

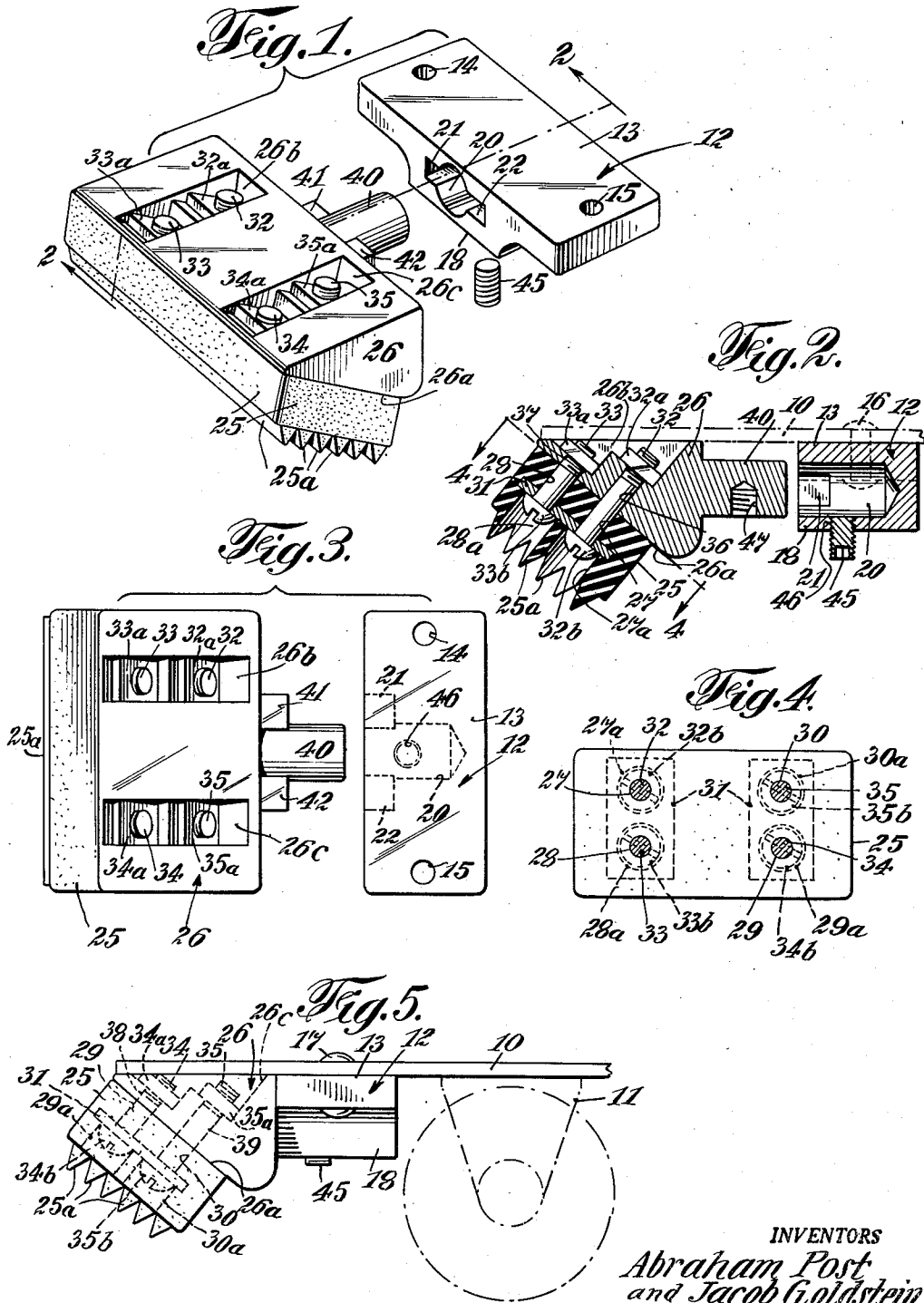
July 25, 1950

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2,516,644

TOE CLIP FOR ROLLER SKATES

Filed Jan. 13, 1948



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UNITED STATES PATENT OFFICE

2,516,644

TOE CLIP FOR ROLLER SKATES

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Application January 13, 1948, Serial No. 2,006

