

No. 809,103.

PATENTED JAN. 2, 1906.

W. H. DUNNE.  
SKATE.

APPLICATION FILED DEC. 8, 1904.

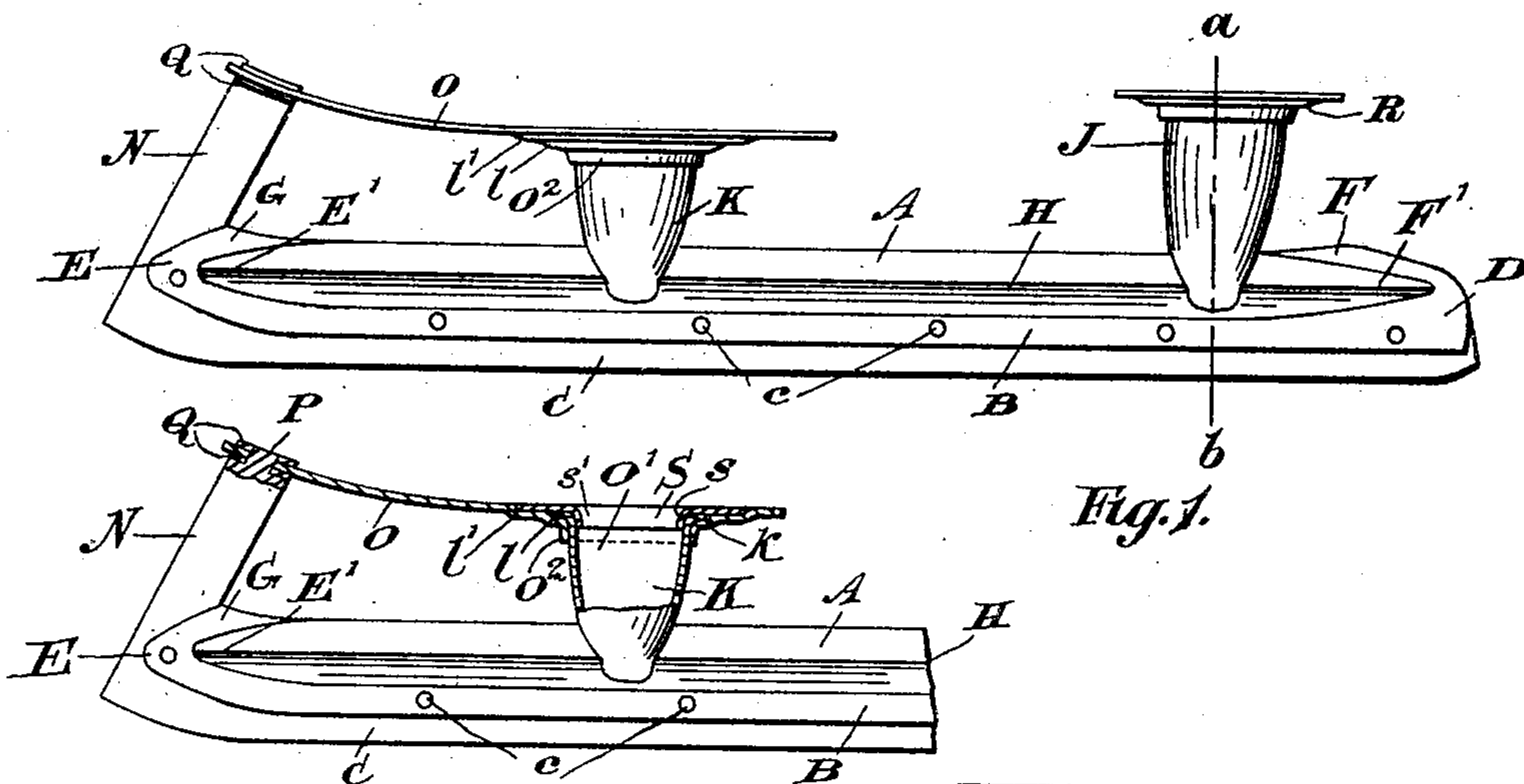


Fig. 1.

Fig. 2.

