United States Patent [19]

Peters

[11] **3,918,729**

[45] **Nov. 11, 1975**

[54] **INTERLOCK DEVICE FOR SKATES**

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[73] Assignee: **Lawrence Peska Associates, Inc.**, New York, N.Y. ; a part interest

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[52] **U.S. Cl.** **280/11.3;** 280/7.13

[51] **Int. Cl.**[2] **A63C 17/18**

[58] **Field of Search** ..... 280/7.13, 7.12, 8, 11.27, 280/11.33, 11.1 R, 11.3

[56] **References Cited**

UNITED STATES PATENTS

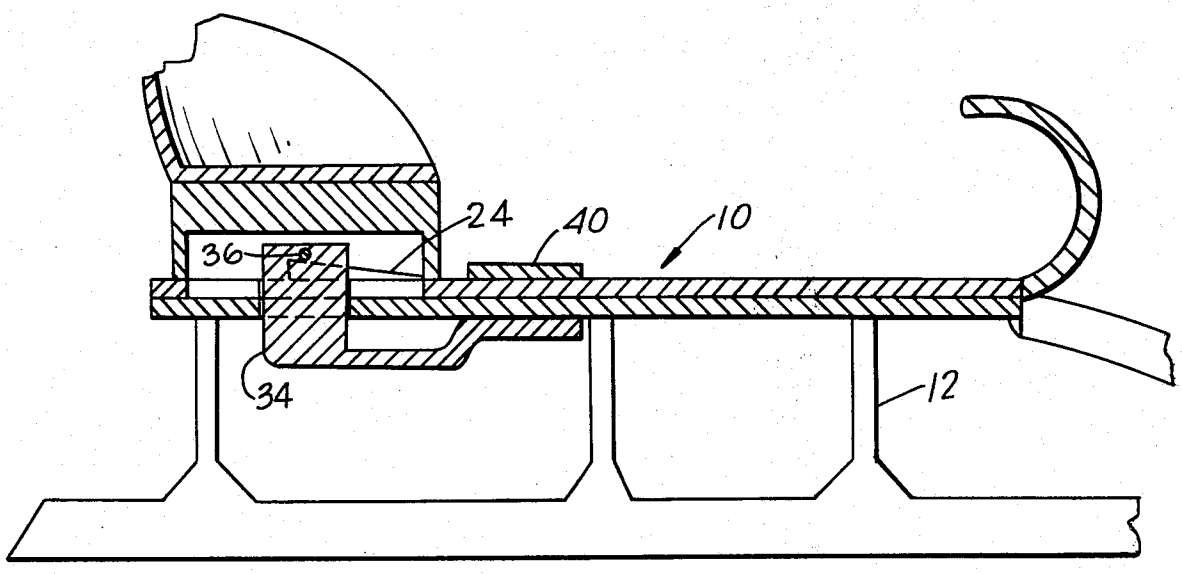
1,405,951	2/1922	St. Pierre	280/11.33
2,998,260	8/1961	Meyer	280/7.13
3,043,600	7/1962	Voakes	280/7.13

Primary Examiner—Leo Friaglia
Assistant Examiner—David M. Mitchell
Attorney, Agent, or Firm—Jack D. Slobod

[57] **ABSTRACT**

A mechanical interlock for securing either ice skates or roller skates to a single base member. The base member has surfaces for receiving the foot of the user and the interlock includes a pair of upstanding studs disposed at one end of the skate which cooperate with recesses in the base plate. An elongated leaf spring is secured to each skate at one axial extremity for pivotal motion in a plane parallel to the plane of the base plate. Disposed on the other axial extremity of the spring is a pair of fingers disposed for snug fitting engagement with the top and bottom respectively of the base plate and the skate.

