Oct. 1, 1940. S. HAMILTON 2,216,438

ICE SKATE

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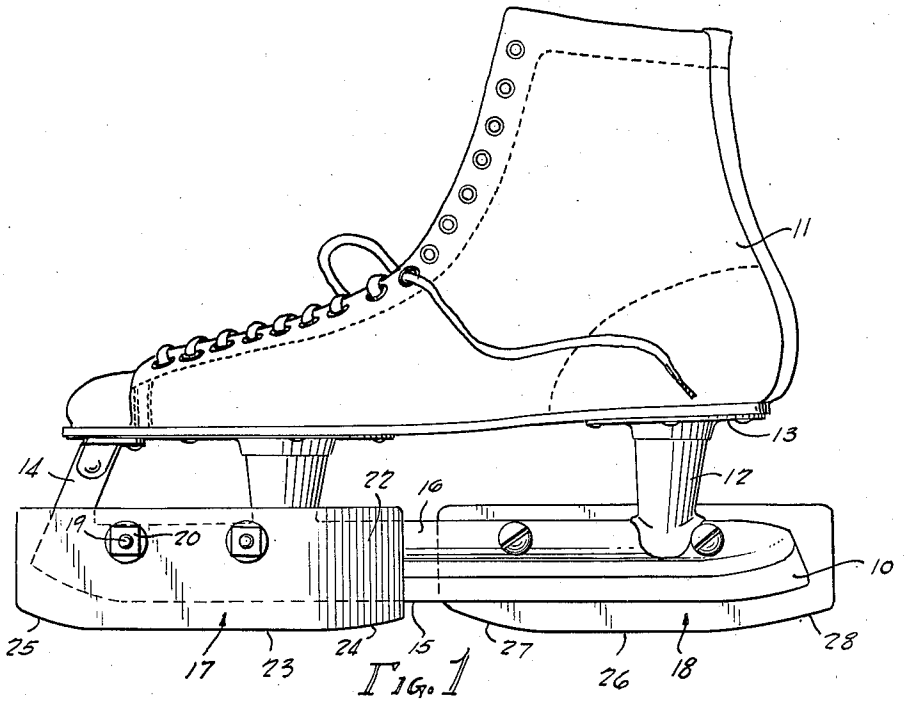


FIG. 1

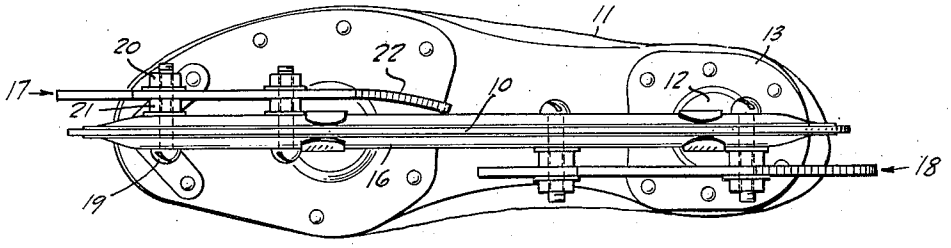


FIG. 2

INVENTOR.
Sam Hamilton.
BY Joshua R. H. Potts
ATTORNEY.

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ICE SKATE

Sam Hamilton, Upper Darby, Pa.

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3 Claims. (Cl. 280—11.12)

This invention has to do with ice skates and is concerned primarily with the provision of a departure from the now widely used "single blade" skate, the new design skate being intended to facilitate the use thereof by novices.

While long experienced skaters have little trouble in maintaining their equilibrium on skates while in motion, manipulating the skates for making turns, and with turning of the ankles, this happy condition is not true for those beginning to learn to use ice skates.

An initiate to skating on single blade ice skates does not have his ankle and leg muscles developed to the extent of a long experienced skater. This fact, together with the structural characteristics of the skates, renders it particularly difficult for the beginner to maintain himself in a stable position. The blade of the conventional ice skate is so narrow that its engagement with the skating surface is substantially lineal. Hence the ability to maintain an upright position depends so largely on the ankle and leg muscles as to render standing upright extremely difficult for one learning to use the skates.

