Feb. 6, 1968 J. P. COLLINS 3,367,669

CONVERTIBLE SKATE

Filed Oct. 18, 1965

FIG. 1.

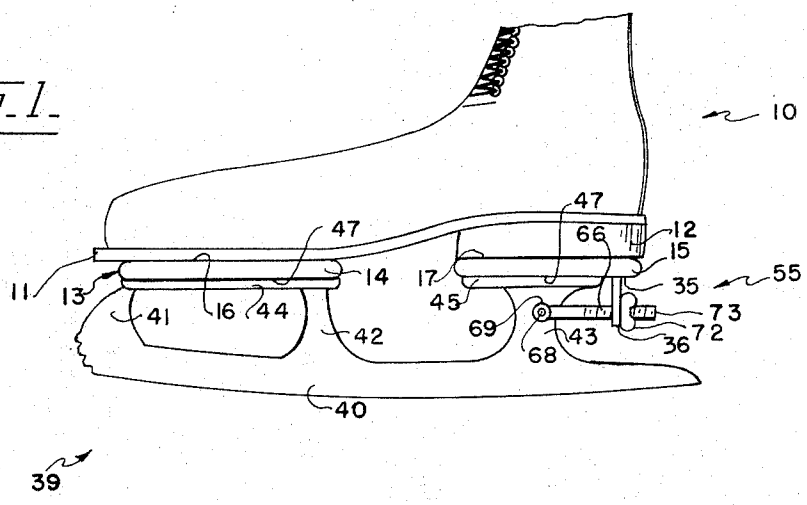
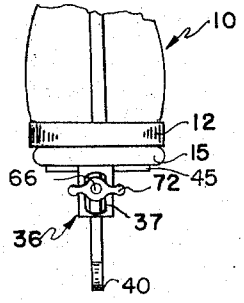


FIG. 2.



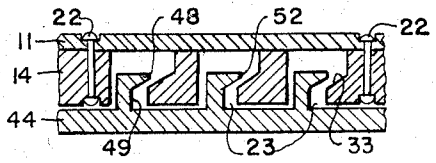
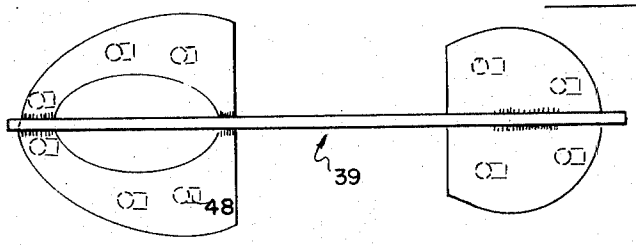


FIG. 3.

FIG. 5.



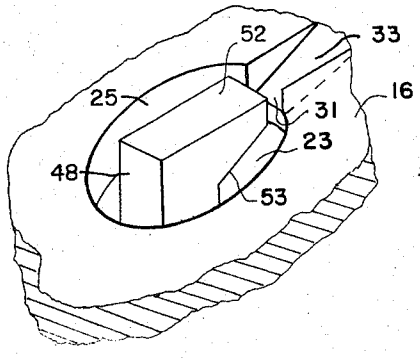


FIG. 4.

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United States Patent Office 3,367,669 Patented Feb. 6, 1968

3,367,669

CONVERTIBLE SKATE

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Filed Oct. 18, 1965, Ser. No. 496,751
2 Claims. (Cl. 280—11.3)

ABSTRACT OF THE DISCLOSURE

A convertible skate assembly including a skate having a platform provided with upstanding lugs engageable with an apertured boot plate connectable to a skating boot and detachably maintained in engagement with the boot by means of an adjustable connector extending between the skate and boot plate.

This invention relates to convertible or interchangeable skates and shoes wherein a skating boot may be interchangeably fitted with skates of varied types.

It is appreciated that skates of a convertible or interchangeable nature are already known whereby an individual taking part in figure skating competition or ice hockey may, without removing his skating boots, change the skates should one pair become dull or should a skate of a different nature be required.

Skates, in order to withstand the stresses and strains imposed thereon during a hockey game or during a figure skating competition, have of necessity been designed to provide absolute rigidity.

In order to obtain the necessary rigidity, convertible or interchangeable skates have, in the main, been so constructed as to be relatively heavy and of a cumbersome appearance, two factors which preclude their use in the sports of hockey and figure skating. Expert participants in these two sports have, therefore, found it necessary to have at their disposal two or more sets of skate and skating boot assemblies where, due to the rigors of the game or for some other reason, it is found necessary or advantageous to change their skates. The cost, it will be appreciated, is often prohibitive.

The present invention overcomes the objectionable features inherent in convertible or interchangeable skates of prior design in that both the skate and the means for connecting it to the skating boot are of light yet durable construction, which provide for absolute rigidity of the skate relative to the skating boot, yet which are not cumbersome of appearance.

The present invention furthermore provides a convertible skate assembly which will permit simple and quick interchange of one skate for another.

The present invention comprises a skate having at least one platform member, at least one boot plate member securable to the sole of a skating boot and having a surface shaped to fit the contours of the platform member, a plurality of spaced-apart laterally and unidirectionally extending lugs on one of the members, the other member being provided with a plurality of lug gripping elements engageable with the lugs when the skate is fitted to a boot so as to interlock said members, and manually operated locking means for restraining relative lateral movement of the members so as to prevent disengagement of the lugs and lug receiving elements.

In the construction of skates and skating boots, some of the boots such as hockey boots have continuous unbroken soles while others such as those used in figure skating are provided with a raised heel. The boot plate members and platform members of the skate assembly of the present invention may therefore be of a continuous nature to extend continuously over the entire sole from

end to end thereof or may be of two part construction, one part to engage the sole of the skating boot and the other part to engage the heel thereof. It is to be understood therefore that in the specification and claims hereinafter, the terms boot plate and platform shall be deemed to include both the aforementioned types.

