

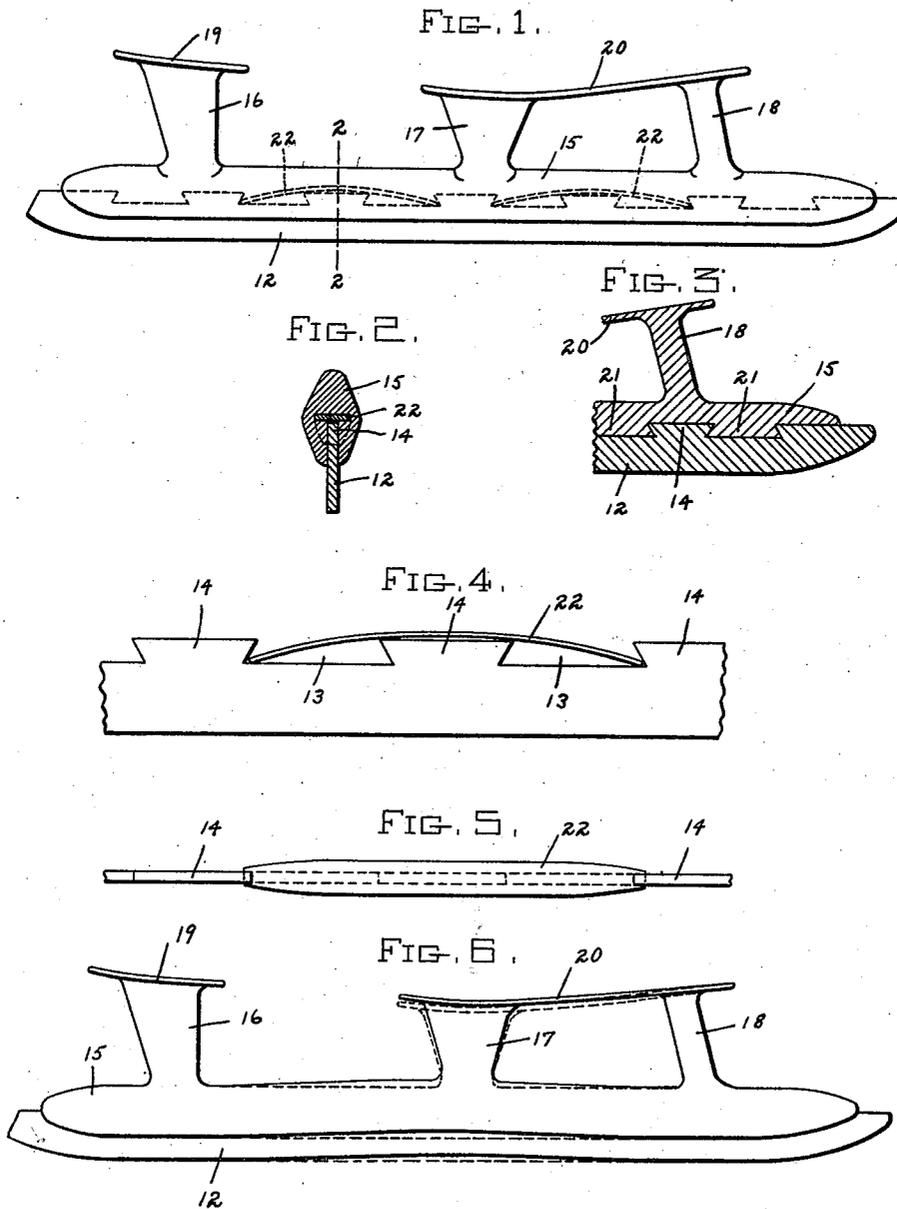
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SKATE AND METHOD OF MAKING THE SAME

Filed Aug. 23, 1921



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# UNITED STATES PATENT OFFICE.

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SKATE AND METHOD OF MAKING THE SAME.

Application filed August 23, 1921. Serial No. 494,513.

*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 and Methods of Making the Same, of which the following is a specification.

This invention relates to an ice skate which includes a one-piece casting, composed of metal, such as aluminum, or an alloy of which aluminum forms a considerable part, said casting including a base portion and upstanding foot supports integral therewith, as in the skate disclosed by my Patent No. 1,115,790, dated November 3, 1914, the base portion containing the upper edge portion of the steel skate runner.

One object of the invention is to provide an improved form of the portion of the runner on which the base portion of the casting is formed by the casting operation, whereby the construction of the runner is simplified and a strong and durable union is provided between the runner and the casting. Another object is to provide improved means for reinforcing the base portion of the casting and strengthening it against strains tending to fracture it crosswise above the runner. Another object is to prevent the contraction of the casting by cooling from imparting to the acting edge of the runner a form varying from the desired predetermined form.

To these and other related ends the invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a side elevation of a skate embodying the invention.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a fragmentary longitudinal central section.

Figure 4 is a side view showing a portion of the runner provided with a reinforcing strip.

Figure 5 is a top view of the runner portion and reinforcing strip shown by Figure 4.

Figure 6 is a side view illustrating the changes of form which are caused by the contraction of the casting.

The same reference characters indicate the same parts in all of the figures.

