June 13, 1961 F. G. REBICEK 2,988,369

SKATES WITH DISPOSABLE BLADES

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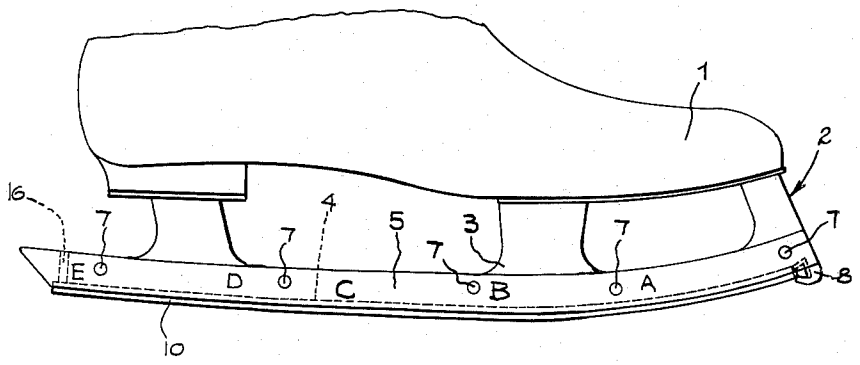


FIG. 1.

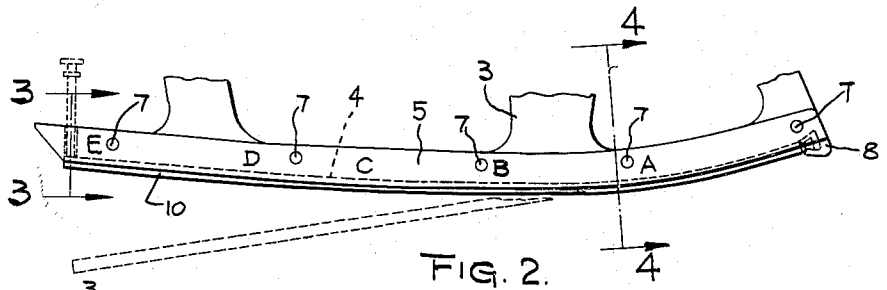


FIG. 2.

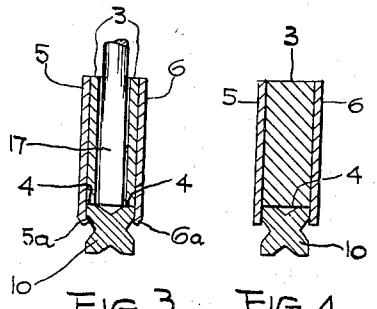


FIG. 3.

FIG. 4.

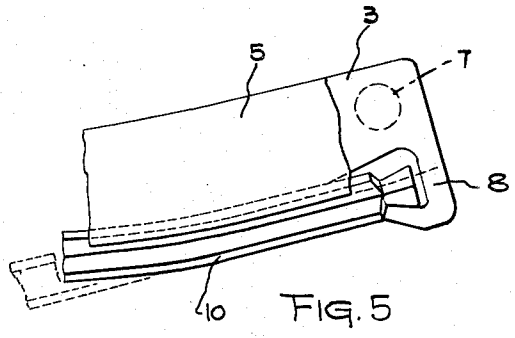


FIG. 5

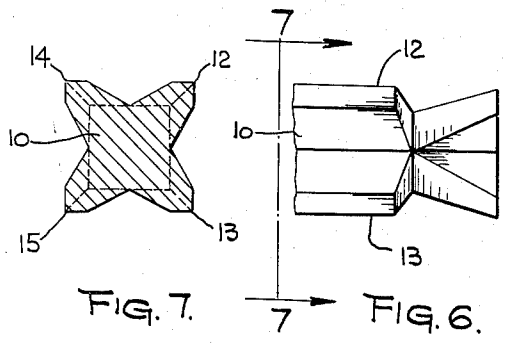


FIG. 7.

FIG. 6.

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SKATES WITH DISPOSABLE BLADES

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This invention relates to new and useful improvements in skates and particularly skates having blades which can be removed and replaced.

The conventional skate is equipped with a runner having an integral blade consisting of a skating surface and two edges, one of the latter of which is designed to engage the surface being skated upon in order to support the skater on one skate while he propels himself on the opposite skate. The propulsive effect, and therefore the efficiency of the skater, is directly related to the resistance to motion produced by the engagement between a blade edge of the skate supporting the skater and the surface being skated upon. Thus it is important that the edge of the blade be sufficiently sharp to penetrate the surface being skated upon in order to produce the required resistance.

Where the blade is integral with the skate, only one edge of each blade is used to produce the resistance required in skating and it is necessary that such a blade be sharpened each time that edge becomes dulled.

To increase the efficiency of skates, and to avoid time consuming blade sharpening, various devices have been designed for removably securing blades to skate runners so that their edges may be reversed, thereby making it possible to insert a sharp blade without sharpening. None of these devices has provided a blade that can be easily removed and reinserted in order to place a new blade in position.

Therefore, it is the principal object of this invention to provide a skate blade which can be easily removed and reinserted in order to place a new blade in skating position.

A further object of this invention is to provide a skate blade which can be easily removed and reinserted with a sharp edge in skating position, and which can be more economically disposed of when dull than any existing replaceable blade.

A still further object of this invention is to provide a replaceable blade which is disposable in that it can be more economically replaced by a new blade than conventional skate blades can be sharpened.

A still further object of this invention is to provide a skate blade which can be inserted and removed solely by applying force to the blade and without the use of tools.

A still further object of this invention is to provide a skate blade which can be inserted and removed with a minimum of inconvenience.

