The present invention provides an antiskid device which covers inline skate wheels and which can be folded onto itself so as to become half as long. In this way, it is much easier to conceal inside a pocket or a pouch.
ANTISKID DEVICE FOR INLINE SKATES

[0001] This application is a continuation in part of pending application Ser. No. 10/679,527 filed Oct. 06, 2003 and claims further priority based on Canadian patent application 2,486,774 filed Dec. 07, 2004

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] This invention relates to inline skates in general but more specifically to a removable antiskid device that covers the wheels of inline skates.

[0004] 2. Description of the Prior Art

[0005] Ever since inline skates became popular and, to a certain extent, from the time of the older roller skates, the problem of using those same skates off track has been a problem. As is well known, aficionados of inline skating use them to go to work, some messenger services even use inline skates to deliver parcels. When comes time to climb stairs or move around inside office buildings, use public transit or roll down steep hills, rolling wheels can be a hazard to both the users and surrounding people. Several inventors have developed devices to cover the wheels of all types of roller skates. As usual, some inventors like things heavy, bulky and impractical with complex attachment means while others are a bit more practical and provide for rather uncumbersome and easy to use skate wheel covers. The sole includes an elongated sheet with releasable mounting members at opposite ends. The mounting members may be attached to the skate in such a manner that the sheet is drawn tautly over the wheels. The wheels are engaged by an upper surface of the sheet while a bottom surface functions as a relatively stationary walking surface.

[0006] U.S. Pat. No. 5,503,433 shows an accessory for a roller skate used for blocking the wheels of roller skates. This device comprises a plurality of elongated members that are made of non-slippery material and sized to snugly fit transversely between two of the wheels. These members are linked together, preferably by an elastic rope which is forming a closed loop. The device can be secured to the frame of the roller skate whenever required by placing each member between two of the wheels to prevent the same from rotating. This device is very advantageous because it is inexpensive and very simple to install on a roller skate. It is also very light in weight and compact, thereby making it easy to carry.

[0007] U.S. Pat. No. 5,836,425 shows a flexible molded block for immobilizing the wheels of an in-line roller blade skate which is portable and easy to use. The device is a flexible chock with a cavity in the center which cradles a wheel of an in-line skate that is installed on. The device immobilizes the skate wheel and removes the stress and weight from the skate wheel, axle, and bearings by resting on a frame assembly “18” of a skate. The wheel chock cavity lip that is produced by using a in-line roller blade skate wheel when making the molded chock, keeps the chock on the skate, preventing it from slipping or sliding off. The device is also small, light weight and easy to store when not in use.

[0008] U.S. Pat. No. 4,413,842 shows a skate converter adapted to receive shoe skates and, which upon fastening, permits the wearer to walk safely in shopping malls and buildings where skate bearing persons are generally prohibited. The converter includes a sole plate and two front and rearwardly spaced apart arcuate sections all of which are covered with a treadlike material to easily grip floors and rugs.

[0009] U.S. Pat. No. 5,513,881 shows a skate guard having front and rear pieces with slots for receiving the front and rear portions of a skate runner. A center piece is rigidly connected to the front and rear pieces, and it is formed of a stretchable elastomeric material which biases the front and rear pieces toward each other. The center piece has a downwardly facing tread surface, and it is stiff enough to keep the front and rear pieces substantially longitudinally aligned with each other when the device is not on a skate runner. In a gap between the front and rear pieces, the center piece has a runner-protecting portion which is no higher than the bottom walls of the runner-receiving slots, and lies between two vertical longitudinal planes which include the sidewalls of the runner-receiving slots.

[0010] U.S. Pat. No. 5,303,955 shows a roller wheel guard for in-line roller skates, is formed of an envelope-shaped body of flexible material such as woven nylon, open at the top, with a rubbery bottom. The envelope-like body receives the series of aligned wheels and extends up to just below the boot of the skate. Side panels of the guard have rear extensions forming at least one strap to be wrapped tightly around the rearmost wheel or the brake when the guard is installed. A further, vertical strap is included, secured to the body and of an adjustable length so as to extend to the top of the back edge of the boot, with an attachment such as a clip for securing to the back of the boot, thus forming a handle when the guard is in place.

