A rubber or foam type yoga mat whose top surface is formed with lateral ridges or swells running continuously from one side of the mat to the other to provide consistent, easily-cleaned traction for hands and feet without the need for a sticky surface material. In one embodiment, groups of closely-spaced small rounded ridges are formed in the mat surface, either over the full length of the mat or in spaced traction zones for hands and feet. In another embodiment, single wide swells are formed in the mat surface in traction zones, each swell sufficiently wide to support or span a hand or foot. The mat also includes an automatically aligned set of integrated fasteners for securing the mat in a rolled condition.
TRACTION-SURFACED YOGA MAT

RELATED APPLICATIONS/PRIORITY BENEFIT CLAIM

[0001] This application claims priority to and the benefit of the filing date of U.S. provisional patent application U.S. Ser. No. 62/031,906 filed on Aug. 1, 2014, which is incorporated herein in its entirety.

FIELD

[0002] The subject matter of the present application is in the field of yoga mats.

BACKGROUND

[0003] Yoga mats are relatively thin, soft mats providing a clean, high-traction surface for performing certain yoga exercises. The mats are often designed to be portable, and generally can be rolled up for storage and transport between yoga sessions. Many newer mats are made of thin foam or synthetic or natural rubber and are sometimes referred to as “sticky mats” (depending on surface texture and material), and will hereinafter be referred to as rubber mats. More traditional mats are made from various fibers and natural materials.

[0004] Yoga techniques often require considerable shear force exerted on the surface of the mat by the practitioner, exerted primarily through the hands and feet, although hips, knees, and other portions of the body may be used. It is generally important that at least the hands and feet stay anchored on the mat during these techniques.

[0005] The textures of existing rubber mats are often fairly fine, amounting to small rectangular grid or woven-type patterns, similar to that of carpet underlay (the original “sticky mats”). Such fine-textured rubber mats can be unpleasant on the skin, difficult to clean, and do not always provide an ideal friction surface for the practitioner. Also, prior rubber mats are not usually provided with a convenient means for keeping them rolled up.

BRIEF SUMMARY

[0006] I have invented a rubber yoga mat surface comprising rounded lateral ridges running from side to side on at least certain zones of the mat’s upper surface. The ridges do not require a sticky texture in order to provide good traction for hands and feet in the shear plane of the mat, they are comfortable, they are easy to clean, and they are aesthetically pleasing.

[0007] In a first embodiment that will be called a “ridge” embodiment, the ridges comprise regions of small parallel lateral ridges having a width or diameter significantly less than that of a hand or foot, such that a hand or foot placed substantially flat on the mat bridges multiple ridges at a time.

[0008] In a first version of the ridge embodiment, the ridges repeat continuously along the full length of the mat to essentially cover its entire surface.

[0009] In a second version of the ridge embodiment, groups of ridges are clustered together in spaced traction zones for hand, foot, or hip placement.

[0010] In a third version of the ridge embodiment, the mat also includes diagonal and longitudinal ridges (hereafter collectively “longitudinal” ridges, to distinguish them from the lateral or horizontal ridges). These longitudinal ridges may cross or intersect the lateral ridges, or they may be limited to zones between lateral ridges, or there may a combination of the two.

[0011] In a second embodiment that will be called a “swell” embodiment, spaced traction zones are each formed by a single large rounded ridge (“swell”) with a width significantly greater than its vertical diameter or height. For example, the width of a swell approximates the length of an average-size palm or forefoot, while the height of the swell may be on the order of ⅛" inch. Like the smaller ridges in the first embodiment, the swells are lateral, i.e. they run from one side of the mat to the other.

[0012] A further feature of my yoga mat is an optional roll-fastening structure integrated with the mat, comprising a short length of male hook-and-loop fastener projecting from a first end of the mat, hook side up, when the mat is unrolled; and a mating piece of female hook-and-loop fastener located on the underside of the mat, loop side down, spaced from the first end a distance corresponding to the circumference of the rolled mat. The mat is rolled from its second end toward the first end, such that the female fastener on the bottom of the mat rolls into contact with the male fastener just as the mat is finished being rolled up.

