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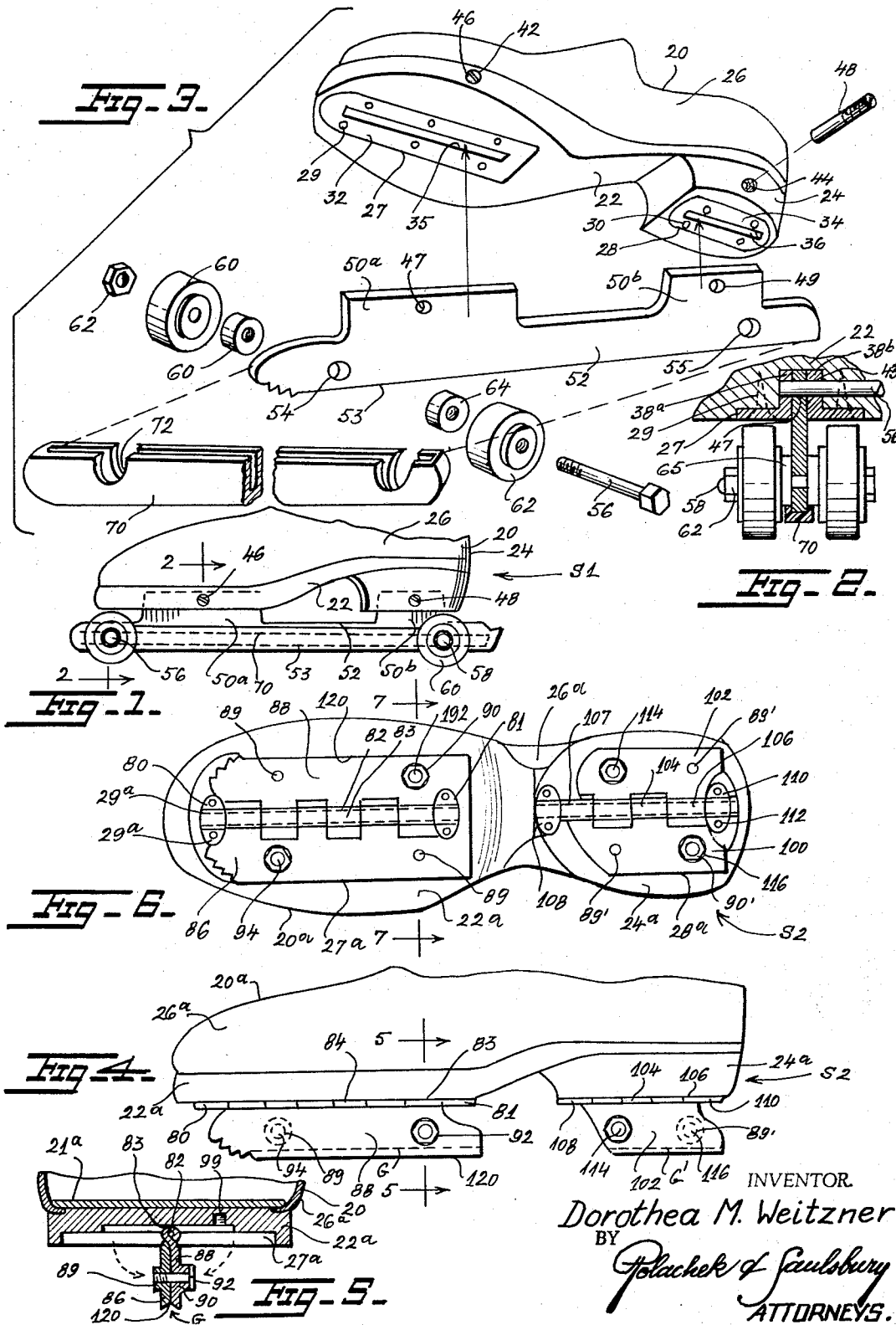
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3,292,940

