Sept. 20, 1938. W. J. GRUBB 2,130,641

SKATE

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Fig. 1.

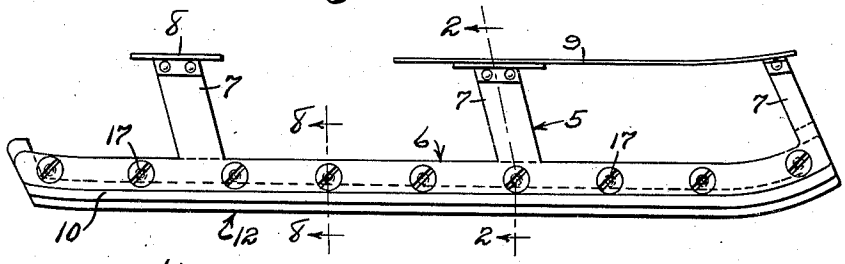


Fig. 17.

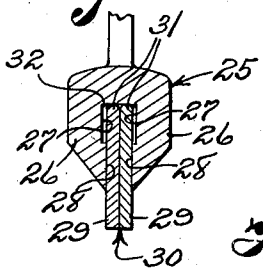


Fig. 14.

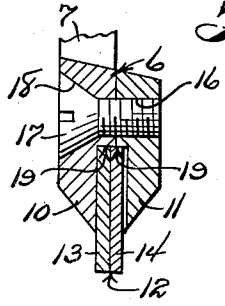


Fig. 6.

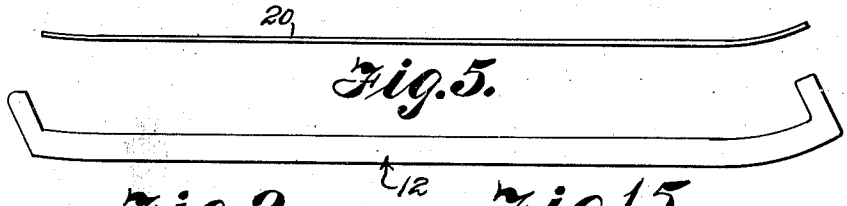


Fig. 5.

Fig. 2.

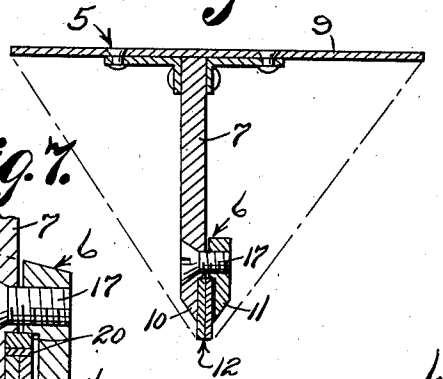


Fig. 15.

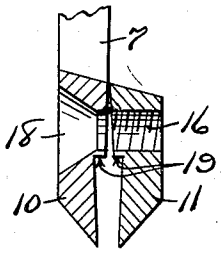
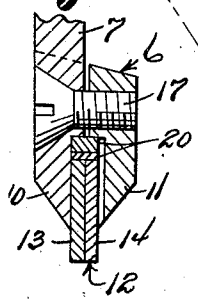


Fig. 7.



William J. Grubb

INVENTOR

BY Victor J. Evans & Co.

ATTORNEYS

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Fig. 3.

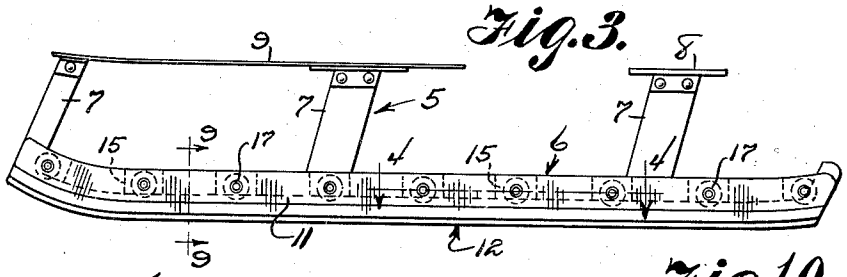


Fig. 8.

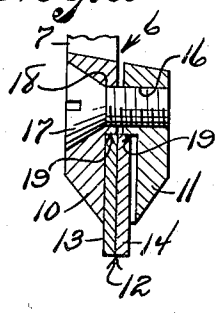


Fig. 9.

