A multi-filamentous net or mesh comprising an image visible on only one side is provided. The image is visible only from the primary viewing position without the paint or ink composition absorbing through the fibers to be visible from the back of the net or mesh. This permits the use of multi-filamentous nets or mesh for images or logos without disrupting the spectators’ view and/or the use of both sides of the net or mesh for unidirectional images or logos.
FIELD OF INVENTION

The present invention generally relates to a multi-filamentous net or mesh having an image visible on only one side. In particular, it relates to a multi-filamentous net or mesh with an image that is durable, crisp and clear from the primary viewing position without the colours being visible from the back of the netting or mesh material.

BACKGROUND OF THE INVENTION

A major challenge facing most companies is obtaining adequate public exposure of its products and/or services. To this end, companies have used a multitude of forms of advertisements to ensure that the public is familiar with their name or product or service.

Sporting events are often events that attract and hold the attention of many spectators including those in the stands at such events as well as those watching such events on television or other forms of media. Due to the overall popularity of sports, it is not surprising to find companies advertising their name, products and/or services. For example, sports such as hockey, soccer, football and many others, are popular in many parts of the world and are enjoyable to many spectators at both the professional and a recreational level.

In the case most public sporting events, companies have long recognized the benefit of locating advertisements directly in the viewing area of the public and/or playing area to increase exposure of the company’s name, product or service to said public. Commercial signage incorporated into these areas also provides the sponsor with effective exposure during any televised coverage of the event along with any clips or photographs of the event used in electronic or print media.

Presently, some sporting events display dasher boards surrounding the playing area. For example, or track, the score board, the finishing line and the playing field itself, are several examples of common areas used to display advertisements. Prices for advertising in/on these spaces vary according to the likelihood of their exposure on television or in pictures. As such, the space located at key areas tend to command the highest prices.

However, there are several notable shortcomings associated with the use of the above mentioned areas for advertisements. The first is that they are often obscured or cropped out in most media photographs since photographers tend to focus primarily on the players. Secondly, given that advertisers do not have access to the same advertising opportunities normally found with professional leagues in most recreational sporting venues, advertisers must find other means to promote their products when working outside a professional sports setting.

It is thus advantageous to develop a new advertising means that would be feasible in both a professional or recreational sports setting. Since goal nets are used in many sports, and is often the subject of the viewing public’s attention during a game, an image placed strategically on the net will have the potential of being seen by a broad audience. Furthermore, manufacturers of sport goal nets can also benefit from the placement of their company’s name or logo onto the net itself since this would easily distinguish their products from those of their competitors.

Given the importance of a substantial advertising inventory as a source of revenue for professional sports teams and event organizers, and the need to effectively capture the viewing public’s attention, there is always a need to develop new advertising possibilities. Since multi-filamentous net or mesh are often the subject of media attention during a sporting event, they are frequently portrayed on television or in photographs. Thus, it would be desirable if one could use the prominent viewing position of the netting or mesh as an advertising tool.

Moreover, multi-filamentous nets or mesh imprinted with an image could be an effective advertising tool due to the kinetic optical effect created when the mesh or netting moves. Unlike static one-dimensional advertisements currently used at most sports arenas, a corporate sponsor’s logos placed on a moving net or mesh would constantly attract the viewers’ eyes due to its movement.

To date, multi-filamentous nets and mesh have remained unadorned due to the corrosive effect of the colouring mixture on the strength of the fibres, and paint’s inability to resist cracking, flaking or peeling under normal use as well as under extreme pressure such as blows of a hockey puck. Additionally, nets or mesh have not been used for advertising due to the restriction that any logo or image applied to the netting or mesh must not diffuse through the netting material for at least two reasons: 1) the “leaked” image could interfere with someone’s vision, and 2) the “leaked” image would cause an inversion of unidirectional logos. Accordingly, goal nets remain void of any designs due to specific sporting regulations (e.g. ice, field, floor and in-line hockey competitions) which prohibit interfering with a judging official’s clear view of a puck ball etc. inside a white net. Therefore, the colouring must be applied in such a manner so as to assure that the design is only visible from the front of the net. Finally, the colour must stay durable on the mesh, or netting when used under normal or extreme environmental conditions.

It is also important that any logo or image applied to a netting or mesh does not diffuse through the twine so as to prevent the inversion of unidirectional logos. This would permit the full exploitation of the netting or mesh for advertising purposes since logos may be applied to both sides of the netting in situations where they are visible to the public.