A still further object of this invention is to provide a skate blade with multiple skating edges in which each edge is easily insertable in skating position in either the left or right skate runner.

In addition to the objects above stated, a number of novel and useful details have been worked out which will be readily evident as the description progresses.

FIGURE 1 is a side view of the invention with the upper skate portion abbreviated.

FIGURE 2 is a side view of the runner in this invention showing the blade inserted in full lines and the blade partially removed in dotted lines.

FIGURE 3 shows a cross section of the runner taken along the lines 3—3 of FIGURE 2.

FIGURE 4 shows a cross section of the runner taken along the line 4—4 of FIGURE 2.

FIGURE 5 is an enlarged side view of the toe end of the runner partially broken away, showing the blade in engaged position in full lines and in partially removed position in dotted lines.

FIGURE 6 is an enlarged view of the toe end of the blade.

FIGURE 7 is a cross section of the blade taken along the lines 7—7 of FIGURE 6.

Referring now to FIGURES 1 through 7 which show the invention, upper skate portion **1** is rigidly mounted on runner **2** in a conventional manner as by rivets (not shown). Runner **2** consists of a blade bearing section **3** having a blade engaging surface **4** extending longitudinally of its lower side and opposed plates **5** and **6** (FIGURE 3) attached as by spot welds **7** to blade bearing section **3**. The lower edges of plates **5** and **6** extend beyond blade engaging surface **4** and each such edge is inclined toward the other as shown at **5***a* and **6***a*, such that the longitudinal opening of the groove formed by plates **5** and **6** and surface **4** is laterally constricted relative to the base of the groove except at the toe end of the runner (FIGURES 3 and 4).

At the toe end of blade bearing section **3** of runner **2** is locking device **8** having a suitable opening for receiving the toe end of blade **10** and holding the blade in a fixed position with respect to the blade bearing section **3**. Blade **10** in its preferred form consists of a resilient strip of square cross sectional area with a longitudinal groove midway from the edges extendng the length of each side, and having its toe end engageable with locking device **8** to secure the blade against fore and aft movement relative to the blade bearing section **3**. It will be seen, however, that it is not essential to the invention that the blade be square in cross section since blades having other cross sectional areas may be used. Likewise, it is not essential to the invention that the sides of the blade be grooved or that the toe end of the blade be formed in the configuration shown.

When it is desired to insert blade **10** into the groove formed by surface **4** and plates **5** and **6**, blade **10** is first rotated until the desired one of edges **12**, **13**, **14** or **15** is in proper position for engagement with the ice or other surface being skated upon. The toe end of blade **10** is then inserted in lock **8** and force is applied successively at points A, B, C, D and E to snap blade **10** into contact with surface **4**. Blade **10** is then in skating position, held against blade bearing section **3** throughout its substantially straight heel end portion by the resiliency of plates **5** and **6** and at the toe end by lock **8**.

In order to remove the blade from runner **2**, blade bearing section **3** is provided with an opening **16** (FIGURE 1) into which any suitable small implement may be inserted, such as pin **17**. By tapping pin **17** sharply, blade **10** will be disengaged from runner **2** as shown in dotted lines in FIGURE 2 and thereafter can be easily removed.

Having now described and illustrated one form of this invention, it is to be understood that the invention is not to be limited to the specific form or arrangement of parts shown and described herein.

What is claimed is:

1. In a skate including an upper portion and a runner the latter comprising a blade bearing section; a laterally flexible blade removably insertable in position such that one of a multiplicity of longitudinal blade skating surfaces bears on the blade bearing section; blade gripping means attached adjacent to and extending beyond the blade bearing section laterally across a portion of the inserted blade; and interlock means at the toe end of said runner for securing one end of the flexible blade in alignment with said blade bearing section such that said blade can be laterally flexed toward said blade bearing section and inserted between said blade gripping

means substantially in contact with said blade bearing section.

2. In a skate including an upper portion and a runner the latter comprising a blade bearing section; a laterally flexible blade removably insertable in position such that one of a multiplicity of longitudinal blade skating surfaces bears on the blade bearing section; blade gripping means attached adjacent to and extending beyond the blade bearing section laterally across a portion of the inserted blade which blade gripping means comprises two members laterally spaced a distance less than the cross sectional width of the blade skating surface such that when said blade is inserted said blade gripping means are flexed laterally away from each other; and interlock means at one end of said runner to secure an end of said flexible blade such that the blade can be flexed toward said blade bearing section and held by said blade gripping means substantially in contact with said blade bearing section.

3. In a skate as described in claim 2, further characterized by the fact that said flexible blade may be inserted on said blade engaging surface irrespective of the longitudinal dimensions of said runner.

4. In a skate including an upper portion and a runner, the latter comprising a blade bearing section; a laterally flexible blade removably insertable in position such that one of a multiplicity of radially arranged blade surfaces of equal lateral dimension bears on the blade bearing section, said blade surfaces being arranged in pairs such that each pair of adjacent surfaces forms a skating edge; blade gripping means attached adjacent to and extending beyond the blade bearing section laterally across a portion of the inserted blade; and interlock means between said blade and said blade gripping means for securing the flexed blade substantially in contact with said blade bearing section.

5. In a skate including an upper portion and a runner the latter comprising a blade bearing section; a laterally flexible blade having a multiplicity of longitudinal blade skating surfaces, each surface being grooved longitudinally; blade gripping means attached adjacent to and extending beyond the blade bearing section laterally across a portion of the inserted blade, said blade gripping means comprising resilient plates forming jaws which engage opposite longitudinal grooves on said blade; and interlock means at the toe end of said blade bearing section to receive one end of said blade while said blade is flexed between said resilient jaws.

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