Dec. 28, 1965 R. H. SHANK 3,225,475

DISPLAY DEVICES

Filed June 18, 1964

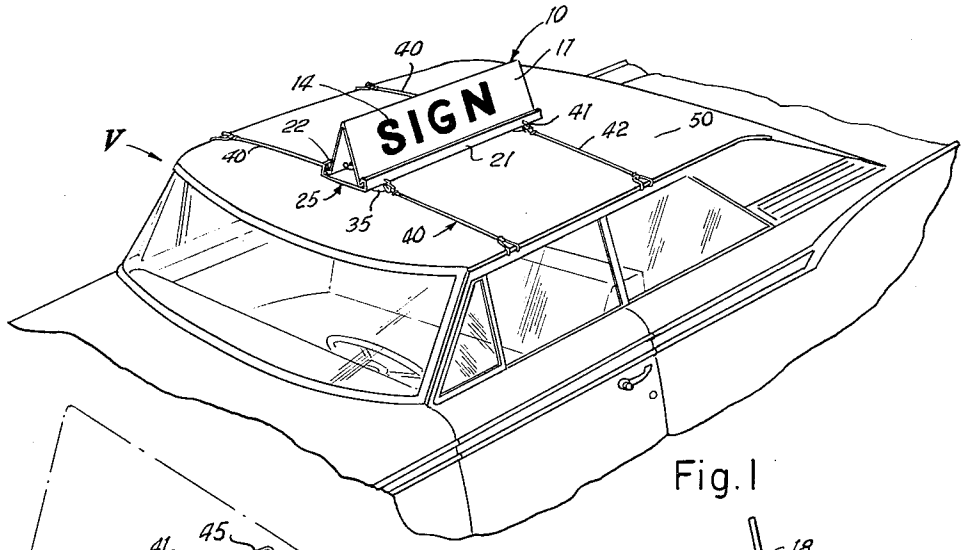

Fig. 1

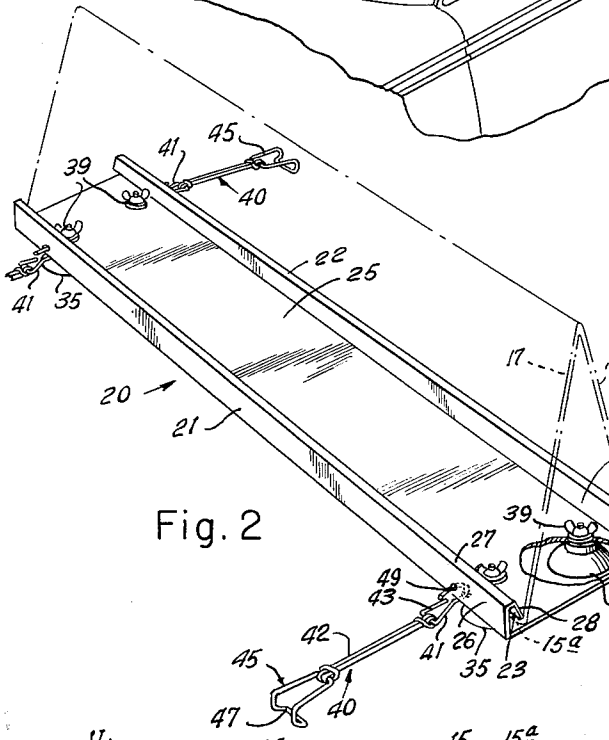

Fig. 2

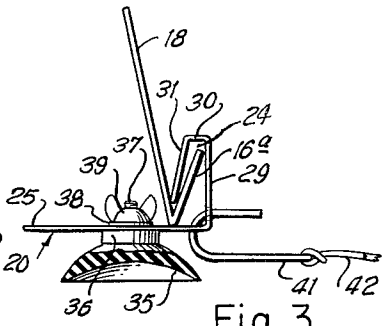

Fig. 3

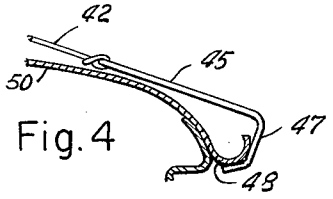

Fig. 4

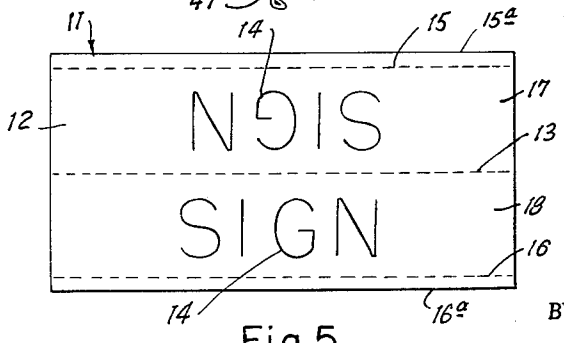

Fig. 5

INVENTOR

Rufus Harold Shank

BY Eastings Ackley and Walter J. Jason

ATTORNEYS

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DISPLAY DEVICES

Rufus Harold Shank, 3114 Cornell Ave., Dallas, Tex.

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This invention relates to new and useful improvements in display devices.

One object of the invention is to provide a new and improved display device which is easily and quickly mountable on a suitable support structure such as a vehicle.

A particular object of the invention is to provide a display device having means for supporting an indicia carrying member in position to be seen from two sides of a vehicle and which is particularly adapted to remain in place on the support during movement of the vehicle.

A further object of the invention is to provide a new and improved display device having a sign of inverted V-shape whereby messages carried on opposite planar sections thereof are prominently displayed, and having a pair of spaced holders for holding the sign along its longitudinal edges.

An important object of the invention is to provide a sign having a base provided with spaced longitudinal extending holder groove means adapted to receive the folded flange portions at the lower edges an inverted V-shaped sign, whereby the sign is tightly held in place in the base and whereby air or wind blast due to movement of the vehicle can not remove the sign from the base.

A further object of the invention is to provide a sign of the character described having an opening extending longitudinally throughout the V-shaped panel of the sign to permit air flow through the sign during movement of the vehicle, to reduce resistance of the sign to air flow and prevent displacement of the sign from the base.

A further object of the invention is to provide a sign base which includes a pair of longitudinally spaced holders each comprising a substantially vertical portion having an inwardly and downwardly extending recess adapted to receive an upwardly extending flange fold at the lower marginal edge of the inverted V-shaped sign.

