A vibration reducing golf glove, which includes a front panel for covering the inner portion of a wearer’s hand and fingers, a thumb section for covering the wearer’s thumb which is coupled to the front panel, and a back panel for covering the outer portion of a wearer’s hand and fingers. Vibration reducing thick leather is coupled independently to the front panel at the palm, thumb and finger areas for reducing the degree of vibration. As a result, the vibration reducing golf glove provides a reduction in the vibration and shock transmitted to the wearer’s hand and at the time a shock or vibration is applied to the outer surface of the glove.
VIBRATION REDUCING GOLF GLOVE

BACKGROUND OF THE INVENTION

[0001] The invention is generally directed to the design of a golf glove and, in particular, to an improved golf glove which will reduce the vibration, shock and jarring caused by striking a golf ball.

[0002] Players of sports in which there is a moment of impact between a club, bat or racquet with a ball incur violent vibrations that are transmitted through their hands and up their arms. For people suffering from “tennis elbow”, “golfer’s elbow”, arthritis, carpal tunnel syndrome and other afflictions of the joints, tendons, muscles and bones, these vibrations and shock can be excruciatingly painful, can create further damage and can even cause them to abandon their sport.

[0003] For example, many older golfers cannot play a full game because of their disabilities and have a need for a glove which cushions the shocks and jarring of ball striking.

[0004] Many attempts have been made to cushion these vibrations through the addition of conventional shock absorbing materials to the palm of sports gloves. None of these have succeeded commercially because of their functional problems. To absorb the vibrations, the materials applied have been bulky, heavy, hot to wear and stiff, all factors which inhibit a player’s performance and enjoyment. In the past, the shock resistant materials have been composed of synthetic hollow coiled foams or other rubber-like materials or gels. In addition to the discomfort associated with these materials there is a substantial loss of feel for the golf glove, bat or racquet which interferes with participation in the sport.

[0005] In particular, a golf glove must be very thin and flexible to fit the wearer’s hand exactly and to allow a good “feel” of the club. Bulk, thick or stiff materials undermine the utility of the glove. Furthermore, the United States Golf Association sets rules for equipment “legal” for tournament play and any glove with artificially added padding is disqualified. Most golfers, even if not tournament players, want to use conforming equipment. Beyond allowing afflicted players to continue enjoying their sport, a vibration reducing glove can actually help to prevent more damage or injury to the affected tendons or joints.

[0006] Golfer’s elbow is caused by damage to the tendons connecting the large muscles of the forearm to the small bones of the elbow. In golfing, the leading elbow (the left arm for a right handed golfer), absorbs more vibration than the trailing elbow (the right arm for a right handed golfer), because the lead elbow must be kept straight. A vibration reducing glove on the left hand (or the right hand of a left handed golfer), where gloves are already worn, would reduce much of the harmful vibration.

[0007] In addition, many older players suffer from arthritis in their hands and fingers and shy away from firmly gripping their club, racquet or bat which diminishes their performance. With a vibration reducing glove, they are again able to take a firm grip without suffering the pain. Accordingly, there is a need for an improved vibration reducing sports glove, which does not inhibit the wearer’s performance, which will be legal for tournament play, and maintains a good sense of feel through the glove.

SUMMARY OF THE INVENTION

[0008] The invention is generally directed to a vibration reducing sports glove which includes a palm panel of the glove for covering at least the inner surface of a wearer’s hand and fingers, a thumb panel for covering the wearer’s thumb, secured to the palm panel, a back panel of the glove for covering the outer portion of a wearer’s hand and fingers and vibration reducing pad means coupled to at least one of the palm panel and the thumb panel, wherein the vibration reducing pad means includes at least one panel of a natural air-filled hollow interior leather.

[0009] The invention is also generally directed to a vibration reducing golf glove constructed in accordance with glove technology with vibration reducing members added in the palm area of the glove, including at least one or more of deer skin, elk skin or moose hide pads affixed to critical shock areas of the glove palm, sewn onto the inside surface of the palm, the deer skin, elk skin or moose hide being tanned in accordance with the same process as the basic glove leather so as to assure compatibility with the glove and texture, feel, stretchability and color so that it does not detract from the golfer’s focus in feeling and gripping the glove and breathes freely for comfort.

