Feb. 7, 1928. 1,658,093

O. O. NYGAARD

COMBINED SKATE AND SKI

Filed May 25, 1926

Fig. 1.

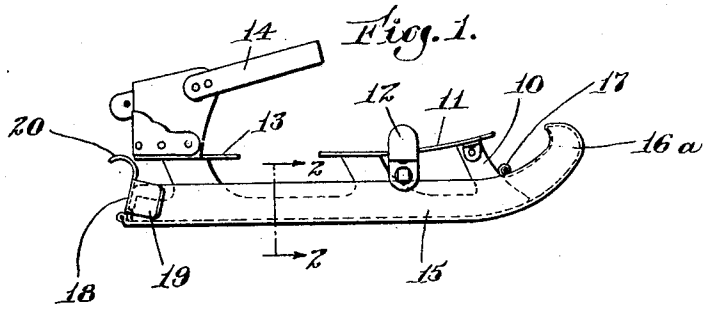
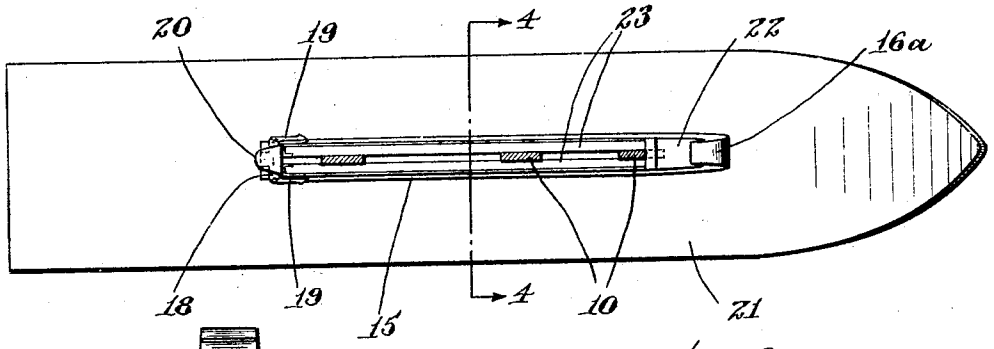


Fig. 3.



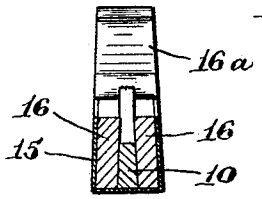


Fig. 2.

Fig. 7.

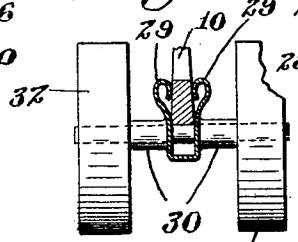


Fig. 6.

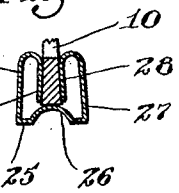
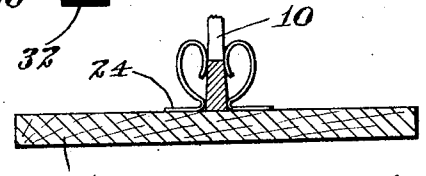


Fig. 5.



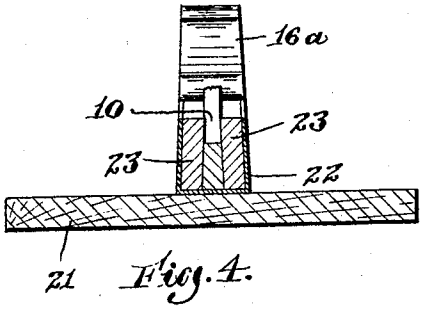


Fig. 4.

Inventor
Oscar O. Nygaard
by James R. Hodder
Attorney

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UNITED STATES PATENT OFFICE.

OSCAR O. NYGAARD, OF SAUGUS, MASSACHUSETTS.

COMBINED SKATE AND SKI.

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My present invention relates to skates and more particularly to a combined skate and ski, combined ice skate and snow skate, or combined ice skate and roller skate.