4 Claims, 4 Drawing Figures



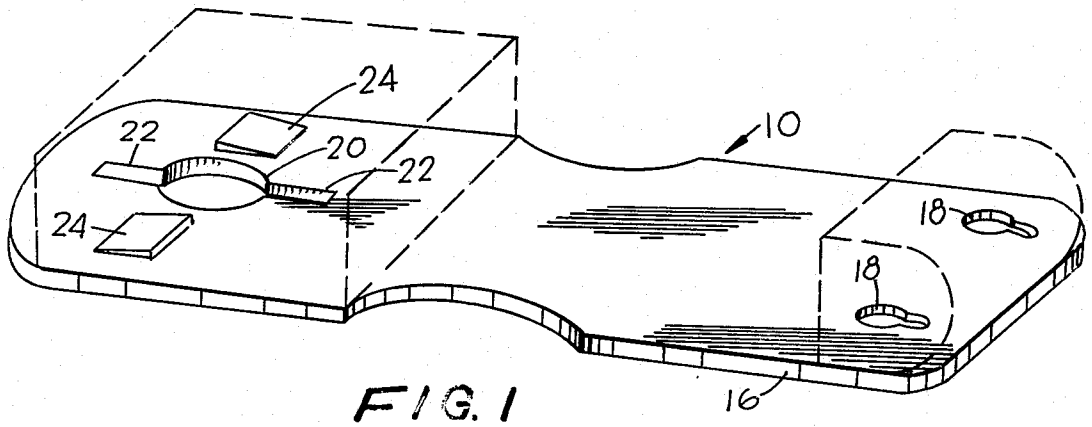


FIG. 1

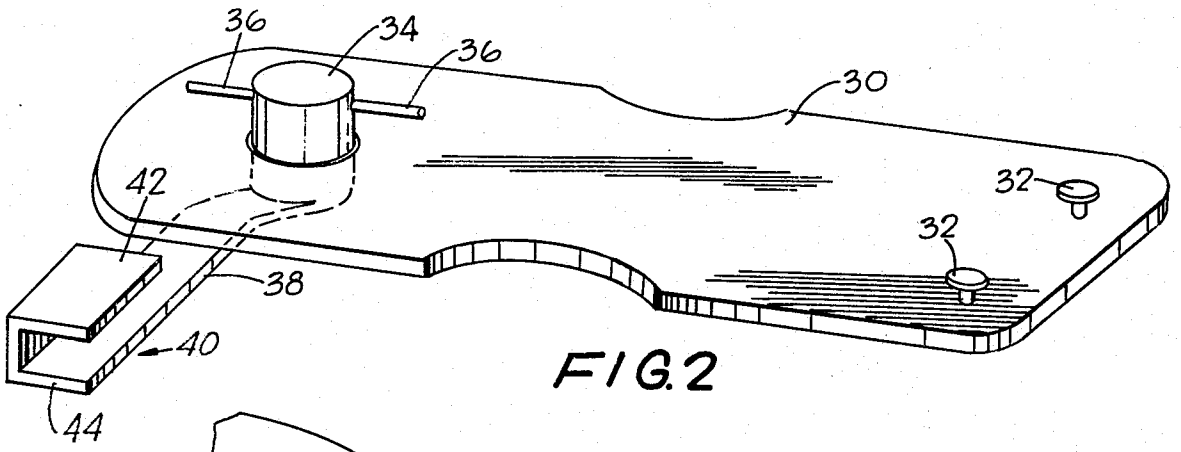


FIG. 2

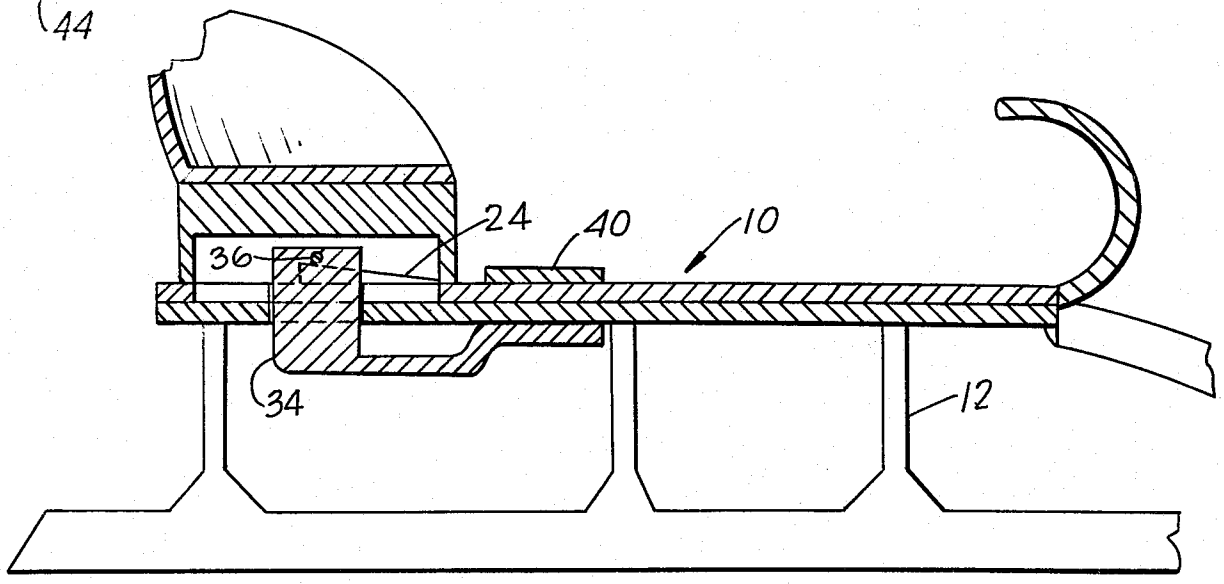


FIG. 3

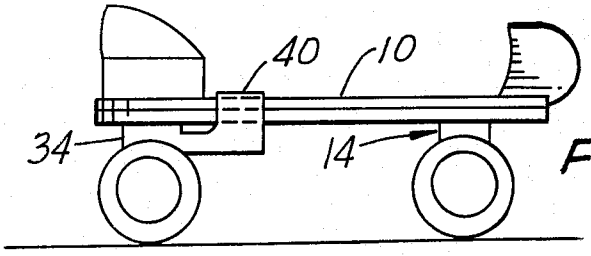


FIG. 4

INTERLOCK DEVICE FOR SKATES

BACKGROUND OF THE INVENTION

The invention relates to skates and particularly to apparatus which may selectively used as a roller skate or an ice skate. The prior art includes Meyer, U.S. Pat. No. 2,998,260 which shows a shoe having a plurality of depending lugs for engagement with horizontally tapered openings. A disadvantage of the structure shown therein is that the user thereof must carry a screwdriver to make the final connection. It is apparent that when roller skating or ice skating it is undesirable to be carrying a screwdriver, because of the danger of falling in addition to the inconvenience. Similarly the apparatus shown in Lynn, et al, U.S. Pat. No. 2,985,461 shows a convertible skate construction which again requires the use of a screwdriver for affixation of the alternate construction.

Examples of other apparatus having a very general similarity to the apparatus of the invention are shown in the following U.S. Pat. Nos. 2,874,970, Mall; 2,868,553, Rieckman; and 3,043,600, Voakes. A disadvantage of the apparatus in the prior art in general is that a separate tool is required and the affixation of the skate to the shoe requires a substantial amount of time and often does not provide for positive fastening between skate and the shoe.

Accordingly it is a primary object of the invention to provide apparatus which provides positive interlocking between the skate and the shoe, which does not require the use of special tools and which further is safe for the user of the apparatus.

Still another object of the invention is to provide apparatus which is simple and inexpensive to manufacture.

SUMMARY OF THE INVENTION

It has now been found that these and other objects of the invention may be attained by an assembly comprising means for receiving the foot of a user. The means includes a first generally planar member having two apertures disposed at one end thereof. The apertures are horizontally elongated with a first longitudinal portion thereof being smaller than the second longitudinal portion.

A skate member which may be either an ice skate or a roller skate includes a second generally planar member for having two upstanding studs with heads thereof larger than the body thereof. The heads are positioned and dimensioned to pass freely through the first portion of the elongated apertures and not to pass freely through the second axial portion thereof. A clamp is carried for rotation about a generally vertical axis carried on the skate member. The clamp comprises two opposed fingers. The fingers of the clamp are configured for tight fitting engagement with the generally planar members firmly together upon selective pivotal motion thereof.