[0011] U.S. Pat. No. 5,833,270 shows an in-line skate cover comprising a web, formed to surround the wheels of the skate on a bottom, front and two side portions; and a tread on said bottom portion of said web, being provided with a high stiffens to resist bowing between adjacent wheels of the skate. The in-line skate has a maximum cross sectional dimension at a position above the wheels smaller than a cross sectional dimension through an axis of the wheels, further comprising an inelastic drawstring in a conduit formed on an upper edge of said web, for constraining an upper aperture of said web at said position above the wheels. An elastic strap is provided extending over a rear upper portion of a hind wheel of the in-line skate. The cover has an open rear portion, and easily accommodates skates of differing sizes. The cover is adapted to be held in wrapped condition around an anatomical body portion, to provide protection and/or support.

[0012] U.S. Pat. No. 6,481,724 shows an adapter comprising an ice-blade mounted in a blade-chassis. The blade-chassis is a plastic molding, which fits between the support rails of an in-line roller skate, and is clamped therebetween by the spindle-rods that serve as the spindles of the rollers. The ice-blade resides in a channel in the blade-chassis, the roof of the channel, and of the blade, being clear of, and below, the spindle rods.

[0013] There is a pending application by this inventor for a variation on the invention of this instant application which features side panels configured and sized to frictionally engage the side of the wheels up to or near the axle so as to securely engage the antiskid device to the wheels.
Despite the numerous variations found in the prior art, the problem remains that users with long feet require long skate wheel covers which are cumbersome to carry when not in use. Some of the inventions provide for a mere blocking of the wheels while allowing the wheels to still make contact with the ground. This can prove ineffectual in some circumstances when a user applies pressure on one wheel in particular which can occur in instances of climbing stairs when the back or the front wheel of the skate makes contact first. If a wheel is not perfectly blocked from rotating, an accident can occur.

Because of the drawbacks of the prior art, there is a need for an improved skate wheel cover device and that includes this inventor’s own copending application which is unfortunately not universally usable as not all makes or models of inline skates have the same spacing between the wheels and the frame to support the wheels so that it can be too narrow to allow the side panels to fit on some models and too wide to provide enough of a frictional engagement on other models. That embodiment can work when configured for a specific make or model of inline skates where a certain thickness for the side panels would fit.

SUMMARY OF THE INVENTION

In view of the foregoing disadvantages inherent in the known devices now present in the prior art, the present invention, which will be described subsequently in greater detail, is to provide objects and advantages which are:

To provide for an antiskid device for inline skates which is easy to install and uninstall.

It is a second object of this invention to provide for an antiskid device for inline skates which can adapt to various wheel diameters as well as wheel spacing.

It is a third object of this invention to provide for an antiskid device for inline skates which is foldable onto itself in order to be more compact when not in use.

It is a fourth object of this invention to provide for an antiskid device for inline skates which covers the bottom part of all wheels so that no contact between any of the wheels and the ground can occur.

To attain these ends, the present invention generally comprises an antiskid device which covers all the inline skate wheels and which can be folded onto itself so as to become half as long. In this way, it is much easier to conceal inside a pocket or a pouch.

There has thus been outlined, rather broadly, the more important features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the invention that will be described hereinafter and which will form the subject matter of the claims appended hereto.

In this respect, before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangements of the components set forth in the following description or illustrated in the drawings. The invention is capable of other embodiments and of being practiced and carried out in various ways. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

As such, those skilled in the art will appreciate that the conception, upon which this disclosure is based, may readily be utilized as a basis for the designing of other structures, methods and systems for carrying out the several purposes of the present invention. It is important, therefore, that the claims be regarded as including such equivalent constructions insofar as they do not depart from the spirit and scope of the present invention.

Further, the purpose of the foregoing abstract is to enable the U.S. Patent and Trademark Office and the public generally, and especially the scientists, engineers and practitioners in the art who are not familiar with patent or legal terms or phraseology, to determine quickly from a cursory inspection the nature and essence of the technical disclosure of the application. The abstract is neither intended to define the invention of the application, which is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

These together with other objects of the invention, along with the various features of novelty which characterize the invention, are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and the specific objects attained by its uses, reference should be had to the accompanying drawings and descriptive matter in which there is illustrated preferred embodiments of the invention.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 Isometric view of the antiskid device installed on an inline skate (in ghost lines).

FIG. 2 Side view of the antiskid device folded.

