Jan. 31, 1956 R. O. HANSON 2,732,823

WARNING FLAG

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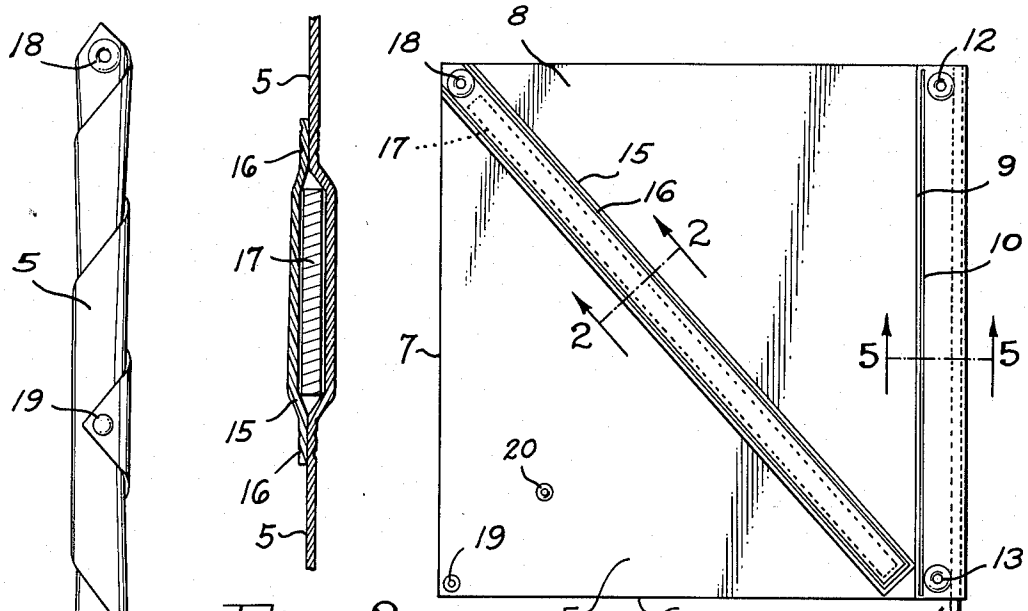


Fig. 1.

Fig. 2.

Fig. 3.

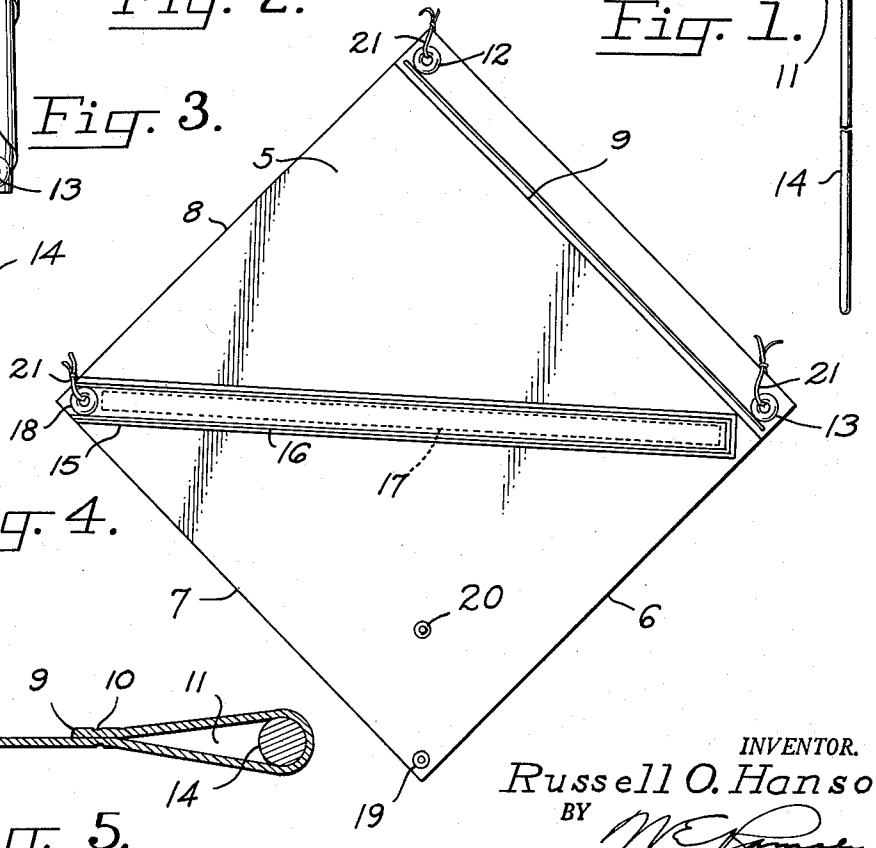


Fig. 4.