[0010] Accordingly, it is an object of the invention to provide an improved vibration reducing sports glove incorporating tanned deer skin, elk skin or moose hide pads in critical, shock absorbent regions.

[0011] Yet another object of the invention is to provide an improved sport glove which includes vibration reducing pads at critical locations associated with a particular sport without interfering with the feel or feel of the glove.

[0012] Yet another object of the invention is to provide an improved vibration reducing glove for use in industrial applications which bring the wearer’s hands and arms in contact with shock and vibration over an extended period of time but which require a good sense of feel through the glove and cannot tolerate thick vibration reducing padding.

[0013] Yet still another object of the invention is to provide an improved vibration reducing sport glove which includes vibration reducing pads between adjacent layers of leather or other material so that the vibration reducing characteristics of the pads are not deteriorated.

[0014] Yet still another object of the invention is to provide an improved vibration reducing sport glove which protects the vibration reducing pads between adjacent layers of leather or other material so that the vibration reducing characteristics of the pads are not deteriorated.

[0015] Still other objects and advantages of the invention will in part be obvious and will in part be apparent from the specification.

[0016] The invention accordingly comprises the features of construction, combinations of elements, and arrange-
ments of parts which will be exemplified in the constructions hereinafter set forth, and the scope of the invention will be indicated in the claims.

DETAILED DESCRIPTION OF THE DRAWINGS

[0017] For a fuller understanding of the invention, reference is had to the following description taken in connection with the accompanying drawings, in which:

[0018] FIG. 1 is a perspective view of the palm side of a vibration reducing golf glove constructed in accordance with a preferred embodiment of the invention;

[0019] FIG. 2 is a perspective view of the back of a golf glove constructed in accordance with a preferred embodiment of the invention;

[0020] FIG. 3 is a perspective view of the palm side of a golf glove constructed in accordance with another preferred embodiment of the invention;

[0021] FIG. 4 is a top plan view of the inside of the palm of a glove constructed in accordance with a preferred embodiment of the invention; and

[0022] FIG. 5 is a top plan view of the inside of the palm of a glove constructed in accordance with another preferred embodiment of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0023] Reference is made to FIGS. 1 and 2 wherein the front and back panels 101 and 130 respectively, of a glove 100 that is constructed in accordance with a preferred embodiment of the invention is depicted. Glove 100 includes thumb section 102 and fingers: index finger 111; middle finger 112; ring finger 113; and small finger 114. In addition, in accordance with golf ball technology, the four fingers are separated by gussets or fourchettes 121, 122, and 123, of an expandable material, which includes the side panels 140, 141 and an elastic strip 142 sewn in over the knuckle area with stitching 157.

[0024] A thumb section 102 is sewn to the inside of the front panel 101 with stitching 153. A thick leather thumb portion 115 is sewn to the inside of the thumb section 102 with stitching 158.

[0025] A thick leather palm portion 117 is sewn to the inside of the front panel 101 with stitching 154. This palm portion 117 is of the same material construction as the thick leather thumb portion 115.

[0026] A thick leather finger portion 118 is sewn to the inside of the front panel 101 with stitching 155. This finger portion 118 is of the same material construction as thumb and palm portions 115, 117. The finger portion 118 extends around the index finger 111 and is made integral with the back panel 130 with stitching 156. Extending the thick leather material around to the index finger section of the back panel 130 eliminates the need for stitching along the index finger 111.

[0027] All the thick leather portions 115, 117, and 118 are made from the same leather material which is about 0.9 to 1.2 mm thick. The thin front and back leather panels 101 are constructed of the same thin leather of about 0.3 to 0.6 mm thick. The thin leather that makes up the glove will be made from such leathers as cowhide, sheepskin or goat skin, or synthetic leathers, whereas the thick leather portions 115, 117 and 118 will be made of leather such as deerskin, elk skin or moose hide. The thin leather is about 0.3 to 0.6 mm thick while the thick leather is about 0.9 to 1.2 mm thick.