5 Claims. (Cl. 280—11.2)

1 This invention relates to toe clips for roller skates.

The invention comprises means for readily applying or detaching a toe clip to a skate plate, so as to facilitate the use of a toe clip for skates. The embodiment of the invention complies with essential requirements in that a housing is permanently applied to the standard plate of the roller skate at its underside and immediately in front of the front wheel hub truss, and still sufficiently rearward of the front end of said plate to permit the lower side of the front part of the plate to be free of any projection, the presence of the relatively flat housing in no way perceptively changing the character of the underside of the plate, at such time when the use of the toe clip is not desired. When, however, such use is desired, the housing provides a strong hold for the toe clip, such as to prevent it from rotating, and provides a facile means of inserting the toe clip holder or for detaching the same. The replaceable holder has means for engaging the fixed housing, and means for holding the toe clip in a position to provide a flat braking surface to the surface of the rink when the skate is tilted as required. The invention solves the problem of providing ease of attachment or detachment on the one hand, and strength to resist the shocks and stresses on the other hand.

The invention will be further described, an embodiment shown in the drawing, and the invention will be finally pointed out in the claims.

In the accompanying drawings,

Fig. 1 is a perspective spaced view of an embodiment of the invention;

Fig. 2 is a longitudinal section taken on line 2—2 of Fig. 1;

Fig. 3 is a plan view of the embodiment, also in spaced position.

Fig. 4 is a transverse section of Fig. 2 taken on line 4—4; and

Fig. 5 is a side view of the embodiment as in use with the toe clip support secured to the housing.

Similar characters of reference indicate corresponding parts throughout the various views.

Referring to the drawings the known skate plate 10, has applied thereto at its underside slightly forward of the known wheel forward truck hanger 11, a housing 12 fixed to the plate 10.

This housing 12 consists of a base member 13 having two holes 14 and 15, for the passage of fastening rivets 16 and 17, which pass through

2 the plate 10, to secure the housing to the plate 10. The housing 12 has an enlarged downwardly extending projection 18, in which a centrally disposed bore 20 is provided. Lateral slots 21 and 22 extend from either side of the bore 20. This housing 12 forms a permanent part of the skate or of the skate plate 10.

A toe clip or brake 25 is secured to a removable support 26. The toe clip 25 has four round shaped openings 27, 28, 29, and 30, with round enlargements 27a, 28a, 29a, and 30a. This clip 25 is made of suitable rubber, and has washers 31 imbedded therein. Bolts 32, 33, 34 and 35, with nuts 32a, 33a, 34a and 35a, pass through the openings 27, 28, 29 and 30, and also through registering openings 36, 37, 38 and 39, in the support 26, the nuts 32a, 33a, 34a and 35a with their bolts 32, 33, 34 and 35 fastening the clip 25 to the support 26. The bolts 32, 33, 34 and 35, have the usual round machine bolt heads 32b, 33b, 34b and 35b. Staggered recesses 26b, 26c, for the nuts are provided in support 26.

Integrally molded or formed with the support 26 is a rearwardly extending cylindrical shank or projection 40, having substantially (with loose fit tolerances) the same external diameter as the internal diameter of the bore 20, with lateral extensions 41 and 42 of the same contour as the slots 21 and 22.

A screw 45 in a screwthreaded opening 46 of the support 12 enters a screwthreaded bore 47 of the shank or projection 40, and locks the clip housing 12 tightly in position, the lateral extensions 41 and 42 securely engaging the slots 21 and 22 and preventing the clip 25 from having a rotative movement.

Ridges 25a of the clip 25 of any suitable form are preferably used so that the skater has an ample frictional hold on the rink floor.