CONVERTIBLE ICE, HOCKEY AND ROLLER SKATES

Filed Nov. 12, 1964

2 Sheets-Sheet 1



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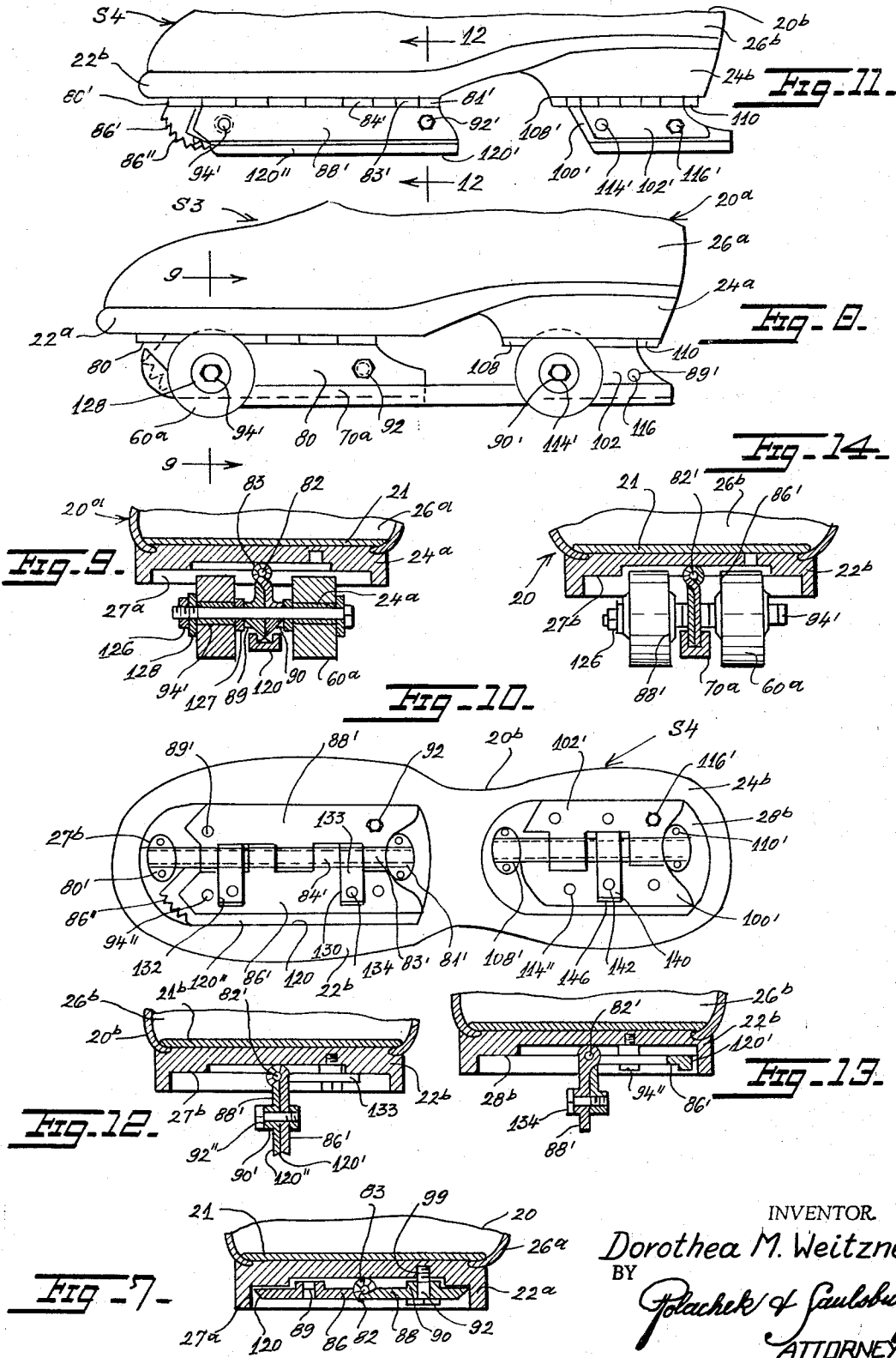
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CONVERTIBLE ICE, HOCKEY AND ROLLER SKATES

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This invention relates to the art of skates and more particularly concerns a skate including a shoe provided with means for converting it to a roller skate, ice skate or walking shoe at will.

