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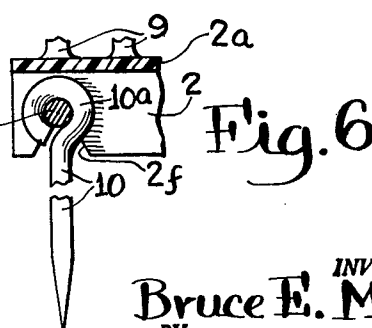
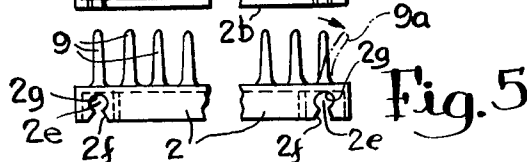
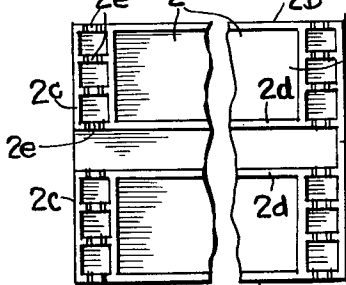
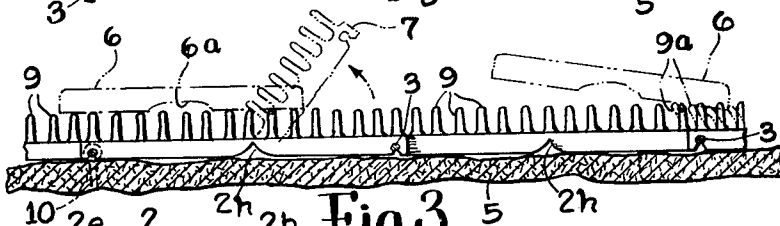
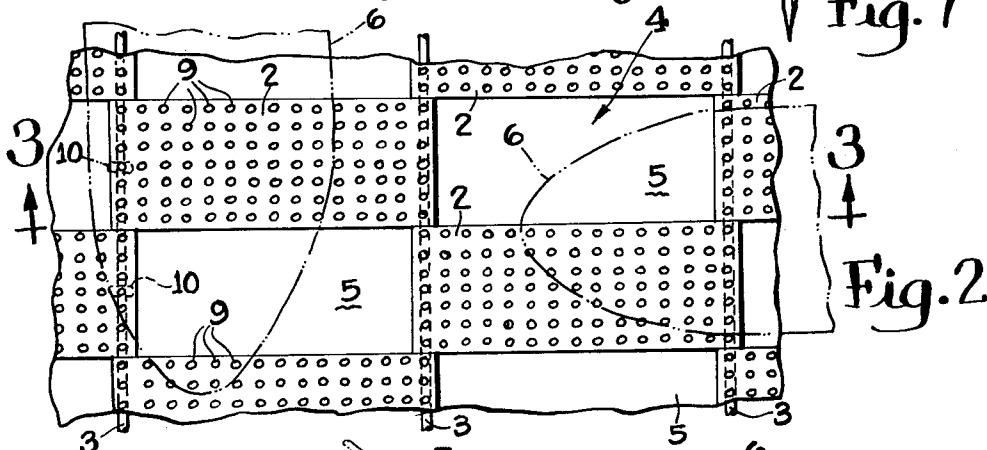
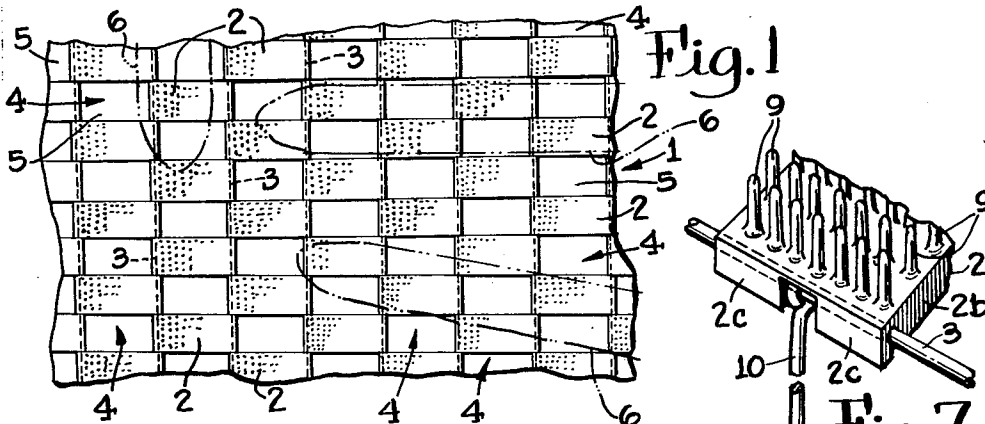
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3,233,893

