Oct. 25, 1927. 1,646,843

S. E. WINSLOW

SKATE

Filed Oct. 30, 1926

Fig. 1.

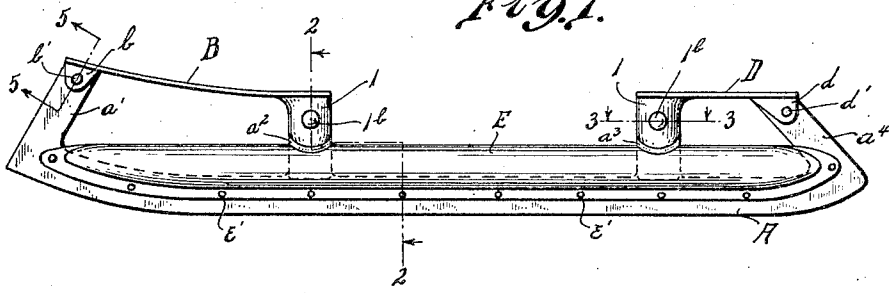


Fig. 2.

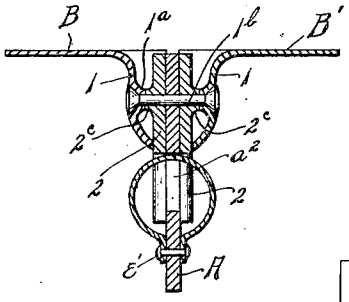


Fig. 3.

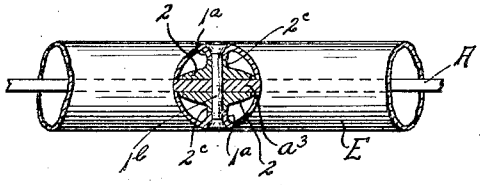


Fig. 9.

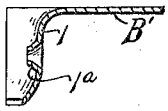
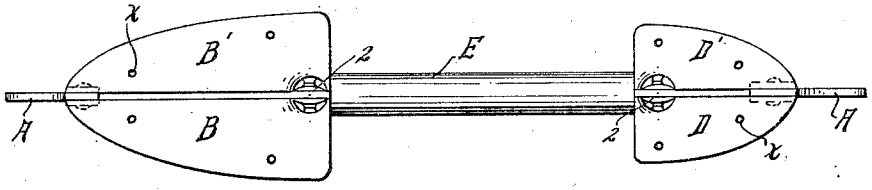


Fig. 6.



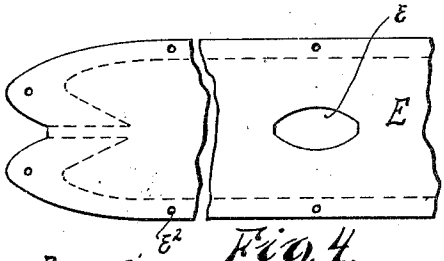


Fig. 4.

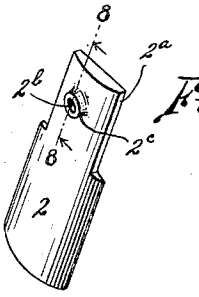


Fig. 7.

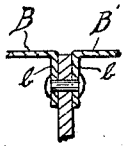


Fig. 5.

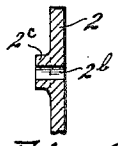


Fig. 8.

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ATTORNEYS.

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UNITED STATES PATENT OFFICE.

SAMUEL E. WINSLOW, OF LEICESTER, MASSACHUSETTS.

SKATE.

Application filed October 30, 1926. Serial No. 145,215.

My invention is an improved skate, stiffened against longitudinal and transverse strains upon the runner by side braces applied to the runner and against vertical and transverse strains applied to the foot plates and their supporting posts by braces applied to the posts connecting the runner with the foot plates, the two sets of braces, for the runner and the foot plates and their posts being independent. My invention also includes a novel depending bracket for securing the toe plates to the upright posts from the blade as well as a novel reinforcing element to be applied to the sides of the posts and to cooperate with the depending bracket. The invention is particularly applicable to skates in which a relatively thin blade or runner is employed.

In the drawings:

Figure 1 is a longitudinal elevation of my improved skate;

Figures 2 and 3 are sections upon an enlarged scale, on lines 2—2 and 3—3, respectively, of Figure 1;

Figure 4 is a fragmentary plan view, on an enlarged scale, of one end of the blank from which the horizontal stiffening element is formed;

Figure 5 is a detail sectional view on line 5—5 of Figure 1;

Figure 6 is a plan view of Figure 1;

Figure 7 is a perspective view of one of the stiffening members, shown in Figures 2 and 3;

Figure 8 is a section on line 8—8 of Figure 7, and

Figure 9 is a detail of Figure 2.

My invention is particularly applicable to skates in which the blade or runner is thin and, without extraneous support, would be too flexible for satisfactory results. The blade in my new skate is formed, as is common, of a horizontal runner or carrying part A, perpendicular to which are four integral posts a^1, a^2, a^3, a^4. To the upper or free ends of these posts are secured a duplex toe-plate BB′, each part of which is provided with depending brackets, b and 1 and a duplex heel plate DD′ each part of which is provided with depending brackets d and 1.

The posts a^2, a^3, respectively beneath the ball of the foot and the front of the heel are subject to great transverse strains as well as most of the vertical pressure due to the weight of the skater. I have found that the ordinary post, integral with the blade, such as the front and rear posts, a^1, a^4, is not adapted to endure the transverse strains of the medial position and preserve perfect alignment with respect to the foot plates and the straightness of the blade A itself and this is especially true when, as is desirable, the blade is thin and therefore flexible.

