

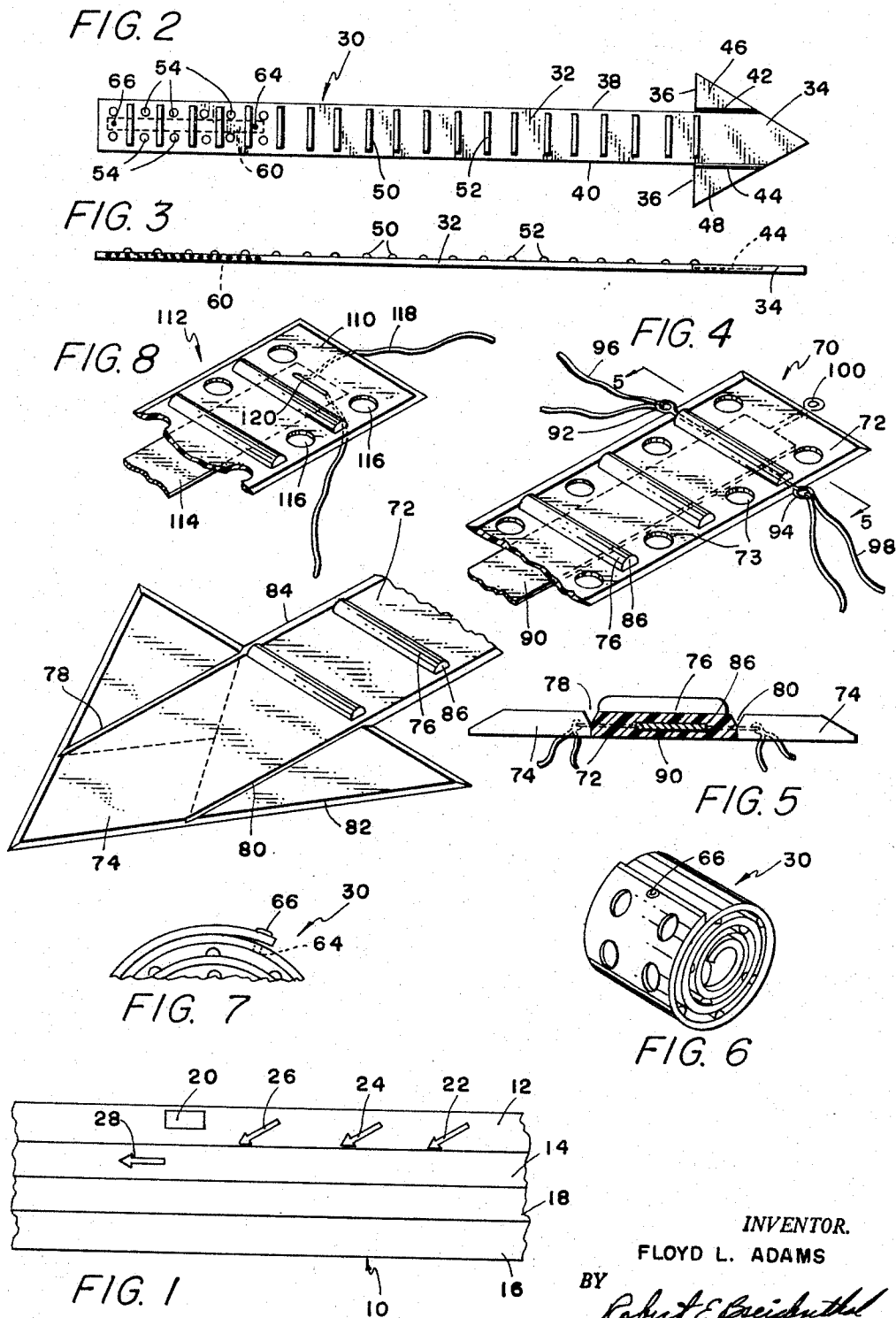
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TRAFFIC DIRECTING MARKER

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TRAFFIC DIRECTING MARKER
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This invention relates to new and useful improvements in traffic direction markers, and more particularly pertains to a marker of such character that is disposed in a flat or extended position to lie flat upon a substantially flat supporting surface such as a roadway or berm without attachment thereto, and which can be rolled into a generally cylindrical configuration or condition for portability and/or storage.

