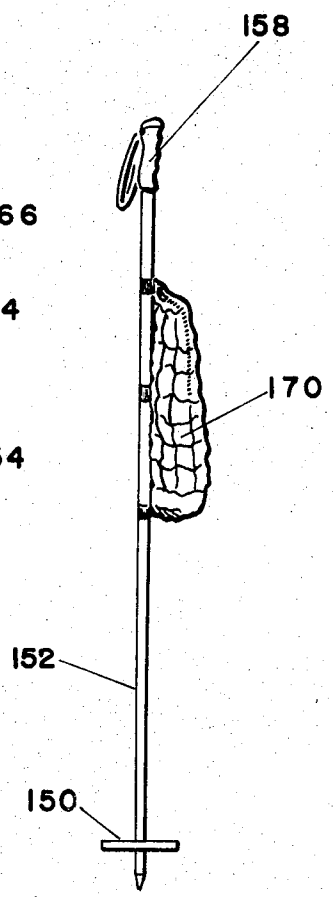


FIG. 22

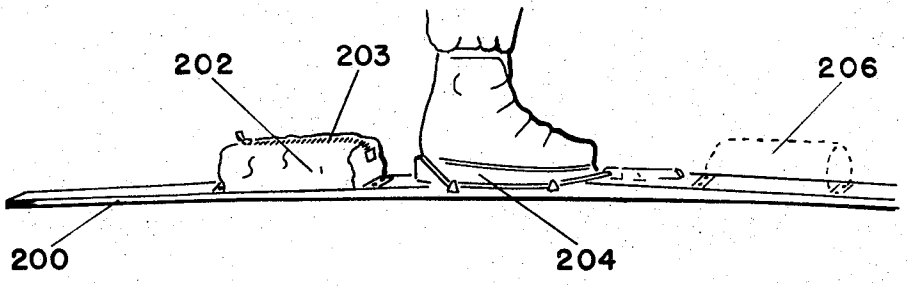


FIG. 28

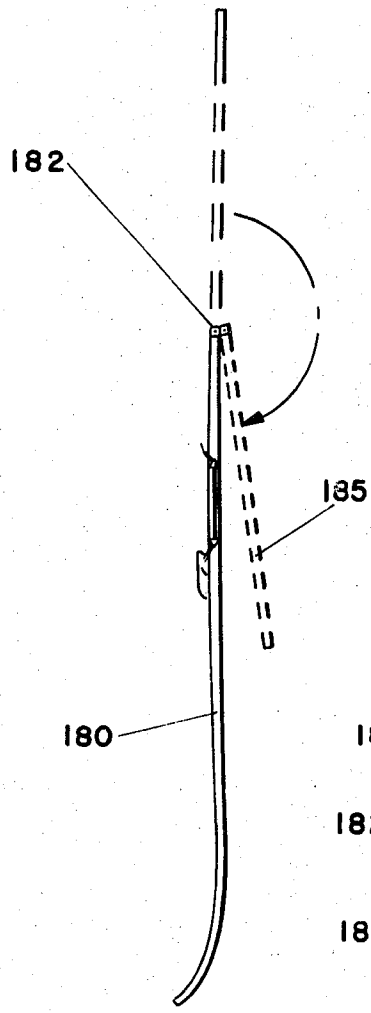


FIG. 25

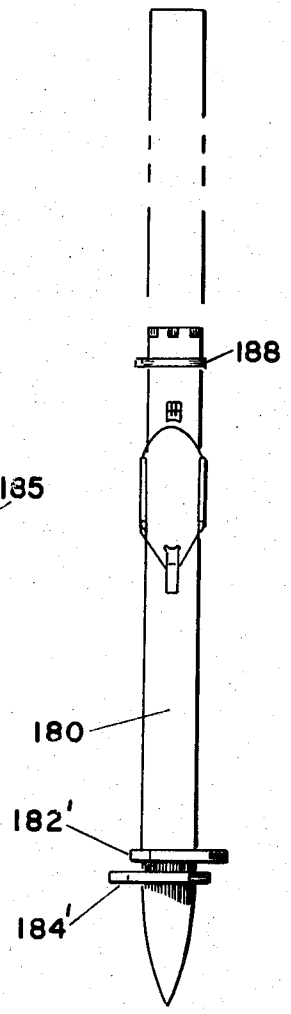


FIG. 26

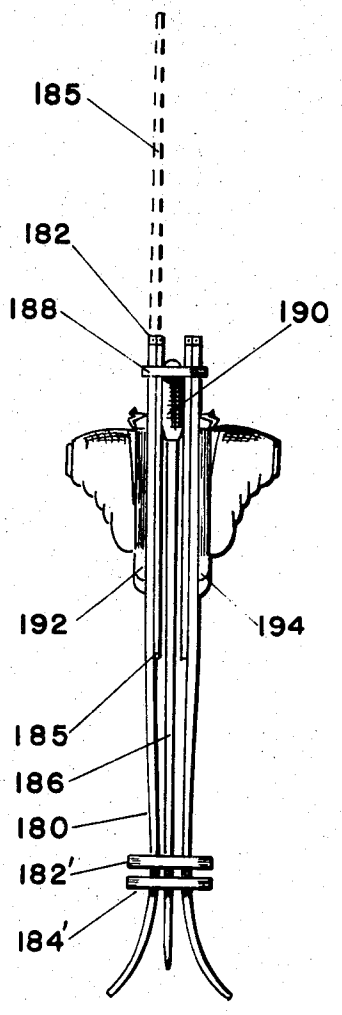


FIG. 27

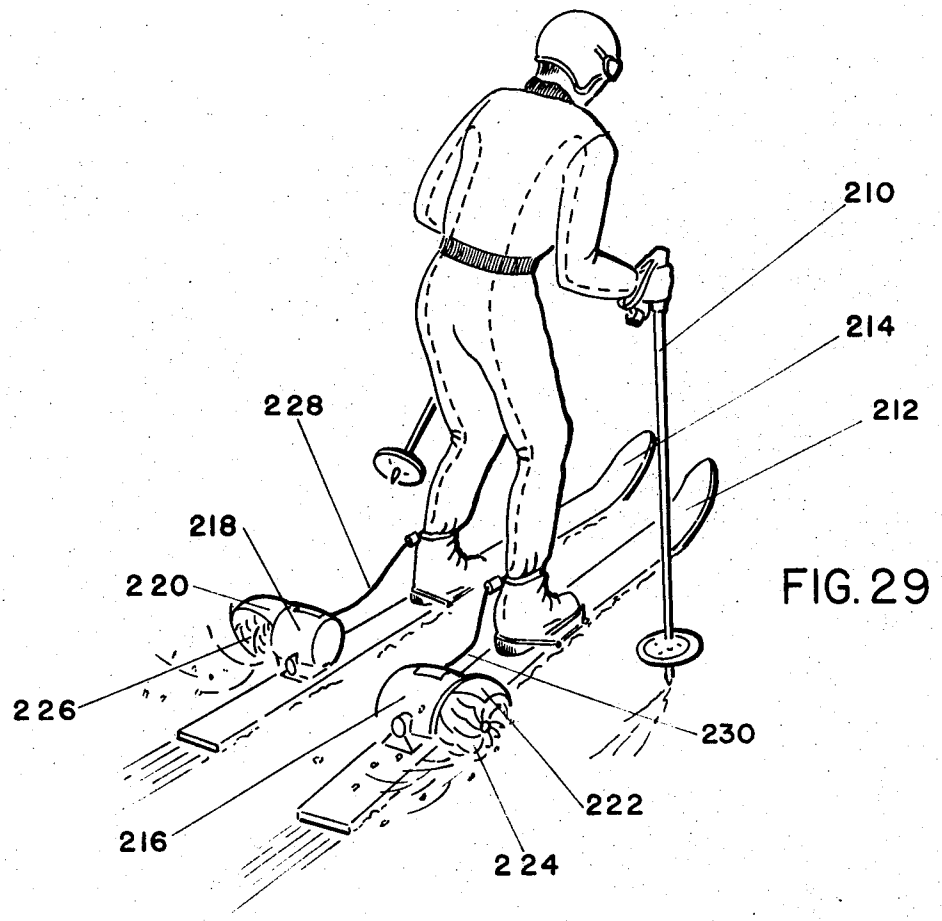


FIG. 29

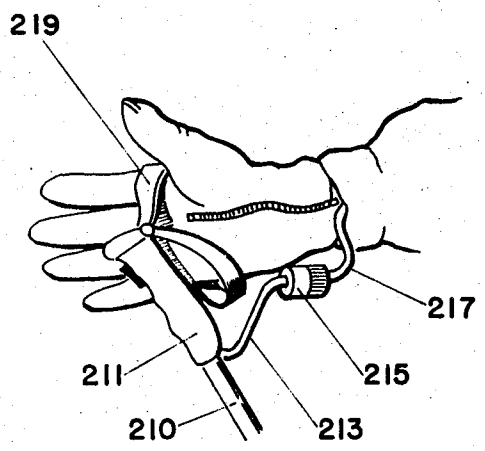


FIG. 31

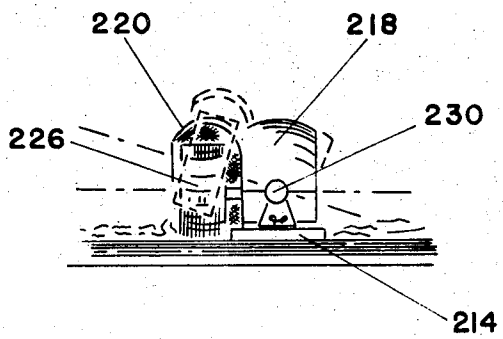


FIG. 30

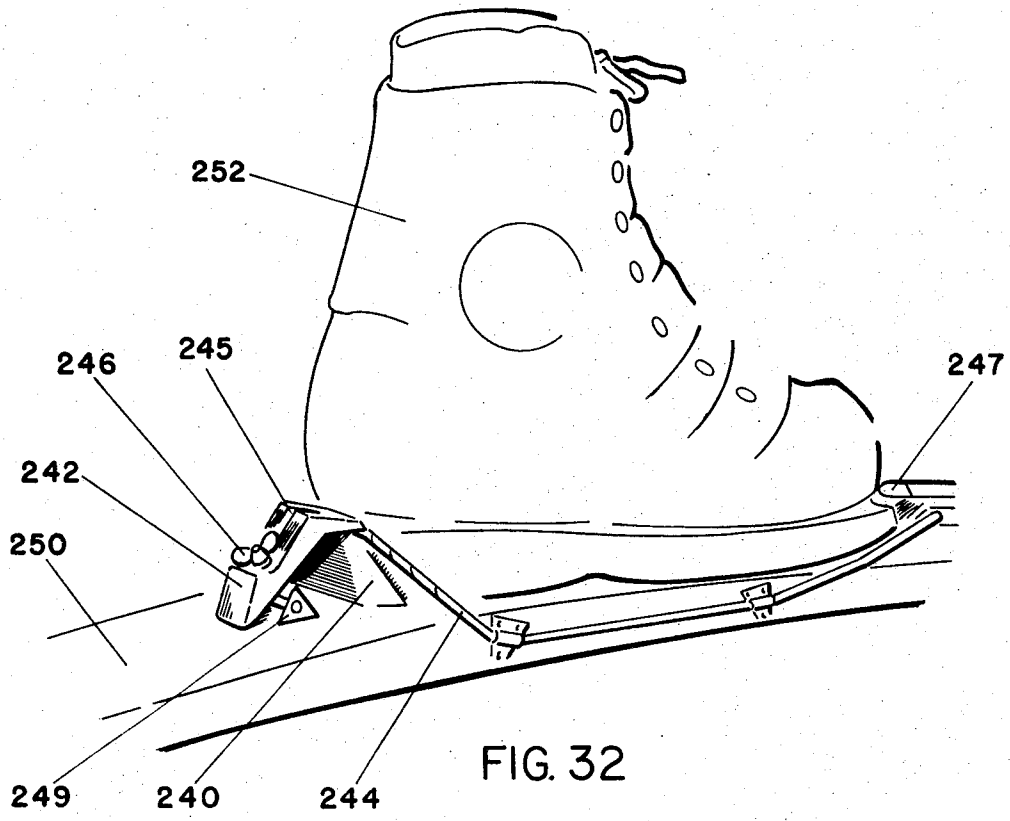


FIG. 32

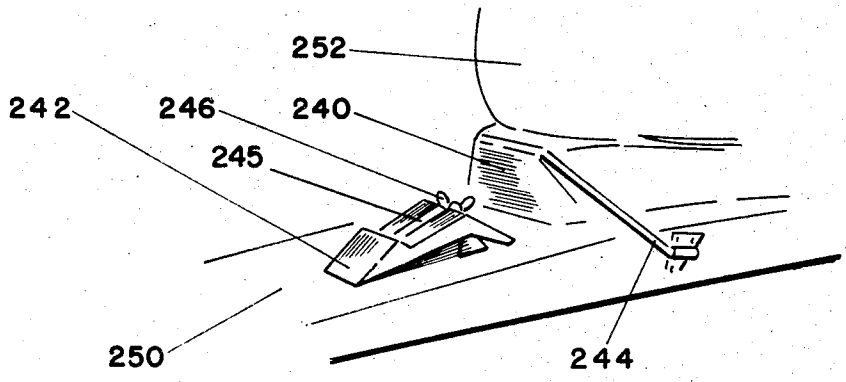


FIG. 33

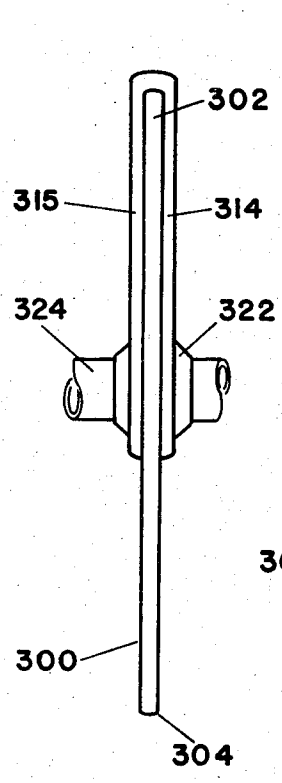


FIG. 35

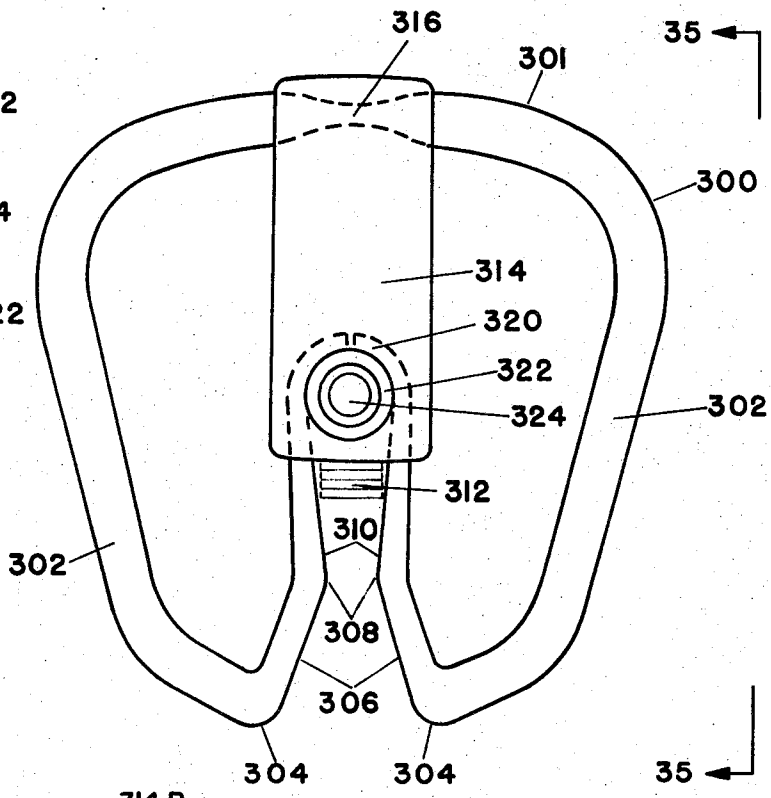


FIG. 34

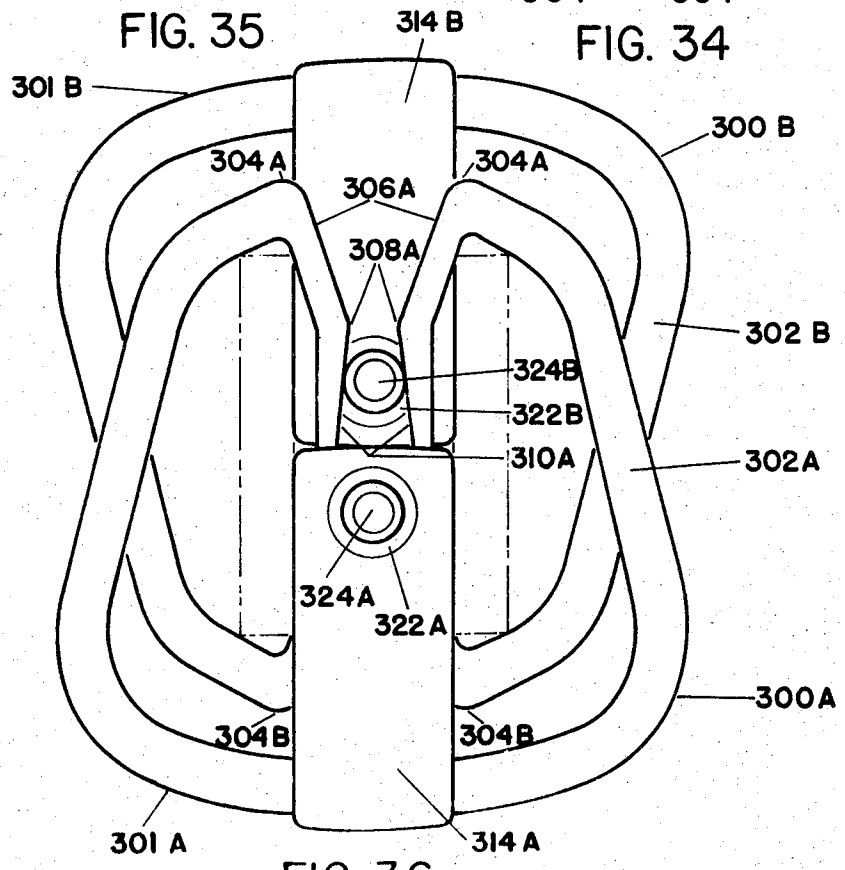


FIG. 36

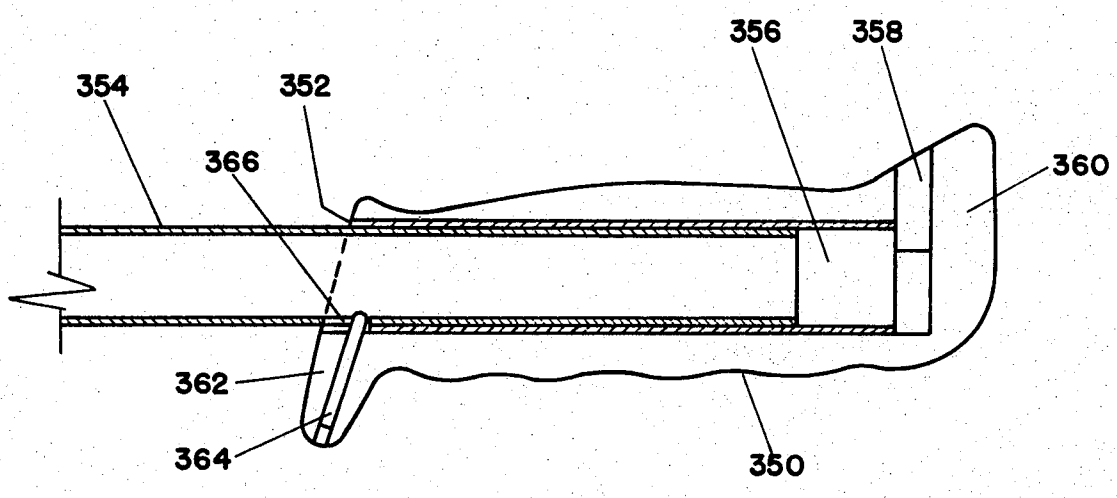


FIG. 37

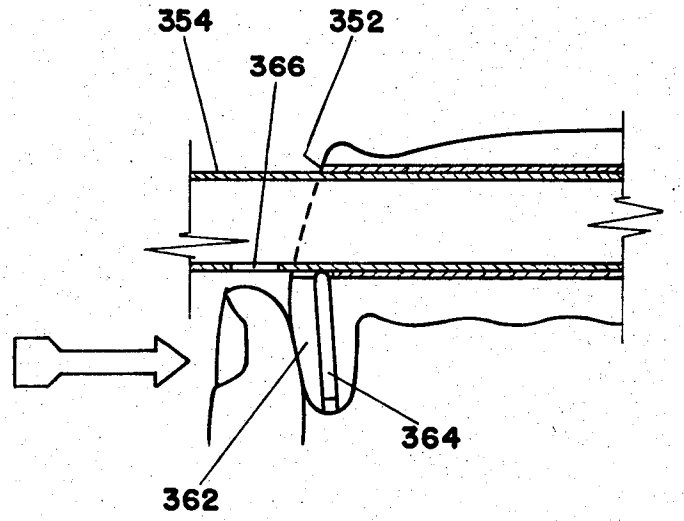


FIG. 38

SKI CONCEPT