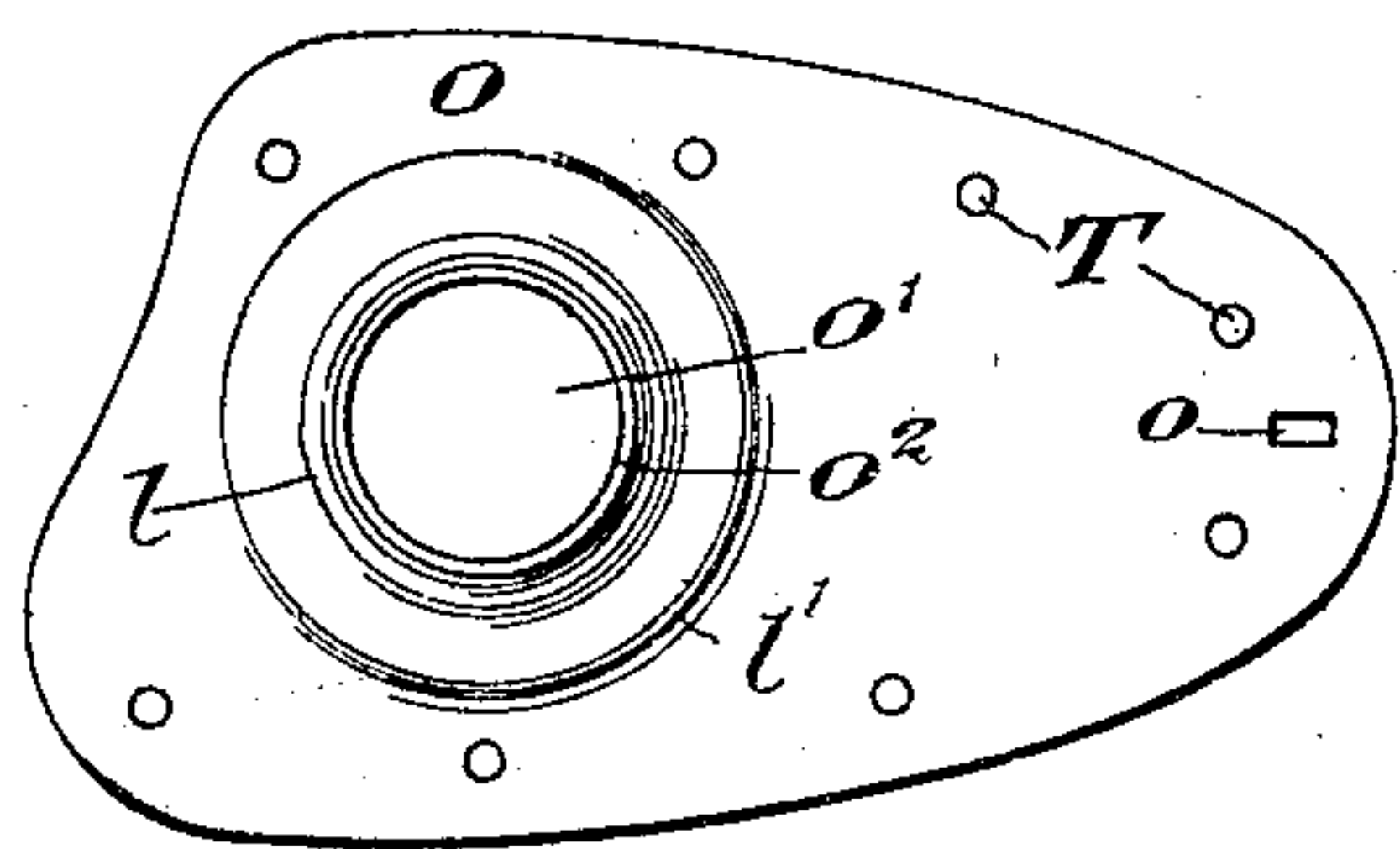


Fig. 4.