The primary object of the present invention is to provide a traffic directing device or marker of the character rollable into a rolled condition for portability and/or storage, and yet which in unrolled and operative condition is durable and reliable in use and resistant to displacement upon being subjected to vehicular traffic passing thereover or in close proximity to the same.

Another important object of the invention is to provide a traffic directing device or marker of the character specified which can be releasably retained in rolled condition.

Still another object of the invention is to provide a device of the character specified which while being rollable will tend to resist any tendency of wind from passing vehicles to cause the same to fold over upon itself.

Broadly, the traffic directing device of this invention comprises a generally flat body that is elongated and having an arrow-like peripheral configuration, said body being of a flexible material and rollable longitudinally to a substantially compact generally cylindrical condition, and means carried by the body for releasably retaining the device in rolled condition, whereby said device can be compactly stored and transported between uses.

Another aspect of the traffic directing device of this invention comprises a generally flat body of an elongated, arrow-like peripheral configuration adapted to lie flat on a flat surface, said body including an elongated, generally rectangular first portion having first and second end edges and a generally triangular second portion having first, second and third edges, said second portion being integral with the first portion with the first end edge of the latter being joined to an intermediate part of the third edge of the second portion, said first portion of the body being provided with a plurality of spaced, upstanding, and transversely extending ribs integral therewith for reinforcing the first portion of the body against twisting about its longitudinal axis, and said body being flexible and rollable upon itself longitudinally into a rolled generally cylindrical condition for storage and portability.

Yet another aspect of the invention comprises a device such as specified in the preceding paragraph provided with means for releasably retaining the body in rolled condition.

Still another aspect of the invention comprises a device such as specified in the penultimate paragraph wherein the first portion of the body is foldable upon itself along lines constituting extensions of the side edges of the first portion, whereby the lateral extents of the second body can be folded into retracted positions intermediate such lines, the arrangement being such that the second portion with its lateral extents folded thereon can be rolled innermost in the body with the first portion retaining the second portion in folded condition.

Still another aspect of the invention comprises the traffic directing device being provided with a plurality of openings in the first portion of the body whereby wind

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resistance of the same is reduced when the body is partially raised from a supporting surface.

Yet another aspect of the invention involves both portions of the body being integral and made of a flexible resin or elastomer with a resilient metallic strip embedded in the first portion of the body, such resilient metallic strip in repose lying straight and tending to yieldingly resist rolling of the body.

A paramount feature of this invention resides in the rollability of the device and the provision of means for releasably retaining the same in rolled condition.

An important feature of the invention resides in the first portion of the body being provided with spaced upstanding and transversely extending ribs which are preferably spaced apart a distance somewhat less than the width of the first portion of the body, such ribs tending to resist twisting of the first portion of the body about its longitudinal axis.

Another feature of the invention of importance is the provision of a plurality of openings through the first portion of the body whereby wind resistance is lessened, whereby wind will have a reduced tendency to fold or flop the device over when the latter is raised above the supporting surface, it being noted that such wind may be such as due to atmospheric conditions or induced by the nearby passage of a vehicle.

Other objects, aspects and features of the invention will become apparent during the following description of preferred embodiments of the invention taken in conjunction with the accompanying drawings illustrative thereof, wherein:

FIGURE 1 is a top plan view of a portion of a multi-lane highway illustrating use of devices of this invention for directing traffic around an emergency vehicle positioned at an edge of one of the outermost lanes;

FIGURE 2 is a top plan view of a marking device of the present invention, certain hidden internal details thereof being indicated in dashed outline;

FIGURE 3 is a side elevational view of the device shown in FIGURE 2, certain hidden details of construction being shown in dashed outline;

FIGURE 4 is a broken enlarged isometric view of another embodiment of the invention employing a different form of means for retaining the device in rolled condition;

FIGURE 5 is a vertical transverse sectional view taken upon the plane of the section line 5—5 in FIGURE 4;

FIGURE 6 is an isometric view on an enlarged scale of the device shown in FIGURES 2 and 3 in rolled condition;

FIGURE 7 is an enlarged fragmentary side view of the structure shown in FIGURE 6 and showing the snap fastener means retaining the device in rolled condition; and,

FIGURE 8 is a fragmentary perspective view of yet another embodiment of the invention employing still another means for retaining the device in a rolled condition.