BACKGROUND

One problem with the sport of skiing is that the skis and associated equipment consist of a number of separate items of rather ungainly and bulky nature that must be transported to and from the skiing area. Since skiers often wear heavy clothing, must walk over snowy or icy areas, and often have to enter through the doorways of buildings with their skiing equipment, it would be very desirable if the skier could have all of his skiing equipment in the form of a single compact unit that could be readily transported from place to place.

I believe that I have found the means for accomplishing this. My various inventions in this regard are set forth in the attached drawings wherein:

FIG. 1 is a plan view of a ski and ski pole assembly in accordance with this invention;

FIG. 2 is a fragmentary sectional view along A—A of FIG. 1 showing details of the lower element of ski assembly in accordance with this invention (without the ski);

FIG. 3 is an enlarged fragmentary perspective view of a ski and ski pole assembly in accordance with this invention, indicating how the skis interfit with the elements;

FIG. 4 is an enlarged view of the portion within the circled B area of FIG. 2;

FIG. 5 is a sectional view of an assembly comprising skis and novel ski handles in accordance with this invention;

FIG. 6 is a fragmentary view in elevation of the novel ski handles in accordance with this invention;

FIG. 7 is an elevation view of a single ski handle in accordance with this invention;

FIG. 8 shows another embodiment of a handle in accordance with this invention;