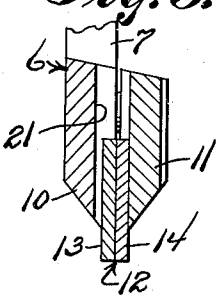


Fig. 10.

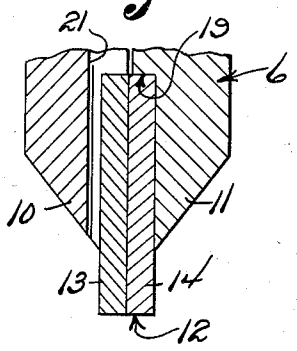


Fig. 11.

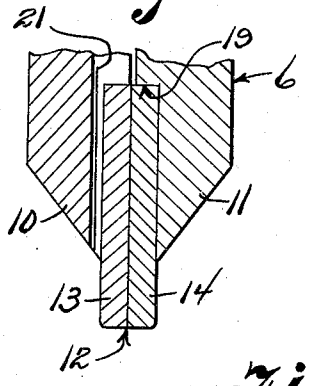


Fig. 12.

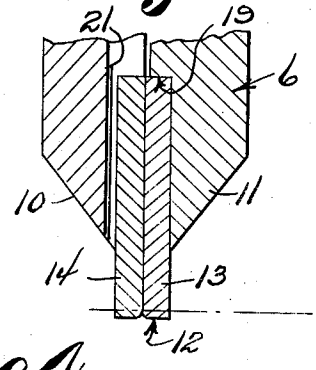


Fig. 13.

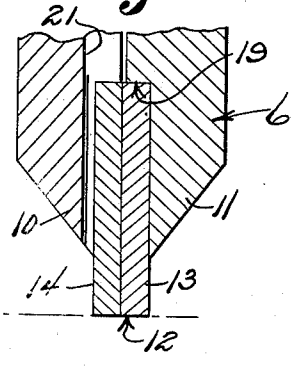


Fig. 4.

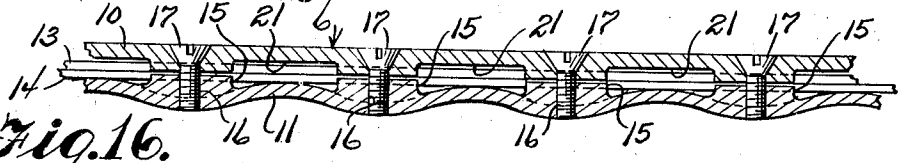
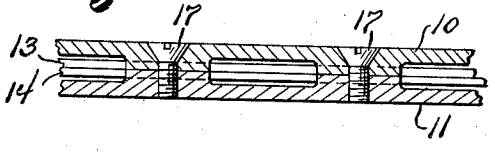


Fig. 16.



William J. Grubb
INVENTOR

BY Victor J. Evans & Co.
ATTORNEYS

Patented Sept. 20, 1938 2,130,641

UNITED STATES PATENT OFFICE

2,130,641

SKATE

William J. Grubb, Martinsburg, W. Va.

Application December 29, 1937, Serial No. 182,327

6 Claims. (Cl. 280—11.12)

My invention relates to new and useful improvements in skates and more particularly to ice skates.

It is well known in ice skates that the blades require frequent sharpening in order that the same may properly engage the ice and eliminate relative slipping. Blades of the ordinary type are constructed of relatively hardened steel and the same attached directly to the skate frame, thereby necessitating the use of a considerable amount of hardened steel which does not at any time engage the ice. The frequent sharpenings of the blades are not only expensive but oftentimes inconvenient due to the sharpening equipment not being readily accessible.

One of the principal objects of my invention is to provide a skate equipped with blades so constructed and arranged whereby the use effects a sharpening of the blades.

Another object of my invention is to provide a skate of the above described character wherein the blades are so constructed and arranged as to require a minimum amount of hardened steel in the manufacture thereof.

A further object of my invention is to provide skates of the above described character wherein the blades are interchangeable, thereby permitting blade replacements.

A still further object of my invention is to provide a skate of the above described character which is simple in construction, durable in use, efficient in operation and economical in manufacture.

Other objects and advantages will be apparent from the following description, appended claims and annexed drawings.

Referring to the drawings wherein like reference characters designate like parts throughout the several views:

Fig. 1 is a side elevation of a skate structure illustrating one form of my invention incorporated therewith.

Fig. 2 is a sectional view taken on the line 2—2 of Figure 1.

Fig. 3 is a side elevation looking from the opposite side of Figure 1.