To correct this difficulty I provide posts a^2, a^3, with side reinforcing elements 2, which lie on either side of posts a^2, a^3, from the upper or free end of the posts to and below the junction of the posts with the blade A and these are preferably spot welded to the posts and blade so as to become in effect integral therewith. These reinforcing elements are preferably shaped as shown in Figures 3 and 7, with a plane face to fit against the flat side of a post a^2, or a^3, and a convex face outwardly.

The upper edges of the element 2 are preferably recessed, for a purpose to be explained, as shown at 2^a (Figure 7) and are provided with an aperture 2^b, surrounded upon the outer side of element 2 by a thimble, 2^c. The aperture 2^b registers with an aperture 2^b in the reinforce 2 upon the other side of the post a^2 or a^3 and with an aperture in the thimble 2^c surrounding this aperture 2^b. These apertures through the reinforces, thimbles and posts a^2 or a^3 are to receive a bolt or rivet 1^b passing through the brackets 1 and locking all the parts together.

The brackets b and d are such as have heretofore been in use in connecting the front end of a toe plate with the front post and the rear end of a heel plate with the rear post. The brackets 1 are novel in shape, being hollow concavo-convex segments of a sphere, set back from the opposed edges of the duplex heel- and toe-plates, and are so shaped in order to provide necessary space for the reinforced upper ends of the runner posts, while covering with a sturdy and graceful bulbous casing the structure contained. In order to provide the necessary mechanical strength, for the bulbous bracket, each bracket 1 is provided with an inwardly projecting hollow cylindrical thimble, 1^a, the free end of which preferably projects to butt upon the free end of thimble 2^c projecting from the outer face of element 2. It is obvious that the cylindrical thimbles, 1^a, 2^c, and elements 2 and post a^2 or a^3 may be connected by a rivet 1^b passing through brackets,

thimbles, reinforcing elements and posts and secured with firmness, the pressure being sustained by the thimbles, reinforcing elements 2 and the posts.

The reinforcing members 2 being applied to posts a^2, a^3, and fixed in place, by spot welding, riveting or other suitable method, the longitudinal stiffening member E is applied by passing apertures, e, in the blank E over the free ends of the posts and securing the two edges of the member E together preferably by rivets e' passing through suitable apertures e^2 in the edges of member E and in the blade A (see Figures 1, 2 and 4). The toe and heel plates are next mounted upon their respective posts, a^1, a^2 and a^3 and a^4 and the brackets b, d, are riveted thereto by rivets b' d' passing through suitable apertures in the brackets and the upper end of posts a^1, a^4, and the brackets 1 are connected by means of rivet 1^b passing through thimbles 1^a, 2^c and aperture 2^b in the reinforces 2 and a suitably registering aperture in the upper ends of posts a^2, a^3. The engaging pressure is taken longitudinally by the thimbles 1^a, 2^c transmitted to the elements 2 and the posts a^2 or a^3. The rivet 1^b obviously will fix the parts not only against the possibility of movement longitudinally of the rivet but also against any motion transversely of the rivet. The edges of brackets 1 are wiped down into recesses 2^a of the reinforces 2, the depth of recess 2^a being equal to or slightly greater than the thickness of the material of bracket 1, the edges of bracket 1 butting against the sides of the posts a^2, a^3, to form a finished looking article when suitably plated (see Figure 3).

It will be apparent from the foregoing that the two factors of distortion or strain upon the skate are met by separate and independent stiffening means, the stiffener E for the blade taking all strains tending to flex the blade without transmitting any such strains to the posts and the reinforcing members 2 and posts a^2, a^3, resisting all transverse strains on posts a^2, a^3 as well as carrying pressure due to the weight of the user, none of which is transmitted to the member E.

I have indicated at x apertures in the toe and heel plates, for connecting the skate to the sole of a shoe.

It is obvious that the element 1^b for connecting the brackets to the posts, which I have shown and described as a rivet, may be a bolt if desired. I prefer however a rivet construction, as the hot rivet, in shrinking, binds the parts together tightly.

I claim:

1. In a skate, a blade; integral posts extending upward from the blade; reinforcing side pieces fast to the blade and posts; heel and toe plates, carrying hollow depending segmental brackets, the hollows of the brackets being opposed to receive the upper ends of the posts; hollow thimbles between the inner surface of the brackets and the outer surface of the side pieces; a binding element through the thimbles, side pieces and post, to secure the brackets to the post.

2. In a skate, a blade; integral posts extending upward from the blade; reinforcing side pieces fast to the blade and posts; duplex heel and toe-plates, carrying hollow depending segmental brackets, the hollows of the brackets being opposed to receive the upper ends of the posts; hollow thimbles projecting within the hollow of the bracket to press upon the side pieces; a binding element passing through the thimbles, side pieces and post, to secure the brackets to the post.

3. In a skate, a blade; posts extending upward from the blade; heel and toe plates carrying hollow depending brackets, the hollows of the brackets being opposed to receive the upper end of the posts; hollow thimbles between the inner surface of the brackets and the outer surface of the posts; a binding element through the thimbles and post, to secure the brackets to the posts.

Signed at Worcester, Massachusetts, this 25th day of October, 1926.

SAMUEL E. WINSLOW.