One object of the invention is to provide a skate including a shoe having an ice skating blade detachably mounted thereon, with roller skating wheels removably mounted on the blades so that the skate can be converted to an ice skate, roller skate or walking shoe.

Another object is to provide a skate including a walking shoe having ice skating blades hinged in recesses in the bottom of the shoe, the blades being pivotable out of the recesses in the shoe, so that the shoe can be converted into an ice skate or roller skate.

A further object is to provide a skate including a shoe, with rollers detachably mounted on hinged ice skating blades to convert the skate to an ice skate, roller skate or walking shoe.

Still another object is to provide a convertible skate with ice skating blades hinged thereon so that the skate can be converted to a figure skate, hockey skate, or a walking shoe.

A still further object is to provide a convertible skate as described wherein rollers can be detachably mounted on the blades so that the skate can be converted to a roller skate, figure skate, hockey skate, or walking shoe.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

FIGURE 1 is a side view of a convertible skate embodying the invention.

FIG. 2 is an enlarged fragmentary sectional view taken on line 2—2 of FIG. 1.

FIG. 3 is an enlarged exploded perspective view of parts of the skate of FIG. 1.

FIG. 4 is a side view of part of another convertible skate.

FIG. 5 is a fragmentary sectional view taken on line 5—5 of FIG. 4.

FIG. 6 is a bottom plan view of the skate of FIG. 5.

FIG. 7 is a fragmentary sectional view taken on line 7—7 of FIG. 6.

FIG. 8 is a side view of part of another skate according to the invention.

FIG. 9 is a fragmentary sectional view taken on line 9—9 of FIG. 8.

FIG. 10 is a bottom plan view of a further convertible skate shown converted to a walking shoe.

FIG. 11 is a side view of the skate of FIG. 10, shown converted to a figure skate.

FIG. 12 is a fragmentary sectional view taken on line 12—12 of FIG. 11.

FIG. 13 is a sectional view similar to FIG. 12 showing the skate converted to a hockey skate.

FIG. 14 is a sectional view similar to FIG. 12 showing the skate converted to a roller skate.

Referring to the drawing, there is shown in FIGS. 1, 2 and 3 a skate S1 including a walking shoe 20 having a thick sole 22, heel 24 and upper 26. In the bottom of

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the heel and sole recesses 27, 28 extending longitudinally of the shoe secured by screws 29, 30 are two brackets 32, 34. The brackets have central slots 35, 36 defined between inwardly extending flanges 38a, 38b of the respective brackets. Transverse threaded holes 42, 44 are provided in the sole and heel aligned with holes 43 in the flanges to receive bolts 46, 48. These bolts are screwed into threaded holes 42, 44 and extend through flanges 38a, 38b. The bolts pass through holes 47, 49 formed in upwardly extending flanges 50a, 50b of a skating blade 52. The blade has a lower sharpened edge 53. Holes 54, 55 are provided near opposite ends of the blade to receive bolts 56, 58 which serve as axles for removable rollers or wheels 60. Nuts 62 engage on ends of the bolts, and washers 64, 65 are applied between the blade nuts 62 and heads of the bolts.

When the blade 52 and wheels 60 are removed as shown in FIG. 3, the shoe 20 can be worn alone as a walking shoe. When blade 52 is mounted on the bottom of the shoe the assembly serves as an ice skate. When the wheels 60 are mounted on blade 52 engaged in the shoe sole and heel, then the assembly serves as a roller skate. A channel shaped flexible rubber or plastic guard 70 can be mounted on the bottom edge 53 of the blade 52 to protect it from damage when the assembly is used as a roller skate. Notes 72 in the side walls of the guard are provided to clear the bolts 56, 58.

