HAND PROTECTING DEVICE

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ABSTRACT

A gripping pad for supporting and protecting the hand of a weight lifter or other user performing an activity that is strenuous to the hand. The gripping pad cushions the junction of the fingers and palm without constricting flexibility or airflow to the skin. Constructed of flexible resilient material, the glove has polymer gel cushions that cushions the palm of the hand and the intermediate phalanges without affecting finger articulation. The bottom surface of the gripping pad has increased friction characteristics.
HAND PROTECTING DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of my co-pending application Ser. No. 12/012,289 filed on Feb. 1, 2008 for “Hand Protecting Device,” the full disclosure of which is incorporated by reference herein, and priority of which is hereby claimed.

BACKGROUND OF THE INVENTION

[0002] Gloves have been used since the beginning of time and serve numerous functions such as to warm, decorate or protect the hand. Protective gloves provide an impenetrable barrier between toxic materials and the human skin or serve as a shield against abrasions, bruises, cuts and calluses. Throughout the centuries, gloves have been manufactured in a variety of materials such as rubber, latex, leather, or cloth and for a variety of purposes, for instance, surgery, gardening, defense against cold weather, as well as gloves developed for sports such as baseball, golf, hockey and weightlifting.

[0003] While there are many athletic and stress-reducing gloves available, many problems arise from their current designs. They can be confining, blocking the air circulation to the outside of the hand as well as the majority portion of the inside of the hand, creating heat buildup and hence, sweat; this can impair traction, which is especially important in weightlifting and other activities where a cylindrical—often heavy—object is repetitively lifted. Numerous gloves have had cutaways to solve this problem, however when the cut away occurs, the normal amount of material that would be available for grasping the item that is being gripped by the hand and lifted is also diminished.

[0004] Conventionally, when a user is lifting weights or performing other prolonged strenuous activities related to gripping a cylindrical object, for instance weightlifting, digging and shoveling dirt or snow, swinging a baseball bat or the like, the hands undergo a tremendous amount of stress. If barehanded, the user will develop unwanted and unhealthy calluses on the hand where the weights are most commonly gripped. The stress of repetitive, irritating motion pulls the skin in the juncture of the fingers (at the metacarpal phalangeal joint) and the hand, causing sores and blisters. Sweat and dirt may inflame these open sores and make further exercise painful or impossible.

[0005] Unfortunately, most of the currently available gloves for this type of activity do not lessen the likelihood of discomfort and calluses. Specifically, calluses may still form where confining material bunches up and sweat is trapped between the skin of the user’s hand and the material of the glove. If the glove is not effective, the user is more likely to not use it and to perform the activity barehanded, bringing us full cycle back to the original problems associated with this kind of activity.

[0006] A number of patents have been issued on different designs of hand-protecting gloves. For instance, U.S. Pat. No. 4,754,499 discloses a gripper pad for providing a non-slip grip on a weightlifting bar. However, the pad extends beyond the edges of the palm and covers a large portion of the hand, which could make it uncomfortable and unwieldy on the user’s hand. U.S. Pat. No. 6,546,954 discloses an orthopedic device to shield the hands, which appears to be bulky, covering most of the fingers. U.S. Pat. No. 6,898,802 teaches grip-gloves to absorb shock during weightlifting. However, the single strap to secure the grip glove to the hand may not provide the utmost protection and may easily break. The surface of the glove itself, while flexible, appears to be stiff and covers the entirety of the palm, which may be uncomfortable to the hand and discourage the user from wearing. U.S. Pat. No. D465,617 discloses a weightlifting glove that provides loops and holes for the fingers as well as the thumb. It has a baseball "mitt"-like appearance and thus it appears that the glove will interfere with the repetitive motion of weightlifting. U.S. Pat. No. 4,977,621 discloses a general utility handgrip assist pad that is manufactured from Neoprene with a thicker portion at the heel of the hand that appears to be cumbersome when the user grips an object. The pad is affixed to the hand with finger holes, but it appears that the hand would slip out of place on the hand and the user would be forced to concentrate extra attention to keeping it in place or would likely not use the device. U.S. Pat. No. 5,600,853 discloses an orthopedic glove that wraps securely around the user’s hand and this will strangle the hand’s ability to breath, for the skin to contact the air. The material of the glove will not conform to both the hand and the object to be lifted which may restrict the traction between the hand and the object. U.S. Pat. No. 5,173,963 teaches a protective band for the hand that resembles a catcher’s mitt or boxing glove. This glove is entirely unsuitable for the lifting of cylindrical objects and the size and shape of the glove will restrict both the motion of the hand and airflow.

