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(54) **Self-rolling banner**

Selbstaufwickelnde Fahne

Drapeau auto-enroulant

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US-A- 4 848 437 **US-A- 5 097 611**
US-A- 5 966 854 **US-A- 6 004 415**

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EP 1 139 320 B1

Description

[0001] The present invention relates to a self-rolling banner. More specifically, the present invention relates to a self-rolling banner for sporting events, political events and advertising, provided with multicolor graphic material printed thereon.

[0002] Self-rolling material, comprising an elongated sheet capable of alternating between a relaxed and a tension state and of independently assuming a rolled-up configuration in said relaxed state and processes for the production thereof are known and described in the prior art, including in the present inventor's earlier U.S. Patents 4,848,437 and 5,176,774, the relevant teachings of which are incorporated herein by reference.

[0003] In said patents there were described multi-layer plastic sheets primarily designed for use as sunblinds for motor vehicles.

[0004] In Figures 4 and 5 of both of said patents there is illustrated the attachment of such a sheet to a single handle or to a pair of handles, however it was found that attachment of such a self-rolling sheet to a rigid handle resulted in the sheet tightening around an element of said handle or handles and eventually tearing and therefore the commercial embodiment of said invention was the one illustrated in Figure 2, wherein the rolling was not effected around ends of said sheet and instead wherein two sheets were joined by welding one edge of a first sheet to an aligned edge of a second sheet in an arrangement whereby due to the internal tension of each sheet they would concentrically roll around each other with their joined edges serving substantially as the axis around which said sunblind rolled up in its relaxed state.

[0005] It has now been realized that self-rolling material such as that described in said patents is ideally suited for use in the preparation of a self-rolling banner which can be kept in compact, rolled-up state for transportation, and unrolled for sporting events, political events and advertising, however the preferred arrangement of said patents was not suitable for such banners, since a continuous non-interrupted advertising surface is preferable for such banners.

[0006] After further research and development it was found to be possible to create a self-rolling banner which indeed would assume a rolled-up configuration around one of both of its ends when said ends are attached to a handle and which could be opened and closed a multiplicity of times without fouling or tearing.

[0007] Thus according to the present invention there is now provided a self-rolling banner comprising the features defined in claim 1.

[0008] In a first preferred embodiment of the present invention said ends of said handle have axially aligned interfacing projections and said axle means is a tubular member sized to concentrically override said interfacing projections and thereby to freely rotate relative thereto.

[0009] In a second preferred embodiment of the

present invention said axle member is a rod-like element and said ends of said handle are provided with apertures for receiving the opposite ends of said rod-like element, whereby said rod-like element is free to rotate within said apertures.

[0010] According to the present invention, said self-rolling banner comprises a second handle and a second axle means to which a second end of said sheet is attached, wherein said second end of said sheet and the sheet material adjacent thereto assumes a rolled-up configuration around said second axle and second axle is freely attached to the ends of said second handle, enabling the free rotation of said second axle relative to said second handle.

[0011] The invention will now be described in connection with certain preferred embodiments with reference to the following illustrative figures so that it may be more fully understood.

[0012] With specific reference now to the figures in detail, it is stressed that the particulars shown are by way of example and for purposes of illustrative discussion of the preferred embodiments of the present invention only and are presented in the cause of providing what is believed to be the most useful and readily understood description of the principles and conceptual aspects of the invention. In this regard, no attempt is made to show structural details of the invention in more detail than is necessary for a fundamental understanding of the invention, the description taken with the drawings making apparent to those skilled in the art how the several forms of the invention may be embodied in practice.

[0013] In the drawings:

FIG. 1a is a perspective view of a preferred embodiment of the banner according to the invention;
FIG. 1b is a detail view of the same embodiment;
FIG. 2 is a partially sectioned elevational view of an embodiment wherein a tubular member serves as an axle;
FIG. 3 is a sectional detail view of a further form of axle;
FIG. 4 is a perspective view of the invention with two handles;
FIG. 5 is a perspective view of an embodiment suitable for use at a political event; and
FIG. 6 is a perspective view of three layers of film for assembly into sheet material having self-rolling properties.

[0014] There is seen in FIGS. 1a and 1b a self-rolling banner 10. Display material 12, seen in FIG 2, is printed, painted or drawn on an elongated sheet 14 of self-rolling material having two ends 16, 18 and two side edges 20, 22. Preferably the sheet 14 comprises at least one layer of a polyester material with printed matter such as display material 12 thereon.