[0028] Golf gloves are generally made from cowhide, sheepskin or goat skin. These leathers are very compact by nature, strong and excellent in transmitting an accurate “feel” of a golf club. However, because of their compact nature they also have little or no ability to absorb the significant vibrations and shock imparted at the moment of striking a ball at very high velocities, which is the main cause of tendon damage and pain in players. In contrast, deer skin, elk skin and moose hide have entirely different fiber structures than these other “gloving” leathers. Nature evolved the skin structure to insulate these northern animals from the harsh winter conditions they must endure. Deer, elk and moose leather, therefore, has an air filled hollow interior and fluffy fiber structure with excellent vibration and shock absorbing characteristics and properties. However, it does not have sufficient tensile strength, when shaved to the necessary thinness for sport gloves, to be used satisfactorily for an entire glove. A resulting glove made entirely from these leathers would either be too thick to be practical or rip in use.

[0029] The grain surface of deer, elk or moose leather, if used as the exterior of a sport glove, would tend to peel and delaminate very quickly. The object of the invention to incorporate the vibration and shock reducing capabilities of deer skin, elk skin or moose skin as underlying sections in key shock areas of sports gloves, thereby enabling players with tendinitis, arthritis or other joint, bone or muscle problems to continue to enjoy their sports without pain or discomfort and to reduce further damage to the afflicted parts. By underlying the basic glove material, the weak nature of the deer skin, elk skin or moose hide is protected. Unlike synthetic shock absorbers, these natural shock absorbers act in concert with the natural leather of the body of the glove, breathe freely for comfort, mold to the player’s hand for perfect fit and transmit a good feel of the player’s golf club.

[0030] A golf club is gripped by the golfer and cradled between the fingers and the thumb. When the golfer swings the club, the club accelerates as it makes contact with the golf ball, and the result is a substantial shock or jarring force imparted to the golf club at the head of the golf club. Since the head is at the opposite end of the golf club from the handle, this has the effect of magnifying the effects of the shock at the handle end, and particularly, where the golf ball is not struck cleanly or where the golfer has taken a divot which results in the club head impacting the ground either before, during or after contact with the ball, additional jarring is present.

[0031] In the preferred embodiment the deerskin has been tanned by the same process as the basic glove leather so that it is completely compatible with the glove in texture, feel, stretchability and color so it does not detract from the golfers focus in feeling and gripping the glove and in addition it breathes freely for comfort. In a preferred embodiment this includes a combination of chrome and syntans (synthetic tanning agents). The thickness of the deerskin can be kept at a relatively small value so that it does not unduly affect the golfer’s feel of the club.

[0032] Although the above description has focused on the benefits of the vibration reducing glove technology in a golf glove, this is merely a representative example of the use of
the technology. The technology is also useful in connection with baseball batting gloves, tennis, racquetball, squash and other racquet sport gloves, driving gloves, bicycle gloves, football gloves, soccer goalie’s gloves, ping pong gloves and other sport gloves.

[0033] It is also applicable to industrial gloves which are designed for fine work where an accurate and close feel is required, but there is vibration or shock associated with the work. For example, wood craftsmen, when using power equipment, which must be handled with great care and detail, must ordinarily suffer significant vibration to avoid allowing the work object from slipping. With a thin glove constructed in accordance with the invention incorporating a deerskin, elk skin or moose hide pad or pads, their grip and feel is unaffected, but the vibration transmitted to their hand is substantially reduced.

[0034] Various types of leathers can be used in accordance with the invention, including conventional glove leathers tanned with primary chrome tanning and secondary tanning with syntans including special additives to impart desired characteristics to the leathers. Also, leather gloves as manufactured in accordance with U.S. Pat. Nos. 5,759,706, and 6,052,827 and sold by Bali Leathers, Inc. under the Graflex. ® name, may include graphite in the fiber of the gloves. The graphite particles provide additional shock and vibration reduction due to the way in which the graphite particles, bonded to the leather fibers, tend to slide laterally to distribute and absorb some of the vibration on the glove. Combined with the deerskin pads in accordance with applicant’s invention, a heightened degree of vibration reduction is provided.