A further object of the invention is to provide a sign of the character described which is easily set up and installed on the vehicle, which can be easily folded for storing or shipping, which is economical to manufacture and which is suitable for use at high speeds.

Additional objects and advantages of the invention will be readily apparent from the reading of the following description of a device constructed in accordance with the invention, and reference to the accompanying drawings, thereof, wherein:

FIGURE 1 is a fragmentary perspective view showing the display device of the invention mounted on the roof of an automobile;

FIGURE 2 is a perspective view, with some parts broken away, of the display device of FIGURE 1 showing the sign portion in dotted lines;

FIGURE 3 is a fragmentary vertical view of the holder at one side of the base of the display device showing the manner in which the sign panel is received in the holder member;

FIGURE 4 is a fragmentary sectional view of one of the hooks for securing the display device to the roof of the vehicle showing the same securing the sign in place; and,

FIGURE 5 is a planar view of the sign panel prior to bending in inverted shape.

In the drawings, the display device **10** includes a sign panel **11** formed of a rectangular flat blank or panel **12** which is provided with a central longitudinal fold, score

or crease line **13** in its medial portion and extending longitudinally thereof. Indicia **14** may appear on panel sections **17** and **18** on opposite sides of the medial fold line **13**, and the indicia is adapted to be displayed in an upright readily legible position when the sign is erected as shown in FIGURE 1. A pair of lateral flange fold lines **15** and **16** are formed along opposite edges of the panel or blank to define flanges **15***a* and **16***a* and these flanges are adapted to be folded outwardly and upwardly as will be hereinafter more fully explained for securing the sign in place in receptacles or holders **21** and **22** of a support or base member **20**, in a manner which will be hereinafter more fully explained.