The ordinary ice skate, while particularly well adapted for sliding or skating on glare ice, is practically useless on anything else, even hard, packed snow, as the weight of the skater thereon is too closely concentrated on a single and narrow straight line, with the result that even on hard packed snow, the skate runner cuts into the snow to such an extent that skating is impossible. Various types of snow skates have been devised and some of them have been reasonably successful. They do, however, fail in solving the problem of having a device which may be rapidly, accurately and economically adapted for use on either ice, snow or ice crust. These three principal conditions may be met and usually are met within a very short distance in the winter and it is advantageous to have a device which may be adapted to meet any of these conditions at a relatively short notice.

In my present invention, I have devised a structure adapted to be associated with the ordinary ice skate, the association with such skate resulting in a structure that produces the combined result of having a snow skate or ski and a holding means therefor and these two elements may be quickly dissociated from each other to again leave the single skating element for use on ice. In practicing my improved invention, I prepare a snow skate runner or a preferably relatively small ski and in such snow skate structure and in the ski structure build a connecting means which may be directly associated with the runner of an ordinary skate and associated in such a way that the ice skate and snow skate or ice skate and ski form practically a unitary structure and yet after the snow skate or ski have been used for as long as desired, they may be readily dissociated from the ice skate and the various elements left in their original position and condition. It is also apparent that my detachable runners may be used advantageously in connection with ordinary sleds and sleighs, and it is my intention to utilize the present invention in combination with such conveyances.

The principal object of my invention, therefore, is a combined ice skate and snow skate, ski, or roller skate.

Another object of my invention is an improved combination of ice skate, connecting means, and snow skate.

Other objects and novel features of the construction and arrangement of parts comprising my device will appear as the description of the invention progresses.

In the accompanying drawings illustrating preferred embodiments of my invention,

Fig. 1 is a side elevation of a combined ice skate and snow skate;

Fig. 2 is a sectional elevation on the line 2—2 of Fig. 1;

Fig. 3 is a plan view of the ice skate combined with a ski;

Fig. 4 is a sectional elevation on the line 4—4 of Fig. 3;

Fig. 5 is a view similar to Fig. 4 but illustrating a different form of connecting means;

Fig. 6 is a sectional view showing a still further modified form of connecting means and form of runners for use on ice and suitable for beginners learning to skate; and

Fig. 7 is a side elevation showing a combined ice skate and roller skate.

Referring to the drawings and particularly to Figs. 1 and 2, there is illustrated an ordinary skate comprised essentially of a runner 10, toe plate 11, toe clamps 12, heel plate 13 and heel strap 14. The runner 10 is ordinarily tapering in cross section, as will be obvious from an inspection of Fig. 2, and I utilize this tapering structure to assist in holding onto the skate a snow runner comprised essentially of a metallic substantially rectangular open top runner 15, of a width enough greater than the width of the skate blade 10 to insure that such open top runner will not cut through or sink into the snow unless such snow is light and fluffy. Particularly is it desired that the width of the bottom of the rectangular structure 15 shall be such that it will readily support the weight of the ordinary user on hard packed snow, such as is usually met with on roadways after the same is packed down by passing sleighs or vehicles. In order to insure sufficient lightness of the rectangular snow blade 15, I make the same of sheet metal and on each side of the side walls secure members 16, preferably of some light but hard wood, these members 16 being spaced apart from each other and having their opposing surfaces beveled to provide a space substantially similar to the shape of the

cross sectional area of the skate blade 10. The forward end of the rectangular snow skate blade 15 is formed either solid or hollow and is curved upwardly, as indicated at 16a, the upper surface of this upwardly extending portion being provided with a stop 17 and against which the front end of the runner or blade 10 abuts. On the extreme rearward end of the blade 15 is hingedly mounted a closure 18, this closure 18 being provided with wings 19 for engaging either side of the rectangular blade 15 and is also provided with a hand-hold 20, by means of which the closure 18 may be swung on its pivot. With this form of my invention, it will be obvious that a pair of ordinary skates, as above described, may be placed on the wearer's feet as soon as he would ordinarily leave his home, and also placed thereon are snow blades 15. It is then possible for the wearer to skate along the roadway until a pond or other place is reached where glare ice exists, at which place and time the snow blades 15 may be removed from the runners 10 and the ordinary skating indulged in. This is of considerable advantage particularly in country districts where no means of mechanical transportation is readily available. The feature of being able with ease and at will to detach and change from ice to snow or from snow to ice use is of special value to children who can thus have the benefit of the help of their elders in securely attaching the skates to their feet before leaving home and which will add to their safety and comfort.