Referring now to the drawings, wherein like numerals designate like parts throughout the various views, attention is first directed to FIGURE 1 wherein a highway is designated generally by the reference numeral 10, such highway 10 including an outer westbound lane 12, an inner westbound lane 14, an outer eastbound lane 16, and an inner eastbound lane 18.

The reference numeral 20 designates either an emergency or service vehicle which must of necessity be either dangerously near or actually disposed on the traffic lane 12 so as to necessitate diversion of westbound traffic from lane 12 to lane 14 in order to afford safe clearance of the vehicle 20. Traffic directing devices according to the present invention and designated by the reference numerals 22, 24, 26 and 28 are employed either by them-

selves or in addition to other traffic directing equipment and personnel in order to accomplish the necessary diversion of traffic flow from lane 12 to lane 14. The structural details of the devices 22-28 enabling their effective placement obliquely for a substantial distance upstream of the vehicle 20 in lane 12 as well as in a straight position in lane 14 adjacent the vehicle 20 will be presently explained. It will suffice for the present to observe that placement of the traffic directing devices directly in the roadway virtually assures motorists being apprised of the necessity to changing traffic lanes long before the motorist is in the immediate vicinity of the vehicle 20 as is often the case in the utilization of warning devices having substantial vertical height.

Attention is now directed to the embodiment of the invention shown in FIGURES 2, 3, 6 and 7, this embodiment of the invention being designated generally at 30. The traffic directing device 30 comprises an integral body of elongated form that is substantially flat and of arrow-like peripheral configuration, such body including a first generally rectangular portion 32 joined at one end to a second portion 34 of generally triangular form. The body portions 32 and 34 are made of a flexible resin or elastomer so as to be rollable as will be presently explained. Suitable materials for the body portions 32 and 34 are synthetic resins such as polyethylene, polyvinyl chloride, nylon, polytetrafluoroethylene such as sold under the trademark Teflon, and neoprene. Also suitable is soft natural latex rubber and butyl and other synthetic rubbers having physical properties generally similar to the inner tubes employed in conjunction with pneumatic vehicular tires. Silicone rubber is suitable and the body portions 32 and 34 can be made of such material with a fabric of nylon or the like embedded therein for reinforcement. While considerable latitude can be exercised in choice of material, it is generally preferred that the body portions 32 and 34 be made of synthetic rubber, such as inner tubes, as such material is very tough and durable, can be readily fabricated and is widely available at reasonable prices. Such material is also preferred for the reason that little, if any, difficulty is encountered throughout the temperature range of the environment in which the device is used in either rolling the device for portability and/or storage, or in unrolling the device to lie flat upon a supporting surface.

While the device 30 can be made in any size suitable for a particular user's purposes, it is generally preferred that the body portions 32 and 34 have a thickness of from about 1/8 inch to about 1/2 inch with about 3/16 inch being especially suitable. Ordinarily, the width of the first body portion 32 will be in the range of about 3 inches to 6 inches, though greater or lesser widths can be used if deemed necessary or expedient, and the length of the first body portion 32 is ordinarily within the range of about feet to about 7 feet. The second body portion 34 is preferably proportioned so that the dimension of the edge 36 adjacent the first body portion 32 is about two and one-half times to three times the width selected for the first body portion 32. Of course, lesser dimensions for the edge 36 can be used; however, one optional feature of the invention makes it desirable that such dimension be not greater than three times the width of the first body portion 32 for reasons now to be given.

The device 30 can be made of any color desired, with such choice usually being made on the basis that the device 30 contrast in color with the surface on which it is to be used. For example, white or bright orange or yellow are well suited to use on dark or asphaltic base road or berm surfaces, whereas the device 30 can be darker (say black or a deep red or blue) color when to be used on light colored surfaces such as concrete. If desired, the upper and lower surfaces of the device 30 can be contrasting colors (i.e., bright light color on one side and a deep dark color on the other side) so that in an emergency the device 30 can be inverted to enhance visibility thereof.