[0007] Still another example of a prior design is shown in U.S. Pat. No. D363,146, where a hand protector is secured by opposing tabs which connect at the back of the hand while the pad of the protector covers the entire palm. However, because there is nothing to secure the pad to the fingers, the user will find that the device shifts up towards the fingers and down towards the palm, especially as the strenuous repetitive motion loosens the opposing tabs. U.S. Pat. No. 5,081,715 discloses a palm protector that covers the entirety of the lower palm and thumb, but leaves free and unprotected the crucial finger and palm juncture that specifically curls around the object to be lifted. The base of the user’s palm will be protected, but is likely to overheat in the enclosed protector.

[0008] While the patented devices may work satisfactorily in many environments, they still leave an area for improvement, especially where the user engages in repetitive weightlifting activity.

[0009] The present invention contemplates elimination of drawbacks associated with the prior designs and provision of a hand-protecting band that is particularly adapted for use in weight-lifting activity or where a user lifts circular objects, around which a hand is curled.

SUMMARY OF THE INVENTION

[0010] It is therefore, an object of the present invention to provide a hand-protecting device for supporting and protecting the user’s hand during strenuous activity.

[0011] It is another object of the present invention to provide a hand-protecting device that allows freedom and flexibility of use without constraining the movements.

[0012] It is another object of the present invention to provide a hand-protecting device that allows air circulation to cool the hand during strenuous activities.

[0013] It is a further object of the present invention to provide a hand-protecting device that is flexible enough to
allow the user to curl finger around a cylindrical object and still cushions the palm and fingers of the user’s hand.

[0014] It still a further object of the invention to provide a hand protecting device that has a non-slip surface which contacts an object being lifted.

[0015] These and other objects of the invention are achieved through a provision of a hand protection device, which comprises a flexible resilient gripping pad having a peripheral edge and a bottom surface, said bottom surface being sized and configured to cover at least an area of a palm of a human hand between a metacarpal bone zone and a phalanges without extending over distal phalanges.

[0016] A finger-engaging band is secured to the upper surface of the gripping pad for engaging fingers of a user, said finger engaging band dividing the gripping pad into a forward part and a rear part. The finger-engaging band has a plurality of spaced-apart finger loops configured to receive user’s fingers therein. A first resilient compressible cushion is fitted to the upper surface of the gripping pad in the rear part of the gripping pad. A second resilient compressible cushion fitted to the upper surface of the gripping pad in the forward part of the gripping pad. The cushions are made of an elastomer, dry polymer or polymer gel.

[0017] The gripping glove of this invention supports and protects the hand of a weightlifter or other user permitting an activity that is strenuous to the hand. The gripping glove cushions the junction of the fingers and palm without constraining flexibility or airflow to the skin. The gripping pad may be of varying sizes to best support both male and female hands as well as juvenile and adult hands.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] FIG. 1 is a side perspective view of the hand-protecting device in accordance with the present invention.

[0019] FIG. 2 is a perspective view of the device in accordance with the present invention showing the end view of the device.

[0020] FIG. 3 is a top perspective view of the device in accordance with the present invention.

[0021] FIG. 4 is a side view of the device of the present invention.

[0022] FIG. 5 is a perspective view of the hand protecting device of the present invention engaged on a human hand.

[0023] FIG. 6 is bottom view of the device of the present invention showing a slip-resistant surface.