[0013] These and other features and advantages of the invention will become apparent from the detailed description below, in light of the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 is a top plan view of a first version of a yoga mat according to a first embodiment of the invention.

[0015] FIG. 2 is a perspective view of a detail (2) taken from the yoga mat of FIG. 1.

[0016] FIG. 3 is a side elevation view of the yoga mat of FIG. 1.

[0017] FIG. 4 is a top plan view of a second version of a yoga mat according to the first embodiment of the invention, with ridges clustered in spaced fraction zones.

[0018] FIG. 5 is a perspective view of a portion of one of the traction zones of the yoga mat in FIG. 4.

[0019] FIG. 6 is a side elevation view of one of the traction zones of the yoga mat in FIG. 4.

[0020] FIG. 7 is a top plan view of a third version of a yoga mat according to the first embodiment of the invention, with multi-directional ridges.

[0021] FIG. 8 is a perspective view of a detail (8) taken from the yoga mat of FIG. 7.

[0022] FIG. 9 is a side elevation view of the yoga mat of FIG. 1.

[0023] FIG. 10 is a top plan view of a second embodiment of a yoga mat according to the invention, with large swells rather than small ridges.

[0024] FIG. 11 is a perspective view of one of the swells of the yoga mat in FIG. 10.

[0025] FIG. 12 is a side elevation view of one of the swells of the yoga mat in FIG. 10.

[0026] FIG. 13 is a top plan view of a yoga mat with a roll-up structure according to the invention.

[0027] FIG. 14 is a side elevation view of the yoga mat of claim 13, showing mat partially rolled up in solid lines, and fully rolled up in phantom lines.

[0028] FIG. 15 is an enlarged side elevation view of the fully rolled mat of FIG. 14, in solid lines.
DETAILED DESCRIPTION

[0029] Referring first to FIGS. 1 through 3, a first embodiment of a yoga mat 10 is shown in exemplary form in order to teach how to make and use the claimed invention. Mat 10 may be made from any known material used for rubber-type yoga mats, including but not limited to PVC, TPE, dense foams, or natural rubber, which are some of the more common materials. Mat 10 may also have a top surface 12 made from one of the above polymers, while the lower substrate or base/bottom 14 is made from a different material.

[0030] Mat 10 is generally rectangular and has a top 12, bottom 14, upper and lower ends 16, and sides 18. The dimensions of the mat may vary with typical yoga mat dimensions. By way of example, mat 10 may be on the order of 72" (180 cm) long, 24" (60 cm) wide, and with a nominal thickness of 1/8" (3 mm) to 1/4" (6 mm) depending on desired cushioning and portability. These dimensions are examples and not intended to be limiting.

[0031] FIGS. 1-9 represent variations on a first “ridge” embodiment of the yoga mat 10, in which small rounded ridges 20 are formed on top surface 12, for example by molding or forming them integrally in the mat material during the mat-forming process. The ridges 20 run from side 18 to side 18 generally perpendicular to the mat’s longitudinal or centerline axis running from one end 16 to the other end 16. As best seen in FIG. 3, ridges 20 have a rounded cross-section, extending to a peak height on the order of 1/4" to 1/2" inches from the normally flat top surface 12 of the mat, and with a similar width or diameter. By way of example, the width of each ridge 20 (the left to right dimension of each ridge along the longitudinal axis of the mat when viewed in plan from above the mat as in FIG. 3, or the left to right dimension in the side elevation of FIG. 3) is approximately equal to its height, and may be on the order of 1/4" to 1/2" inches. The small ridges run lengthwise continuously, i.e. without interruption, from one side 18 of the mat to the other. The dimensions of the ridges are not critical, except that their width be small enough that an average size palm or foot (schematically represented in phantom at H in FIG. 3) spans at least several ridges 20, and that their height not unduly interfere with the user’s comfort or performance of yoga.