Indeed, any color scheme to enhance visibility can be employed, such as coating or painting the device 30 with a reflective material or paint, and this practice can be extended to painting the upper surface in any suitable pattern (diagonal stripes, etc.) with contrasting colors as will be appreciated by those skilled in the art.

The second body portion 34 is foldable upon lines constituting extensions of the side edges 38 and 40 of the first body portion 32, it being preferred in order that such folding can be more easily accomplished that the upper side of the second body portion 34 be provided with V-shaped grooves 42 and 44 along such lines. With such construction, the lateral extents 46 and 48 of the second body portion 34 can be folded upon each other and the intervening extent of the body portion 34 so that the device 30 has a maximum transverse extent of the spacing of the edges 38 and 40. The V-shaped grooves 42 and 44 are of a minimum depth sufficient to facilitate such folding of the lateral extents 46 and 48 so as not to excessively weaken the second body portion 34.

In the interest of reinforcing the first body portion 32 against twisting about its longitudinal axis and also in the interest of enhancing resistance against folding in any direction oblique to the longitudinal dimension of the first body portion 32, the first body portion 32 is provided with a plurality of spaced, upstanding transversely extending ribs such as those indicated at 50 and 52. Preferably, the material of the reinforcing ribs 50 and 52 is the same as that of the first body portion 32 and are integral therewith. The longitudinal extent of the ribs 50 and 52 may be for the entire longitudinal extent of the first body portion 32 as shown, and if desired such series of ribs can be extended on into the second body portion 34. The ribs 50 and 52 need not necessarily extend along the entire length of the first body portion 32, though it is especially preferred that such ribs extend for at least the one-third to one-half of the length of the first body portion 32 that is most remote from the second body portion 34, this being preferred as the extent of the first body portion 32 most remote from the second body portion 34 is most subjected to conditions that would tend to fold the same over about a line oblique to the longitudinal dimension of the first body portion 32.

It has been found in the use of the device 30 such as indicated in FIGURE 1 that the impact of vehicles passing over the device 30 is most likely to raise the end of the device 30 most remote from the second body portion 34, and that when so raised the wind induced by the passing vehicle has a tendency to cause the first body portion to fold over obliquely upon itself. In order to lessen the susceptibility of the second body portion 32 to the effects of wind, the part of the body portion 32 most remote from the portion 34 is provided with a plurality of openings 54 therethrough. It will be apparent that such openings 54 tend to allow air to pass through the body portion 32 when it is raised and thereby lessens the tendency of wind to fold the body portion 32 over upon itself obliquely is greatly lessened.

In order further to reinforce the end of the body portion 32 against folding and also in order to compensate at least in some measure for the strength lost through the provisions of the openings 54, a thin flat strip of resilient metal 60 having a generally rectangular configuration is embedded in the first body portion 32 as shown in dashed outline in FIGURE 2. The resilient metal strip 60 can conveniently be made of spring steel of the character employed in mechanical clock springs. Preferably, the resilient metallic spring 60 is straight when in repose as in the case when the device 30 is in use, and is of a thickness not sufficiently great to prevent rolling the first body portion 32 upon itself, especially when the part of the body portion 32 including the spring 60 is outermost in the roll. It will be noted upon inspection of FIGURE 2 that the spring 60 is centrally disposed of the body portion 32 extending longitudinally therewith, and that the openings

of perforations 54 are disposed in two rows along opposite sides of the spring 60.

As thus far described, it will be apparent that the device 30 can be rolled into a generally cylindrical configuration such that shown in FIGURE 6 by first folding the lateral extents 46 and 48 upon the intervening extent of the second body portion 34 and the device 30 rolled upon itself from the right to the left as seen in FIGURE 2, it being noted that such rolling serves to position the second body portion 34 in the center of the roll and also retains the lateral extents 46 and 48 thereof in folded condition. It will be noted that the spacing and arrangement of the ribs 50 and 52 do not afford any material resistance to such rolling. This is true even through the spacing of the ribs 50 and 52 is preferably less than the width of the first body portion 32, whereby rollability is not substantially effected adversely and yet folding about a line oblique to the longitudinal dimension of the first body portion 32 is optimized.