In one form the fingers will be manufactured of spring steel. Normally the apertures will be disposed with the longitudinal axis thereof in aligned relationship to the longitudinal axis of the first generally planar member.

BRIEF DESCRIPTION OF THE DRAWING

The invention will be better understood by reference to the accompanying drawing in which:

FIG. 1 is a perspective view of the foot receiving means in accordance with the invention;

FIG. 2 is a perspective view of the generally planar member which is part of each skate member in accordance with the invention;

FIG. 3 is a sectional view taken through a vertical plane of an assembled ice skate and foot receiving means in accordance with the invention; and

FIG. 4 is a side elevational view to a reduced scale of an assembled roller skate in accordance with the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIGS. **1** through **4** there is shown a foot receiving means **10** which cooperates with either an ice skate member **12** or a roller skate member **14.** Each foot receiving means **10** comprises a first generally planar member **16** having disposed at one end thereof elongated apertures **18, 18.** Disposed at the other end of the first generally planar member **16** is a bore having radially extending therefrom two slots **22, 22.** Disposed about the bore **20** are ramps **24, 24.**

Cooperating with the first generally planar member is a second generally planar member **30** which is ordinarily part either of a ice skate assembly **12** or a roller skate assembly **14.** Disposed at one end thereof are two upstanding studs **32, 32** having heads which are dimensioned and positioned for easy passage through the enlarged portion of apertures **18, 18** and which prevent axial travel through the smaller portion of the apertures **18, 18.** Disposed at the other end of the second generally planar member **30** is a cylindrical surface **34** having radially extending arms **36** disposed thereabout. It will be understood that the cylindrical member **34** is dimensioned for rotation about the axis thereof within the second generally planar member **30.** Extending from the cylindrical member **34** is an arm **38** having a clamp **40** carried at the axial extremity thereof. The clamp **40** includes opposed fingers **42, 44.**

In operation the upstanding studs **32, 32** are engaged in the apertures **18, 18.** Thereafter the arms **36, 36** are passed through the slots **22, 22** and the arm **38** is rotated such that the fingers **42, 44** are urged into tight fitting engagement between a first generally planar members **16** and a second generally planar member **30.** It will be understood that the fingers **42, 44** ordinarily will be manufactured of a spring like material such as spring steel. It will be further understood that the studs **32, 32** ordinarily will not project completely through the apertures **18, 18** but instead will pass only partly through the first generally planar member **10** to avoid any interference with the feet of the user thereof. It will be further understood that the apparatus in accordance with the invention may utilize various foot receiving means and that these may include structures for receiving either a shoe or the foot directly.

Having thus described my invention, I claim:

1. A skate assembly comprising:

means for receiving the foot of a user, said means for receiving including a first elongated generally planar horizontal member having two apertures disposed at one end thereof, said apertures being elongated with a first longitudinal portion thereof being smaller than a second longitudinal portion,

a skate member having ground engaging means, said skate member including a clamp carried on an elongated arm, said elongated arm being carried

for pivotal motion around a generally vertical axis on said skate member, said clamp including a pair of horizontally extending fingers, said skate member including a second generally planar horizontal member having two upstanding studs with heads thereof larger than the body thereof, said heads being dimensioned and positioned to pass freely through said first portion of said elongated apertures and not to pass freely through said second portion thereof, said clamp being selectively pivotable for clamping engagement of said first and second generally planar members between said fingers.

2. The apparatus as described in claim **1** wherein said fingers are manufactured of spring steel.

3. The apparatus as described in claim **2** wherein said apertures are elongated in a direction which is aligned with respect to the direction of elongation of said first and generally planar member.

4. The apparatus as described in claim **3** wherein said generally vertical axis is established by cylinder and said first elongated generally planar member has an aperture disposed for snug fitting engagement with said cylinder with said means for receiving the foot and said skate member in engaged relationship.

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