Instead of utilizing a snow blade 15, I may utilize a ski 21 and on such ski secure a holding means 22 similar in use and appearance to the snow blade 15. The member 22 is provided on its interior with spaced members 23, which assist, in connection with the blade 10 of the skate, in holding the skate and ski rigidly together. In place of the rectangular frame 22 with its enclosed plates of material 23, I may substitute a plurality of spring plates 24 spaced apart from each other and providing a means for yieldingly holding the skate blade 10 in position on the ski. Either of these methods outlined may be employed and it is possible to utilize the spring plates 24 in connection with the rectangular snow skate 15, substituting such spring plates for the spaced apart plates 16.

In Fig. 6 is shown a modified form of connecting means and a skate runner adapted to be used on either ice or snow which is comprised of a bottom 25, having a recessed or depressed portion 26, and the sides 27 are folded over inward and downward, as indicated at 28, these inward and downward portions being spring members which hold the skate blade 10 in proper position relative to the snow skate.

In Fig. 7 is shown a modified form of the invention in which the ice skate runner 10 has attached thereto clips 29 which clips are formed integral with bearing members 30 in which is mounted a shaft 31, carrying at either end the usual rollers 32 of a roller skate.

Having thus described my invention, what I claim as new is:

1. In a device of the kind described, the combination of a rectangular snow skate blade, a longitudinal passage formed therein and extending substantially throughout the length thereof, a stop positioned at the forward end of such passage, said passage being adapted to receive and hold against movement an ordinary skate blade and a closure for said longitudinal passage whereby retrograde movement of the skate blade in the rectangular passage is prevented.

2. In a device of the kind described, the combination with a snow skate having a longitudinal passage extending throughout the length of one side thereof, non-metallic material in the bottom of said passage, an ice skate fitting within said passage and having its lower face engaging with the non-metallic filling and yielding means for closing the end of the passage whereby retrograde movement of the skate blade in said passage is prevented.

3. In a device of the kind described, the combination of a rectangular snow skate blade formed of wood, a pair of parallelly arranged metal plates secured to the upper face of said blade and defining a passage, a stop positioned at the forward end of said passage, said passage being adapted to receive and hold an ordinary skate blade and a yielding closure for the opposite end of said passage for preventing retrograde movement of the skate blade with respect to the snow skate blade.

4. In a device of the kind described, the combination of a snow skate runner having a longitudinal passage at one side thereof, comprised of non-metallic material enclosed within a metallic casing and said passage adapted to receive an ice skate.

5. In a device of the kind described, the combination of a snow skate runner having a longitudinal passage at one side thereof adapted to receive an ice skate blade, said snow skate runner having a non-metallic body portion with an outer metallic covering.

6. In combination with an ice skate, a runner adapted for sliding on snow having a non-metallic body portion with an outer metallic covering, and means for attaching said snow skate runner to the ice skate.

7. In a device of the kind described, the combination of a snow skate blade, including spaced metallic plates, non-metallic

plates arranged between the metal plates and spaced from each other to define a passage, a stop positioned at the forward end of such passage, said passage being adapted to receive and hold an ordinary skate blade.

8. In a device of the kind described, the combination of a snow skate blade, including spaced metallic plates, non-metallic plates arranged between the metal plates and spaced from each other to define a passage, a stop positioned at the forward end of such passage, said passage being adapted to receive and hold an ordinary skate blade, a closure for the opposite end of said passage for preventing retrograde movement of the skate blade with respect to the snow skate blade and a clamping means associated with the closure for clamping the ordinary skate blade in the passage.

In testimony whereof, I have signed my name to this specification.

OSCAR O. NYGAARD.