[0024] FIG. 7 is an illustration of the device of the present invention positioned on a user’s hand, with the gripping pad being flatter positioned on a horizontal surface.

[0025] FIG. 8 is an illustration of the device of the present invention positioned on a user’s hand and contacting an object being lifted.

[0026] FIG. 9 is an illustration of the critical areas on the user’s hand, which the band of the present invention protects.

[0027] FIG. 10 is an illustration of the device protecting the palm of the user’s hand curled around a cylindrical object.

DETAIL DESCRIPTION OF THE INVENTION

[0028] Turning now to the drawings in more detail, numeral 10 designates the hand-protecting device of the present invention. The device 10 comprises a flexible, resilient bottom gripping pad 12 having a peripheral edge defined by a first elongated side 14, a second elongated side 16, a first end 18 and a second end 20. The pad has a forward part and a larger rear part separated by a finger band, as will be explained in more detail hereinafter.

[0029] The pad 12 has a bottom surface 24, which is configured with grooves 23, which can be randomly formed, in a criss-cross fashion about the entire bottom surface 24. If desired, the grooves 23 can form a pattern, such as a honeycomb pattern in the bottom surface 24. The upper surface 25 of the pad 12 can be formed substantially planar and smooth.

[0030] The grooves or indentations 23 increase friction characteristics of the bottom surface 24 and resist slipping of the gripping pad 12 when the user engages an object. The pad 12 can be formed from a number of materials, one of the preferred materials being a synthetic rubber, such as Neoprene.

[0031] As can be seen in the drawings, the gripping pad 12 has a generally elongated oval configuration, where the sides 14 and 16 are connected to the ends 18 and 20 by curved corners 25, 26, 27, and 28. Of course, other configurations can be selected for the bottom pad 12, if desired. The pad 12 is sized to cover substantially a large part of a palm 70 of the user’s hand 80, as shown in FIGS. 5 and 7. In one aspect, the pad 12 covers a part of the metacarpals 72, proximal phalanges 73 and intermediate phalanges 74. In one aspect of the invention, the bottom pad 12 leaves the distal phalanges 75 and a large portion of the thumb 71 uncovered.

[0032] A first flexible, compressible, resilient cushion 30 is affixed to the upper surface 25 of the pad 12 in the rear part of the pad 12. The first cushion 30 has a generally oval configuration and is configured to fit within the peripheral borders of the pad 12. If desired, an indentation can be formed in the upper surface 25 of the pad 12, and the first cushion 30 can be fitted into the indentation. The first cushion 30 can be made of elastomer, polymer gel material or dry-polymer gel material suitable to be secured to the pad 12. The first cushion 30 has a top surface 32, which is exposed to contact by the human hand 80. The first cushion 30 resiliently flexes and bends together with the pad 12 as can be seen in FIG. 10.

[0033] Secured to the upper surface 25 of the pad 12 is a finger band 50, which can be formed integrally with the pad 12. The finger band 50 is provided with a plurality of finger loops 52 that are sized and configured to receive fingers of the user’s hand therein. The finger band 50 can be formed from a band of flexible stretchable resilient material such as Neoprene, similar to the pad 12. Alternatively, the finger band 50 can be formed from an elastic band made of bristle elastic, latex and the like. The finger band 50 can be secured to the upper surface 25 of the pad 12 by adhesive, by heat or any other suitable method.

[0034] The finger loops 52 are separated from each other by bridges 54 formed from the solid portion of the band 50. In this manner, each phalange of the user’s hand 80 is separately protected by the device 10.

[0035] The finger band 50 is sized to extend at least between the area 60 along the metacarpal bone zone and the proximal phalanges zone 62, as illustrated in FIG. 9. The finger loops 52 are positioned to engage at least a part of the proximal phalanges 73. It is preferred that the band 50 and the pad 12 do not extend over the distal phalanges 75, leaving the ends of the fingers free to articulate. Since the finger band 50 does not engage the opposing thumb 71, the device 10 does not interfere with the normal articulation of the hand.