[0015] In a further embodiment the sheet 14 compris-

es at least one layer of a polypropylene material with printed matter thereon.

[0016] Yet further possible ways of manufacturing the sheet have been detailed in US Patents 4,848,437 and 5,176,774.

[0017] A handle 28 has ends 30, one of which is seen in FIG. 1b, bracketing the side edges 20, 22 of sheet 14 adjacent to one of the sheet ends 16. The sheet 14 material is capable of alternating between a relaxed, rolled-up state, as seen in FIG. 1a at the left side, and a tensioned extended state, as seen on the right side of the figure. The sheet 14 can independently assume its rolled-up configuration in its relaxed state around an end of the sheet 16.

[0018] The end 16 is attached to an axle 32 around which the sheet 14 assumes its rolled-up configuration, when released.

The axle 32 is revolvably mounted to the ends 30 of the handle 28, enabling free rotation therearound. In the present embodiment the axle 32 has a bore 34 at each extremity allowing the ends 30 to enter therein.

[0019] In the present embodiment the handle 28 is made of bent metal wire. In operation the handle 28 is gripped in one hand and the sheet end 18 in the other hand. For convenience of gripping, the free end 18 of the sheet 14 is shown as an edge 36.

[0020] With regard to the rest of the figures, similar reference numerals have been used to identify similar parts.

[0021] Referring now to FIG. 2, there is seen an embodiment of a self-rolling banner 38 wherein the ends 40 of the handle 42 have axially-aligned interfacing projections 44 and the axle 46 is a tubular member sized to concentrically override interfacing projections 44 and thereby to freely rotate relative thereto. In the present embodiment the handle 42 is made of a plastic molding.

[0022] The slogan 12 can be used at airports, railway stations or wherever a traveler or guest arrives.

[0023] FIG. 3 illustrates an enlarged detail of a further embodiment of a self-rolling banner 48. The axle 50 is a rod-like element and the ends 52 of the handle 54 are provided with apertures 56 for receiving the opposite ends 58 of the axle 50. The axle 50 is free to rotate within the apertures 56, and is shown provided with optional bearing shoulders 60.

[0024] Seen in FIG. 4 is an embodiment of a self-rolling banner 62 further comprising a second handle 64 and a second axle 66.

[0025] A second end of the sheet 18, seen in FIG. 1a, is attached to the second axle 66. When released the second end of the sheet 18 and the sheet material 68 adjacent thereto assumes a rolled-up configuration around the second axle 66.

[0026] Similarly to the first axle 32, seen in FIG. 1a, the second axle 66 is freely attached to the ends of the second handle 64, enabling free rotation of the second axle 66 relative to the second handle 64.

[0027] Referring now to FIG. 5, the self-rolling banner

72 can suitably be configured for use at sporting events, and with multicolor graphic matter printed thereon. The printed matter can include slogans to encourage the local team, e.g. "Ten-goal Rangers, You're the Champs!"

[0028] For political events slogans 74 such as the one shown in the figure or "Vote NO! to proposition 123" could be used.

[0029] Used for advertising, sales of any product or service can be promoted.

[0030] The user can achieve an eye-catching effect by fast opening and closing the banner 72 several times.

[0031] In FIG. 6 there is depicted a detail of a further embodiment of the self-rolling banner sheet 76. The sheet material comprises multi-layers having at least one plastic sheet 78 joined to one or more further layers 80, 82 at states of different relative stretch.

[0032] Advantageously at least one of the sheets 78 is a thermoplastic film which is interconnected by heat-sealing while being stretched relative to the other layer or layers.

[0033] It will be evident to those skilled in the art that the invention is not limited to the details of the foregoing illustrative embodiments and that the present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

Claims

1. A self-rolling banner (10) for two handed vertical and horizontal display comprising an elongated sheet (14) of self-rolling material having two ends (16,18) and two side edges (20,22) and at least one handle (28) having ends bracketing the side edges of said sheet adjacent one of said ends, wherein said material is capable of alternating between a relaxed and tensioned state and of independently assuming a rolled-up configuration in said relaxed state around at least one end of said sheet, said end being attached to an axle means (32) around which said sheet assumes its rolled-up configuration, **characterized in that** said axle (32) is freely attached to said ends (30) of said handle (28), enabling the free rotation of said axle relative thereto, and **in that** said banner further comprises a second handle (64) and a second axle means (66) to which a second end of said sheet is attached, wherein said second end of said sheet and the sheet material adjacent thereto assumes a rolled-up configuration around said second axle and second axle is freely attached to the ends of said second handle, ena-

bling the free rotation of said second axle relative to said second handle.