In FIGS. 4-7 is shown another skate S2 which has a walking shoe 20a with a thick sole 22a, thick heel 24a, upper 26a and innersole 21a. Wide shallow recesses 27a, 28a are formed in the sole and heel respectively. Secured in recesses 27a by screws 29a are two hinge brackets 80, 81 with eyes holding a longitudinally extending pin 82 engaging interfitted eyes or loops 83, 84 of two short figure skating blades 86, 88. Bosses 89, 90 are formed on the sides of the blades. Bosses 89 are internally threaded. Two bolts 92 extend through unthreaded bosses 90 in the two blades and engage in threaded holes 99 in the sole. The bolts hold the blades in recess 27a as clearly shown in FIGS. 6 and 7, so that the shoe can be used as a walking shoe. Two other short blades 100, 102 have loops 104, 106 pivotally engaged on a pin 107 held in eyes of hinge brackets 108, 110. These brackets are held by screws 112 on the heel. Bolts 114, 116 are screwed into threaded holes in the heel in the same manner as bolts 92, 94 to hold the blades 100, 102 in recess 28a.

When the skating assembly S2 is to be converted from a walking shoe as shown in FIGS. 6 and 7 to an ice skate as shown in FIGS. 4 and 5, the bolts 92, 94, 114, 116 are removed from the threaded holes 99 in the sole and heel and the blades are turned on their hinges to depending position. The blades 86, 88 and 100, 102 are abutted. Bolts 92, 94 are passed through bosses 90 and are screwed tightly in the bosses 89. Bolts 114, 116 are passed through bosses 90' and tightly screwed in the bosses 89'.

The blades have beveled edges 120 so that the abutted blades with two parallel sharp edges define grooves G, G' equivalent to hollow ground grooves of a unitary blade; see FIG. 5.

To convert the skate S2 to a walking shoe, the bolts are removed from the blades which are then turned into the recesses 27a, 28a and the bolts are replaced to hold the blades within the recesses.

It is possible to convert skate S2 from an ice skate as shown in FIG. 4 to a roller skate S3 as shown in FIGS. 8 and 9. This is done by removing short bolts 94 and 114 and replacing with long bolts 94' and 114'. These bolts pass through the forward aligned bosses 89, 90 and 89', 90' of the front and rear plates 86, 88 and 100, 102 and through bearing sleeves 124 in wheels 60a. Ends of the

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bolts are engaged by nuts 126. Washers 127 are provided at inner sides of the wheels and washers 128 are located at outer sides of the wheels. A flexible channel-shaped guard 70a similar to guard 70 of skate S1 is applied to the sharp edges 120 of the blades to protect them when the skate is converted to a roller skate.

FIGS. 10-14 show a skate S4 which is convertible to a walking shoe, figure ice skate, hockey ice skate, or roller skate. In skate S4, the shoe 20b is similar to shoes 20 and 20a with thick sole 22b, thick heel 24b, upper 26b and innersole 21b. In the wide shallow recess 27b of sole 22b is a figure skating blade 86' with a serrated front end 86''. Blade 88' is shorter and shaped like a hockey blade with a smooth tapered front end 88''. The edge 120' of blade 86' is hollow ground and wider than the body of the blade. The offset portion 120'' of the edge of the blade aligns with the plane of blade 88' as shown in FIG. 12. Blade 88' is narrower than blade 86' so that when the blades are abutted the hollow ground edge 120' and serrated end 86'' of blade 86' will be exposed and the assembly will constitute a figure skate. The blades are pivotally supported by hinge pin 82' and have eyes on loops 83', 84' engaged on this pin which is held by brackets 80', 81' at the underside of sole 22b. Notches 130 are formed in blade 86' and in these notches seat clamping plates 132, 133 held by short bolts 134 seated in threaded holes in the sole.