FIG. 9 is a fragmentary side view, partly in section of a ski assembly and handle means in accordance with this invention;

FIG. 10 is an elevation view of a compact ski assembly unit in accordance with this invention;

FIG. 11 is a perspective view showing how a compact unitary ski assembly in accordance with this invention could be secured to a portion of a fence;

FIG. 12 is a fragmentary elevational view of a novel ski handle arrangement in accordance with this invention;

FIG. 13 is a fragmentary perspective view of a ski handle arrangement in accordance with this invention;

FIG. 14 is a view along A-A of FIG. 16 showing another ski handle arrangement in accordance with this arrangement;

FIG. 15 is a fragmentary perspective view showing how the novel handle in accordance with this invention grips a ski;

FIG. 16 is a fragmentary top view of a ski pole handle in accordance with this invention;

FIG. 17 is a fragmentary perspective view of another embodiment of a ski pole handle in accordance with this invention;

FIG. 18 is a fragmentary side view of another embodiment of a ski pole handle in accordance with this invention;

FIG. 19 is a fragmentary sectional view of a ski pole handle with interior storage space;

FIG. 20 is a fragmentary perspective view showing how a handle, such as shown in FIGS. 18 and 19, can be opened and a lock removed;

FIGS. 20A, 21 and 22 are side views of a ski pole and strap attachment means in accordance with this invention;

FIG. 23 is an elevation view of a hinged ski mounted in a compact unit with the novel elements of this invention;