The blank or panel **12** may be formed of cardboard, plastic, or other suitable substance which is somewhat resilient and resists bending or folding along the score of fold lines **13**, **15** and **16**, so that when the two sign panel sections **17** and **18** of the sign are defined as the panel is folded along the lines **13** to form the inverted V-shaped structure illustrated in FIGURES 1 and 2, a resilient force is exerted on lower edges of the panel sections and the flanges **15***a* and **16***a* carried thereby tending to move them outwardly and upwardly relative to each other about the axis of the fold line **13**.

The lower edge portions or flanges **15***a* and **16***a* of the sign panel sections are folded outwardly and upwardly as shown in FIGURES 1 and 2, and are received in the longitudinally extending inverted substantially V-shaped recesses **23** and **24** formed in the holders **21** and **22** of the base member **20**. The support or base member is preferably formed of a sheet of metal or similar material having a planar base portion **25** and having the marginal longitudinally extending holder members **21** and **22** formed along the longitudinal edges thereof. The holder **21** is formed by an upturned outer flange portion **26**, an inwardly turned spacer portion **27** and a downwardly and inwardly extending retainer flange portion **28** providing a substantially V-shaped recess **23** between the upstanding flange **26** and the downwardly and inwardly extending retaining flange **28** of the holder. The upwardly and inwardly extending flange **15***a* of the sign panel section **17** is received in the recess **23** as shown in FIGURE 2 and has a tight sliding fit therein.

The holder **22** is formed by an upstanding flange **29**, an inwardly extending spacer portion **30** and a downwardly and inwardly extending retainer flange **31**, which define the substantially inverted V-shaped recess **24** of the holder. The upwardly and outwardly extending flange **16***a* of the sign panel section **18** is received in the recess **24** and is tightly frictionally held therein as shown in FIGURE 3.

From the foregoing, it will be seen that the sign panel **11** is tightly frictionally held in place on the base member **20** by means of the engagement of the flanges **15***a* and **16***a* of the panel in the recesses **23** and **24** of the base member. Since the flanges **15***a* and **16***a* extend the full length of the sign panel, and the recesses in the holder **21** and **22** also extend the full length of the base member, and since the flanges **15** and **16***a* are such a width that they are tightly engaged between the base section of the support or base member and the side walls and bottom of the recesses. Any tendency to lift the sign from engagement with holders of the base member would only tend to turn the flanges **15***a* and **16***a* outwardly and downwardly into tighter frictional engagement with the flanges forming the walls of the recesses and prevent displacement of the sign from the base. Also, the width of the flanges may be such that the flanges will engage the spacer portions **27** and **30** at the upper end of the recesses and tends to further tightly engage the sign in the holders.

The base member **20** is mounted longitudinally of the

roof of the vehicle V with the holders **21** and **22** extending longitudinally of the vehicle parallel to the sides thereof. The base member is provided with a plurality of retaining means or suction cups **35**, one suction cup being preferably provided at each of the four corners of the base member. Each of the cups has an upstanding boss **36** in which the head of a bolt **37** is molded or otherwise secured. The bolts **37** extend upwardly through suitable apertures in the base section **25** of the support or base member **20** and washers **38** and wing nuts **39** are threaded thereon to secure the cups in place on the base member, whereby the cups may engage the upper surface of the top of the car to prevent sliding movement of the base member thereon and to resiliently support the base member on the vehicle.