In the drawings which illustrate the invention,

FIGURE 1 is a side elevation of skate and skate boot attached and constructed in accordance with the invention,

FIGURE 2 is an end elevation of the skate and skate boot of FIGURE 1,

FIGURE 3 is an enlarged side sectional view of a portion of the invention illustrating the connection of a lug with the boot plate, and connection of the boot plate with the sole of a skating boot,

FIGURE 4 is an enlarged isometric view of a portion of the invention illustrating the relationship of one of the lugs to the gripping element engageable therewith, and

FIGURE 5 is a bottom view of the invention.

Referring to the drawings, the numeral **10** designates a skating boot of the type commonly worn by figure skaters having a sole **11** and a raised heel **12**.

The convertible skate assembly, being the subject of this invention, comprises a two part boot plate generally designated by the numeral **13** comprising a sole plate **14** and a heel plate **15**. Both the sole and heel plates are of thin metallic construction having a peripheral outline generally contoured to the peripheral outline of both the sole and the heel of the skating boot, the upper surfaces **16** and **17** of the sole plate **14** and heel plate **15** respectively being contoured to fit the sole and heel respectively of the boot. Both the sole and heel plates **14** and **15** are secured to the respective portions of the sole and heel by a rivet type connection as illustrated in FIGURE 3, the rivets **22** being applied in a known manner and in a number sufficient to provide for a safe, firm anchorage.

Both plates are provided with a plurality of openings **23** spaced apart symmetrically adjacent the peripheral edges of both plates, six being shown on the sole plate **14** and four on the heel plate **15**. These openings are of an elongated teardrop shape being aligned in a fore and aft direction so that the bulbous ends **25** thereof are the leading ends.

The upper surfaces **16** and **17** of the sole and heel plates are ground away at the tail ends **31** of the openings to form upward and rearward sloping ramps **33**, one of the latter being shown in FIGURES 3 and 4.

The heel plate **15** at its after end **35** is provided with a vertically depending transversely extending brace element **36** having a downwardly opening vertical slot **37** formed therein.

The numeral **39** generally designates the skate of this invention, the latter being of the figure skate type having a blade **40** and fore, centre and aft supporting posts numbered **41**, **42** and **43**, the latter being integrally connected, in a known manner, to a sole platform **44** and heel platform **45**. Both platforms have the same peripheral configuration as the peripheral configuration of the plates **14** and **15** and have upper surfaces **47** contoured to fit the undersurfaces of the latter. Secured to the upper surfaces **47** of both sole and heel plates, preferably by welding or the like, are a plurality of lugs **48**. These lugs have vertical shank portions **49** and laterally extending and rearwardly directed end portions **52**, the latter having their undersurfaces **53** sloped upwardly and rearwardly from the shanks **49**. These lugs **48** are located so as to have a mating relationship with the openings **23** in the sole and heel plates **14** and **15**, and their end portions **52** are small enough so that when the skate is fitted to the boot, the lugs **48** may extend upwardly into the

openings whereby movement of the skate in a rearward direction relative to the boot will bring the undersurfaces of the lugs **48** into slidable co-acting engagement with the ramps **33** drawing the platforms **44** and **45** into tight engagement with the plates **14** and **15** respectively.

In order to prevent forward movement of the skate relative to the boot, an occurrence which would naturally tend to permit the lugs to release their grip upon the plates **14** and **15**, a locking device, herein accorded the numeral **55**, is employed. This locking device comprises an elongated threaded shaft **66** which is hooked at one end **68** through a suitable aperture **69** formed in the after post **43**.

In applying the skate to the boot, the lugs **48** are engaged with the ramps **33** and the shaft **66** swung upwardly into the slot **37** of the brace element **36**.

A wing nut **72** is then threaded over the other end **73** of the shaft and tightened against the brace element **36**. The locking device **55** not only maintains the engagement of the lugs with the sole and heel plates **14** and **15**, but serves to increase the binding action of the lugs on the ramps.

It will be seen that the skate assembly constructed in accordance with the foregoing specification is not cumbersome in appearance as the lugs are hidden, the only visible evidence of the nature of the skate being the locking device, yet the assembly provides the desired rigidity and strength of construction to withstand normal stresses imposed during use thereof.

It will also be appreciated that although the specification hereinbefore describes the construction of a skate assembly having the lugs secured to the platforms of the skate, it is apparent that the position of the lugs and openings may be reversed, i.e. the lugs may extend from the boot plates **14** and **15** to engage with the platforms through openings formed in the latter.

What I claim as my invention is:

1. A convertible skate assembly comprising a skate having at least one platform, the latter having an upper surface, at least one boot plate securable to a skating boot and having upper and lower surfaces, the lower surface being shaped to the contour of the upper surface of the platform and being provided with a plurality of spaced apart openings, a plurality of rearwardly extending lugs connected to the platform and extending above the upper surface thereof, said lugs being arranged in mated relationship relative to the openings and being receivable by the latter, said lugs being adapted to be drawn into gripping engagement with the boot plate when the skate is fitted to a boot, a bracket element on the boot plate, an elongated threaded shaft connected at one end to the skate for extension rearwardly through the bracket element and a nut threadedly engageable with the shaft and arranged to be tightened against the bracket element so as to prevent forward movement of the skate relative to the boot and thereby prevent disengagement of the lugs and boot plate.

2. A convertible skate assembly as claimed in claim **1** in which the lugs and boot plate are provided with mutually engageable sloped surfaces, the inclination of said surfaces being such as to result in movement of the platform towards and into engagement with the boot plate when the lugs are drawn into engagement with boot plate.

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