FIG. 24 is a side view of the compact unit shown in FIG. 23;

FIG. 25 is an elevation view of another type of ski in accordance with this invention;

FIG. 26 is a side view of the ski shown in FIG. 25 assembled into a compact unit by means of the novel elements of my invention;

FIG. 27 is a side view of the ski assembly shown in FIG. 26;

FIG. 28 is a fragmentary perspective view of another embodiment of a ski in accordance with this invention;

FIG. 29 is a perspective view showing a novel motorized ski arrangement in accordance with this invention;

FIG. 30 is a fragmentary view in elevation of a novel ski motor arrangement;

FIG. 31 is a fragmentary perspective view illustrating an arrangement relative to skier motor control;

FIG. 32 is a fragmentary perspective view of a novel ski boot holding means;

FIG. 33 is a view similar to FIG. 32 showing another position of part of the ski boot assembly;

FIG. 34 is a plan view of another form of novel ski element in accordance with this invention;

FIG. 35 is a view along 35—35 of FIG. 34;

FIG. 36 is a plan view illustrating how two elements such as are shown in FIGS. 34 and 35 would look when assembled with skis and ski poles;

FIG. 37 is a fragmentary sectional view of another novel form of ski pole handle in accordance with this invention;

FIG. 38 is a fragmentary view similar to FIG. 37 showing how the handle may be disengaged from the ski pole itself.

In the first embodiment shown in FIGS. 1 to 7 and 10, a pair of skis 30, 32 is shown held together in a compact package. The skis are packaged with the shoes attached thereto, as shown in FIG. 10, and are secured together by elements 34, 36 and one or more straps or tie members (such as 58) attached to the handle (e.g. 56) of a ski pole 40. Elements 34 and 36 are preferably made of rubber or plastic and are a variation of the usual "ring" or "basket" or "wheel" or "snow engaging elements" used on ski poles to prevent the pole from sinking too far into the snow.

Referring to FIG. 3, elements 34 and 36 are shown in position for assembly with skis 30 and 32. Ski 32 is shown in position to be moved downward through vertically aligned openings in elements 34 and 36. Element 34 may have the general shape of a circle that has been flattened at its sides and is provided with elongated openings 44, 48 through which the skis may pass. An elongated slot 41 is provided in element 34 for one ski pole 40 and a circular hole 37 is provided for ski pole 38 (see FIG. 1). A space 53 is provided for a name plate. Element 36 is a duplicate of element 34, the only

difference being that in FIG. 3 they are turned 180° with respect to each other. Element 36 has elongated openings 42 and 46 which would correspond with elongated openings 48 and 44 of element 34 (except that they are turned 180°).

FIGS. 2 and 4 show that the walls of the elongated openings may be beveled so as to expedite the insertion of the skis. For instance by using element 36 as an example, FIGS. 2 and 4 show that the walls of elongated opening 44 is preferably beveled at 50 so as to expedite insertion of the ski. It is also contemplated that the openings 44 and 48 can be enlarged by cutting out a part thereof with a knife, and in this connection, grooves 51 are provided to constitute guides for removing part of the material to thereby enlarge the opening.

Referring now to FIGS. 5 and 6, the ski poles 38, 40 are provides with handles 54 and 56 (made of hard rubber or plastic) with top portions 59 and 61 and with straps 58 and 60. Snap fastener means are provided on each of the straps, the female portions 64 and 66 of the snap fastener means being located near the outer ends of the straps and the male portions (e.g. 62) of each snap fastener means being located near the inner end of each strap.

FIGS. 5–7 also show that each of the handles 54 and 56 are provided with a plurality of deep groove and rib formations 68 and 69 that are adapted to interlock together so as to hold the handles together. It will be noted that the ribs of the groove and rib formation are preferably enlarged at their outermost ends to provide a snapping action and to faciliate interlocking. FIG. 5 shows that if the sides of the handles 54 and 56 are appropriately shaped (such as with a channel 70) the skis 30 and 32 will "fit" in the sides of the handles.

It will now be seen that the skis, poles, shoes and elements 34, 36 may be formed into a compact unit by inserting the skis in the openings in elements 34, 36 (as shown in FIGS. 1–4) and fastening the straps, handles and skis as is shown in FIG. 5. It is preferred that the handle be thick enough to act as a camber block.

FIG. 8 shows another embodiment of a handle for a ski pole 38 consisting of a handle portion 54A, a top portion 69 and a strap 58A. In this embodiment a different fastening means is provided for the handles as compared with the groove and rib arrangement 68 and 69 shown in FIGS. 5–7. The surface 68A is covered with a material such as Velcro, a fibrous interlocking fastening means known in the art.

FIG. 9 shows how a compact ski unit comprised of elements 34 and 36 and ski 32 (with shoe retainer 134) can be provided with carrying means. A fastener element 136 surrounds one or both skis and is provided with one end of a rope or cable 130. An intermediate portion of the rope 130 is provided with a handle 131 and the extreme end of rope 130 is connected to a separable combination lock that is connected to another part of the ski and ski pole assembly. This arrangement permits the package to be easily carried.