The base member is retained in place on the vehicle top by means of four substantially identical band or strap assemblies **40** each of which includes a hook member **41** at one end and a resilient cord or band **42** looped through the eye **43** of the hook member **41** and extending outwardly therefrom to a J-shaped catch member **45** at the opposite end of the resilient strap or band. The band or strap **42** is looped through the open eye **46** formed in the inner or upper end of the upright leg of the J-shaped catch member **45**, and the outer portion of the hook catch member **45** is provided with a downwardly and then rearwardly J-shaped hook or catch section **47** which is adapted to engage over the drain or gutter portion **48** of the top **50** of the vehicle V. Since the strap or band **42** is made of resilient material, the sign is tightly resiliently secured in place on top of the vehicle without adjustment of the straps by appropriately choosing the length of the resilient strap **42**. The hooks **41** extend through suitable apertures **49** in the base section and upright flanges of the base member and holder, as clearly shown in FIGURES 2 and 3. If desired, of course suitable webs or straps may be connected to the hooks **41** and the catches **45** and provided with adjusting means for securing the sign in place by tightening of the straps after the hooks **41** have been engaged with the base member and the catches **45** engaged with the gutter or drain of the vehicle top.

To assemble the display device, the sign blank or panel **12** is folded along the central fold line **13** until the lower edges of the two planar sign panel sections **17** and **18** are in substantially parallel side by side abutting relationship. Then the flanges **15***a* and **16***a* are formed by folding the same upwardly and outwardly along the fold lines **15** and **16**, respectively, in the opposite direction to overly the adjacent sign panel sections **17** and **18**. With the sign panel thus folded, the flanges **15***a* and **16***a* are inserted into the open ends of the recesses **23** and **24** of the holders **21** and **22**, respectively, and the sign is moved longitudinally relative to the base member to move the entire length of the flanges **15***a* and **16***a* into the recesses **23** and **24** of the holder members as shown in FIGURES 1 and 2. By suitably guiding the sign panel and the flanges of the panels into the recesses, the sign may be readily assemblied in the holders on the base member. However, once the sign has been moved into position on the base member, the flanges **15***a* and **16***a* frictionally engage the flanges forming the side walls of the recesses **23** and **24** of the holders to prevent ready displacement of the sign from the holders of the base member.

Since the sign extends longitudinally along the line of movement of the vehicle, and since the inverted V-shape of the sign presents only the edge portions of the panels to the air during the travel of the vehicle, even though the vehicle may attain high rates of speed the wind and air resistance of such narrow edge portions of the sign is small and the force of the air acting against this very small area of the sign does not overcome the frictional resistance of the engagement of the flanges **15***a* and **16***a* within the holders **21** and **22**. Any lateral or transverse force applied to either panel **17** or **18** of the sign is, of course, resisted by engagement of the flanges in the recesses and such lateral force tends to tighten the flanges in the recesses as has been explained. Furthermore, any tendency of the sign to lift off the base likewise tends to swing the flanges **15***a* and **16***a* outwardly into tighter gripping engagement with the flanges forming the side walls of the recesses in the holders. Likewise, downward force applied to the sign brings the lower folded portions of the panel **12** along the fold lines **15** and **16** into tighter gripping engagement with the base section **25** and similarly tends to wedge the panel sections **17** and **18** outwardly along the base section and into tighter gripping engagement with the inturned flanges **28** and **31** of the holders.

It will thus be seen that a new and improved display device of extremely simple construction has been provided which is easily and quickly assembled and installed on a support such as the roof of a vehicle, and that the device includes a sign of inverted V-shaped which extends longitudinally of the vehicle and has a pair of laterally spaced and longitudinally extending holders in which are engaged the full length of the lateral flanges at the lower edges of the inverted V-shaped sign to positively hold the sign against displacement from the base member.

It will further be seen that the flanges of the sign are not only held by the hooked relationship of the upwardly and outwardly turned flanges **15***a* and **16***a* in the recesses **23** and **24** of the holders, but that the flanges frictionally engage the side walls of the recesses to prevent longitudinal, lateral or upward displacement of the sign relative to the holders and to the base member.

It will also be seen that the sign is readily securable to the vehicle roof top by means of resilient straps and connecting means **40** whereby the same may be quickly installed or removed from position on the vehicle.

The foregoing description of the invention is explanatory only, and changes in the details of the construction illustrated may be made by those skilled in the art, within the scope of the appended claims, without departing from the spirit of the invention.