2. A self-rolling banner according to claim 1, wherein said ends (40) of said handle (42) have axially aligned interfacing projections (44) and said axle means (46) is a tubular member sized to concentrically override said interfacing projections (44) and thereby to freely rotate relative thereto. 5
3. A self-rolling banner according to claim 1, wherein said axle member (50) is a rod-like element and said ends (52) of said handle (54) are provided with apertures (56) for receiving the opposite ends (58) of said rod-like element, whereby said rod-like element is free to rotate within said apertures. 10
4. A self-rolling banner according to claim 1, wherein said sheet (14) comprises at least one layer of a polyester material with printed material (12) thereon. 15
5. A self-rolling banner according to claim 1, wherein said sheet (14) comprises at least one layer of a polypropylene material with printed material (12) thereon. 20
6. A self-rolling banner according to claim 1, for sporting events, political events and advertising, provided with multicolor graphic material printed thereon. 25
7. A self-rolling banner according to claim 1, wherein said sheet material comprises a multi-layer plastic sheet of at least two layers of material joined to one another at states of different relative stretch. 30

Patentansprüche

1. Selbstaufwickelnde Fahne (10) für eine zweihändige vertikale und horizontale Entfaltung, die eine längliche Bahn (14) des selbstaufwickelnden Materials mit zwei Enden (16, 18) und zwei Seitenrändern (20, 22) und mindestens einem Griff (28) mit zwei Enden aufweist, die die Seitenränder der Bahn benachbart einem der Enden festklemmt, wobei das Material zwischen einem entspannten und gespannten Zustand wechseln kann und unabhängig eine eingerollte Konfiguration im entspannten Zustand um mindestens ein Ende der Bahn annehmen kann, wobei das Ende an einer Achseinrichtung (32) befestigt ist, um die die Bahn ihre eingerollte Konfiguration annimmt, **dadurch gekennzeichnet, daß** die Achse (32) frei an den Enden (30) des Griffes (28) befestigt ist, wodurch die ungehinderte Drehung der Achse relativ dazu ermöglicht wird, und daß die Fahne außerdem einen zweiten Griff (64) und eine zweite Achseinrichtung (66) aufweist, an 40

der ein zweites Ende der Bahn befestigt ist, wobei das zweite Ende der Bahn und das Bahnmaterial benachbart dazu eine eingerollte Konfiguration um die zweite Achse annimmt und die zweite Achse frei an den Enden des zweiten Griffes befestigt ist, wodurch die ungehinderte Drehung der zweiten Achse relativ zum zweiten Griff ermöglicht wird.

2. Selbstaufwickelnde Fahne nach Anspruch 1, bei der die Enden (40) des Griffes (42) axial ausgerichtete Anpassvorsprünge (44) aufweisen und die Achseinrichtung (46) ein zohrförmiges Element ist, das so bemessen ist, daß es konzentrisch über die Anpassvorsprünge (44) hinweggeht und sich **dadurch** ungehindert relativ dazu dreht. 10
3. Selbstaufwickelnde Fahne nach Anspruch 1, bei der das Achselement (50) ein stabartiges Element ist und die Enden (52) des Griffes (54) mit Öffnungen (56) für das Aufnehmen der entgegengesetzten Enden (58) des stabartigen Elementes versehen sind, wodurch sich das stabartige Element ungehindert innerhalb der Öffnungen drehen kann. 15
4. Selbstaufwickelnde Fahne nach Anspruch 1, bei der die Bahn (14) mindestens eine Schicht eines Polyestermaterials mit einem Aufdruck (12) darauf aufweist. 20
5. Selbstaufwickelnde Fahne nach Anspruch 1, bei der die Bahn (14) mindestens eine Schicht eines Polypropylenmaterials mit einem Aufdruck (12) darauf aufweist. 25
6. Selbstaufwickelnde Fahne nach Anspruch 1 für Sportereignisse, politische Ereignisse und Werbung, die mit einem mehrfarbigen grafischen Aufdruck darauf versehen ist. 30

