

April 21, 1964

H. V. AMOS ETAL

3,129,944

GOLF MAT COMPOSED OF A PLURALITY OF PARALLEL BRUSH STRIPS

Filed Aug. 24, 1961

FIG. 1

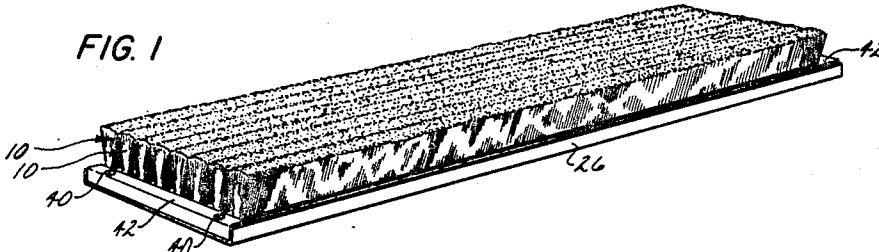


FIG. 2

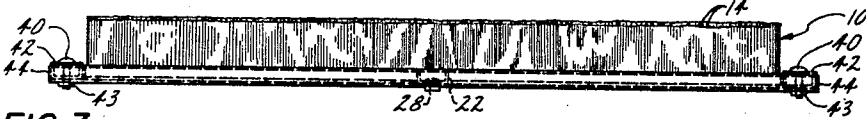


FIG. 3

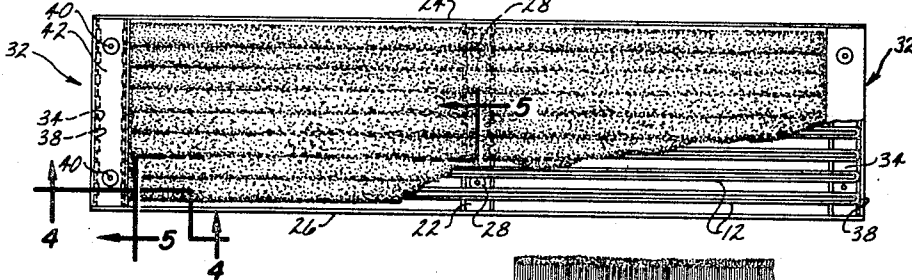


FIG. 4

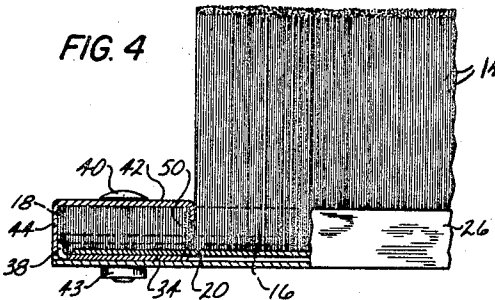


FIG. 5

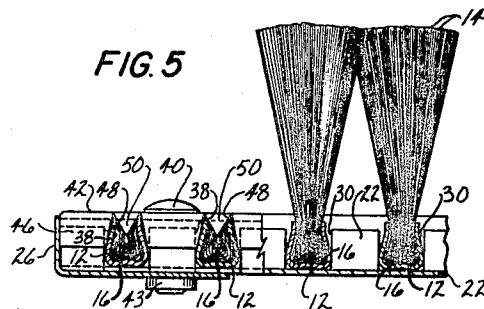
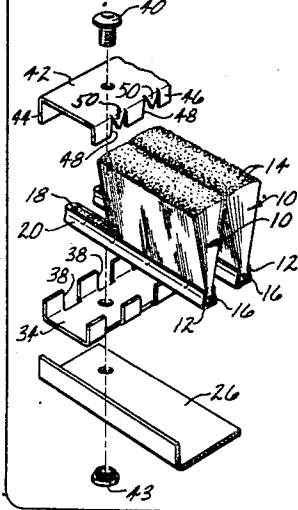


FIG. 6



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1

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GOLF MAT COMPOSED OF A PLURALITY OF PARALLEL BRUSH STRIPS

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Filed Aug. 24, 1961, Ser. No. 133,617
6 Claims. (Cl. 273-195)

This invention relates to a golf mat of the general type shown in United States Patent No. 2,668,711, issued to John L. McLaughlin on February 9, 1954, and entitled Golf Tee Having Ball Supporting Fibers. Golf mats of this general type have several important advantages and have been found generally satisfactory. Brush fibers forming the mats are resilient in character and resemble natural turf to some extent. Moreover, the mats find particularly advantageous use in the practice of fairway wood and iron shots as they eliminate the task of divot replacement and the need for relocation of practice tees due to excessive turf removal.