Means is provided for retaining the device 30 in the rolled condition shown thereof in FIGURES 6 and 7. In this form of the invention to means provided comprises conventional snap fastening means including a female fastening component 64 facing toward the underside of the first body portion 32, and a male component 66 opening through the upper side of the body portion 32. In the preferred construction, the snap fastener components 64 and 66 are secured and anchored to the spring 60, whereby the latter reinforces the snap fastening means and resists their being torn away. The spacing of the fastener components 64 and 66 is approximately that of the circumference of the device 30 when the latter is in rolled condition, and the manner in which such fastening means is secured is clearly shown in FIGURES 6 and 7.

Attention is now directed to another embodiment of the invention employing yet a differing form of fastening means. This embodiment of the invention is designated generally at 70 and comprises a first body portion 72 with openings 73 and a second body portion 74 generally similar to the previously described body portions 32 and 34. As in the case of the previously described embodiment of the invention, the first body portion 72 is provided with transversely extending reinforcing ribs 76 and the second body portion is provided with V-shaped grooves 78 and 80 may be folded to the positions indicated thereof in dashed outline.

FIGURE 4 also shows the peripheral edges of the entire device 70 being beveled as at 82 and 84. Also in order to lessen the impact of vehicular traffic passing over the device 70, the ribs 76 are rounded or smoothed in profile as shown and have their transverse extremities beveled as indicated at 86.

The first body portion 72 is provided with a resilient metallic spring 90 embedded therein generally similar to the previously described spring 60, except for the fact that the spring 90 is provided additionally with integral metallic extensions 92 and 94 that protrude through the opposite side edges of the first body portion 72 and have loops formed at their ends as shown to which tie strings 96 and 98 are secured. Similarly, the spring strip 90 is provided with an additional integral metallic extension 100 that extends through the edge of the first body portion 72 as shown, and the extension 100 also is formed with an opening or eye at its exposed end to which a tie string can be attached. The metallic extensions 92, 94 and 96 can be of the same metal as the spring 90 in which case it is preferred that such portions be heated and air cooled to reduce any tendency to brittleness on the tie strings 96 and 98 being tightened thereon.

The use of the device 70 is the same as that previously described in connection with FIGURES 1 and 2, and the same is rolled in a similar manner, the only difference being that the device 70 is retained in a rolled condition similar to that shown in FIGURE 6 by means of the tie strings 96 and 98. The tie strings 96 and 98 are simply

pulled across the ends of the cylinder defined by the roller device 70 and tied for releasably retaining the same in rolled condition. If desired, a tie string can be employed in conjunction with the metallic extension 100 in which case the tie string wraps around the circumference of the rolled device 70 and is tied.

FIGURE 8 shows yet another embodiment of securing means for detachably retaining a device of the character previously described in a rolled condition. In this figure the reference numeral 110 indicates an end portion of the body of the device 112 corresponding to the previously described first body portion 32, it being noted that a metallic spring 114 is embedded in the body portion 110 and that the latter is provided with openings 116 there-through that correspond generally to the previously described openings 54 shown in FIGURE 2 and the openings shown in the embodiment of the invention in FIGURE 4. In the embodiment of the invention shown in FIGURE 8, a draw string 118 is provided having its intermediate portion 120 disposed upon the body 110 and thence extending downwardly through openings through both the body portion 110 and the spring 114 embedded therein, whereby the free opposite ends of the tie string 118 extend from below the body portion 110. When the device 112 is rolled, it will be noted that the bottom thereof through which the free ends of the tie string 118 extend is exposed so that it is convenient to tie the tie string 118 about the circumference of the rolled device 112.