In recess 28b of the heel 24b is a figure skating blade 100' with a rearwardly extended end. The adjacent hockey blade 102' is somewhat shorter for use with hockey blade 88'. The blades are pivotally held on hinge pin 107' supported by brackets 108' and 110' at opposite ends of the heel in recess 28b. A clamping plate 140 is held by a bolt 142 screwed into a hole in the heel. The plate 140 fits into a notch 146 formed in blade 100'.

FIG. 10 shows the blades retracted or turned into the recesses and held by short bolts 92', 94'' in holes 89', 90' and 114'', 116' so that the shoe 20b can be worn as a walking shoe. FIG. 11 and FIG. 12 show blades 86', 88' and blades 100', 102' turned down and abutted. The blades are held by the short bolts. The skate is thus arranged for use as a figure skate.

Guard 70a can be mounted on the abutted blades to protect their edges; see FIG. 14.

To convert the skate to a hockey skate, blades 86' and 100' will be turned up into recesses 27b, 28b and held by bolts 94'' and 114''. The clamping plates 132, 133 and 142 will be turned down after removal of bolts 134, 142 and the bolts will then engage the clamping plates and hockey skating blades 88', 102' together; see FIG. 13. The skate is thus converted to a hockey ice skate.

The ice skate can be converted to a roller skate either by removing the bolts which hold the clamping plates and hockey skating blades together or by removing the short bolts which hold the figure skating blades and hockey skating blades together and substituting the long bolts 94' and 114' such as shown in FIGS. 8 and 9. Wheels 60a can be mounted on the bolts; see FIG. 14. This will convert the ice skate to a roller skate.

It will be apparent that there has thus been provided a skating assembly which can be converted to a figure ice skate, hockey ice skate, roller skate or walking shoe at will.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

What is claimed is:

1. A convertible skate, comprising a walking shoe having a thick sole, a thick heel and an upper, said sole and heel having long shallow recesses therein, hinge brackets secured at opposite ends of the recesses, pins engaged by the brackets extending longitudinally of the sole and heel

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respectively, a first pair of blades pivotally engaged with one of the pins in the recess in the sole, a second pair of blades pivotally engaged with the other pin in the other recess in the heel, each blade having holes near opposite ends thereof, said sole and heel having threaded other holes registering with at least one hole in each of the blades, and short bolts removably engaged in the holes in the blades, sole and heel and holding the blades in the recesses.

2. A convertible skate, comprising a walking shoe having a thick sole, a thick heel and an upper, said sole and heel having long shallow recesses therein, hinge brackets secured at opposite ends of the recesses, pins engaged by the brackets extending longitudinally of the sole and heel respectively, a first pair of blades pivotally engaged with one of the pins in the recess in the sole, a second pair of blades pivotally engaged with the other pin in the other recess in the heel, each blade having holes near opposite ends thereof, bolts engaged in the holes in the blades holding the blades abutted to each other and extending downwardly from the sole and heel, so that the assembly of shoe and heel constitutes an ice skate, said sole and heel having threaded other holes registering with at least one hole in each of the blades when the blades are pivoted into the recesses and the bolts are engaged in the holes in the blades and the threaded holes in the sole and heel, so that the assembly of shoe and blades then constitutes a walking shoe.

3. A convertible skate, comprising a walking shoe having a thick sole, a thick heel and an upper, said sole and heel having long shallow recesses therein, hinge brackets secured at opposite ends of the recesses, pins engaged by the brackets extending longitudinally of the sole and heel respectively, a first pair of blades pivotally engaged with one of the pins in the recess in the sole, a second pair of blades pivotally engaged with the other pin in the other recess in the heel, each blade having holes near opposite ends thereof, bolts engaged in the holes in the blades holding the blades abutted to each other and extending downwardly from the sole and heel, so that the assembly of shoe and heel constitutes an ice skate, said sole and heel having threaded other holes registering with at least one hole in each of the blades when the blades are pivoted into the recesses and the bolts are engaged in the holes in the blades and the threaded holes in the sole and heel, so that the assembly of shoe and blades then constitutes a walking shoe, said blades having beveled edges defining a groove therebetween when the blades are abutted to each other.