One object of the present invention is to provide a golf mat of the type mentioned with improved brush strip retaining means capable of more securely holding brush strips than has heretofore been possible with known mat constructions, and which means serves to directly and positively retain brush fibers and their associated core wires in position in the channel members of the brush strips.

Another object of the present invention is to provide a golf mat of the type mentioned wherein all or substantially all of the brush strip retaining means and structural parts can be formed by sheet metal and in conventional press operations to the end that an economic advantage is achieved in the manufacture of the mats.

The drawing shows a preferred embodiment of the invention and such embodiment will be described, but it will be understood that various changes may be made from the construction disclosed, and that the drawing and description are not to be construed as defining or limiting the scope of the invention, the claims forming a part of this specification being relied upon that purpose.

Of the drawings:

FIG. 1 is a perspective view of a golf mat embodying the present invention.

FIG. 2 is a side view of the mat.

FIG. 3 is a plan view of the mat with a portion thereof broken away to better illustrate details of construction.

FIG. 4 is an enlarged combined longitudinal vertical section and side view of a portion of the mat, taken generally as indicated at 4-4 in FIG. 3.

FIG. 5 is an enlarged transverse vertical section of a portion of the mat taken generally as indicated at 5-5 in FIG. 3.

FIG. 6 is an exploded perspective showing details of brush strip retaining means included in the mat.

Referring particularly to FIG. 1, it will be observed that the golf mat shown comprises a plurality of parallel horizontal brush strips indicated generally at 10, 10. Eight strips 10, 10 are shown, but the number of strips employed may vary widely within the scope of the invention. Each brush strip comprises a longitudinally extending channel or channel member 12, FIGS. 5 and 6, which may be formed of metallic or plastic material and which has upstanding symmetrical side walls which converge upwardly. Fibers 14, 14, arranged in a layer, are looped or folded within the channel or channel member 12 and project upwardly therefrom, the fibers extending around a longitudinal core or retaining wire 16 disposed within the channel. Substantial retaining forces

2

are exerted on the fibers 14 and the core wire 16 by the upwardly converging sides of the channel 12, but rough use can result in upward removal of the core wire and fibers from the channel as in a buckling action.

Preferably the upstanding side walls of each channel member converge at the ends of the member as shown at 18 in FIGS. 4 and 6 so as to retain the fibers at the ends of the fiber layer. Adjacent the neck between the upper edges of the channel side walls the layer of fibers in each fiber strip is narrow and compact, but above the neck the fibers of each layer diverge as shown so that the layer is much wider with the fibers thereof loosely arranged and freely movable relatively to each other. Ordinarily, the upper ends of the fibers are somewhat more closely spaced near the center of the fiber layer than near the edges thereof. The said edges are in engagement with, or slightly overlap with respect to, the corresponding portion of the next adjacent fiber layer as best shown in FIG. 5 and the upper ends of the fibers of all of the layers terminate approximately in a common horizontal plane. Thus, a resilient horizontal and substantially flat ball supporting surface is provided.

In addition to the provision of converging channel side walls at each end of each brush strip 10, each of said brush strips has opposite end portions whereat the fibers are severed so as to terminate below the ball supporting surface and approximately in the plane of the upper edge surfaces of the side walls of the associated channel. Such an end portion of a brush strip is indicated at 20 in FIGS. 4 and 6. As will be seen, the provision of brush strips with opposite end portions having foreshortened fibers permits the use of a fiber engaging means which serves to retain the fibers in the channel.

In the presently preferred form, a retaining means for the brush strips 10, 10 includes a transverse center support member in the form of an upright channel 22. The channel 22 is preferably formed of sheet metal and has opposite end portions thereof connected with first and second side frame members 24 and 26. The side frame members 24 and 26 extend longitudinally beneath the channel 22 at its opposite end portions and the connection between the frame members and the channel may be effected by means of suitable bolts 28, 28. Preferably, the frame members 24 and 26 are formed of sheet metal and they each comprise a flat horizontal body portion and an upstanding flange. The channel 22 extends between and engages or at least approximately engages the upstanding flanges of the side frame members when the channel and the members are connected together.

