J. ADAIR.

SKATE.

No. 187,697. Patented Feb. 27, 1877.

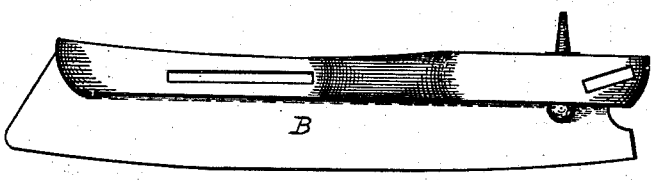

Fig. 1.

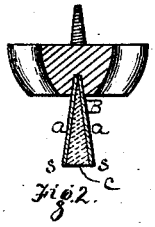

Fig. 2.

Witnesses.

C. L. Parker

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UNITED STATES PATENT OFFICE.

JAMES ADAIR, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND C. CURTIS HUSSEY, OF SAME PLACE.

IMPROVEMENT IN SKATES.

Specification forming part of Letters Patent No. **187,697**, dated February 27, 1877; application filed February 3, 1877.

To all whom it may concern:

Be it known that I, JAMES ADAIR, of Allegheny, county of Allegheny, State of Pennsylvania, have invented or discovered a new and useful Improvement in Skates; and I do hereby declare the following to be a full, clear, concise, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—like letters indicating like parts—

Figure 1 is a side view of my improved skate, and Fig. 2 is a transverse sectional view thereof.

Heretofore, in making skate-runners, it has been usual to weld a steel blade or bit to an iron back. In such mode of manufacture it is not practicable to employ the higher grades of steel, on account of difficulties in welding and tempering. Hence the running or wearing edges become rounded or blunt by use, and the skate must be taken now and then to the shop for regrinding and resharpening.

It is also a fact that in grinding and sharpening skate-runners, the central part of the running-edge is usually ground out hollow, so as to get sharp, well-defined running-corners.

By my improvement I am able to attain two useful results: first, the use of a higher grade or quality of steel than has heretofore been found practicable, whereby sharp, well-defined running-edges are longer preserved as against wear; and, secondly, the runner is almost, if not entirely, self-grinding or self-sharpening. Also, the higher grade of steel employed, while reducing the wear, reduces in the same proportion the friction of the skate-blade on the ice.

To these ends I make the skate-runner B of a combination of iron and steel, substantially as represented in Fig. 2, where *a a* represent the steel parts or surfaces, and *c* the iron part or center.

The union of these exterior and central layers may be secured by welding either under the hammer or between the rolls; but the best way, as I now believe, of carrying out my invention is to cast these layers together in a suitable mold, and in proper proportions, in bar or ingot form, in any of the ways employed in making iron-center steel for surface wear.

The proper proportions of parts in casting, by which I mean chiefly the proportionate thicknesses and taper (if any) of the iron and steel layers, will be regulated by the skilled workman, according to the proportionate thicknesses and taper desired in the several layers, or each of them, and the relative amounts which they will be drawn and reduced in the next step of the operation.

After the casting is done, the ingot or bar is rolled or hammered, in the usual or any known way, to the thickness and shape desired, and is trimmed, tempered, finished, and mounted in any of the ways known to the art.

In this casting operation I am enabled to use a higher grade or quality of steel than has been practicable heretofore, and am also enabled to give it a higher temper, so that the running-corners *s s* will, when sharpened, take a quicker and firmer bite on the ice, will wear longer, and run with less friction; also, the center of the running-edge of the skate, being of iron, (or, if preferred, a comparatively soft or low grade of steel,) will wear away or wear out hollowing to substantially the form heretofore secured only by grinding, and also by such wear, will always keep such form, so that only the thin steel edges being presented to the ice, the skate will be not only self-sharpening, but also will wear longer and run with less resistance from friction.

I am aware that iron center steel adapted for use in making plow mold-boards, safe-plates, and like articles for side-surface wear, is not new; but I am not aware that it has ever been proposed to utilize the edges of the steel layers by the wearing away of the interposed iron center.

I claim herein as my invention—

A skate-runner composed of iron (or soft-steel) center and hard or high steel faces, having the central layer of iron (or soft steel) and the exterior layers of hard steel, so disposed that the edges of all shall constitute the running and wearing surface, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JAMES ADAIR.

Witnesses:

J. J. MCCORMICK,

GEORGE H. CHRISTY.