FIG. 11 shows a similar arrangement as in FIG. 9 and illustrates how the rope 130 can be disconnected at the lock 124 and looped around a fence rail 132 and through the hoops of shoe retainer 134, to thereby secure the skis against theft.

Referring next to FIGS. 18 to 20, there is shown an embodiment wherein cap member 114 of the ski pole handle 118 (adjacent the snap fastener means 112 for strap 110) can be raised to expose the hollow inner portion of the handle 118. A latch means 20 normally secures the cap 114 in closed position and this latch means may be released by pressing on latch release means 116 so as to thereby move the latch inwardly. A slit 121 may be provided in the handle in order to facilitate operation of latch release means 116. Connecting member 126 interconnects the handle 118 with the ski pole 132. The cable 128 has a combination lock 124 with a handle loop 122 at one end, and a cord 130 connected to a retention bungee 142 at the other end. The locking element is (140) capable of interlocking with the top end of combination lock 124 to thereby form a continuous loop. As will be seen, the cable 128 may be removed from the hollow handle and fastened around any desired point or assembly.

FIGS. 12 and 13 show how a handle 56 can act as a spacer block between the skis 30 and 32. Pivoted L-shaped ski gripping members 72 and 74 of flexible material can be pivoted at 76 and 78 so as to grip the skis. After the ski gripping members 72 and 74 have been spread to the position shown in FIG. 12, it will be seen that the remaining portion of the handle is somewhat T-shaped, with the opposite ends 79 of the top 78 of the "T" engaging the inside surfaces of the skis (and leaving open portions 80 and 82.) Straps 60 may be attached to the handle 56 and secured by a screw 66.

In FIGS. 14 and 16 it will be seen that on either side of the central portion 92 of the handle 56 there are disposed ski gripping members 88 and 90 that are integral with the handle 56 (rather than being mounted on a pivot) and are merely bent over or twisted sidewise to grip the side of the ski 30, the upper portion 98 of the handle extends between adjacent skis. Since ski gripping member 88 is in effect cut out of the handle, which leaves a void space 96 when member 88 is twisted to the side to grip the ski 30. A strap 94 is attached to the handle by screw 66.

In FIG. 15 the ski pole handle 56 has a ski gripping section 86 similar to that shown in FIG. 15 and is designed to grip the edge of the ski 32. The handle also contains ribs and grooves 68.

FIG. 17 shows a hollow handle 100 for a ski pole having ski gripping portions 102 shaped with under cut portions to accommodate a cover 104. A retainer chain 106 is attached to the handle at 108. Ski gripping portions 102 are discontinued at 103 to receive projection 146 of cover 104.

FIGS. 25 to 27 show skis consisting of two parts 180 and 185 that are hinged together at 182. To provide a more compact package sections 185 are folded 180° before elements 182 and 184 (corresponding to elements 34 and 36 of FIGS. 1–4) are put in place. Shoes 192 and 194 and pole 186 are shown assembled in FIG. 27. A strap 188 is placed around the upper portion of the assemblage, including ski handle 190.

FIGS. 20A and 21 show a ski pole 152 with handle 158 and snow engaging element 150. On the ski pole 152 are mounted a strap 154 secured by fastener 156; a strap and fastener 164 and an additional strap 162 having snap fasteners 160. As shown in FIG. 21, clothing or other articles 166 may be secured to the pole by the straps.

FIG. 22 is similar to the arrangement of FIGS. 20A and 21 shows a bag 170 made of mesh material secured to a ski pole 152 for carrying articles therein.

FIG. 28 shows a ski 200 having shoe 204 thereon and having containers 202 and 206 for carrying articles. Container 202 is closed by zipper 203.

FIGS. 29 to 31 show a skier, ski pole 210, skis 212 and 214, and electric motors 216 and 218 having driving vanes 224 and 226 for propelling the skis. Guards 220 and 222 are shown above the vanes, and wires 228 and 230 lead to the skier, along his legs, body and arms to wire portions 217 (see FIG. 31) connector 215, wire 213, and handles 211 on ski poles 210, where a switch (not shown) or other means may be operated by the skier to control the motors. Strap 219 extends around the skier's hand and aids in retaining the handles.

In FIG. 30 it will be seen that the motor 218 is pivotally mounted upon a base 214 and pivot 230 so that the driving blades 226 can be tipped up so as to disengage from the snow or they can be tipped downwardly so as to dig deeper into the snow. The batteries for operating the motors would be carried on the person of the skier.

FIGS. 32 and 33 show a ski 250 having a ski boot 252 having a toe engaging member 247 and a heel engaging member 240, 244. Clamp member 242 engages the boot heel to secure it by tightening wing nut 246. The opposite end of the clamp member may be used to engage articles to be carried when the skis are being carried. Slot 245 permits sliding of the clamp member 242 so that the longest portion is between the wing nut 246 and the end which may be used for other articles.