[0036] A second cushion 40 is affixed to the upper surface 25 of the pad 12 adjacent the first elongated side 14 in the forward part of the pad 12. The second cushion 40, similar to
the first cushion 30, can be made of elastomer, polymer gel material or dry-polymer gel material suitable to be secured to the pad 12. The second cushion 40 has a top surface 42, which is exposed to contact by the human hand 80. The second cushion 30 resiliency flexes and bends together with the pad 12 as can be seen in FIG. 10. In one aspect of the invention, the second cushion 40 has a crescent configuration, which follows the general outline of the first elongated side 14.

1037] The first cushion 30 and the second cushion 40 extend above the upper surface 25 of the gripping pad 12, providing an additional cushioning effect when the user engages a heavy object. Similarly to the first cushion 30, the second cushion 40 can be imbedded into an indentation formed in the upper surface 25 of the pad 12, if desired.

1038] In use, a person inserts the fingers in the loops 52, with the palm of the person’s hand contacting the cushions 30 and 40. The person can then grip a cylindrical object 54, with the bottom surface 24 contacting the cylindrical object 54 and frictionally engaging the object 54. The bottom surface 24 provides a non-slip surface, thereby facilitating lifting of the object 54. The thumb 71 is free to engage the object 54, as well.

1039] Although the drawings illustrate a hand-protecting device made for the human right hand, it will be apparent to persons skilled in the art that a mirror image device can be made for positioning on the user’s left hand.

1040] The device of the present invention protects the user’s hand from calluses and tears due to the stress of lifting the object. The elastic finger band ensures that the gripping pad 12 does not slip out of place or off the hand. The device 10 is sized to cover the critical areas involved in lifting of weights and allows the rest of the hand to be exposed so that the skin may breathe. The particular advantage of the instant device is that it does not interfere with the fingers’ articulation, allowing the user to curl the hand around an object and securely grip the object during lifting.

1041] Other workout gloves may cover a larger portion or the entire hand and are often unsatisfactory to users. They do not allow the hand breathing room, which causes the hand to sweat atypically and can make the glove uncomfortably or unwieldy. The gripping hand-protecting device of the instant invention protects the pertinent area of the hand, but still allows enough of the hand to be free to breathe and to flex as needed. In the instant device, only the portion of the hand crucial to gripping is covered, allowing the majority of the hand freedom of movement.

1042] It will be understood that the particular shapes and materials of the outer shell, the gel insert and finger loops are exemplary and can be easily modified depending on the requirements of the user’s hand. For instance, the gripping glove may be smaller to fit the hand appropriately for women and adolescents or larger to fit the hand of males and adults. Also, the material may be decorated with designs that may be glued, sewn or otherwise incorporated, such as a camouflage pattern for the particular use of sportsmen, or the school mascot of a specific sports team.

1043] Many other changes and modifications may be made in the design of the present invention without departing from the spirit thereof. I therefore pray that my rights to the present invention be limited only by the scope of the appended claims.

1 claim:

1. A hand protection device, comprising:

a flexible resilient gripping pad having an upper surface and a bottom surface, said bottom surface is sized and configured to cover at least an area of a palm of a human hand between a metacarpal bone zone and phalanges without extending over distal phalanges;

a finger-engaging means secured to the upper surface of the gripping pad for engaging fingers of a user, said finger engaging means dividiing the gripping pad into a forward part and a rear part;

a first resilient compressible cushion fitted to the upper surface of the gripping pad in the rear part of the gripping pad; and

a second resilient compressible cushion fitted to the upper surface of the gripping pad in the forward part of the gripping pad.

2. The device of claim 1, wherein said first cushion and said second cushion is each formed from a material selected from a group comprising an elastomer, polymer gel and dry polymer substance.

3. The device of claim 1, wherein said first cushion and said second cushion each have a top surface, which is configured for contact with the human hand.

4. The device of claim 1, wherein said first cushion and said second cushion each have a top surface, which extends outwardly from the upper surface of the gripping pad.

5. The device of claim 1, wherein said bottom surface is provided with a plurality of grooves configured to increase frictional characteristics of the gripping pad.