7. Selbstaufwickelnde Fahne nach Anspruch 1, bei der das Bahnmaterial eine mehrschichtige Kunststoffolie aus mindestens zwei Schichten des Materials aufweist, die miteinander in Zuständen einer unterschiedlichen relativen Dehnung verbunden sind. 35

Revendications

1. Banderole auto-enroulante (10) pour affichage vertical et horizontal à deux poignées, comprenant une feuille allongée (14) d'un matériau auto-enroulant comportant deux extrémités (16, 18) et deux bords latéraux (20, 22), et au moins une poignée (28) comportant des extrémités crochétant les bords latéraux de ladite feuille à proximité d'une desdites extrémités, dans laquelle ledit matériau est capable d'alterner entre un état relâché et un état tendu et 50

d'adopter indépendamment une configuration enroulée dans ledit état relâché autour d'au moins une extrémité de ladite feuille, ladite extrémité étant fixée à un moyen formant axe (32) autour duquel ladite feuille adopte sa configuration enroulée, **caractérisée en ce que** ledit axe (32) est fixé librement auxdites extrémités (30) de ladite poignée (28), permettant la rotation libre dudit axe par rapport à celle-ci, et **en ce que** ladite banderole comprend en outre une deuxième poignée (64) et un deuxième moyen formant axe (66) auquel est fixée une deuxième extrémité de ladite feuille, dans laquelle ladite deuxième extrémité de ladite feuille et le matériau en feuille adjacent à celle-ci adoptent une configuration enroulée autour dudit deuxième axe et le deuxième axe est fixé librement aux extrémités de ladite deuxième poignée, permettant la rotation libre dudit deuxième axe par rapport à ladite deuxième poignée.

2. Banderole auto-enroulante selon la revendication 1, dans laquelle lesdites extrémités (40) de ladite poignée (42) comportent des saillies d'interconnexion alignées axialement (44) et ledit moyen formant axe (46) est un élément tubulaire dimensionné pour chevaucher concentriquement lesdites saillies d'interconnexion (44) et tourner ainsi librement par rapport à celles-ci.
3. Banderole auto-enroulante selon la revendication 1, dans laquelle ledit élément formant axe (50) est un élément en forme de tige et lesdites extrémités (52) de ladite poignée (54) sont munies d'ouvertures (56) pour recevoir les extrémités opposées (58) dudit élément en forme de tige, moyennant quoi ledit élément en forme de tige est libre de tourner à l'intérieur desdites ouvertures.
4. Banderole auto-enroulante selon la revendication 1, dans laquelle ladite feuille (14) comprend au moins une couche d'un matériau à base de polyester sur laquelle est imprimé un matériau (12).
5. Banderole auto-enroulante selon la revendication 1, dans laquelle ladite feuille (14) comprend au moins une couche d'un matériau à base de polypropylène sur laquelle est imprimé un matériau (12).
6. Banderole auto-enroulante selon la revendication 1, pour des manifestations sportives, des manifestations politiques et de la publicité, munie d'un matériau graphique multicolore imprimé sur celle-ci.
7. Banderole auto-enroulante selon la revendication 1, dans laquelle ledit matériau en feuille comprend une feuille plastique multicouches d'au moins deux couches de matériau jointes l'une à l'autre à des états d'étirement relatif différents.