FIGS. 37 and 38 show a removable handle 350 on a ski pole 354. Handle 350 is made of rubber or plastic and may have a metal lining 352. The ski pole has a slot 366 therein and the handle 350 is made of flexible material with a latch member 364 in portion 362 thereof. In FIG. 37 latch member 364 is shown in slot 366. To disengage the latch, pressure may be applied to part 362 to withdraw the latch. Plug 356 closes the tube. The hollow ski pole may be used to carry liquid refreshments or other items.

FIGS. 34 and 35 show a ski pole 324 having snow engaging element 302 contoured at 300, 301, 304, 306, 308 and 310 so as to be roughly horseshoe shaped. A tubular member 322 (within which ski pole 324 fits) is mounted between ends 320 of element 302 and a U-shaped member 314-315 embraces element 302 at narrowed portion 316 and provides a support for tubular member 322. In forming a ski package, (see FIG. 36) the skis will be disposed in the open spaces between member 314 and the element 302. The other ski pole, in packaging, will snap past the narrow portion 308 and be confined at portion 310 of element 302.

FIG. 36 shows snow engaging elements 302 as they would be assembled in packaging skis, the numerals in this figure corresponding to those in FIG. 34, except with the added letters A and B. Ski pole 324A extends through tubular member 322A and ski pole 324B is confined between the ends of element 302A. Pole 324A is confined between the ends of element 302B.

FIGS. 23 and 24 show ski 172 having foldable portion 174 hinged at 176 and ski 173 having a foldable portion 175. Numeral 187 indicates a boot holder. Ski poles 177 are assembled in a manner as has been described with reference to FIG. 10, and the straps 179 extend from the ski pole handles in the same manner as has been described with reference to FIG. 10. When carrying the package, the folded down portions 174, 175 will reduce the overall bulk and thereby expedite handling.

I claim:

1. A ski pole comprising an elongated handled pole and a generally planar snow engaging element positioned adjacent the lower end of said pole, said snow engaging element having two spaced apart passageways therein, each passageway having a size and shape that can accomodate a portion of a ski inserted in an endwise manner, said generally planar snow engaging element additionally having an elongated slot which is adapted to receive another ski pole, said passageways being positioned so that when two ski poles are engaged, by virtue of the said elongated slots therein, the passageways in the two snow engaging elements can be vertically aligned so that a portion of a ski can be inserted therethrough in an endwise manner.

2. A ski pole according to claim 1 wherein a handle is provided at the upper end of the probe and a portion of the handle is provided with gripping means so that when this portion of the handle is brought together into abutting relationship with the handle of a similar ski pole it will intermesh with said other handle to a limited extent.

3. A ski pole according to claim 2 wherein said ski pole handle is additionally provided with a strap.

4. A ski pole according to claim 2 wherein said gripping means comprises a plurality of grooves and ribs.

5. A ski pole according to claim 2 wherein said gripping means comprises Velcro.

6. A ski pole in accordance with claim 1 wherein the upper portion of the ski pole is provided with a handle that can be disengaged from the pole by a latch means.

7. A ski pole according to claim 1 wherein one side of said handle is shaped so as to form a channel for a ski.

8. A ski pole according to claim 1 wherein said ski pole is provided with a handle that has a top portion that can be moved to expose a cavity interior of the handle.

9. A ski pole according to claim 8 wherein said top portion is associated with a latch means that can be activated to allow the top to open.

10. A ski pole according to claim 8 wherein said cavity is large enough to house a cable and locking mechanism.

11. A ski pole according to claim 1 wherein at least a portion of said ski handle is formed so that it can move sidewise with respect to the axis of the pole to thereby be able to at least loosely grip the side edges of a ski that is positioned adjacent to said ski pole.

12. A ski pole according to claim 1 wherein said passageways are bevelled to facilitate insertion of the skis.

13. A ski pole according to claim 1 wherein the handle on the top end of the ski pole is shaped so that it can serve as a spacer block.

14. A ski pole according to claim 1 wherein said ski pole is hollow and is provided with a removable cap.

15. A ski pole according to claim 1 wherein at least one strap is attached to the pole intermediate the handle and snow engaging element.

16. A ski pole according to claim 1 wherein the snow engaging element comprises a generally horse-shoe shaped tubular element having inwardly extending legs at its open end, a U-shaped member straddling said element and a ski pole extending through said member and element.

17. A novel ski pole and ski package for skiers including a pair of skis and a pair of poles that are constructed in accordance with claim 25, each ski pole and each ski being joinable into a unitarywhole by virtue of the interfitting relationship between the structural components of portions of said skis and poles.

18. A ski having a motor mounted thereon, said motor being connected to impeller vanes which are adapted to engage the snow in order to move the ski, said motor being associated with a clutch means in such a manner that when the skier activates the motor the clutch means will cause the impeller vanes to be lowered into the snow and conversely when the skier deactivates the motor the clutch means together with the optional use of a spring means will cause the impeller vanes to lift out of contact with the snow.

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