Fig. 5.

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WARNING FLAG

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This invention relates to a warning flag, preferably red in color, such as is used to attract attention and to warn of the existence of a danger. Exemplary uses for such a flag include suspension from an overhanging load on a truck as required by some State laws, display adjacent a highway obstruction or other potential danger area frequented by the public, and manipulation to signal as with vehicle traffic control, railroad switching, and demolition, utility and construction crew operations.

The flag of this invention approximates in size and shape and preferably in color the well-known red warning flag which heretofore has been made of cloth. As is apparent, the primary utility of such a warning flag is to attract attention by display or manipulation, to signal and to warn motorists, pedestrians, workers, and others that a danger exists in order that they can avoid the same. I have found, in common with others employing red cloth warning flags, that certain disadvantages are inherent therein and it is one object of my invention to provide a warning flag of improved construction which eliminates these disadvantages.

Considering initially several of the uses to which a warning flag is put, the disadvantages of the prior cloth flag and the advantages of my improved flag will become apparent. For example, substantially all state highway laws require that a truck having an overhanging and protruding load identify and warn other motorists of the presence of such a load by carrying a red warning flag at the terminal end thereof during the daylight hours. The well known cloth flag heretofore employed for this purpose is a red square of cloth having sewn strips or rope laces for tying the same to the load. Safety engineers and truck drivers using this flag are well aware that exposure to the wind when the truck is traveling often abrades, frays, or otherwise wears or entirely tears the flag loose from the load. When wet from rain, the cloth flag will not unfurl and thus fails to serve the attention attracting and warning purposes thereof except minimally. Exposure of the cloth flag to the elements and to the dust generated on a construction job or while passing over the open highway quickly soils the flag or causes the red color thereof to fade whereupon the warning and attention attracting qualities thereof are decreased. When a staff is added to the flag for use in displaying the same adjacent a manhole, rut, working utility crew or other danger area, other disadvantages become apparent. Thus, unless a strong breeze or wind is blowing, a cloth flag will not stand out from a vertical staff for maximum visibility in service of the intended warning function. When wet from rain or coated with mud or dirt, even greater wind velocities are required to unfurl a cloth flag. Additionally, a breeze or wind which varies in direction often will tangle and wrap a cloth flag about the staff again decreasing the warning utility thereof. As will become

apparent, each of these enumerated disadvantages is eliminated or alleviated by my improved construction.

To eliminate the above disadvantages, my invention provides a portable warning flag which is constructed from a flat, flexible sheet of heavy gauge plastic material which is water repellent, smooth surfaced and tough in order to resist wear and promote ease of cleaning. One marginal edge of this flag is lapped in order to bound an open ended, hollow, staff receiving tunnel for the flag. This tunnel receives the staff by which the flag is displayed. Further, at least three of the corners of the body of the flag carry eyed grommets for the reception of ties or strings to attach the flag to a load or as otherwise desired. Diagonally across the body of the flag, I arrange a narrow, elongated strip of the same plastic sheet material in order to bound and to define a diagonal hollow pocket. An elongated flat reinforcing rib is inserted and sealed within this hollow pocket, one of the aforementioned grommets cooperating therewith to retain the reinforcing rib in place. Additionally, a mated pair of snap-fasteners are secured to the body of the flag along one diagonal thereof to provide means for securing the flag in a folded, furled position for storage about the aforementioned reinforcing rib as a core.

The advantages of the above described construction are many and diverse, each being aimed toward the provision of an increased visibility and a better attention attracting quality in service of the intended function of a warning flag. Firstly, such a heavy gauge plastic sheet material flag is water repellent, tear and wear resistant, color fast and easily cleaned with a damp cloth for continued use over a long life in spite of constant exposure to the elements and to abrasion. It further is capable of suspension or display in any of several positions with or without a staff. For storage, it is foldable quickly and readily into a compact bundle and is capable of being secured firmly in a furled position. Additionally, when unfurled, it is capable of being retained in an open, extended position without the aid of a wind or breeze and will not become tangled or wound about the staff should a breeze arise. The last named of these advantages is provided by the flat reinforcing rib which extends diagonally across the face of the flag so that, once unfurled, the rib will reinforce and retain the parts in an extended open position. Maximum visibility is provided during all uses of the flag, in contrast with the heretofore common cloth flag, since suspension and display of the flag from any of diverse positions cooperates with the diagonal reinforcing rib to hold the flag open and unfurled in a position of maximum display area. For example, a cloth flag suspended from one corner only on an overhanging truck load hangs somewhat as would a handkerchief suspended from one corner. By providing grommets in at least three corners of my sheet plastic flag, on the other hand, these three corners can be tied to the load with the reinforcing rib in a horizontal position. The reinforcing rib thus holds the flag extended with the two diagonal corners spaced in a position of maximum visibility.