4. A convertible skate, comprising a walking shoe having a thick sole, a thick heel and an upper, said sole and heel having long shallow recesses therein, hinge brackets secured at opposite ends of the recesses, pins engaged by the brackets extending longitudinally of the sole and heel respectively, a first pair of blades pivotally engaged with one of the pins in the recess in the sole, a second pair of blades pivotally engaged with the other pin in the other recess in the heel, each blade having holes near opposite ends thereof, bolts engaged in the holes in the blades holding the blades abutted to each other and extending downwardly from the sole and heel, so that the assembly of shoe and heel constitutes an ice skate, and wheels removably and rotatably mounted on the bolts so that the assembly of shoe, blades and wheels constitutes a roller skate, said sole and heel having threaded other holes, whereby the roller skate is converted to an ice skate by removal of the wheels, and whereby the ice skate is converted to a walking shoe by removing the bolts, pivoting the blades into recesses and securing the blades therein by other bolts inserted in the holes in the blades, sole and heel.

5. A convertible skate, comprising a walking shoe having a thick sole, a thick heel and an upper, said sole and heel having long shallow recesses therein, hinge brackets secured at opposite ends of the recesses, pins engaged

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by the brackets extending longitudinally of the sole and heel respectively, a first pair of blades pivotally engaged with one of the pins in the recess in the sole, a second pair of blades pivotally engaged with the other pin in the other recess in the heel, each blade having holes near opposite ends thereof, bolts engaged in the holes in the blades holding the blades abutted to each other and extending downwardly from the sole and heel, so that the assembly of shoe and heel constitutes an ice skate, and wheels removably and rotatably mounted on the bolts so that the assembly of shoe, blades and wheels constitutes a roller skate, said sole and heel having threaded other holes, whereby the roller skate is converted to an ice skate by removal of the wheels, and whereby the ice skate is converted to a walking shoe by removing the bolts, pivoting the blades into recesses and securing the blades therein by other bolts inserted in the holes in the blades, sole and heel, said blades having beveled edges defining a groove therebetween when the blades are abutted to each other, and a channel-shaped guard removably mounted on the blades for protecting the edges thereof.

6. A convertible skate, comprising a walking shoe having a thick sole, a thick heel and an upper, said sole and heel having long shallow recesses therein, hinge brackets secured at opposite ends of the recesses, pins engaged by the brackets extending longitudinally of the sole and heel respectively, a first pair of blades pivotally engaged with one of the pins, in the recess in the sole, a second pair of blades pivotally engaged with the other pin in the other recess in the heel, each blade having holes near opposite ends thereof, one of the blades in the recess in the sole having a serrated end to define a figure skating blade, the other blade in the recess in the sole being shorter and narrower than the figure skating blade and defining a hockey skating blade, one of the blades in the recess in the heel being longer and wider than the other blade in the recess in the heel to define respectively figure and hockey skating blades, bolts engaged in the holes in the blades holding the blades abutted to each other and extending downwardly from the sole and heel, so that the assembly of shoe and blades constitutes a figure ice skate, and clamping plates pivotally mounted on the pins, said clamping plates being engageable by bolts with shorter and narrower blades while the longer and wider blades are held in the recesses so that the assembly of shoe and blades constitutes a hockey ice skate, said sole and heel having threaded other holes registering with holes in the blades and clamping plates and receiving bolts for holding the blades and plates in the recesses, so that the shoe can be worn as a walking shoe.