FIG. 3 Side view of the antiskid device unfolded.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

An inline skate (10) has a pliable yet resilient antiskid device (12) installed over its wheels (14, 14', 14''). The antiskid device (12) consists of a pair of wheel receptacles (16, 16'). Each receptacle (16, 16') only cover the bottom part of the wheels (14, 14', 14''). A first receptacle (16) receives the front wheel (14) and one of the middle wheels (14'') and the other receptacle (16') receives the rear wheel (14') and the other middle wheel (14''). The antiskid device (12) consists mainly of a high friction (hence antiskid) elastomer means (18) cojoined to and covering a substantially large part of the exterior surface which is made of a synthetic resin to give it strength and rigidity. Two straps (28, 28') are fixedly attached to the antiskid device (12) with one strap (28) being wrapped around the front wheel (14) and back down overlapping itself and going up in a “V” pattern to terminate at a point on the wheel assembly base (15) of the inline skate (10), where it is releasably attached by a releasable attachment means (29), and the other strap (28') doing a similar pattern but around the rear wheel (14) and also releasably attached by a releasable attachment means (29'). The straps (28, 28') are releasably attached to the assembly base (15) by releasable
attachment means (29, 29") which can be clipping means or preferably hook and pile means, although a variety of suitable releasable attachment means can be employed to strap around the inline skate (10) all within the scope of the invention. The "V" pattern creates a push-pull force which stabilizes the receptacles (16, 16') so that they are not pulled forward, for the receptacle (16) at the front of the inline skate (10), or rearwardly, for the receptacle (16') at the rear of the inline skate (10).

[0031] The straps (28, 28') are themselves fixedly attached to the antiskid device (12) in a concave part (19) situated on the underside of the receptacles (16, 16). Receptacles (16, 16') come in pairs and two of them are needed for a 4 wheel inline skate (10). Each pair of wheel receptacles (16, 16') is linked to the other by way of a pliable hinge (26). The hinge (26) is used for folding each pair of receptacles (16, 16') by rotating them together around the hinge (26) and mating them in clamshell fashion to procure a more compact size so as to facilitate carrying of the antiskid device (12) when not in use. Tabs (27) from one receptacle (16) interlock with the other receptacle (16') in order to obtain proper alignment of the two receptacles (16, 16') as per FIG. 6 and in order to keep the antiskid device (12) in a closed configuration, the straps (28) are used with one being folded inside the closed configuration in the empty space available and the other being wrapped around tightly so as to keep the antiskid device (12) in its closed configuration.

[0032] The pliable and resilient nature of the antiskid device (12) allows for different wheel (14) diameters to fit by flexing a tongue (30) which is an integral part of the antiskid device (12). Indeed, there are different wheel (14) diameters for different inline skate (10) models and sometimes, even on a single pair of inline skate (10).

[0033] As to the present state of technology, the preferred method of fabrication consists in a coinjection of plastic resin covered with a high friction elastomer material.

[0034] As to a further discussion of the manner of usage and operation of the present invention, the same should be apparent from the above description. Accordingly, no further discussion relating to the manner of usage and operation will be provided.

[0035] With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the present invention.

[0036] Therefore, the foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

1. An antiskid device for inline skates comprising:
   a plurality of wheel receptacles to receive inline skate wheels;
   said wheel receptacles further comprised of a high friction means joined to a pliable and resilient main body;
   a pair of straps releasably attached to said antiskid device to strap around said wheels and releasably attach to an assembly base by releasable attachment means;
   a pliable hinge to link each pair of wheel receptacles together to the next adjacent pair of wheels in line, to allow clamshell folding of said antiskid device.

2. An antiskid device for inline skates as in claim 1 wherein:
   said shell being pliable and resilient so as to allow for different diameters of said inline skate wheels to fit inside said receptacles.

3. An antiskid device for inline skates as in claim 1 wherein:
   a plurality of wheel receptacles to receive inline skate wheels;
   said wheel receptacles further comprised of a high friction means joined to a pliable and resilient shell.

4. An antiskid device for inline skates as in claim 1 wherein:
   said main body being of plastic resin coinjected with a high friction elastomer material.

5. An antiskid device for inline skates as in claim 1 wherein:
   two straps are fixedly attached to said antiskid device with one of said straps being wrapped around a front wheel and back down overlapping itself and going up in a "V" pattern to terminate at a point on said wheel assembly base of said inline skate, and
   the second of said straps doing a similar pattern but around a rear wheel;
   said straps being secured to said assembly base by attachment means.

6. An antiskid device for inline skates as in claim 5 wherein:
   said straps being releasably attached to said assembly base by hook and pile means.

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