Moreover, during actual skating there is grave danger of the beginner turning his ankle, and this likelihood is also attributable to lack of muscular development when coupled with the structural design of the skates.

Another difficulty which is noticeably encountered by novices is that of making turns while skating. The effecting of a turn requires that adjustment in the relative positions of the skates and the inclination thereof with respect to the skating surface be made. Generally speaking, the adjustment of the relative positions of the skates also involves a change in the bearing points of the blades with the ice, or at least a change in the points of engagement under maximum pressure. The difficulties of the beginner in learning to properly manipulate the skates to make the turns as desired is also intimately tied up with the structural design of the skate.

From the foregoing it is apparent that the main troubles experienced by the learner are directly attributable to the single blade construction of the skates.

With this condition in mind the invention has in view, as its foremost objective, the provision of a pair of ice skates including blade constructions for eliminating the undesirable single blade characteristics above noted, and yet which maintain the single blade characteristics that are not harmful, and desirable. In attaining this objective the invention contemplates an arrangement wherein the blade of each skate is for all effective purposes replaced by means which disturbs the heretofore conventional lineal contact with the skating surface and changes the same into what is, in effect, a surface contact.

More in detail this invention has in view, as an important objective, the provision of an ice skate including blades presenting ice engaging surfaces in spaced parallel staggered relationship.

Another more detailed object of the invention is to provide a single blade ice skate with an attachment on one side having an ice engaging edge, and a second attachment on the opposite side having an ice engaging edge. These attachments are disposed in parallel relationship and are staggered so that the effective area of contact with the ice for purposes of stability and equilibrium is a parallelogram rather than a single line.

In order to maintain the desirable characteristics of a single blade ice skate the invention has in view, as a further objective, the provision of an ice skate provided with blade arrangements in the manner above set forth, and in which the staggered ice engaging edges are in a non-overlapping relationship.

A further object in view is the provision of an ice skate of the character above noted which includes means for adjusting the relative positions of the blades.

Still another more detailed object of the invention is the provision of a single blade ice skate to which are applied at each side attachments including ice engaging edges which are parallel to each other and to the blade of the skate, and means are included for adjusting the distance between each of the attachments and the blade of the skate.

It is, of course, desirable that a wearer of skates including the attachments of this invention manipulate the same in the conventional manner in order to make right and left hand turns. This manipulation involves a change in the relative position of the skates for the purpose of changing the point of bearing engagement with the ice, and the manipulation also involves a rocking or tilting of each of the skates. Accordingly it is important that the attachments of this invention be designed to accommodate these manipulations.

The invention, therefore, has in view, as another highly important object, the provision of a blade arrangement for ice skates of the character above noted in which the ice engaging edges are curved to accommodate the required manipulations for the making of turns.

Various other more detailed objects and advantages of the invention will in part become apparent, and in part be hereinafter stated, as the description of the invention proceeds.

The invention, therefore, comprises a pair of ice skates each of which includes a blade arrangement providing ice engaging edges in spaced parallel non-overlapping staggered relationship. The blades of each skate and the ice engaging edge thereof are designed on curvatures adapting

the skates to manipulation for the making of turns.

For a full and more complete understanding of the invention reference may be had to the following description and accompanying drawing, wherein

Figure 1 is a view in side elevation of an ice skate with attachments applied thereto in accordance with the precepts of this invention, and

Figure 2 is a bottom plan view of the skate shown in Figure 1.

Referring now to the drawing, wherein like reference characters denote corresponding parts, an ice skate is illustrated as including the usual blade 10. In the embodiment illustrated the blade 10 is shown as being carried by the shoe 11, although it is to be clearly understood that the invention is not to be limited in this respect. Obviously the blade 10 might be attached to the foot in any preferred manner.

The attachment to the shoe 11 is effected by posts 12 which carry the blade 10 at one end, and which are formed with flanges 13 at the other that are riveted to the bottom of the shoe 11. In addition to the posts 12 securing means at the forward end or nose of the blade are shown at 14.

The blade 10 has a lower edge 15 which, in the first instance, is intended as the ice engaging edge, while the upper part of the blade carries an enlargement designated 16. It is to the blade 10, and particularly the enlargement 16, that the attachments of this invention are intended to be applied to render ineffective the edge 15 just as soon as the attachments are in use.