[0032] Ridges 20 are separated by junctions 21 as shown in FIG. 3, preferably short flats 21a or rounded troughs 21b. While sharp V-shaped junctions 21c or other configurations are possible, the flat or rounded junctions of FIG. 3 are believed to be easier to clean and are therefore currently preferred. Ridges 20 are closely spaced, for example touching one another at junctions 21c, or with the spacing between them at junctions 21a or 21b preferably less than their width or height. It will be understood that FIG. 3 schematically shows all three junction examples described above on a single mat, for compact illustration, rather than because all three would necessarily be provided on a single mat 10. Generally it would be preferable from a manufacturing standpoint to provide a uniform ridge-and-junction geometry on mat 10.

[0033] In the example of FIGS. 1-3, the top surface 12 of mat 10 has a substantially continuous array of ridges 20, such that the top surface of the mat is essentially covered with parallel ridges 20 over its full length.

[0034] In FIG. 4, mat 10 has at least two spaced fraction zones 40 located at head and foot regions of the mat, respectively, with the remainder of the top surface 12 being relatively flat and smooth. Optional additional traction zones 40 are possible, such as that shown in phantom lines in the middle of the mat. Each traction zone 40 includes an array of ridges 20 sufficient to span or support most or all of a user’s hand, foot or intermediate body portion (e.g., lumbar/hip) when pushing against the mat in the shearing plane along top surface 12. For example, each traction zone 40 may have a dozen or more small ridges 20. Traction zones 40 are shown as having equal dimensions in FIGS. 10-12, but their respective dimensions may differ with respect to one another, depending on their location on the mat and the anticipated style of yoga for which the mat is intended. “Average” or “typical” here may vary according to the anticipated user (e.g., adult or child, male or female, large or small).

[0035] In FIGS. 7-9, mat 10 has a multi-directional array of ridges, in the illustrated example with a preferred combination of lateral ridges 20 and longitudinal ridges (longitudinal ridges 120 and diagonal ridges 220). The different orientation of the ridge sets 20, 120, and 220 provides good shear traction in different directions, which for some yoga practitioners may be more versatile. One or more sets of the ridges 20, 120, and 220 are likely to be interrupted by one or more of the other sets of ridges in such a multi-directional array. The location and relative orientation of the longitudinal ridge sets 120 and 220 relative to lateral ridges 20 may be varied depending on user preference or anticipated usage.

[0036] Referring next to FIGS. 10-12, a second embodiment of yoga mat 10 is shown in which each traction zone 40 is a large spaced lateral “swell” rather than a group of small ridges 20. Swells 40 are spaced apart to define separate traction zones on the mat, each swell comprising one traction zone and running from one side of the mat to the other, essentially the full width of the mat as with the smaller ridges 20. Each swell 40 is a gently rounded, relatively wide, raised region of the mat surface, for example on the order of 6" inches wide to support the span of a hand, foot, or hip portion of the body, and with a peak height on the order of 1/4" to 1/2" inches. These dimensions may vary, but in general the swells will have a peak height on the order of the mat thickness or greater, in order to provide sufficient traction relative to the surrounding flat top surface 12 of the mat. Referring to FIG. 12, the length of swells 40 will approximate the length of a typical or average hand/palm, a foot/forefoot, and a lumbar/hip region, respectively, depending on their locations on the mat. Swells 40 are shown as having equal dimensions in FIGS. 10-12, but their respective dimensions may differ with respect to one another, depending on their location on the mat and the anticipated style of yoga for which the mat is intended. “Average” or “typical” here may vary according to the anticipated user (e.g., adult or child, male or female, large or small).