SKI SLIDE

Filed July 24, 1962

2 Sheets-Sheet 1



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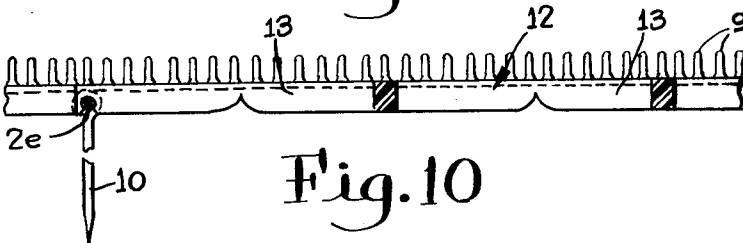
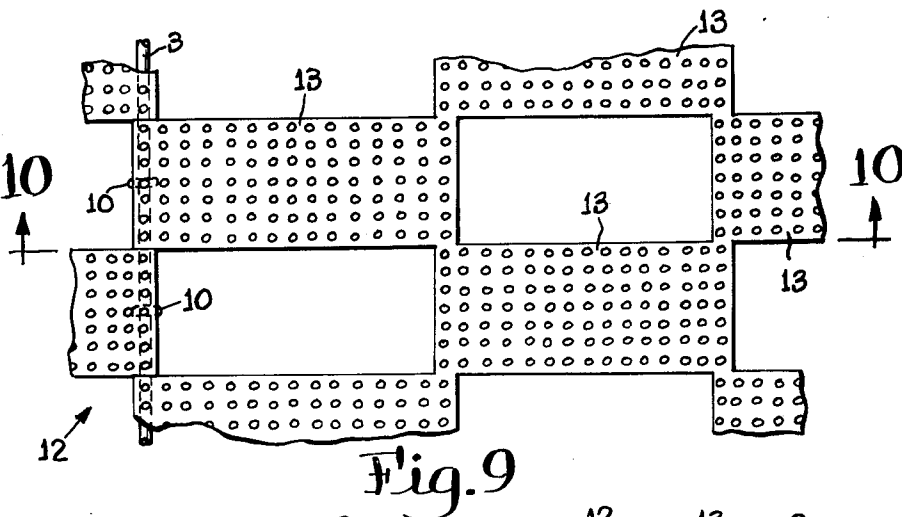
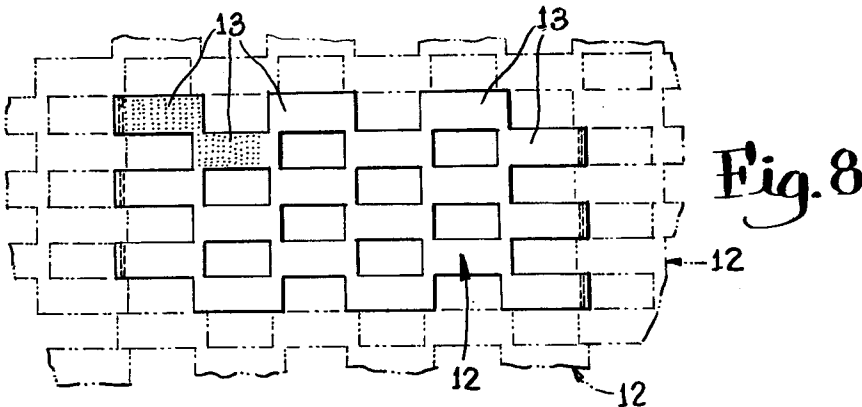
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SKI SLIDE

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2 Sheets-Sheet 2



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SKI SLIDE

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5 Claims. (Cl. 272-56.5)

This invention relates to the art of skiing and particularly to an artificial ski slide to use as a substitute for the customary snow or ice covered surface.