The attachments of this invention take the form of blade parts 17 and 18, the blade part 17 being intended to be applied to the forward part of the runner 10, while the part 18 is applied to the rear part. As clearly brought out in the drawing, the forward part 17 is disposed at one side of the blade 10, while the rear part 18 is disposed on the opposite side and in staggered relationship with respect to the front part 10.

To effect the attachment to the blade 10 headed bolts 19 may be employed. These bolts pass through openings in the enlargement 16 and the blade 10, and their threaded extremities carry nuts 20 and 21 between which are disposed the blade parts 17 and 18. It is obvious that by varying the thickness of the nuts 21 the distance of the blade part 17 with respect to the blade 10 may be varied.

The blade part 17 at the rear thereof and adjacent to the middle of the blade 10 is curved inwardly, as shown at 22, this inward curvature being coincident with a curving upwardly of the ice engaging edge 23 shown at 24, this edge 23 being also curved upwardly at the forward end of the blade part 17, as shown at 25. The reason for the curvature in the structure of the blade part 17 and the ice engaging edge is to provide for the manipulations necessary for the making of turns.

Whereas the front blade part 17 is curved inwardly at 22, the rear blade part 18 is preferably substantially straight, although the ice engaging edge shown at 26 is curved upwardly at the front and rear ends, as shown at 27 and 28.

It will be noted that in the form of the invention illustrated in the drawing the blade parts 17 and 18 are in a non-overlapping relationship. Hence the curvature of the blade parts and their ice engaging edges are peculiarly designed for this non-overlapping arrangement. However, it may be that some slight overlap between the blade parts would be permissible if accompanied by a change in the curvature of the blades, and possibly their ice engaging edges.

Some ice skates are designed for a slight tilting of the blade inwardly, this to accommodate the spread of the wearer's legs and to reduce the tendency for outward turning of the ankles. Thus the ice engaging edge 15 of the blade 10 need not be squarely normal to the side faces of the blade but may be slightly inclined.

Substantially this same characteristic may be carried out in attaching the blade parts 17 and 18 to the blade 10. Thus if the skate is designed for the left foot, as in the illustrated embodiment, the plane of the ice engaging edges 23 and 26 will not be squarely normal to the side faces of the blade 10, but will be slightly inclined thereto to provide for this slight inward tilt.

An important advantage to the beginner in using the attachments of this invention is found in the making of turns. As the skate is tilted from one side to another, depending on the direction of the turn, there are two distinct points of bearing engagement with the ice, one for each blade part. Hence there is greater sureness in making the turn, and a great reduction in the possibility of ankle turning.

With the blade parts 17 and 18 applied to the blade 10 the edge 15 of the latter is rendered ineffective. Of course, after the novice has used the skates an appreciable length of time so that he is no longer a beginner, and his leg and ankle muscles have been strengthened, the parts 17 and 18 may be removed, whereupon the skate will be used in the usual way.

While a preferred specific embodiment of the invention is hereinbefore set forth it is to be clearly understood that the invention is not to be limited to the exact construction illustrated and described, because various modifications of these details may be provided in putting the invention into practice within the purview of the appended claims.

I claim:

1. In an ice skate, an outer front blade part having an ice engaging edge, said blade part curving inwardly at the rear with said ice engaging edge curving upwardly at said curved rear end, and an inner rear blade part also having an ice engaging edge, said ice engaging edges being disposed in staggered parallel relation.

2. In an ice skate, an outer front blade part having an ice engaging edge, said blade part curving inwardly at the rear with said ice engaging edge curving upwardly at said curved rear end, and a straight inner rear blade part having an ice engaging edge, said ice engaging edges being disposed in staggered parallel relation.

3. In combination, a single blade ice skate including a main blade, a front blade part carried by said blade on the outer side thereof and having an ice engaging edge, the rear of said front blade part curving inwardly towards said main blade with the ice engaging edge at said inwardly curved portion curving upwardly, and a rear blade part carried by said main blade on the inner side and having an ice engaging edge, the said ice engaging edges being arranged in spaced parallel staggered relation.

SAM HAMILTON.