Another problem associated with applying images onto multi-filamentous nets or mesh is due to the characteristic of the twine commonly used, and the normal practice of how goal nets are prepared in professional sports leagues. Using ice hockey as an example, goal nets must be assembled manually on the day of the game at the particular venue to ensure that they meet sporting regulations. Therefore, due to the alignment of knots in the netting, and how the nets are stretched onto the goal posts at the correct tension, it is essential that the image be applied on site to ensure that it will not be distorted. Also given the sensitivity of the multi-filamentous nylon twine to pressure, any colouring medium must be applied manually to ensure the proper degree of absorption.

Due to the above mentioned problems, goal nets made of multi-filamentous mesh or netting commonly used
in sports games have remained plain and devoid of any visual enhancement. There is, therefore, a need for goal nets comprising durable images that can only be seen from one side.

BRIEF DESCRIPTION OF THE DIAGRAMS

[0014] The invention will now be further described using a hockey net as an example and with reference to the following drawings wherein:

[0015] FIG. 1 is a frontal view of a typical hockey net showing the placement of the image or logo on the netting material;

[0016] FIG. 2 is a rear view of a typical hockey net void of any design or color on the netting material;

[0017] FIG. 3 is an aerial view of a typical hockey net showing the placement of the image or logo on the netting material.

SUMMARY OF THE INVENTION

[0018] It is therefore an object of the present invention to provide a multi-filamentous net or mesh exhibiting an image or logo visible only from one side of the mesh or netting.

[0019] In a further embodiment of the present invention, the multi-filamentous net or mesh comprising of an image or logo visible on only one side, includes but is not limited to, such nets or mesh used in the sports of hockey, soccer, water-polo, lacrosse, football, golf and baseball.

[0020] In yet a further embodiment, the netting can have one image on one side of one section and another image on one side of a different section.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] Because multi-filamentous mesh or netting are often the key area of focus in numerous sporting events and the fact that the net or mesh is often captured in the background of photographs and on television, the application of a logo on one side of the mesh or net will result in powerful public exposure for advertisers.

[0022] The term “net” means a fabric made from string, cord, etc. loosely knotted or woven in an openwork pattern. The term “mesh” means a fabric of thread, cord, wire, etc. knitted, knotted, or woven in an open texture with holes. In both cases, the mesh or net can be made from natural or synthetic materials with variations in the size of openings and in the diameter of the thread, cord, wire, etc. used for the mesh or net.

[0023] The term “goal net” means a net of various constructions having a frame supporting a mesh or netting made of multi-filamentous twine used in numerous sports games where the aim is to have a player shoot or kick an object (e.g. puck or a ball, frisbee, or the like) into the net. The netting or mesh used for goal nets are commonly knotted to provide the proper alignment of openings.

[0024] High tensile strength net structures often used in commercial applications are produced from either wire, synthetic or vegetable fibres. Several non-limiting examples of synthetic materials used for this purpose include nylon, and polypropylene yarn. Vegetable yarns include cotton, hemp, or other suitable materials.

[0025] There are numerous examples of goal nets made of multi-filamentous mesh or netting being used in sports games. Some common examples include goal-nets used in the various forms of hockey, the game of water-polo, soccer, lacrosse and the like.

[0026] Given the importance of goal nets in many sports, it is common to have them closely inspected by the governing sports bodies. The netting material used for the nets is typically hand-knotted aid then hand-fitted onto the proper goal posts soon before each game in professional leagues. The alignment of the knots along with the tension of the netting is verified by officials in keeping with sporting regulations. Nets may be rejected due to numerous reasons, many of which are related to the quality of the netting material itself.

[0027] To make the multi-filamentous nets or mesh of this invention, one must apply a new paint composition to one side of the net or mesh in a specific manner.

[0028] The invention comprises: a pigment formulation of which two basic examples are provided; a paint composition and an ink composition. The defining characteristics of the pigment formulation are such that the formulation must demonstrate such fluidity characteristics to enable it to soak into the net fibres sufficiently that it will not chip, peel or wear away due to physical impact or weathering during the game. It must not soak into the fibres so much that it bleeds to the other side of the net fibre. The formulation must not damage the net fibres or cause a distortion of the net geometry. The formulation must result in a clear crisp image that is observable on one side of the net and not on the other side of the net.

[0029] This invention also contemplates that a mixture of automotive paint with other paints can fall within the scope of its boundaries, should such mixture demonstrate the qualifying characteristics enumerated herein. Likewise a mixture of paint and ink can also fall within the scope of this invention if it demonstrates the qualifying characteristics enumerated herein.