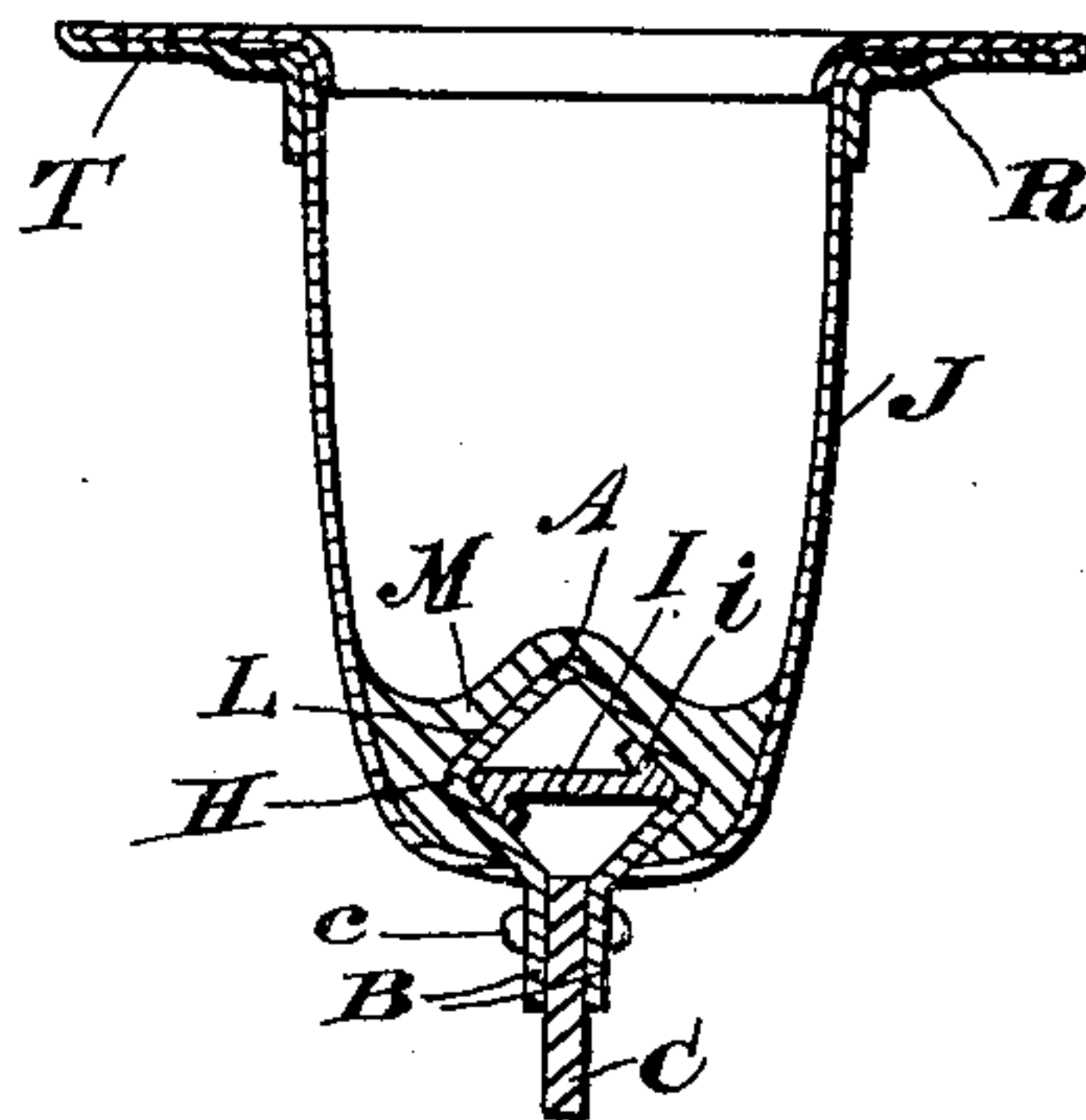


Fig. 3.