When displayed from a staff, use is made of the staff receiving tunnel bounded by the left marginal edge of my improved flag. This tunnel is of limited cross sectional area due to the restriction of the area by two eyed grommets secured through the ends of the tunnel. Accordingly, in conjunction and cooperation with the flexible material of which the flag is constructed, a staff inserted in the tunnel is gripped and held tightly so as not to slip or dislodge in the wind. Additionally, by inserting the staff so that the reinforcing rib extends from the lowermost corner of the flag adjacent to the staff to the most distant corner adjacent the top of the staff, an open,

unfurled position is assured for maximum visibility even though no wind or breeze is blowing. That is to say, the diagonal reinforcing rib will hold the flag in an open position even in still air and will prevent tangling or winding about the staff in a breeze.

Other objects, advantages, and capabilities of my invention will be described with reference to the accompanying drawing, wherein:

Fig. 1 is a plan view of the portable warning flag displayed from a staff with the flag itself held in an extended, unfurled position by the diagonal reinforcing rib for maximum visibility;

Fig. 2 is a detail section view, taken substantially on the line 2—2 of Fig. 1, showing the attachment of the narrow elongated strip of plastic sheet material to the body of the flag by heat seals in order to bound a hollow pocket in which the reinforcing rib fits;

Fig. 3 is a perspective view of the flag folded or furled with the snap fasteners retaining the flag in this position for storage;

Fig. 4 is an elevation view, somewhat reduced in size from the other drawings, showing the warning flag with ties or strings through the three eyed grommets at the corners of the body of the flag in order to facilitate display with the reinforcing rib in a horizontal position; and

Fig. 5 is a section view, taken substantially on the line 5—5 of Fig. 1, showing the staff receiving tunnel as it grips a staff inserted therein for the display and support of the flag.

The warning flag illustrated in the drawings preferably is formed from a flat flexible sheet of solid red color heavy gauge polyethylene or vinyl plastic material. Such a material is readily available on the market and has the advantages that it is colorfast, water repellent, smooth-surfaced and tough in order to resist wear and promote ease in cleaning. To clean such a material, it either is immersed in a washing solution or a damp cloth is wiped across the surface thereof. As is apparent, the flat flexible sheet form of this plastic material is utilized because it possesses the appearance of a warning flag when displayed. Thus, while no particular pattern or design is formed on either face of the flag, it is important that the color thereof be red where the flag is to warn of danger, red being the accepted danger warning color throughout the civilized world.

The body of the flag **5**, during fabrication, is made rectangular in shape and thus is bounded by four straight marginal edges numbered **6** to **9** inclusive in the drawings. I here use the term rectangular as generic to the term square. The right-hand marginal edge **9** in Fig. 1 is lapped and secured marginally, as by a heat seal **10**, along a straight line which is inboard of and parallel to the resultant outboard edge of the fabricated flag. As shown in the cross section detail of Fig. 5, this lapping of the marginal edge **9** bounds and defines an open-ended hollow staff receiving tunnel **11**. Additionally, it reinforces the flag at points of maximum stress as is apparent.

After the marginal edge **9** is lapped and heat sealed to the body of the flag during fabrication, a pair of eyed grommets **12** and **13** are added. These grommets are metallic and they pierce and grip the double sheet thickness at points spaced inwardly from the open ends and sides of the tunnel **11** thereby obstructing a preselected portion of the tunnel opening. The eyes in the grommets **12** and **13** serve to receive ties or laces as hereinafter will be described. At the same time, the physical positioning of the grommets in partial obstruction of the staff receiving tunnel **11** cooperates with the flexible nature of the plastic material from which the flag is formed frictionally and flexibly to grip the staff **14** as shown in Fig. 1. In use by vertical display, a metal or wood staff **14** is employed and the dimensions thereof are such

that it precisely and exactly fits the small opening in the tunnel **11** which is bounded by the outboard edges of the grommets **12** and **13** and by the inside of the tunnel **11** (see the dashed outline of the staff in Fig. 1). Thereinafter, when the flag is displayed, it will not come loose from the staff **14** even though substantial wind or other force is exerted upon the flag.