From the foregoing it will be apparent that each of the embodiments of the device that have been illustrated and described can be easily delivered in a compact condition to a point of use and position in the manner shown in FIGURE 1. The devices are sufficiently compact when in rolled condition that they can be carried by emergency vehicles and traffic control officer to employ as needed. Obviously, as soon as the need for the devices in a particular traffic directing situation ceases, they can be conveniently rolled and secured for storage in an emergency vehicle 20 or the like.

While the devices of this invention may be adequate in themselves in most traffic situations so that other devices or personnel are not necessary, the use of the devices of this invention is quite compatible with conventional traffic directing means, especially those that have substantial height and cannot be placed where traffic may pass thereover.

Inasmuch as the illustrated and described preferred embodiments of the invention are susceptible to numerous variations and changes without departing from the spirit of the invention, and since the invention has been described in elaborate detail in order to impart a full and complete understanding thereof rather than to imply limitation in scope, attention is directed to the appended claims in order to ascertain the actual scope of the invention.

I claim:

1. A traffic directing device comprising a generally flat body of an elongated, arrow-like peripheral configuration adapted to lie flat on a flat surface, said body including an elongated, generally rectangular first portion and a generally triangular second portion at an end of the first portion and integral with the first portion whereby a visual indication of direction can be obtained, said first portion of the body being provided with a plurality of spaced upstanding, transversely extending ribs integral therewith for reinforcing the first portion of the body against twisting about its longitudinal axis, and said body being flexible androllable upon itself longitudinally into a rolled generally cylindrical condition for storage and portability, and means for releasably retaining the body in rolled condition, said means comprising mating snap fasteners secured at longitudinally spaced positions to the first portion thereof, with the spacing thereof being substantially equal to the circumference of the device in rolled condition."

2. A traffic directing device comprising a generally flat body of an elongated, arrow-like peripheral configuration adapted to lie flat on a flat surface, said body including an elongated, generally rectangular first portion having side edges and a generally triangular second portion at an end of and said first portion of the body being provided with a plurality of spaced upstanding, and transversely extending ribs integral therewith for reinforcing the first portion of the body against twisting about its longitudinal axis, said second portion of the body having a transverse dimension greater than the first portion and projecting laterally from the side edges of the first portion, said second portion being foldable upon itself along lines constituting extensions of the side edges of the first portion whereby extents of the second portion extending laterally of the first portion can be folded into retracted positions intermediate such lines, and said body being flexible and rollable upon itself longitudinally with the second portion innermost and folded along said lines into a rolled generally cylindrical condition for storage and portability.

3. A traffic directing device comprising a generally flat body of an elongated, arrow-like peripheral configuration adapted to lie flat on a flat surface, said body including an elongated, generally rectangular first portion and a generally triangular second portion disposed at an end of and integral with the first portion whereby a visual indication of direction may be obtained, said first portion of the body being provided with a plurality of openings therethrough whereby wind resistance of the same is reduced when partially raised from a supporting surface, and said body being flexible and rollable upon itself longitudinally into a rolled generally cylindrical condition for storage and portability.

4. The combination of claim 3, including means for reinforcing the first portion against twisting about its longitudinal axis.

5. The combination of claim 4, wherein said means comprises an elongated normally straight strip of resilient

metal secured to and extending longitudinally of the first portion.

6. The combination of claim 5, wherein said strip is embedded in the first portion, and a tie string connected to the strip at a position therealong remote from the second portion of the body for releasably retaining the body in the rolled condition.

7. The combination of claim 5, wherein said strip is embedded in the first portion, and snap fastening means secured to the strip for releasably retaining the body in the rolled condition.

8. A traffic directing device comprising a generally flat body of an elongated, arrow-like peripheral configuration adapted to lie flat on a flat surface, said body including an elongated, generally rectangular first portion and a generally triangular second portion at an end of and integral with the first portion whereby a visual indication of direction may be obtained, said first portion being provided with a plurality of spaced upstanding, and transversely extending ribs integral therewith for reinforcing the first portion of the body against twisting about its longitudinal axis, said body being flexible and rollable upon itself longitudinally into a rolled generally cylindrical condition for storage and portability, said first portion having a plurality of openings therethrough whereby wind resistance of the same is reduced when partially raised from a supporting surface.

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