In the drawings 12 represents a steel runner having recesses 13 in its upper edge whereby portions of said upper edge are converted into longitudinally extending tongues 14, projecting from the upper edge and extending in a row longitudinally of the runner, the sides of said tongues being flush with the sides of the runner and their ends being undercut to overhang portions of the bottoms of the recesses. 15 represents the base portion and 16, 17, and 18 the upstanding standard portion of a one-piece casting preferably composed of aluminum or an alloy including aluminum and steel or other metal or metals. The standard 16 has a heel supporting plate or recess 19 cast thereon, and on the standards 17 and 18 are cast a sole supporting rest 20.

The casting is formed in a suitable mold or die adapted to enclose the recessed and tongued upper edge portion of the runner, the form of the die being such that the base portion 15 covers portions of the sides of the runner and fills the recesses 13 so that the base portion is provided with tongues 21 (Figure 3) interlocked with the runner tongues 14.

The described form of the runner enables it to be quickly and inexpensively manufactured by a stamping operation, no cutting or grooving of the sides of the runner being required. The interlocking tongues 14 and 21 provide a strong durable union between the runner and the casting.

The recesses and tongues of the runner enable a reinforcing strip 22 of hard sheet metal, such as steel, to be engaged with the runner as indicated by Figures 4 and 5 before the casting is formed upon the runner. Said strip, which is flexible, is engaged with the undercut ends of two of the tongues 14 and bridges another tongue as shown in Figures 4 and 5. The reinforcing strip is so proportioned that it is entirely covered by and embedded in the base portion 15 of the casting. The reinforcing strip is held in its proper position relatively to the runner by friction before the casting is formed. The wider sides of the reinforcing strip extend crosswise of the runner as shown by Figure 2, so that the strip is well adapted to resist strains tending to fracture the base portion

15 crosswise. It is obvious that the reinforcing strip may be of sufficient length to bridge more than one tongue 14, and that more than one strip may be provided if desired. Figure 1 shows two reinforcing strips, one in the portion of the casting base between the standards 16 and 17, and the other in the portion between standards 17 and 18.

10 I find that when the casting shrinks upon the tongued and recessed edge portion of the runner, the shrinkage is liable to distort or impart an undesirable form to the bottom or acting edge of the runner. To prevent this objectionable result I impart to both the mold and the runner an abnormal form. When the acting edge of the runner is to be substantially straight, in the completed skate, the abnormal form of said edge is as indicated by full lines in Figure 6, said edge having a slight reentrant curvature shown somewhat exaggerated. The abnormal form imparted to the casting is also as indicated by full lines (although exaggerated) in Figure 6, the upper edge of the base portion 15 having a slight salient curvature while the lower edge has a slight reentrant curvature, these curvatures being due to the formation of the mold.

20 After the casting operation and before the casting has had time to appreciably contract, the casting is removed from the mold and allowed to contract while unconfined. The contraction imparts to the casting and runner the form shown by Figure 1, and by dotted lines in Figure 6, the acting edge of the runner assuming a straight form.

25 If the acting edge is to have a slight salient curvature in the completed skate, the abnormal form of the mold and runner must be varied to produce this result.

30 By the method above described I overcome the only objection known to me to the employment of a runner having a recessed and tongued upper edge portion, viz, the liability of a variation of the acting edge of the runner, from the desired final form, by the shrinking of the casting, this liability being due to the different coefficients of expansion and contraction of the two members of the skate.

I claim:

1. A skate comprising a runner having a plurality of tongues projecting from its upper edge and extending in a row longitudinally of the runner, the ends of said tongues being undercut, and a one-piece casting including an elongated base portion cast upon the upper edge portion of the runner and surrounding said tongues, and upstanding foot-supporting standards integral with said base portion.

2. A skate comprising a runner having recesses in its upper edge converting por-

tions of said upper edge into longitudinally extending tongues, the sides of said tongues being flush with the sides of the runner and their ends being undercut to overhang portions of the bottoms of the recesses; and a one-piece casting including an elongated base portion cast upon the upper edge portion of the runner and filling the recesses therein, and upstanding foot-supporting standards integral with said base portion.

3. A skate comprising a runner having a plurality of tongues projecting from its upper edge, the ends of said tongues being undercut, a sheet metal reinforcing strip engaged at its ends with two of the said tongues and bridging another tongue, and a one-piece casting including an elongated base portion cast upon the upper edge portion of the runner and upon said reinforcing strip, and upstanding foot-supporting standards integral with said base portion.

4. A skate comprising a runner having recesses in its upper edge converting portions of said upper edge into longitudinally extending tongues, the sides of said tongues being flush with the sides of the runner and their ends being undercut to overhang portions of the bottoms of the recesses; a sheet metal reinforcing strip engaged at its ends with two of said tongues and bridging another tongue, and a one-piece casting including an elongated base portion cast upon the upper edge portion of the runner and upon said reinforcing strip, and upstanding foot-supporting standards integral with said base portion.

5. That improvement in the method of making a skate comprising a runner and a one-piece casting having an elongated base portion cast upon and interlocked with the upper edge portion of the runner, the runner and casting being composed of metals having different coefficients of expansion and contraction, said improvement consisting in imparting an abnormal form to the runner, forming undercut recesses in the upper edge of the runner and thereby converting portions of said upper edge into longitudinally extending tongues having undercut ends, imparting an abnormal form to the said casting while forming the same by a mold on the recessed and tongued edge portion of the runner, removing the casting from the mold before substantial contraction of the casting, and allowing the casting to contract while unconfined, the abnormal form of the runner and casting being such that the contraction of the casting imparts a predetermined normal form to the casting and the runner.

In testimony whereof I have affixed my signature.

CARL B. DREVITSON.