Although popular, the sport of skiing has not been advanced as much as desired because of certain inconveniences. Skiing has generally been confined to regions where the climate provides cold weather and snow for at least a portion of the year. Regions where it is warm all year long have no skiing facilities. Unless many skiers are willing to travel substantial distances to reach suitable in season skiing sites, they must suffer long periods where no participation in the sport is possible. Attempts have been made to provide artificial means both indoors and outdoors as a substitute for the natural snow and ice of the ordinary ski surface, but with only partial success.

It is the principal object of this invention to provide an improved ski slide which can be used all year round, both indoors and outdoors, in all climate regions where and when snow and ice are unavailable.

In order to accomplish this object, an improved ski slide is provided which is made of a flexible synthetic plastic material having a surface of low coefficient of friction and provided with evenly spaced flexible projections extending upwardly from it. In use, the skis are supported on the upper ends of the projections which are spaced close to each other by distances equal to only a small fraction of the width of the skis used on the surface and stiff enough to support the ski load without any substantial deflection. The projections are also flexible enough to deflect upon application of a force applied by the ski upon tilting and edging of the ski against them and resilient enough to return to their original shapes upon release of the force. The flexing of the projections permits a controlled movement of the skis quite similar to the control acquired on a snow surface. The resilient yielding of the projections by flexing permits effective edging of the skis for accurate and definite ski movements. Also, the very close spacing of the flexible projections prevents positive tracking of the projections in central longitudinal grooves ordinarily extending for the lengths of the skis.

It is another object of the invention to provide individual small area sections of flexible material provided with the flexible projections thereon, which sections are adapted to be hinged together by connecting rods into larger areas of any desired size. The advantage of this is that only small identical sections need be manufactured, rather than long continuous lengths, and replacement of damaged portions is facilitated.

It is another object of the invention to minimize the amount of material required for the ski surface by providing means for either connecting the individual sections in checkerboard fashion with alternating openings or spaces between the sections, or else having each section of checkerboard design with alternating openings or spaces between permanently connected sub-sections. By spacing the sections or sub-sections close enough relative to the size of the skis used, the skis properly bridge the sections or sub-sections without snagging and permit skiing as though the ski surface presented a continuous array of projections. The spaces provide a distinct advantage of allowing the points of the ski poles to reach the underlying support regions for the ski surfaces and permit efficient gripping section of the ski poles which

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is not as good when the ski poles directly contact the sections. Also, the spaces minimize the amount of material required; about one-half the material being required than if the ski surface is continuous without the spaces.

It is another object of the invention to provide an improved ski slide composed of sections or sub-sections as described which are deliberately weakened in cross-section at certain regions to increase their flexibility and enable the slide to readily follow contours of the underlying supporting surface for the slide. Also, this selective weakening allows for easy buckling of the sections in cases when a ski or ski pole of the skier snags on the slide to thereby minimize the possibility of injury to the skier.

It is still another object of the invention to provide an improved ski slide composed of sections which are hinged together by connecting rods wherein the hinge portions on the sections are of an open slot type so that they can be readily snapped in place on the connecting rods and securely held by the resilience of the plastic section material itself and readily removed from the connecting rods by an unsnapping action when necessary.

It is another object of the invention to provide an improved staking means for the ski slide whereby the slide can be securely staked to the ground or slide supporting surface.

Other objects and advantages of the invention can be understood upon reference to the accompanying drawings in which FIG. 1 is a plan view of a simplified showing of a portion of a ski slide embodying the invention with portions of skis illustrated in phantom outline to illustrate the bridging of the skis across the openings of the ski slide;

FIG. 2 shows an enlarged portion of the ski slide portion of FIG. 1 except that all detail of construction is illustrated;

FIG. 3 is an elevation of the ski slide as viewed in section along the line 3-3 of FIG. 2;

FIG. 4 is a cutaway view of a single section of the ski slide as viewed from beneath the section;

FIG. 5 is a side elevation of the single section shown in FIG. 4;

FIG. 6 is an enlarged end portion in section showing a stake used to secure the ski slide sections to the ground or other supporting surfaces;

FIG. 7 shows a perspective view of the end portion of FIG. 6;

FIG. 8 shows a plan view of an alternate construction for the ski slide wherein the single sections are larger by several multiples of the sections shown in FIGS. 1 to 7;

FIG. 9 shows an enlarged plan view of a portion of the ski slide shown in FIG. 8; and

FIG. 10 shows an elevation in section along the line 10-10 of FIG. 9.