6. The device of claim 1, wherein said finger engaging means comprises a finger band extending between opposing ends of the gripping band.

7. The device of claim 1, wherein said finger engaging means consists of a finger band extending between opposing ends of the gripping band.

8. The device of claim 7, wherein the finger band is integrally formed with the gripping pad.

9. The device of claim 7, wherein the finger band comprises a plurality of finger-engaging loops separated by bridges formed from solid portions of the finger band.

10. The device of claim 1, wherein said first cushion has a generally oval configuration sized and shaped to fit within peripheral borders of the rear part of the gripping pad.

11. The device of claim 1, wherein said first cushion has a generally crescent configuration sized and shaped to fit within peripheral borders of the forward part of the gripping pad.

12. A hand protection device, comprising:

a flexible resilient gripping pad having an upper surface and a bottom surface, said bottom surface is sized and configured to cover at least an area of a palm of a human hand between a metacarpal bone zone and phalanges without extending over distal phalanges;

a finger-engaging band secured to the upper surface of the gripping pad for engaging fingers of a user, said finger engaging band dividing the gripping pad into a forward part and a rear part, said finger-engaging band being provided with a plurality of spaced-apart finger loops;

a first resilient compressible cushion fitted to the upper surface of the gripping pad in the rear part of the gripping pad; and

a second resilient compressible cushion fitted to the upper surface of the gripping pad in the forward part of the gripping pad.
13. The device of claim 12, wherein the finger loops are separated by bridges formed from solid portions of the finger band, and wherein the finger loops are configured to receive a finger of the human hand therein.

14. The device of claim 12, wherein the forward part of the gripping pad has smaller area dimensions than rear part of the gripping pad.

15. The device of claim 12, wherein said first cushion and said second cushion is each formed from a material selected from a group comprising an elastomer, polymer gel and dry polymer substance.

16. The device of claim 12, wherein said first cushion and said second cushion is each formed from a polymer gel substance.

17. The device of claim 12, wherein said first cushion and said second cushion each have a top surface, which is configured for contact with the human hand.

18. The device of claim 12, wherein said first cushion and said second cushion each have a top surface, which extends outwardly from the upper surface of the gripping pad.

19. The device of claim 12, wherein said bottom surface is provided with a plurality of grooves configured to increase frictional characteristics of the gripping pad.

20. A method of protecting a human hand from abrasion by an item being lifted, the method comprising the steps:
   providing a flexible resilient hand-protecting pad sized and configured to cover at least an area of a human hand between a metacarpal bone zone and phalanges zone without extending over distal phalanges, said pad having a an upper surface and a bottom surface;
   providing a finger-engaging band with a plurality of loops extending upwardly from the upper surface of the gripping pad, said finger-engaging band dividing the gripping pad into a forward part and the rear part;
   providing a first compressible resilient elastic cushion fitted in the forward part of the gripping pad;
   providing a second compressible resilient elastic cushion fitted in the rear part of the gripping pad;
   engaging fingers in said loops such that user’s thumb is not covered by the finger-engaging band, while a user’s hand in the area between a metacarpal bone zone and distal phalanges contacts the first cushion and the second cushion, and while the finger-engaging band is positioned over proximal phalanges.

21. The method of claim 20, further comprising a step of providing a plurality of grooves on the bottom surface of the gripping pad thus increasing frictional characteristics of the gripping pad.

22. The method of claim 20, wherein said first cushion and said second cushion are each formed from a material selected from the group consisting of elastomer, dry polymer and polymer gel substance.

23. The method of claim 20, wherein said finger engaging loops are separated by bridges formed from solid portion of the finger-engaging band.

24. The method of claim 20, further comprising a step of providing each of the first cushion and the second cushion with a top surface and engaging the first cushion and the second cushion with the gripping pad such that the top surface extends upwardly from the upper surface of the gripping pad.

25. The method of claim 20, further comprising a step of forming the finger-engaging band integrally with the gripping pad.

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