[0037] Referring next to FIGS. 13-15, a roll-fastening structure is shown incorporated into the mat 10. One or more short lengths of male hook-and-loop fastener 50 is secured to one end 16a of the mat, for example the “head” end, projecting a short distance from the end of the mat with the male hook side facing up. One or more corresponding pieces of female hook-and-loop fastener 60 is secured to the bottom 14 of mat 10, spaced from male fastener end 16a a distance approximating the circumference of mat 10 when the mat is rolled up, longitudinally aligned with male fastener 50, and with the loop side down. In the illustrated example, female fastener 60 is embedded in a recess 14a in the bottom of the mat (shown in FIG. 15), to be essentially flush therewith, helping to keep the bottom of the mat flat on the floor without
ripples or bulges, and preventing the relatively soft surface loop of the female fastener from being crushed over time, reducing its effectiveness.

[0038] As shown in FIG. 15, when mat 10 is rolled up from “foot” end 16 (the end without male fastener 50), with the top surface 12 rolled to the interior, female fastener 60 ends up aligned with the male fastener 50 projecting from the other end of the mat, making it simple to connect the fasteners and secure the rolled-up mat.

[0039] Fasteners 50 and 60 could be switched, with female fastener 60 projecting from end 16 and male fastener 50 secured to the bottom 14. The manner of securing fasteners 50 and 60 to the mat may vary, including but not limited to adhesive connection, mechanical fastener, or by molding the fasteners into the mat material. Fasteners 50 and 60 may be single pieces, continuous strips across the width of the mat, or multiple spaced pieces of fastener. And while hook-and-loop fastener material is shown as the preferred example, other types of mating fastener could be located on the mat at 50 and 60, and used in similar fashion, including but not limited to flat flexible magnetic material, snaps, buttons, ties, etc.

[0040] It will finally be understood that the disclosed embodiments represent presently preferred examples of how to make and use the invention, but are intended to enable rather than limit the invention. Variations and modifications of the illustrated examples in the foregoing written specification and drawings may be possible without departing from the scope of the invention. It should further be understood that to the extent the term “invention” is used in the written specification, it is not to be construed as a limiting term as to number of claimed or disclosed inventions or discoveries or the scope of any such inventions or discoveries, but as a term which has long been conveniently and widely used to describe new and useful improvements in science and the useful arts. The scope of the invention supported by the above disclosure should accordingly be construed within the scope of what it teaches and suggests to those skilled in the art, and within the scope of any claims that the above disclosure supports in this provisional application or in any non-provisional application claiming priority to this provisional application.

1. A generally rectangular rubber-type yoga mat having a top surface, a bottom surface, sides, and upper and lower ends, the improvement comprising:
a plurality of raised, rounded lateral ridges running from side to side over at least a portion of the top surface of the mat, the ridges running continuously across the mat in essentially uninterrupted fashion, generally perpendicular to a mat centerline and generally parallel to one another.

2. The yoga mat of claim 1, wherein the lateral ridges comprise closely spaced small ridges of a width requiring multiple lateral ridges to support or span a hand or foot or intermediate body portion of a person using the mat.

3. The yoga mat of claim 2, wherein groups of the lateral ridges are located in at least two traction zones spaced from one another, with a first traction zone adjacent the upper end of the yoga mat and a second traction zone adjacent the lower end of the yoga mat.

4. The yoga mat of claim 1, wherein the lateral ridges comprise single wide swells spaced from one another, a first swell located adjacent the upper end of the yoga mat and defining a first traction zone, and a second swell located at adjacent the lower end of the yoga mat and defining a second traction zone.

5. A roll-securing structure for a substantially rectangular yoga mat having a top surface, a bottom surface, sides, and upper and lower ends, comprising:
a first fastener projecting from the upper end of the mat, and a second fastener secured to the bottom surface of the mat and located a distance from the upper end of the mat corresponding to a rolled circumference of the mat, wherein the first and second fasteners are aligned to be mated when the mat is rolled from the lower end toward the upper end.

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