As shown in FIG. 1, one embodiment of the ski slide 1 embodying the invention consists of a plurality of separate rectangular sections 2 hinged together in a checkerboard pattern by means of connecting rods 3 passed transversely through the end portions of the sections. This hinging arrangement provides free hinging movement of the sections relative to each other and provides rectangular openings 4 between the sections making the support surface 5 for the ski slide 1 accessible. The size of the sections 2 is small enough that the skis 6 used on the slide adequately bridge between the sections without any tendency to snag on the marginal edges of the sections. The effect relative to the skis, for this reason, is as if the sections would be connected together in close side by side relation without any openings 4 between them as a single large continuous web. However, by having the checker-

board arrangement, the amount of material required for the ski slide is approximately halved and the openings provide access for the ski poles used by the skier to the ground or support surface 5 where they can readily penetrate and positively grip to aid control by the skier.

As shown in FIGS. 4 and 5, each section 2 is preferably in molded form and is manufactured of a plastic material, such as polyethylene, which is light in weight, quite flexible and has a smooth surface with a rather low coefficient of friction so that it is relatively slippery to the touch. The plastic can be purchased with an ultra violet stabilizer mixed in it to retard weakening of the plastic from the sun's rays.

Each section is provided with an upper flat wall 2a having depending side walls 2b and end walls 2c. Other depending reinforcing walls, or ribs 2d are also provided. At its opposite ends each side wall 2b is provided with a keyhole slot 2e, each slot having a flared lead-in portion 2f leading to a circular portion 2g which is of approximately the same diameter as the connecting rods 3. Projecting from the upper surface of each section are a plurality of closely spaced resilient elements or fingers 9. The spacing of these fingers 9 is quite close and is only a small fraction of the width of a ski to be used on the ski slide. Ordinarily, a ski is provided with a longitudinal groove extending for the length of the ski and of a width approximately one-fifth the width of the ski. It is important that the spacing of the fingers be only a fraction of the width of such groove so that no tracking of the groove on a single row of fingers can occur. The primary purpose of the fingers is to provide support for the skis, over a minimum area of contact with the skis, but also provide a yielding surface due to the flexibility and resilience of the fingers to permit accurate control of ski movements when the skis are tilted and edged against the fingers. It is desirable that the resilience of the fingers provide a degree of tracking across multiple rows of the fingers as the fingers bend due to the weight of the skis and the skier on them, but the close spacing of the fingers permits only a slight degree of tracking which can be easily overcome by the skier upon the application of minimum forces to change direction of the skis. The effect, insofar as control of the skis by the skier, is quite similar to that achieved by the use of snow on the ski slide. Phantom outline of a ski 6 at the left in FIG. 3 shows the proportions of a typical ski groove 6a to the close spacing of the fingers 9 to minimize tracking. Also, phantom outline 9a (FIGS. 3 and 5) shows how the fingers 9 can deflect under pressure of the skis.

Although the walls 2b and 2d can extend for the same width from end to end of the sections, they are preferably provided with recesses 2h (FIG. 3) which weaken the cross-section of the sections to allow for selective bending of the sections as indicated in phantom outline at 7. This is desirable in cases of snagging of the skis on the sections so that the sections readily bend and minimize the possibility of injury to the skiers.

The purpose of the keyhole slots 2e is to permit snapping the sections 2 onto the connecting rods 3 rather than threading of the sections 2 thereon. The advantage is that assembly of the entire ski slide and replacement of worn or broken sections is extremely simple and easy to accomplish. The lead-in flared portions 2f of the slots 2e and the flexibility of the sections themselves permit easy camming of the sections 2 onto the rods 3 and the flexibility also allows for unsnapping or removal of the sections. The resilience of the sections 2 keeps the keyhole portions tightly in place on the rods 3.