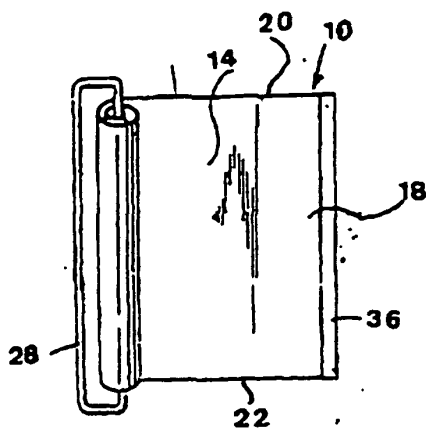


Fig. 1a

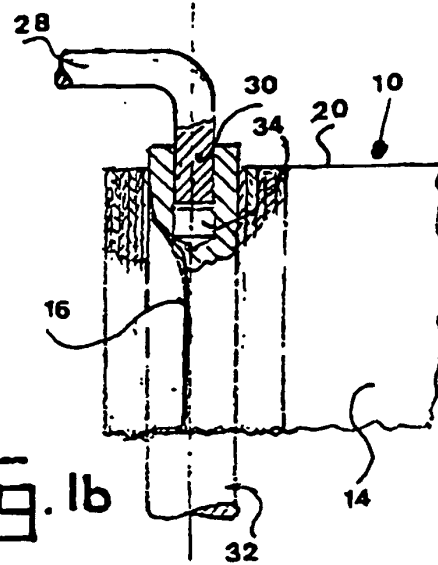


Fig. 1b

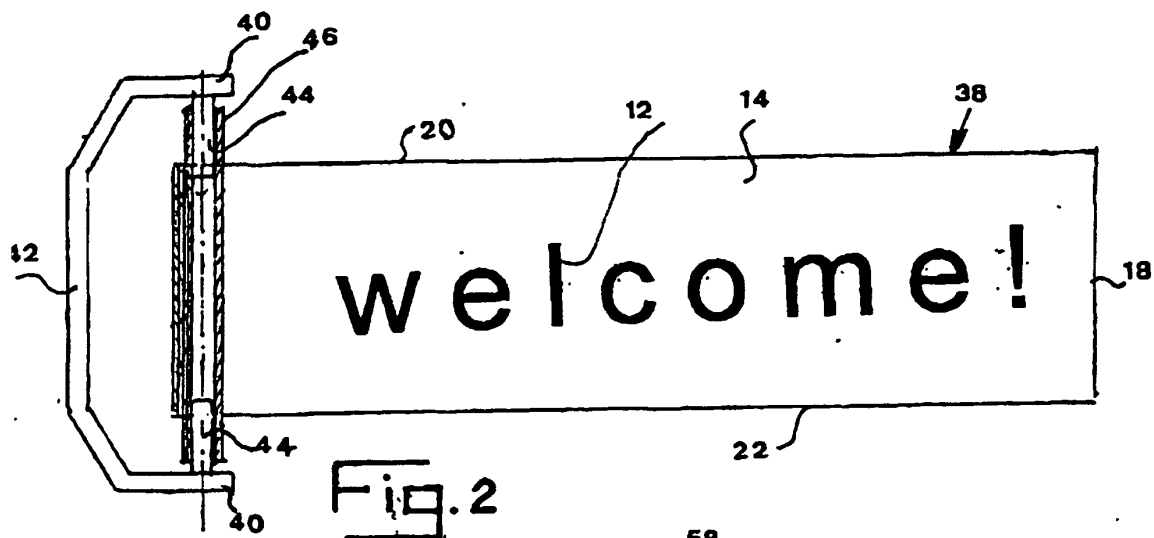


Fig. 2

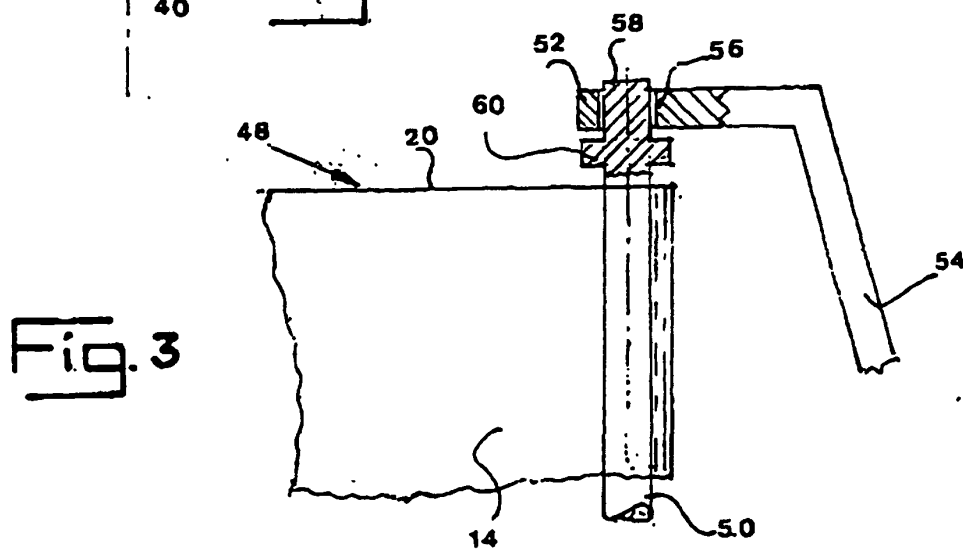


Fig. 3