[0030] This invention also contemplates a method of application for the formulation which takes into account two viewpoints of the net. The primary viewpoint is one in which a clear, crisp image can be observed on the net. This will usually correspond to the viewing position of the judging officials.

[0031] The final characteristics of the net employing the formulation and method of this invention are such that a clear, durable image (viewable from the primary perspective) will be formed on the net, without distortion or damage to the net matrix (geometry) wherein such image will withstand the “wear and tear” of the game and will not be observable from a secondary position that is generally, approximately 180° from the primary viewing angle.

[0032] The Paint Composition

[0033] Paint typically comprises of three basic components: pigments, binders or resins, and solvents, as well as a few additives to correct any possible defects in the paint. Automotive paints differ from general household paint in its
requirement to provide excellent corrosion resistance for the coated metal surface while providing the desired gloss and brightness for automobiles.

[0034] For this present invention, a paint composition is disclosed comprising of any automotive (either enamel or lacquer) basecoat or colour coat (i.e. pigmented polymer layer) normally used prior to a clear coat during automotive refinishing in a suitable and effective ratio of basecoat to proper diluent and water by volume. The basecoat material comprises any suitable film forming material conventionally used in this art including acrylics, alkyds, polyurethanes, polyesters and aminoplast resins. In addition to the pigments, commercial basecoats may also contain metallic or mica particles. Well known and useful automobile basecoats include products from DuPont, BASF, Glasurit, R-M, House of Kolor, Alchel, Berger Paints, Spies Hecker, Martin Senour as well as other paint manufacturers.

[0035] In addition to the pigment colour of the basecoat, further pigments may be added to the present invention. As a pigment colour, any of the inorganic or organic high-weather-resistant pigments which are commonly used in automotive basecoats can be successfully employed. Useful examples include inorganic pigments such as rutile type titanium dioxide, carbon black, etc. and such organic pigments as quinacridone pigments, (e.g. quinacridone red, etc.), azo pigments, (e.g. pigment red etc.), and phthalocyanine pigments, (e.g. phthalocyanine blue, phthalocyanine green etc.).

[0036] The diluent can be any appropriate paint solvent that is compatible with the basecoat to give a proper drying time. The chemical makeup of various diluent, although similar in design and purpose, varies according to the type of pigments and binders used in the particular paint products. As a common practice, thinners are designed to work with lacquer-based products, while reducers are used for enamel and urethane-based products. Equivalent products currently available on the market are easily obtained through automotive paint companies. When using the present paint composition on netting or mesh, the composition may approximately be composed of an effective % by volume of a diluent.

[0037] In a preferred embodiment we used two commercially available products, Chromabase®8, an automobile refinishing coating, and Basemaker® 7185S, a slow acting diluent. Both products are readily available from DuPont Company.

[0038] The Ink Composition

[0039] The variety of printing ink is numerous and can be classified by various means. Examples of recognized classifications include composition and texture, application and use, and drying manner. Generally, inks are composed of colouring, a binder or vehicle, and drying agents. For the present invention, a dye-based ink composition is disclosed comprising any type of printing ink in an effective ratio of ink to proper diluent and water by volume. Non-liming examples of possible inks for the present invention include fluorescent, Pantone base, Half-tone process or regular colours.

[0040] The diluent can be any appropriate solvent that is compatible with the ink mixture to give a proper drying time. Equivalent products currently available on the market are easily obtained through ink manufacturers. When using the present ink composition on synthetic fabric the volume of the diluent may vary according to several factors including the level of humidity, the ambient temperature and the thickness of the applied coating. It is desirable for the ink mixture to have a curing time of approximately 30 minutes.

[0041] One preferred embodiment uses two commercially available products: HOMASCO®, a multi-usage ink; and HOMASCO® Regular Solvent, a medium acting diluent. Both products are commercially available from suppliers of printing inks.

[0042] The Method of Application

[0043] The paint and ink compositions may be applied to a number of net or mesh-like surfaces. The preferred method of application for both compositions is by the free-hand application of the colouring medium to the mesh, or netting material. Examples of manual application methods include the use of a paint roller, sponges, brushes and other means well known to those in the art of paint application.

[0044] The outline of the image may be imposed onto the mesh, net or fence surface in one of two fashions. The first is by way of a prepared stencil, which is affixed onto the mesh or netting in the correct position before applying the paint or ink by the appropriate method. A second method is by projecting the image to be created onto the mesh or netting with a projector and manually tracing an outline with a felt-tipped marker, paint brush, ink applicator or other applicators that are well known to those skilled in the art. In both cases, only the area to be painted is exposed while the remaining area is covered.