Each side wall of the channel 22 is provided with a uniformly transversely spaced series of upwardly open notches 30, 30. Said notches are aligned longitudinally in pairs to receive the channels 12 of the brush strips 10, 10 and, as best shown in FIG. 5, the side walls of the notches are spaced apart so as to engage or at least approximately engage the channels. Thus, the channel member 22 serves to secure the brush strips 10, 10 against lateral or sidewise movement.

The supporting and retaining means for the brush strips 10, 10 shown also includes first and second or left and right-hand transverse end support members 32, 32. Said members are or may be substantially identical and each of the members includes an upright channel 34 substantially identical with the aforesaid center channel 22. Notches 38, 38 in the channels 34, 34 open upwardly and receive end portions of the brush strip channels 12, 12 in the manner described for the center channels 22. Additionally, each of the channels 34, 34 extends between the side flanges of the side frame members 24 and 26 in the manner of the center channel 22. As will be seen, said end channels 34, 34 are connected with

the side frame members 24 and 26 by suitable bolts 40, 40 which also connect cap strips 42, 42 of the end support members.

The cap strips 42, 42 are or may be substantially identical and each of said strips includes a depending outer flange 44 and a depending inner flange 46 as best shown in FIG. 6. The flanges 44 and 46 are spaced apart longitudinally so as to depend alongside and embrace the side walls of an associated end channel 34 as best shown in FIG. 4. When so positioned, end portions of the flanges 44 and 46 engage the side flanges of the side frame members 24 and 26 and are held against transverse movement. The body of the cap strip, as best shown in FIG. 4, overlays the severed fibers of the brush strips 10, 10 and secures the said fibers and their associated core wires 16, 16 against upward movement relative to the channels 12, 12. As shown in FIG. 4, the body of the cap strip substantially engages or at least approximately engages the upper ends of the severed fibers and it also engages or at least approximately engages the upper edge surfaces of the associated channel. Additionally, the outer depending flanges 44, 44 of the cap strips 42, 42 engage end surfaces of the channels 12, 12 of the brush strips and secure the brush strips against relative longitudinal or endwise movement. The cap strips are held in position as shown by means of the bolts 40, 40 which extend through suitable openings therein and downwardly through suitable openings in the end channels 34, 34 and the side frame members 24 and 26 into threaded engagement with small nuts 43, 43.

As best shown in FIG. 6, the inner flange 46 of each cap strip 42 has a series of downwardly open notches 48, 48 formed therein. The notches 48, 48 are uniformly spaced transversely so as to receive upper portions of the channels 12, 12 of the brush strips 10, 10, FIG. 5. Preferably and as shown, the side walls of the notches 48, 48 converge upwardly so as to engage the channels of the channel members 12, 12 and to secure the same against pivotal movement about longitudinal axes. Sharp generally V-shaped depending tangs 50, 50 in the notches 48, 48, also best shown in FIG. 5, enter the fibers within the channels 12, 12. Recalling that the fibers are compact or closely engaged with each other within the channels 12, 12, it will be seen that the tangs 50, 50 can serve to secure the fibers and their associated core wires 16, 16 against relative longitudinal movement in the channels 12, 12. Thus, the fibers and the core wires within the channels 12, 12 are secured against upward movement by the cap strips 42, 42 and also against relative longitudinal movement. Accidental or unintended upward removal of the fibers and core wires from the channels is positively prevented as a result of such construction.

It will also be observed that the side walls of the notches 48, 48 and the tangs 50, 50 serve to secure the brush strips 10, 10 against pivotal movement about longitudinal axes. As best shown in FIG. 5, upper edge portions of the side walls of the channels 12, 12 are engaged by the side walls of the notches 48, 48 and by the edge surfaces of the tangs 50, 50. Preferably, a wedging action occurs between the channel side walls and the notch side walls and tang edge surfaces such that the channels are positively held against pivotal movement about longitudinal axes as aforesaid.

From the foregoing, it will be apparent that a simple and yet highly effective and durable supporting and retaining means for brush strips has been provided. The resulting golf mat can be expected to exhibit all of the favorable characteristics of similar mats heretofore known and, in addition, there is little or no possibility of removal of fibers and core wires from the brush strip channels by buckling or like action. Additionally, substantially all elements of the supporting and retaining means of the golf mat can be formed in conventional press operations. The channel members 22, 34, 34 are or may be identical in construction. The side frame members 24

and 26 may also be identical and the cap strips 42, 42 are similarly adapted. Obviously, a substantial economic advantage in manufacture is achieved in such adaptation to low cost press operations and in the provision of identical parts.

The invention claimed is:

1. A golf mat comprising a plurality of similar parallel horizontal brush strips each including an upright channel with a core wire disposed therein and a layer of fibers folded about the core wire within the channel and projecting upwardly from the channel, said brush strips being uniformly and closely spaced so that the upper end surfaces of the fibers thereof form a substantially flat horizontal ball supporting surface, and each of said brush strips having opposite end portions with fibers terminating below said ball supporting surface and approximately in the plane of the upper edge surfaces of the associated channel, a transverse center support member disposed beneath said brush strips and engaging and securing each of them against sidewise movement, and first and second transverse end support members engaging and securing each of said brush strips against sidewise and endwise movement, each of said end support members including a cap strip which overlays one of said opposite end portions of each brush strip and secures the brush fibers and core wires against upward movement relative to their channels.

2. A golf mat comprising a plurality of similar parallel horizontal brush strips each including an upright channel with a core wire disposed therein and a layer of fibers folded about the core wire within the channel and projecting upwardly from the channel, said brush strips being uniformly and closely spaced so that the upper end surfaces of the fibers thereof form a substantially flat horizontal ball supporting surface, and each of said brush strips having opposite end portions with fibers terminating below said ball supporting surface and approximately in the plane of the upper edge surfaces of the associated channel, a transverse center support member disposed beneath said brush strips and engaging and securing each of them against sidewise movement, and first and second transverse end support members engaging and securing each of said brush strips against sidewise and endwise movement, each of said end support members including a cap strip which overlays one of said opposite end portions of each brush strip and secures the brush fibers and core wires against upward movement relative to their channels, and each of said cap strips having a plurality of depending tangs which are uniformly spaced apart transversely and which respectively enter channels of the several brush strips to engage fibers therein and to hold the fibers and their associated core wires against endwise movement relative to their channels.

3. A golf mat as set forth in claim 2 wherein each of said transverse support members is provided with a uniformly transversely spaced series of notches, the notches in each support member being aligned longitudinally with corresponding notches in each of the other support members to receive the brush strips, and the width of each notch being such that the sides of the strip channels at least approximately engage the notch side walls.

4. A golf mat as set forth in claim 3 and which includes a pair of longitudinal side frame members, each of said members being connected with each of said transverse support members to provide a rigid generally rectangular frame for the mat.

5. A golf mat comprising a plurality of similar parallel horizontal brush strips each including an upright channel with a core wire disposed therein and a layer of fibers folded about the core wire within the channel and projecting upwardly from the channel, said brush strips being uniformly and closely spaced so that the upper end surfaces of the fibers thereof form a substantially flat horizontal ball supporting surface, and each of said brush strips having opposite end portions with fibers terminating

5

below said ball supporting surface and approximately in the plane of the upper edge surfaces of the associated channel, an upright transverse center support channel disposed beneath said brush strips and having a series of upwardly open notches in its side walls for receiving and securing said strips against sidewise movement, first and second transverse end support members each comprising a channel substantially identical with said center support channel and an associated cap strip, said end channels each being provided with a series of upwardly open notches in its side walls for receiving and securing said brush strips against sidewise movement, means connecting said cap strips with said end channels so that the strips overlay said opposite end portions of said brush strips and secure the brush fibers and their associated core wires against upward movement relative to their channels, depending flanges on said cap strips which engage and secure said brush strips against endwise movement, a uniformly transversely spaced series of depending tangs on each cap strip, said tangs respectively entering channels of the several brush strips and engaging fibers therein to hold the fibers and their associated core wires against endwise movement relative to their channels, and a pair of

6

longitudinal side frame members each connected with said center support channel and with each of said transverse end support members to provide a rigid generally rectangular frame for the mat.

5 6. A golf mat as set forth in claim 5 wherein said cap strips are each provided with a uniformly transversely spaced series of downwardly open notches with upwardly converging side walls, wherein said tangs depend respectively within said notches, and wherein said notch side walls engage upper edge portions of the channels of said brush strips adjacent the point of entry of the tangs into the fibers of the strips whereby to secure the brush strips against pivotal movement about longitudinal axes.

References Cited in the file of this patent

UNITED STATES PATENTS

1,089,972	Schumann	Mar. 10, 1914
2,199,252	Zehetner	Apr. 30, 1940
2,668,711	McLaughlin	Feb. 9, 1954

FOREIGN PATENTS

1,033,910	France	July 16, 1953
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