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(54) **STRINGS FOR A TENNIS RACKET**

(57) A tennis racket (10) carries strings (13) which have a material applied thereto which provides the strings with a tacky surface. In some forms the material can be a solution or a dry adhesive. In other forms the material

can be hook-like which engages the loop-like surface of a tennis ball. As such, a tennis ball can be struck creating more RPM to impart spin to the ball.

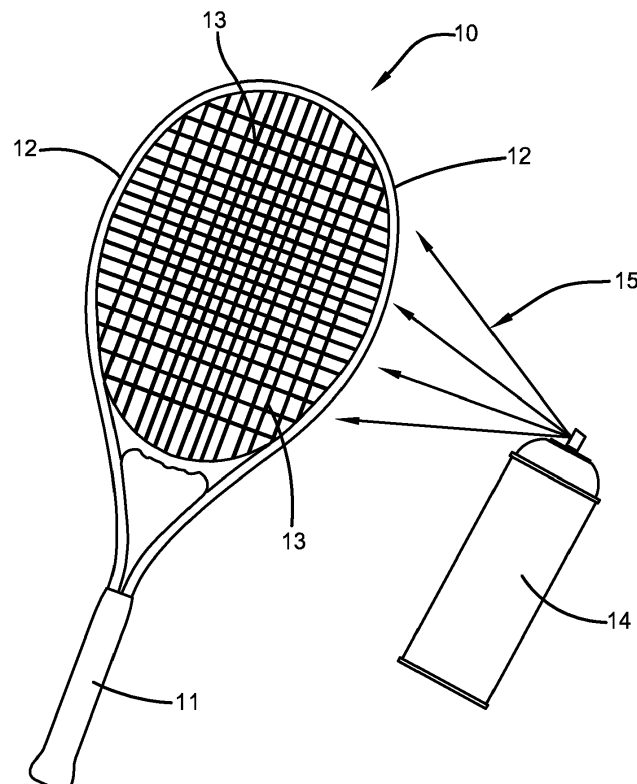


FIG. 1

Description

TECHNICAL FIELD

[0001] This invention relates to improved tennis racket strings. More particularly, this invention relates to tennis racket strings which are treated to provide improved results when playing the game of tennis.

BACKGROUND ART

[0002] The nature of the strings of a tennis racket is critical to one's success in the game of tennis. When striking a tennis ball the strings interact with the fibrous felt cover of the ball. Typical strings are most often made of nylon or polyester and are selected for their properties of elasticity, durability, tension retention, rebound efficiency, and the like. When striking a ball, the intention is to provide a high RPM and a spin, such as to create a slice or top spin, so as to cause problems for an opponent.

[0003] Some attention has been given to this problem with original equipment rackets being provided, at some cost, with strings specifically designed, in profile or material, to increase the ability to provide spin. However, to date nothing has been done to solve this problem for those owning existing strung rackets.

[0004] Thus, despite all the attention given to the nature of the strings, such attention has heretofore not been directed to improving the coefficient of friction of the strings by applying a product to the strings, so as to enhance the possibility of applying spin to the tennis ball at increased RPM.

DISCLOSURE OF THE INVENTION

[0005] It is therefore an object of one aspect of the present invention to provide strings for a tennis racket that will improve the ability of a player to apply a spin, such as a slice or top spin, to the tennis ball.

[0006] It is an object of another aspect of the invention to apply a material to the strings which increases the coefficient of friction of the strings.

[0007] It is an object of an additional aspect of the invention to provide a tennis racket having the above-described strings.

[0008] These and other objects of the present invention, as well as the advantages thereof over existing prior art forms, which will become apparent from the description to follow, are accomplished by the improvements hereinafter described and claimed.

[0009] In general, a tennis racket has a frame and a plurality of strings carried by the frame. A material is applied to the strings to improve the coefficient of friction of the strings thereby improving the striking ability of the racket.

[0010] In accordance with another aspect of the invention, a method of manufacturing tennis racket strings includes the steps of applying a material to the strings

thereby increasing the coefficient of friction of the strings and improving the result of the strings engaging a tennis ball by imparting spin to the tennis ball.