Fig. 4 is a sectional view taken on the line 4—4 of Figure 3.

Fig. 5 is a side elevation of one of the blade sections.

Fig. 6 is a side elevation illustrating spacing strips.

Fig. 7 is a detail transverse section illustrating the use of one of the spacing strips.

Fig 8 is an enlarged detail sectional view taken on the line 8—8 of Figure 1.

Fig. 9 is a similar view to Figure 8 taken on the line 9—9 of Figure 3.

Figures 10, 11, 12 and 13 are enlarged sectional views illustrating steps in the method of sharpening the blades.

Fig. 14 is a transverse sectional view of a modified form.

Fig. 15 is a transverse sectional view of another modification.

Fig. 16 is a longitudinal section illustrating a further modification of my invention.

Fig. 17 is a transverse sectional view illustrating a still further modification of a holder.

In practicing my invention, with reference to the preferred embodiment illustrated in Figures 1 to 13 inclusive of the drawings, I provide a skate frame 5 having a longitudinal extending blade holder 6 fashioned with standards 7 on which are secured the usual heel and toe plates 8 and 9 respectively whereby to receive a shoe of the wearer, the shoe being attached thereto in any convenient manner.

The blade holder comprises a pair of longitudinally coextending sections 10 and 11, the section 10 having fashioned thereon the standards for supporting the heel and toe plates 8 and 9 and recessed throughout the length of the lower portion thereof to form an upper longitudinally extending shoulder for engagement with a blade 12 having coextending sections 13 and 14 as hereinafter set forth.

The section 11 is fluted throughout the length thereof and the concave inner faces fashioned with bosses 15 forming a plurality of shoulders on the upper portion thereof for likewise engaging the blade 12. The bosses are fashioned with threaded apertures 16 to receive therein screws 17 seated within registering apertures 18 formed in the upper portion of the section 10. Said screws serve to secure the sections 10 and 11 together and clamp the blade 12 therebetween to prevent dislodgement therefrom. The lower transverse walls 19 of the shoulders are aligned for abutting engagement with the upper faces of the sections of the blade whereby to form a seat for said sections and limit the upward movement thereof.

The convex inner faces of the section 11, between the bosses 15, extend towards the section 10 to engage the blade 12 therebetween and exert a tensioning action on the screws 17 when the sections 10 and 11 are secured in clamping engagement with the blade, thereby preventing

accidental loosening or dislodgement of the screws.

The sections of the blade are secured within the holder with the under or ice engaging faces extending in parallelism to present sharp lower corners on each side of the blade for engagement with the surface of the ice whereby to effect a cutting action therewith to prevent slipping during the use of the skate as shown in Figure 10. During skating, the aforesaid sharp corners become dull or rounded and will of a consequence result in a slipping of the blade relative to the ice as illustrated in Figure 11. When the blade thus becomes dull, the screws are loosened to permit withdrawal of the blade from the holder and the sections transposed, the outer faces of one section engaging the outer faces of the other section and the same inserted in the holder and secured therein by a tightening of the screws as depicted in Figure 12. When thus transposed the rounded or dull corners of the sections are disposed adjacent each other and the sharp corners, formerly positioned adjacent each other, are presented on the outside faces of the blade. Further skating causes the underfaces of the sections of the blade as well as the outer corners to wear and as a result the blade is sufficiently shortened to effect sharp corners at the abutting faces, as shown in Figure 13, thereby providing sharpened corners for the outer faces when the sections are again transposed as heretofore set forth.

From the foregoing it will be apparent that by transposing the sections of the blades at frequent intervals, the blades are maintained in sharpened condition.

The constant wearing or sharpening of the blades results in shortening the same and in order to compensate for the same and maintain the cutting edge of the blade in the same relative position below the blade holder, I provide spacing strips **20** for insertion between the upper face of the blade and the walls **19** of the blade holder. The number of strips **20** thus employed may be increased dependent upon the amount of wear on the lower face of the blade.

Intermediate of the bosses **15** the upper portion of the section **10** is recessed as at **21** to lighten the weight of the skate structure.

In the modified form illustrated in Figure 14, the shoulder of the section **10** extends over the blade **12** a sufficient distance to effect engagement with the upper face of the blade, thereby preventing upward movement of one section of the blade relative to the other.

As illustrated in Figure 15, the inner faces of the holder sections may be modified in a manner to present angularly disposed inner faces relative to each other whereby to effect a greater clamping action on the blade adjacent the lower end of the holder.