It is apparent that the primary utility of a warning flag is to attract attention or to signal and warn workers, pedestrians, motorists, and others that a danger exists in order that they can avoid the same. To this end, I have provided for a maximum display area and a maximum visibility of my flag by adding thereto a long narrow strip of the aforementioned plastic sheet material. This strip **15** is arranged flatwise across one diagonal of the rectangular body **5** and is sealed to that body marginally of the strip along two longitudinal sides and adjacent one end as by a heat seal **16**. Within the elongated hollow pocket thus defined intermediate the body of the flag **5** and the face of the strip **15**, an elongated flat reinforcing rib **17** is inserted. This rib **17** is stiff to act as a rib, yet it possesses a certain degree of flexibility. Further, it is complementary in shape to the pocket defined by the strip **15** so as to fit snugly therein as shown in Fig. 2. That end of the strip which is not heat sealed to the body of the flag is closed and secured by means of an eyed grommet **18** which pierces the double thickness of the plastic adjacent to that corner of the flag where the margins **7** and **8** meet.

In use, the flat reinforcing rib **17** serves the intended function by retaining the flag in an extended open or display position of the parts for maximum visibility when the flag is unfurled as shown in Figs. 1 and 4. Additionally, this rib defines a core about which the flag can be wound and folded when it is furled for storage in the position of Fig. 3. To this end, a mated pair of snap fastener halves **19** and **20** are secured to the body of the flag **5** at points spaced inwardly from the corner where the marginal edges **6** and **7** intersect. These snaps are arranged on the opposite diagonal of the flag from the diagonal traversed by the reinforcing rib **17**. Accordingly, when the flag is folded and furled into the storage position of Fig. 3, the snap half **20** exactly underlies and mates with the overlying snap half **19**. Securing of these halves **19** and **20** prevents inadvertent unfurling or unfolding of the flag during storage or transportation thereof.

Turning now to Fig. 4, I have shown the warning flag in use without the staff **14**. In this figure, several ties **21** are arranged in the eyes of the respective grommets **12**, **13** and **18**. One or more of these ties are used to secure the flag pendant from an overhanging load on a truck as required by state law and substantially all jurisdictions. When thus displayed, the reinforcing rib **17** lies in a substantially horizontal position across the exposed area of the flag. Since this rib serves to retain an extended and an unfurled position of the flag parts, a maximum visibility and a maximum warning function thus will be served by the flag. Additionally, the tough, wear-resistant nature of the plastic material from which the body of the flag **5** is made will resist fraying, fading, tearing, and other wearing or disfigurement of the flag while the truck is traveling with the flag displayed. Because each of the grommets **12**, **13** and **18** pierces the double thickness of the plastic material, it is much more difficult, if not substantially impossible to tear the grommets loose from the flag during normal usage. Accordingly, the flag will be retained in position for maximum visibility in spite of severe and continued usage and exposure.

When my warning flag is used for vertical display with a staff beside a construction job or in another danger area, the staff **14** is inserted in the flexible tunnel **11** as shown in Fig. 1. With this positioning of the parts effected,

the base of the staff **14** can be inserted in the ground or tied to the railing about a manhole or otherwise positioned or gripped by a workman. In any event, a vertical staffed display of the flag also will result in a maximum visibility thereof since the reinforcing rib **17** will cause the parts to stand out in the position of Fig. 1. That is to say, the reinforcing rib **17** traverses a diagonal of the flag and holds the corner carrying the grommet **18** horizontally out from the corner carrying the grommet **12**. Thus, even though a breeze is not blowing, the flag will serve its intended warning function and will provide a maximum visibility. Still further, as an inspection of Fig. 1 will make apparent, the rib **17** will prevent the flag from becoming wound about or otherwise entangled with the staff when the wind does blow.