[0035] Applicant has developed testing in connection with the vibration reducing aspects of the sport glove technology in accordance with the invention. A test has been configured in which the leather is placed on a particularly hard, stable surface, such as marble or granite, and a steel ball bearing is dropped from a standardized height onto the leather. To the extent that there is little or no vibration reduction by a panel of the glove the ball bearing would be expected to rebound to a height equivalent to the height it would bounce up to in the absence of any glove panel on the hard surface. In contrast, where the glove panel, incorporating the vibration reducing thick portions 115, 117, and 118, in accordance with the invention, is placed on the hard surface and the ball bearings are dropped from the standard height, one would expect a reduction in rebound height to correspond with a degree of vibration reduction. This is because a portion of the impact energy of the ball bearing is absorbed and distributed by the vibration reducing thick portions. In addition, to the extent that the downward force of the ball bearing is not only stopped but accelerated upward, the force exerted on the wearer’s hand would correspond to the sum of the force that the ball bearing had when it contacted the glove panel and the force required to redirect the ball bearing upward, away from the panel. Where the ball bearing rebounds to a lesser height the total force supplied by the glove (and, in fact, by the hand behind the glove which supports the glove panel) is therefore reduced. In testing it was found that there was a significant and substantial reduction of the rebound height of a steel ball bearing when dropped from a standardized height onto a glove panel including a thick vibration reducing portion constructed in accordance with a preferred embodiment of the invention as compared to a standard leather glove without such vibration reduction technology. Accordingly, there is clear evidence that the vibration reducing thick leather placed at critical points of contact actually reduced the force transmitted to the wearer’s hand whether vibration, shock or other transient force.

[0036] Accordingly, an improved vibration reducing golf glove incorporating improved vibration reducing thick leather portions at critical locations, which do not interfere with the feel and wear of the glove, is provided.

[0037] It will thus be seen that the objects set forth above, among those made apparent in the preceding description, are efficiently obtained and, since certain changes may be made in the above constructions without departing from the spirit and scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative, and not in a limiting sense.

[0038] It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention, herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

1. A vibration reducing golf glove, comprising: a thin leather front panel of the glove, for covering the inner portion of a wearer’s hand and fingers; a thin leather back panel of the glove for covering the outer portion of a wearer’s hand and fingers; a thumb section coupled to the front panel for covering the wearer’s thumb; vibration reducing means coupled to the interior of the front panel and constituting a minimum of sixty percent of the front panel area; the vibration reducing means including thick leather palm, thumb and finger portions, wherein the thick leather portions have a thickness of about three to five times the thickness of the thin leather panels; the thick leather portions are sewn to the thin leather portions on an inside surface thereof; and the finger portion including an index finger having vibration reducing means extending around the finger to include a portion of the back panel, whereby the vibration reducing golf glove provides a reduction in the vibration and shock transmitted to the wearer’s hand at the time a shock or vibration is applied to the outer surface of the glove.

2. The vibration reducing golf glove of claim 1, wherein the front panel, back panel and thumb section of the glove is formed from leather tanned in accordance with a tanning process.

3. The vibration reducing golf glove of claim 2, wherein the vibration reducing means is formed of deer, elk or moose skin tanned in accordance with the process used for tanning the leather used in the front panel, thumb section and back panel.

4. The vibration reducing golf glove of claim 4, wherein the front panel, back panel, and thumb section are formed from a lightweight synthetic leather with deer, elk or moose leather as the vibration reducing means.

5. The vibration reducing golf glove of claim 1, wherein the vibration reducing means also includes portions of deer, elk or moose skins having a thickness.

6. The vibration reducing golf glove of claim 1, wherein the thickness of the vibration reducing means is between 0.9 mm to 1.2 mm.
7. The vibration reducing golf glove of claim 1, wherein the palm panel, thumb section and back panel are formed of a synthetic leather and the vibration reducing means include deer, elk or moose leather inner pads.

8. The vibration reducing golf glove of claim 1 wherein the glove has vibration reducing means covering seventy percent of the front panel.

9. The vibration reducing golf glove of claim 1 wherein the palm panel, thumb section and back panel are formed of a graphite impregnated leather and the vibration reducing means include deer, elk or moose leather.

10. The vibration reducing golf glove of claim 1, wherein the back panel includes an elastic strip coupled to the back panel over a knuckle area of the glove.

11. The vibration reducing golf glove of claim 10, wherein the glove include elastic side panels.