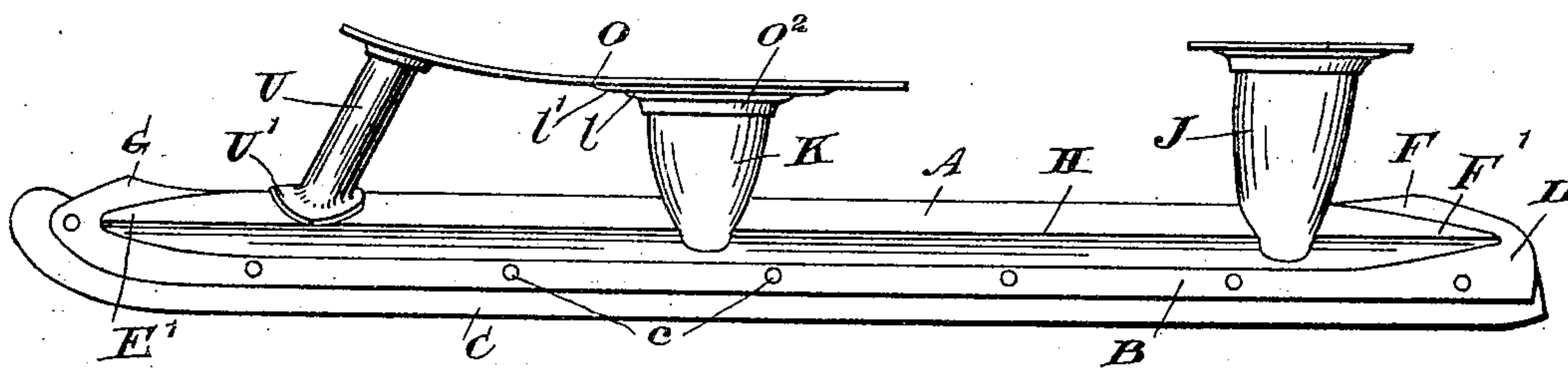


Fig. 5.

Witnesses.

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# UNITED STATES PATENT OFFICE.

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## SKATE.

No. 809,103.

Specification of Letters Patent.

Patented Jan. 2, 1906.

Application filed December 8, 1904. Serial No. 235,967.

*To all whom it may concern:*

Be it known that I, WILLIAM HAMILTON DUNNE, manufacturer, a subject of the King of Great Britain, residing in the city of Toronto, county of York, Province of Ontario, Canada, have invented certain new and useful Improvements in Skates, of which the following is a specification.

My invention relates to improvements in skates; and the objects of my invention are, first, to provide a strong neat durable skate that can be used either for hockey-playing or general skating, and, secondly, to manufacture the sole-plate out of one piece of metal in the manner hereinafter particularly described; and it consists, essentially, of a hollow support for the runner made quadrilateral in cross-section and having its lower ends converged to form vertical portions, so as to hold the runner, cups provided with quadrilateral slots fitting on said hollow quadrilateral support, and heel and toe plates suitably secured to said cups. In order to lighten the skate as much as possible, I make the quadrilateral support of thin metal, preferably steel, and internally brace same by means of a horizontal brace extending the desired length within said support.

Figure 1 is a side elevation of my skate constructed for ordinary use. Fig. 2 is in part a longitudinal vertical section through the sole-plate and cup therefor shown in Fig. 1. Fig. 3 is an enlarged vertical cross-section on the line *a b*, Fig. 1. Fig. 4 is a view of the under side of the sole-plate, and Fig. 5 is an alternative form of my skate constructed for racing.

In the drawings like characters of reference indicate corresponding parts in each figure.

Formed out of one piece of metal, preferably thin steel, is the hollow support A, quadrilateral in cross-section, the lower ends of which converge together, so as to form vertical portions B, between which is secured the runner C. The runner C may be secured in place either by brazing or soldering or else by rivets *c*. The hollow quadrilateral support A is preferably converged at both ends, forming vertical portions D and E, which construction provides stiffening-backs F and G, which give additional rigidity to the support A. This construction necessitates the tapering off of the quadrilateral-shaped portion of the support A, as shown at F' and E', thus giving a very neat appear-

ance to the skate. By constructing the support A quadrilateral in cross-section it will be understood that I provide same with side ribs H, which prevent the bending of said support. I make said support A of as light material as possible in order to reduce the weight of the skate and internally brace same by a horizontal brace I, held in the inner corners of said support A, caused by the construction of the said ribs H. This horizontal brace I extends the whole length of the support A, if desired, or any desired distance therein, so as to properly brace same. The said brace I is of course brazed or soldered in position and absolutely prevents any twisting or buckling of the support A. As the major portion of the runner C is in contact with the ice, it will be understood that during skating there is a severe twisting strain exerted against the support A, which would be twisted and buckled were it not supported as described.

The heel and toe cups J and K are each provided with slots L, quadrilateral in cross-section, so that they may be snugly slid onto the support A. When in position, the said cups are secured to the support A by any suitable soldering or brazing material M. Even without the brazing or soldering material M the cups K and J are prevented from side movement.

N is the usual toe-brace, secured to or forming part of the runner C and suitably secured to the sole-plate O. According to the construction shown a slot or hole *o* is formed in the toe of said sole-plate, through which projects a shoulder P. By means of the pieces Q the top of the toe-brace is suitably secured in position. The vertical portions E, it will be noticed, overlap the sides of the toe-brace N and are secured thereto.