In summary, I have provided a heavy gauge plastic sheet material warning flag of increased visibility and better attention attracting quality in service of the intended functions of a warning flag. Additionally, this flag is tear and wear resistant, colorfast, easily cleaned with a damp cloth for continued use over a long life in spite of constant exposure to the elements and to abrasion and is capable of display or suspension in any of several positions with or without a staff. The flag also is readily and quickly foldable into a compact furled position where it can be secured by means of snap fasteners for protection during storage. In the unfurled or open position of display, the flag will remain extended without the aid of a wind or breeze for maximum visibility.

I claim:

1. A portable warning flag, comprising a flat flexible sheet of heavy gauge plastic sheet material having a rectangular body in the pattern, color and shape of a warning flag, one marginal edge of said body being lapped and secured marginally to bound a hollow staff receiving tunnel, a narrow elongated strip of the same type of plastic sheet material arranged flatwise across one diagonal of said rectangular body, said strip being sealed to said body marginally of the strip to bound intermediate said margins an elongated hollow pocket, an elongated flat reinforcing rib means arranged within said elongated hollow pocket to retain an extended open position of the parts for maximum visibility when the flag is unfurled and to define a core about which the flag can be wound and folded when furled, and at least three of the corners of said rectangular body including the two corners adjacent the ends of said reinforcing rib carrying eyed grommet means for the reception of ties jointly with said rib to retain the flag in an open unfurled position of maximum visibility when displayed vertically.

2. A portable warning flag, comprising a flat flexible sheet having four straight marginal edges bounding a rectangular body in the pattern, color and shape of a danger warning flag, one of said marginal edges being lapped and secured marginally along a straight line inboard of and parallel to the resultant marginal edge to bound an open ended hollow staff receiving tunnel for the flag, a grommet means piercing and gripping the double sheet thickness at each end of said one lapped marginal edge at points spaced inwardly from the open ends and the sides of said tunnel thereby obstructing a preselected portion of the tunnel opening frictionally and flexibly to grip a staff, a narrow elongated strip arranged flatwise across one diagonal of said rectangular body, said strip being sealed to said body marginally of the strip along two longitudinal sides, and a grommet means piercing and gripping substantially the full width of the double thickness of that end of said elongated strip and body which are opposite said tunnel.

3. A portable warning flag, comprising a flat flexible sheet of heavy gauge plastic sheet material having four straight marginal edges bounding a rectangular body, said plastic material being smooth surfaced to promote ease of cleaning, one of said marginal edges being lapped and secured marginally by a heat seal along a straight line to bound an open ended hollow staff receiving tunnel for the flag, a narrow elongated strip of the same said plastic sheet material arranged flatwise across one diagonal of said rectangular body, said strip being heat sealed to said body marginally of the strip along two longitudinal sides and that end adjacent said tunnel to define and bound intermediate said margins an elonagted flat reinforcing rib means complementary to and arranged within said elongated hollow pocket to reinforce and retain an extended open position of the parts for maximum visibility when the flag is unfurled and to define a core about which the flag can be wound and folded when furled, and a mated pair of snap fastener means carried by said body for securing the flag in a furled, folded position about said rib as a core.

4. A portable warning flag, comprising a flat flexible sheet of solid color heavy gauge plastic sheet material having four straight marginal edges bounding a rectangular body in the pattern, color and shape of a danger warning flag, said plastic material being water repellent, smooth surfaced and tough to resist wear and promote ease of cleaning, one of said marginal edges being lapped and secured marginally by a heat seal along a straight line inboard of and parallel to the resultant marginal edge to bound an open ended hollow staff receiving tunnel for the flag, an eyed grommet means for the reception of a tie piercing and gripping the double sheet thickness at each end of said one lapped marginal edge thereby obstructing a preselected portion of the tunnel opening frictionally and flexibly to grip a staff, a narrow elongated strip of the same said plastic sheet material arranged flatwise across one diagonal of said rectangular body, said strip being heat sealed to said body marginally of the strip along two longitudinal sides and that end adjacent said tunnel to define and bound intermediate said margins an elongated hollow pocket, an elongated flat flexible reinforcing rib means complementary to and arranged within said elongated hollow pocket to reinforce and retain an extended open position of the parts for maximum visibility when the flag is unfurled and to define a core about which the flag can be wound and folded when furled, an eyed grommet means piercing and gripping substantially the full width of the double thickness of that end of said hollow pocket opposite said tunnel to retain said reinforcing rib within said pocket, and a mated pair of snap fastener means for securing the flag in a furled, folded position about said rib as a core, said snap fastener halves being secured to said body at points spaced inwardly from one corner thereof along that diagonal opposite to said reinforcing rib.

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