If desired, as illustrated in the modified form shown in Figure 16, the section **11** of the blade holder may be constructed of a relatively straight section having the plurality of bosses formed on the inner faces thereof.

A skate having a blade constructed in accordance with my invention requires only an amount of hardened steel for the blade, thereby permitting the use of more economical metal in the construction of the frame. It is to be understood that blades of various configurations for particular types of skating may be interchangeably used within the blade holder thereby permitting the use of one skate frame for many types of skating. Furthermore, the screws **17** and the threaded apertures **16** are provided with coacting tight fitting threads whereby to preclude accidental loosening of the screws due to vibration or use of the skate structure.

In the modified form illustrated in Figure 17 the holder **25** comprises integrally connected longitudinally extending blade holding section **26** having oppositely disposed inner side walls, the upper faces of which are recessed as at **27** to present lower laterally extending shoulders **28** for frictionally engaging the sections **29** of the blade **30**. The upper faces of the blade are rounded as at **31** to permit easy insertion thereof within the channel thus formed by the sections **26**, said upper faces of the blade engaging the upper wall **32** of the channel whereby to limit the movement of the blade when inserted and form a nest therefor. The sections **26** of the holder are of sufficient resiliency whereby the shoulders **28** effectively clamp the blade **30** therebetween and prevent accidental dislodgement thereof. However, it is to be distinctly understood that the blade may be readily removed from the holder for the purpose of transposing the blade sections.

What I claim is:

1. In a skate structure, a frame including a blade holder, a blade mounted within said holder and fashioned with coextending abutting blade sections having lower sharp corners, and means carried by said holder for maintaining said blade within said holder in a manner to permit said blade sections to be transposed relative to each other to present sharp corners on the outer faces of said sections when the other corners have become dull due to wear.

2. In a skate structure, a frame including a blade holder having coextending holder sections, a blade mounted between said sections and fashioned with abutting blade sections having lower sharp corners, and means connecting said holder sections together for maintaining said blade therebetween and adjustable to permit said blade sections to be transposed relative to each other to present sharp corners on the outer faces of said sections when the other corners have become dull due to wear.

3. In a skate structure, a frame including a blade holder, a blade mounted within said holder and fashioned with coextending abutting blade sections having lower sharp corners, means carried by said holder for maintaining said blade within said holder in a manner to permit said blade sections to be transposed relative to each other to present sharp corners on the outer faces of said sections when the other corners have become dull due to wear, and means insertable within said holder for compensating for wear on said blade whereby to maintain the lower face of said blade in adjusted position below said holder.

4. In a skate structure, a frame including a blade holder having coextending holder sections, a blade mounted between said sections and fashioned with abutting blade sections having lower sharp corners, means connecting said holder sections together for maintaining said blade therebetween and adjustable to permit said blade sections to be transposed relative to each other to present sharp corners on the outer faces of said sections when the other corners have become dull due to wear, and means insertable within said holder for compensating for wear on said blade whereby to maintain the lower face of said blade in adjusted position below said holder.

5. In a skate structure, a frame including a

blade holder having parallel longitudinally extending holder sections, a blade mounted between said holder sections and fashioned with abutting longitudinally extending blade sections having lower sharp corners, and screws connecting said holder sections together for maintaining said blade sections therebetween and adjustable to permit said blade sections to be transposed relative to each other to present sharp corners on the outer faces of said blade sections when the other corners have become dull to wear occasioned by skating, one of said holder sections fluted throughout the length thereof and having spaced bosses on certain of the fluted faces for engagement over said blade, other fluted faces engaging a blade section whereby to exert tension on said screws to prevent accidental dislodgement thereof.

6. In a skate structure, a frame including a blade holder having parallel longitudinally extending holder sections, a blade mounted between said holder sections and fashioned with abutting longitudinally extending blade sections having lower sharp corners, screws connecting said holder sections together for maintaining said blade sections therebetween and adjustable to permit said blade sections to be transposed relative to each other to present sharp corners on the outer faces of said blade sections when the other corners have become dull due to wear occasioned by skating, one of said holder sections fluted throughout the length thereof and having spaced bosses on certain of the fluted faces for engagement over said blade, other fluted faces engaging a blade section whereby to exert tension on said screws to prevent accidental dislodgement thereof, and a spacing strip insertable within said holder between the upper faces of said blade and the lower faces of said bosses for compensating for wear on said blade whereby to maintain the lower face of said blade in initial position below said holder.

WILLIAM J. GRUBB.