7. A convertible skate, comprising a walking shoe having a thick sole, a thick heel and an upper, said sole and heel having long shallow recesses therein, hinge brackets secured at opposite ends of the recesses, pins engaged by the brackets extending longitudinally of the sole and heel respectively, a first pair of blades pivotally engaged with one of the pins, in the recess in the sole, a second pair of blades pivotally engaged with the other pin in the other recess in the heel, each blade having holes near opposite ends thereof, one of the blades in the recess in the sole having a serrated end to define a figure skating blade, the other blade in the recess in the sole being shorter and narrower than the figure skating blade and defining a hockey skating blade, one of the blades in the recess in the heel being longer and wider than the other blade in the recess in the heel to define respectively figure and hockey skating blades, bolts engaged in the holes in the blades holding the blades abutted to each other and extending downwardly from the sole and heel, so that the assembly of shoe and blades constitutes a figure ice skate, and clamping plates pivotally mounted on the pins, said clamping plates being engageable by bolts with the shorter and narrower blades while the longer and wider blades are held in the recesses so that the assembly of shoe and

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blades constitutes a hockey ice skate, said sole and heel having threaded other holes registering with holes in the blades and clamping plates and receiving bolts for holding the blades and plates in the recesses, so that the shoe can be worn as a walking shoe, and wheels rotatably mounted on said bolts so that the assembly of shoe, blades and wheels constitutes a roller skate, whereby the roller skate is convertible to a figure ice skate by removal of the wheels, whereby the figure ice skate is convertible to a hockey skate by pivoting the figure skating blades into the recesses and securing them there by bolts and engaging the clamping plates with the hockey skating blades by other bolts, and whereby the hockey skate is convertible to a walking shoe by removing the other bolts and pivoting the clamping plates and hockey skating blades into the recesses and securing them there by the other bolts.

8. A convertible skate, comprising a walking shoe having a thick sole, a thick heel and an upper, said sole and heel having long shallow recesses therein, hinge brackets secured at opposite ends of the recesses, pins engaged by the brackets extending longitudinally of the sole and heel respectively, a first pair of blades pivotally engaged with one of the pins in the recess in the sole, a second pair of blades pivotally engaged with the other pin in the other recess in the heel, each blade having holes near opposite ends thereof, one of the blades in the recess in the sole having a serrated end to define a figure skating blade, the other blade in the recess in the sole being shorter and narrower than the figure skating blade and defining a hockey skating blade, one of the blades in the recess in the heel being longer and wider than the other blade in the recess in the heel to define respectively figure and hockey skating blades, bolts engaged in the holes in the blades holding the blades abutted to each other and extending downwardly from the sole and heel, so that the assembly of shoe and blades constitutes a figure ice skate, and clamping plates pivotally mounted on the pins, said clamping plates being engageable by bolts with the shorter and narrower blades while the longer and wider blades are held in the recesses so that the assembly of shoe and blades constitutes a hockey ice skate, said sole and heel having threaded other holes registering with holes in the blades and clamping plates and receiving bolts for holding the blades and plates in the recesses, so that the shoe can be worn as a walking shoe, and wheels rotatably mounted on said bolts so that the assembly of shoe, blades and wheels constitutes a roller skate, whereby the roller skate is convertible to a figure ice skate by removal of the wheels, whereby the figure ice skate is convertible to a hockey skate by pivoting the figure skating blades into the recesses and securing them there by bolts and engaging the clamping plates with the hockey skating blades by other bolts, and whereby the hockey skate is convertible to a walking shoe by removing the other bolts and pivoting the clamping plates and hockey skating blades into the recesses and securing them there by the other bolts, said figure skating blades having offset edge portions aligned with the hockey skating blades and hollow ground at their free edges, and a channel shaped guard removably mounted on the blades to protect the edges of the blades.

References Cited by the Examiner

UNITED STATES PATENTS

| | | | |
|-----------|--------|-----------|-----------|
| 115,487 | 5/1871 | Lank | 280—11.18 |
| 1,773,303 | 8/1930 | Duff | 280—11.3 |
| 2,244,719 | 6/1941 | Mansfield | 280—11.3 |

FOREIGN PATENTS

| | | |
|---------|---------|---------|
| 750,433 | 5/1933 | France. |
| 14,700 | 12/1905 | Norway. |

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