[0045] Following the preparation of an outline to be filled in, the paint or ink composition is applied while the netting is attached to the goal posts in a vertical position. The method of the present invention is conducted with a paint roller having a dense sponge applicator of various sizes, or with other appropriate applicators known to those skilled in the art. After the sponge applicator is properly saturated with the colouring mixture, any excess paint is removed from the applicator before the colour is applied to the mesh or netting. To ensure sharp clear images, the colouring mixture is applied in a quick fashion to prevent any paint from dripping onto the sides of the twine. The colouring mixture is allowed to dry for a minimum of five minutes following each application to ensure proper absorption into the mesh or net surface. A minimum of two coats of the colouring mixture is used to create an image on the mesh or netting.

[0046] The final impact of the applied image is verified by inspecting the final product from the known angle of the television cameras in the proper sporting venue. Additional paint or ink may be required where the knots of the netting material affected the application of the colouring medium.

[0047] Positioning of the Image on the Goal Net

[0048] The optimal positions for the images are determined by analysing the views from the standard positions or the television cameras in order to achieve the truest depiction or the image as seen on television. In situations where the event is not televised the most effective position for the images will be chosen by determining the common positions of photographers and how the image is conveyed overall to the viewing spectators. Given the unique nature of the net as
an advertising medium, the spectators' perception of the image will change with the net's movements.

[0049] To further assist in understanding the present invention, the following non-limiting examples of the use of the coloured means on multi-filamentous mesh or twine is provided. These examples, of course, should not be construed as specifically limiting the present invention. Variations presently known or later develop, which would be within the purview of one skilled in the art, are considered to fall within the scope of the present invention as described herein.

[0050] Examples

[0051] The present invention may be beneficial in numerous applications. In the case of hockey, it is essential that any images applied to the goal net do not diffuse through the twine. Contrary to other sports, hockey regulations stipulate that the back of a hockey net must remain white to ensure a goal judge's full visibility of the puck inside the net. In light of this, the present invention will not inhibit the goal judge's view while providing effective media exposure for the advertiser. Furthermore, given the full visibility of the net during a televised game, it will also be possible to apply images on top of the hockey nets using the present invention.

[0052] In accordance with its principal aspects, one example embodiment of the present invention is a hockey net having an image or logo applied onto the inside of the net (see FIG. 1) or on top of the net (see FIG. 3). The image or logo is not visible when viewed from the rear of the net or from the side when the mesh or netting is moving (see FIG. 2).

[0053] A second example of the present invention is a soccer net having an image or logo on the inside of the net that is only visible from the front of the net. The image or logo is not visible when viewed from the rear or from the side of the net.

[0054] A third example is a water-polo net having an image or logo on the inside of the net that is only visible when viewed from the front of the net and not from the back or the side of the net.

[0055] A further example is to have an image on the multi-filamentous mesh used in football, and baseball games without blocking the spectators view.

[0056] A further example of the present invention is a goal net used in the game of lacrosse. Images or logos are applied to the inside of the net that are only visible when viewed from the front and not from the back or from the side of the net.

[0057] A further example is to demonstrate its durability, the image or logo applied onto a hockey net using the present invention was subject to high impact forces normally associated with the game of hockey. The test consisted of subjecting the coloured areas to the force of numerous pucks shot at high speeds. Despite the numerous forceful impacts of the pucks, the colours or the painted image remained intact and vibrant. There was also no apparent detrimental effect on the strength of the twine due to the colouring mixture. These test results clearly show that the present invention is superior to any commercial product currently available on the market when used on multi-filamentous mesh or nets.

[0058] Changes and modifications to the described embodiments and examples may be made without departing from the scope or spirit of the present invention. The scope of the invention is intended to be limited solely by the scope of the appended claims.

[0059] It will be understood that the foregoing descriptions describes only a few of the specific embodiments, which are illustrative of the present invention. The disclosed embodiments may be expanded upon according to the various sports requiring the use of a goal net.

I claim:

1. A multi-filamentous net or mesh comprising of an image or logo visible on only one side.

2. A multi-filamentous net or mesh comprising of one image on one section and one or more images on one or more different sections.

3. A multi-filamentous net or mesh as described in claims 1 or 2, wherein the net is selected from the list comprising an ice hockey net, a field hockey net, a floor hockey net, a soccer net, a water-polo net, volleyball net, badminton net, tennis net and a lacrosse net.

4. A multi-filamentous net or mesh as described in claims 1 or 2, wherein the mesh is used in the list comprising of golf, football, baseball games, car racing, track, cycling, and skiing.

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