As shown in FIGS. 2, 3, 6 and 7, stakes 10 are provided where necessary to stake the sections 2 to the ground or other support surface 5 by driving them to penetrate into the surface. These stakes are provided with a loop or hook portion 10a encircling the rods 3 to provide the connections to the ski slide. As many of these stakes 10

as seem necessary can be connected to insure that the ski slide is adequately secured to the support surface 5.

As an alternate construction to permit assembly of the ski slide 1 with fewer rods and minimize assembly time, as shown in FIGS. 8, 9 and 10, larger sections 12 can be made which contain a plurality of sub-sections 13 joined together in the same checkerboard pattern as the ski slide assembly of the first embodiment shown and described. The sub-sections 13 are about the same size as the sections 2, but they are integrally molded together at their ends to form the single larger sections 12. As shown, a larger section 12 contains eighteen small sub-sections 13, but can just as well contain more or less sub-sections as desired, depending upon manufacturing facilities.

The reinforcing webbing for the sections, although not shown in detail, can be quite similar to that of the sections 2, except that only the endmost sub-sections 13 need have the keyhole slots 2e provided therein for providing connections to the rods 3. The sub-sections 13 are likewise provided with recesses 2h which permit selective bending of the sections when snagging with a ski occurs.

Another advantage of both embodiments is that the sections or sub-sections can be cast or painted in different colors to permit assembling the ski slide with a definite visual pattern which can include a word pattern for advertising and promotion purposes.

Typical sections 2 or sub-section 13 which work very effectively are those having a width of about two inches and a length of about five inches. The fingers or elements 9 in this case are about 0.09 inch in diameter and about 0.437 inch long with a lateral spacing between elements of about 0.280 inch on centers. It is believed that certain latitude is allowable in dimensions and materials, but it is known that these dimensions and the plastic mentioned provide an effective ski slide structure which provides sufficient stiffness of the fingers for proper support of skis of common size without substantial deflection of the fingers, still provides flexibility of the fingers to permit their deflection upon application of a force applied by the ski upon tilting and edging of the ski against the fingers, and gives the fingers sufficient resilience to return to their original shapes upon release of the force, all of these characteristics providing for controlled movements of the skis on the slide.

Although two embodiments of the invention have been shown and described, it should be clearly understood that the invention can be made in still other ways without departing from the true scope of the invention as defined by the appended claims.

I claim:

1. A ski slide for use on a support surface, comprising: a plurality of sections each having an upper wall and a plurality of resiliently bendable support elements upstanding from said wall, said elements having a low coefficient of friction no greater than approximately that of conventional snow skiing surfaces; means connecting said sections to define a mat; and means secured to said connecting means for penetrating the support surface to retain the mat against translation on the support surface.

2. A ski slide for use on a support surface, comprising: a plurality of sections each having an upper wall and a plurality of resiliently bendable support elements upstanding from said wall, said elements having a low coefficient of friction no greater than approximately that of conventional snow skiing surfaces; means connecting said sections to define a mat; and means movably secured to said connecting means for penetrating the support surface to retain the mat against translation on the support surface.

3. A ski slide for use on a support surface, comprising: a plurality of sections each having an upper wall and a plurality of resiliently bendable support elements upstanding from said wall; and means connecting said sec-

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tions in a checkerboard arrangement to define a mat having alternate ski supporting sections and fully open spaces providing free access to the subjacent support surface, said support elements being formed of a flexible plastic material having a low coefficient of friction no greater than approximately equal to that of conventional snow skiing surfaces.

4. The ski slide of claim 3 wherein said plastic comprises polyethylene.

5. A ski slide for use on a support surface, comprising: a plurality of sections each having an upper wall and a plurality of resiliently bendable support elements upstanding from said wall, said elements having a low coefficient of friction no greater than approximately that of conventional snow skiing surfaces; and means connecting said sections to define a mat, said connecting means including an opening in each section spaced from said support elements, and rigid members each fitted in openings of a plu-

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5 rality of sections, said openings defining a slot narrower at its open portion than the cross-section of said rigid members to require said open portion to be spread to allow movement of the rigid members into the slot, said sections being composed of flexible and resilient material to allow said spreading and also spring back of the section material to maintain releasable engagement thereof with the rigid members.

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