The housing 12 is attached to the toe plate 10 of the skate. This is a permanent attachment, made with rivets 16 and 17 or bolts. The rubber stop holder 26 is made of an aluminium alloy with a high sheer and compressed ultimate strength, and is composed of a sloped surface 26a against which the clip or brake 25 rests. The shank 40 fits into the mating hole 20 in the housing 12. The shank 40 has two shoulders 41 and 42 to prevent rotation in the hole. An Allen-head screw 45 is used for securing the shank to the housing. The rubber clip or brake 25 is rectangular in shape and is moulded with metal washers 31. Standard machine screws and bolts as described are used for securing the rubber clip to the holder 26.

The main advantages of this improvement is that the holder 26 is attachable and detachable as one wishes, since for dancing a toe stop cannot be used for proper results. For free style and figure skating, a toe stop is naturally necessary. Since most toe stops heretofore proposed are permanently attached, this is a definite advantage. Also all the component parts when used are attached securely but not permanently, since they are easily removable and therefore in case of breakage they will be easily replaceable. The square rubber clip or brake naturally gives one a large surface contact with the floor, and also provides a greater tractive force for jumping takeoff. It is made not only of aluminium, but of an alloy with high shear and compressive ultimate strength to give it lightness as well as strength.

The fact that the holder 26 is of triangular shape with its base abutting against the underside of the plate 10, and with its inclined side 26a inclined to the horizontally disposed plate 10, enables the flat rectangular toe clip with its parallel sides and with one side provided with ridges 25a, to be brought into a position parallel with the surface of the rink floor, by a tilting of the skate and a very secure anchorage obtained. The reaction is in line with the axis of the shank 40 in its housing bore.

As the lower surfaces of commercial skate plates are usually transversely curved, the commercial embodiments of the invention are slightly curved on the top surface of the toe clip holder to bring about a symmetrical fit. Also, the upper surface of the housing may be provided with a conoidal shaped recess, to abut against a corresponding shape of the front part of a precision skate truck to permit a close assembly particularly in such skates where the distance from the truck to the front of the plate is relatively short, as in some female skates, and thereby prevent the toe clip holder from extending beyond the plate at the front thereof.

We wish it to be understood that we do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

We claim:

1. In a roller skate toe clip, the combination of a housing having a flat side adapted to be attached to the underside of a skate plate, and having a longitudinal bore, with lateral extension recesses, a support having a shank for fitting into said bore, said shank having lateral projections to fit into the lateral recesses, said support having a flat side adapted to face the underside of

said skate plate, and a resilient toe clip member secured to said support, and having a face disposed at an angle to the underside of the plate.

2. In a roller skate toe clip, the combination of a housing having a flat side adapted to be attached to the underside of a skate plate, and having a longitudinal bore, a support having a longitudinal shank for fitting into said bore for attaching the support to the housing, said support having a flat side adapted to face the underside of said skate plate, a resilient toe clip member having a face disposed at an angle to the underside of the plate, and means for detachably fastening the toe clip member to the support.

3. The structure of claim 2, in which the outer surface of the support is inclined to the skate plate, and the toe clip member has a face abutting said inclined surface and has an outer face disposed at an angle to the underside of the plate.

4. The structure of claim 3, in which bolts pass through the support and through said toe clip member, whereby said support and toe clip member form an entity readily removable from the housing.

5. In a roller skate toe clip, the combination of a housing having a flat side adapted to be attached to the underside of a skate plate, and having a longitudinal bore, a support having a longitudinal shank for fitting into said bore, said support having a flat side adapted to face the underside of said skate plate, and having recesses in said flat side, said recesses having bolt seats inclined to said flat side, and said support having an outer surface disposed at an inclination to the skate plate, a resilient toe clip having a face abutting said inclined surface and another face disposed at an angle to the underside of the skate plate, bolts passing through the support and through said toe clip member and seated on said seats, washers embedded in the toe clip member through which the bolts pass, and means fastening the shank to the housing whereby said support and toe clip member form an entity readily movable from the housing.

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