The construction of the heel-cup J (shown in section in Fig. 3) is substantially the same as the sole-cup. (Shown in section in Fig. 2.)

The heel-cup J is secured to its heel-plate R in the same manner as the sole-plate O is secured to the sole-cup K, so the description of one will do for both. The upper edge of the sole-cup K is flared outwardly, so as to form a flange *k*, which rests in a flange-bed *l*, formed in the sole-plate O.

The sole-plate-strengthening plate S is provided with a central hole *s'*. When this hole is made in this strengthening-plate, a downwardly-turned flange *s* is formed, which overlaps the flange *k*, and extends a suitable dis-



tance down into the sole-cup K. In order that the top of the sole-plate O may be flush, so as to provide a level bed for the sole of the boot, the sole-plate-strengthening plate S rests in the flange-bed  $l'$ , formed in said sole-plate. The sole-plate O is further provided with an opening or hole  $O'$ . When this hole is made in this sole-plate, a downwardly-extending flange  $O^2$  is formed, which fits around the outside of the sole-cup K and gives support to the flange  $k$ .

All the above-mentioned parts are brazed together, thus providing a very rigid construction.

From the description of the sole-plate O it will be understood that same is manufactured out of one piece of metal.

By means of the usual holes T the skate is secured to the boot.

In order to increase the soldering area between the support A and the horizontal brace I, I turn the side edge of said brace I as shown at  $i$ .

Referring to Fig. 5, it will be seen that my skate as designed for racing is provided with a blade and support therefor much longer than the blade and support for the skate designed for general skating. In this form of skate the toe-brace U is preferably hollow and is suitably secured at its upper end to the sole-plate O. The lower end  $U'$  of the toe-brace U is constructed saddle-shaped, so as to straddle the upper half of the support A, and is suitably brazed or soldered thereto.

From the construction shown it will be understood that I provide no sharp flanges in my skate, thus not unduly weakening the metal, so that there will be no danger of the heel-plate and sole-plate breaking away from their respective cups. I of course do not confine myself to the construction shown for securing the said heel and sole plates to their respective cups.

As is usual in the manufacture of skates of this class the heel-cup J is made the necessary distance higher than the sole-cup.

It will of course be understood that I may make changes in the construction of my skate without departing from the scope of my invention.

What I claim as my invention is—

1. A skate comprising a hollow support, quadrilateral in cross-section, and having its lower ends converged to form vertical portions, the said quadrilateral support being placed so that one of its corners forms the apex which is directly above the space between said vertical portions, the other corners of said support forming side ribs; the runner held between said vertical portions and extending a sufficient distance therebe-

low, and a horizontal brace secured within said support and in the inner corners formed by said side ribs.

2. A skate comprising a hollow support, quadrilateral in cross-section, and having its lower ends converged to form vertical portions, the said quadrilateral support being placed so that one of its corners forms the apex which is directly above the space between said vertical portions, the other corners of said support forming side ribs; the runner held between said vertical portions and extending a sufficient distance therebelow, and a horizontal brace secured within said support and in the inner corners formed by said side ribs, the side edges of said brace being turned so as to increase the soldering area between said inner corners and said brace.

3. A skate comprising a hollow support, quadrilateral in cross-section, and having its lower ends converged to form vertical portions, the said quadrilateral support being placed so that one of its corners forms the apex which is directly above the space between said vertical portions, the other corners of said support forming side ribs; the runner held between said vertical portions and extending a sufficient distance therebelow; a horizontal brace secured within said support and in the inner corners formed by said side ribs, the heel and sole cups provided with quadrilateral-shaped slots embracing said support and secured thereto, and the heel and sole plates secured to their respective cups.

4. The combination of the sole-plate provided with a first and second flange-bed and an opening provided with a downwardly-extending flange; a hollow cup fitting in said opening and provided at its top with an outwardly-flared flange which rests in said second flange-bed, the downwardly-extending flange of said sole-plate being secured to the outside of said hollow cup, and the sole-plate-strengthening plate resting in said first flange-bed thus providing said sole-plate with a flat surface; the said sole-plate-strengthening plate being provided with a central hole which has a downwardly-turned flange which overlaps the outwardly-flared flange of said hollow cup and extends a suitable distance down thereinto, the said parts being suitably secured together.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM HAMILTON DUNNE.

Witnesses:

EGERTON R. CASE,  
GEORGE McLEAN.