What is claimed and desired to be secured by Letters Patent is:

1. A display device including: a sign having a pair of planar panel sections and formed substantially in an inverted V-shape and having retainer sections at the lower longitudinal edges of each of the divergent panel sections in the form of upwardly and outwardly extending flanges; a base member having means for securing it to a vehicle top and having laterally spaced longitudinally extending holder means disposed on the upper surface thereof; said holder means having vertically extending longitudinal recesses formed therein adapted to receive the adjacent upwardly and outwardly extending flange portions of the sign, whereby each of flange portions is hooked in one of the vertical recesses of the holder means for retaining the sign in position on the base member.

2. A display device of the character set forth in claim **8** wherein: the means for securing the base member to a vehicle top includes resilient support means on the under side of the base member adapted to engage the vehicle top to support the base member thereon, and a plurality of laterally extending resilient strap means having hooks and catches at opposite ends thereof, the hooks being engaged with the base member and the catches being adapted to engage the drain mold or gutter of the vehicle top.

3. As a subcombination in a display service, a sign panel formed of an elongate rectangular sheet of material having a central fold line extending longitudinally thereof and dividing the panel into a pair of laterally spaced display panel sections in a substantially inverted V-shape, and a pair of lateral fold lines spaced inwardly from the longitudinal edges of said panel and parallel to

the central fold line defining flange members at the marginal edges of said panel and of said indicia panel sections extending upwardly and outwardly of the lower edge portions of the panel sections and providing securing means for securing the sign panel in a holder.

4. As a subcombination in a display device, a base member including: an elongate base section; longitudinally extending holder means formed along the longitudinal edges of the base section and extending in parallel spaced relationship to each other; said holder means each having an integral upstanding flange connected with said base member and extending upwardly therefrom, a laterally and inwardly extending spacer section and a downwardly and inwardly inclined retainer flange, said upwardly extending flange, spacer section and downwardly and inwardly retainer flange defining a downwardly and inwardly opening longitudinal recess in each of said holder means above the base member adapted to receive a portion of a sign to be supported by said base member, resilient support means on the under side of said base portion adjacent the ends thereof adapted to support the base portion on a supporting surface of a vehicle with the holder means disposed upwardly above the supporting surface, and a plurality of laterally extending resilient securing means affixed at one end to the base member and extending laterally therefrom and having means at the other end adapted to engage said supporting surface for securing the base member in place on said vehicle for supporting a sign thereon.

5. A display device including: a sign having a pair of planar sections joined at their upper edges and extending divergently downwardly and outwardly from such joined upper edges, said planar sections having outwardly and upwardly extending flanges at their lower edges, the flanges at the lower edges of the planar sections extending upwardly and outwardly on opposite sides of the sign; a base member adapted to be secured to a vehicle for displaying the sign and including an elongate base section

having a pair of laterally spaced longitudinally extending holder means formed along longitudinal edges thereof and projecting upwardly above the base section; each of said holder means being formed of an upstanding flange integral at its lower end with the base section and extending upwardly vertically therefrom and connected at its upper end with an inturned spacer section disposed above and substantially parallel to the base section and extending inwardly over the base section from the upstanding lateral flange and having a downwardly and inwardly inclined retaining flange extending downwardly and inwardly from the inner edge of the retainer section and overlying the base section, the lower edge of the retainer flange being spaced from the base section, said flanges and spacer means providing an inverted downwardly and inwardly opening recess in each of said holder means adapted to receive the outwardly and upwardly inclined flange portions of the sign member in close frictional engagement in the recesses.

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EUGENE R. CAPOZIO, *Primary Examiner.*

LAWRENCE CHARLES, *Examiner.*

SHELDON M. BENDER, *Assistant Examiner.*

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,225,475 December 28, 1965

Rufus Harold Shank

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 2, line 59, for "15" read -- 15a --; line 71, for "tends" read -- tend --; column 4, line 60, for the claim reference numeral "8" read -- 1 --; line 69, for "service" read -- device --.

Signed and sealed this 6th day of December 1966.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents