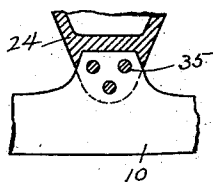


SKATE,

Patented Mar. 15, 1921.



BY *Night Broom* *2nd by May*
attys.

UNITED STATES PATENT OFFICE.

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SKATE.

1,371,608.

Specification of Letters Patent.

Patented Mar. 15, 1921.

Application filed May 20, 1920. Serial No. 382,769.

To all whom it may concern:

Be it known that I, CARL B. DREVITSON, a citizen of the United States, residing at Somerville, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Skates, of which the following is a specification.

This invention relates to ice skates, and particularly to that type, in which, the blade or runner is made separately, and the foot supporting structure or frame, which is usually of a different kind of metal from that of the blade and is molded in place thereon, inclosing portions of the upper edge of the runner or blade.

The present invention is an improvement on skates set forth in Letters Patent No. 1,115,790, November 3, 1914, and has for its objects, to produce a skate of this type, in which the heel supporting structure, and the sole supporting structure, are made separately, and in which at the same time, said supporting structure is attached to and interlocks with the upper edge of the runner or blade so as to be firmly attached thereto in a manner to resist stress and strain longitudinally, as well as laterally of the blade or runner, and to avoid the annealing of the runner edge in the process of casting.

Referring to the drawings,—

Figure 1 is a side elevation of the skate, with part of the foot supporting structure in section to show the interlocking arrangement between the parts.

Fig. 2 is a cross section on line 2—2 of Fig. 1, showing the construction of the heel cup and its connection with the blade or runner.

Fig. 3 is a similar section on line 3—3 of Fig. 1, showing the connection of the toe end of the runner and sole support.

Fig. 4 shows another form of fastening the support to the runner.

Referring to the drawings in detail, the same reference numerals designating the same parts on all figures thereof; the skate consists in a general way, of a steel runner 10 and a foot supporting structure or frame, of cast metal, preferably of aluminum or an alloy of aluminum attached thereto in the manner, hereinafter to be described.

The runner 10, which is substantially flat on both sides is formed with an upturned front end 11, having a lug or projection 12 formed thereon at its upper end. Similar

lugs or projections 13 and 14 are formed on the upper edge of the runner and are spaced apart, one being positioned to come beneath the ball of the foot and the other beneath the heel. These lugs are provided with undercut shoulders 15 and 16 forming notches or recesses therebeneath. There are also formed in the runner suitable apertures 17, 18 and 19 located adjacent to and beneath the lugs 12, 13 and 14. The notches and the apertures present transverse locking faces arranged in groups, said faces being spaced apart and said groups being spaced apart a distance corresponding to that of the lugs or projections. The purpose of this arrangement will hereinafter appear.

The foot supporting structure comprises separate, spaced apart heel and sole supports. The heel support consists of a cup shaped member 21, having an outstanding flange 22 about its upper edge, by which it may be attached to the heel of the shoe and for that purpose, it may be provided with apertures 23, for the reception of nails or any other suitable fastening means.

The sole support comprises a cup shaped member 24 similar to that comprising the heel support, adapted to be positioned beneath the ball of the foot and a flange 25 formed integral therewith about its upper edge and extending forwardly in the form of a web 26 on which the sole of the foot is supported. Formed integrally with the toe end of the web is a lug or projection 27, by which said toe end is attached to the turned up forward end of the runner. This web is preferably formed with means whereby it may be attached to the sole of the shoe, as in the case of the heel. The heel and sole supports are permanently fastened to the runner by being die cast in place thereon with the lower portions of the supports extending down about and inclosing the portions of the runner about the locking faces, and having portions extending through the apertures and into the notches, making a tight fit therewith, thereby preventing relative movement of the support and runner in any direction.

In forming my skate by casting, as above indicated, a die is provided made up of a plurality of members forming when brought together, a cavity corresponding to the completed skate. The runner is placed in the portion thereof corresponding to its shape

with the lugs 12, 13 and 14 projecting into the portion of the die corresponding to the parts to be cast thereto. The molten metal is then poured into the die and subjected to pressure, and is forced thereby into the apertures 17, 18 and 19 and into the notches under the shoulders 15 and 16, completely filling the same, and forming, when the metal cools, rigid shoulders 28 and 29 fitting snugly in said notches and bridges 30, extending through apertures 17, 18 and 19.

By casting the various supporting members to the runner, as set forth above, with the supports as separate parts instead of all being cast together as in my previous patent, I secure the advantage of lightness of weight together with cheapness of construction owing to the use of a smaller amount of metal and by forming lugs or projections 12, 13 and 14 on the upper edge of the runner, I obviate the likelihood of drawing the temper from the runner edge in casting the support to the runner. The casting is, also, more perfect due to the more limited space to be dealt with and the percentage of losses in casting is very much decreased over a skate made with a casting along the whole of its upper edge. This construction also obviates the necessity of a continuous piece or rib along the upper edge of the runner, and forms a strong connection between the runner and the foot supporting structure whereby stress longitudinally of the blade is effectively resisted, and the parts held firmly together.

Lateral stresses are resisted and effectively provided against by the extension of the cup members 21 and 24 downwardly against the sides of the lugs 14 and 13.

For the supporting structure, I have found aluminum or an alloy including aluminum, to be the best suited material on account of its strength and durability and its resistance to corrosive influences and because of its tendency to contract when solidifying from a molten condition.

In Fig. 4, I show a form of my device in which instead of the undercut shoulders 15 and 16, I provide apertures 35 spaced apart and through which the metal passes in the process of casting, forming a tight fit therewith. These apertures are shown as rounded holes and three in number, but it will readily appear that they may be of any shape and there may be any number of them. The metal of the support may extend down about the projection as in the case of the form shown in Figs. 1, 2 and 3.

The walls of the several apertures, and the surfaces of the several undercut shoulders,

form transverse locking faces extending from side to side of the runner, said faces being arranged in groups. As shown by Fig. 1, groups of locking faces are formed by the walls of orifices and by the surfaces of undercut shoulders. As shown by Fig. 4, groups of locking faces are formed by the walls of orifices. In each case, each group of locking faces is adapted to prevent relative movement in any direction of the support cast thereon, and the said supports are the only portions of the cast metal structure contacting with the runner.

Having thus explained the nature of my invention and described a way of making and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, what I claim is:

1. A skate comprising a runner, having substantially flat sides and transverse locking faces, extending from side to side, said faces being arranged in groups which are spaced apart and a cast metal foot-supporting structure including spaced apart supports, the lower portions of which inclose the portions of the runner having said locking faces and are interlocked with the latter, each group of locking faces being formed to prevent relative movement of the corresponding support in any direction, the said supports being the only portions of the cast metal structure contacting with the runner.

2. A skate comprising a runner having substantially flat sides and transverse locking faces, extending from side to side, said faces being arranged in groups which are spaced apart, and a cast metal foot-supporting structure including spaced apart supports, the lower portions of which inclose the portions of the runner having said locking faces and are interlocked with the latter, each group of locking faces being formed to prevent relative movement of the corresponding support in any direction, the said supports being the only portions of the cast metal structure contacting with the runner, the upper edge of the runner being provided with a plurality of spaced apart projections on which said locking faces are formed, so that the portions of the runner inclosed by said supports are sufficiently separated from the lower edge of the runner to prevent the annealing of said lower edge by the heat of the molten metal from which the supports are formed.

In testimony whereof I have affixed my signature

CARL B. DREVITSON.