[0011] The invention also contemplates providing an apparatus to be used for a tennis racket including a plurality of strings and a material applied to the strings. The material improves the coefficient of friction of the strings thereby increasing the possibilities of imparting spin to a ball when striking the ball.

[0012] Preferred exemplary embodiments of strings for a tennis racket according to the concepts of the present invention is shown by way of example in the accompanying drawings without attempting to show all the various forms and modifications in which the invention might be embodied, the invention being measured by the appended claims and not by the details of the specification.

BRIEF DESCRIPTION OF THE DRAWING

[0013]

Fig. 1 is a perspective view of a tennis racket having a material sprayed thereon to increase the coefficient of friction of the strings.

Fig. 2 is a perspective view of a tennis racket having an alternative material carried by the strings to increase the coefficient of friction of the strings.

Fig. 3 is an enlarged view of the encircled portion of Fig.2.

PREFERRED EMBODIMENTS FOR CARRYING OUT THE INVENTION

[0014] A tennis racket made in accordance with the present invention is indicated generally by the numeral 10 in the figure. Racket 10 includes a handle 11 which carries a frame 12. The frame 12 carries a plurality of strings 13 which are tautly stretched within the frame 12. Strings 13 can be made of a material typically used for tennis strings such as nylon, cut gut, polyester or the like.

[0015] In accordance with one aspect of the present invention, strings 13 are provided with an outer material that improves the coefficient of the friction of the strings and effectively renders them tacky. One type of material would consist of a hydrogenated rosin such as that sold under the trademark STAYBELITE by Pinova, Inc. of Brunswick, Georgia. Such a rosin can be incorporated into a paste or a spray such as the Mueller Stickum paste or Mueller Stickum Spray Grip Enhancer sold by Mueller Sports Medicine, Inc. of Prairie du Sac, Wisconsin.

[0016] These or equivalent materials, may be applied to the strings in a number of ways. For example, with the material in a gel form, such could be provided in a tube with some type of applicator, such as a sponge, so that when the tube is squeezed, the material saturates the sponge. Alternately, a roll-on ball type mechanism could be provided. Or most simply, a towelette could be saturated with the material so that it could be rubbed onto the

strings. If the material is in a liquid form, it could be provided as an aerosol spray to be applied to the strings as shown in the figure where a cannister 14 is used to spray material 15 onto the strings. Whatever the form of dispensing, such provides the strings 13 with a tacky feeling and yet, when dried, the material will not be transferred to a tennis ball when it is struck. But when a ball is struck, the presence of the material enhances the RPM of an airborne ball increasing the possibility of imparting a desirable spin to the ball.

[0017] To even further increase the coefficient of friction of the strings and to further enhance the ability to spin the ball, the material can include a grit or other abrasive particles which provide the strings with roughness in addition to tackiness. Such a grit could simply be in the form of a sand.

[0018] In accordance with another aspect of the invention, a dry adhesive could be applied to strings 13. Such could use the technology of Nanograiptech of Pittsburg Pennsylvania. This adhesive could be extruded onto the strings to provide the required coefficient of friction increase. The advantage of this alternative is that there is no possibility of a residue of the product being transferred to a tennis ball.

[0019] Another aspect of the present invention is shown in Figs. 2 and 3. In this embodiment an array of VELCRO-like micro-hooks 16 are provided to generally coat the strings. Since tennis balls are made of a felt-like material, such provides the loops to be temporarily gripped by hooks 16 to enhance the ability of the user of the racket 10 to impart spin to the tennis ball

[0020] In view of the forgoing description, it should be evident that a tennis racket and the tennis racket strings described herein accomplish the objects of the invention and substantially improve the art.

of the strings and improving the results of the strings engaging a tennis ball by imparting spin to the tennis ball.

- 5 6. The method of claim 5 wherein the material includes a rosin.
7. The method of claim 6 wherein the material includes an abrasive material.
- 10 8. The method of claim 5 wherein the material includes an array of hooks which are adapted to grip the surface of a tennis ball.
- 15 9. An apparatus to be used for a tennis racket comprising a plurality of strings, and a material applies to said strings which improves the coefficient of friction of said strings thereby increasing the possibility of imparting spin to a ball when striking the ball.
- 20 10. The apparatus of claim 9 wherein the material includes a rosin.
- 25 11. The apparatus of claim 10 wherein the material includes an abrasive material.
- 30 12. The apparatus of claim 9 wherein said material includes an array of hooks which are adapted to grip the surface of a tennis ball.

Claims

1. A tennis racket comprising a frame, a plurality of strings carried by said frame, and a material applied to said strings to improve the coefficient of friction of said strings thereby improving the striking ability of the racket.
- 45 2. The tennis racket of claim 1 wherein said material includes a rosin.
3. The tennis racket of claim 2 wherein said material includes an abrasive material.
- 50 4. The tennis racket of claim 1 wherein said material includes an array of hooks which are adapted to grip the surface of a tennis ball.
- 55 5. A method of manufacturing strings for a tennis racket comprising the steps of applying a material to the strings thereby increasing the coefficient of friction

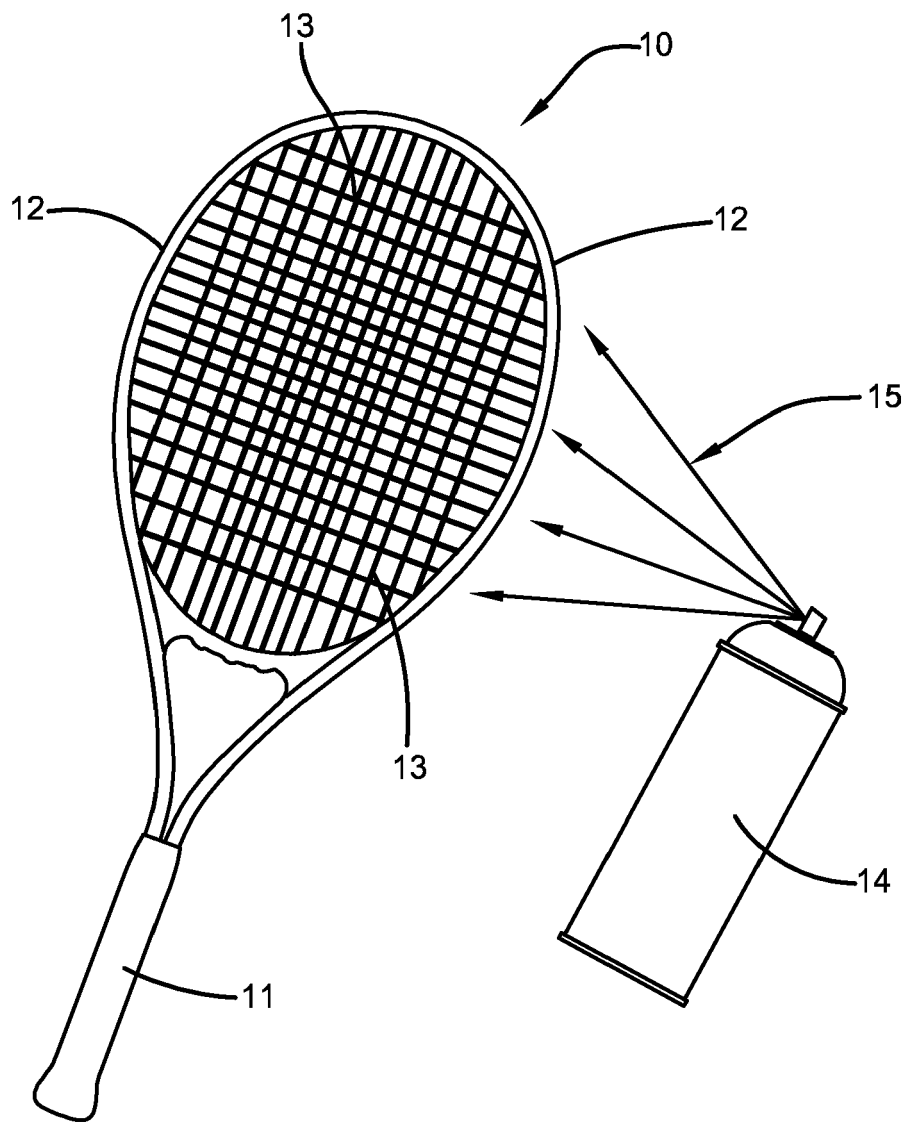


FIG. 1

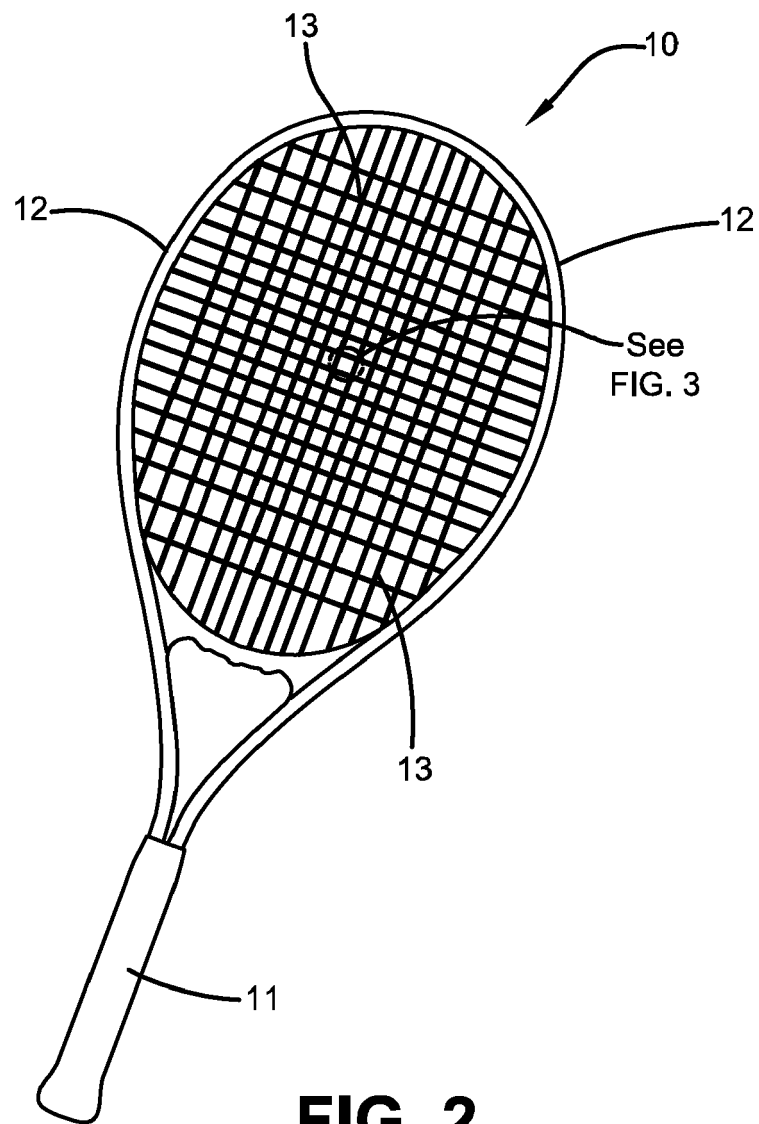


FIG. 2

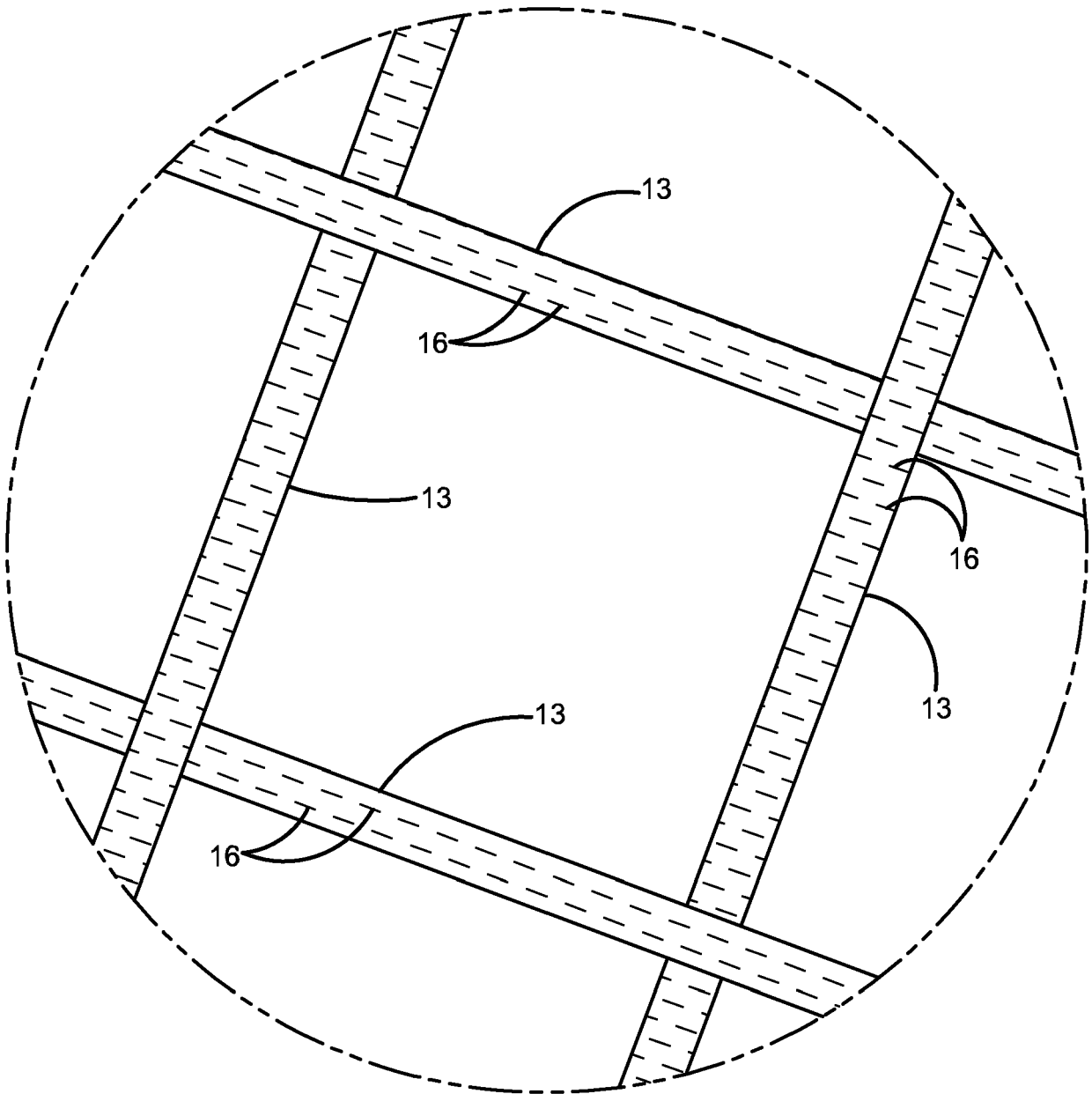


FIG. 3



EUROPEAN SEARCH REPORT

Application Number

EP 22 17 9016

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EPO FORM 1503 03.82 (P04C01)

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 238 262 A (FISHEL CLARK W [US]) 9 December 1980 (1980-12-09) * columns 3-4; claims; figures *	1, 3, 5, 7, 9, 11	INV. A63B51/02
X	DE 27 35 669 A1 (REPPERT RUEDIGER LOTHAR VON DI) 22 February 1979 (1979-02-22) * page 3, paragraph 2; claim 1; figures *	1, 3, 5, 7, 9, 11	
X	US 4 183 200 A (BAJAJ GIRDHAR [US]) 15 January 1980 (1980-01-15) * column 4, lines 1-7; claims 1, 9; figures *	1, 2, 5, 6, 9, 10	
X	SE 9 002 330 L (CHRISTER GARPENBORG) 4 January 1992 (1992-01-04) * abstract; figures *	1, 4, 5, 8, 9, 12	
X	DE 196 15 945 A1 (LUETHY HELMUT [DE]; DOERFER ARTUR [DE]) 23 October 1997 (1997-10-23) * column 1, line 38 - column 2, line 4; figures *	1, 2, 5, 6, 9, 10	TECHNICAL FIELDS SEARCHED (IPC) A63B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 16 November 2022	Examiner Herry, Manuel
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 22 17 9016

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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16-11-2022

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