July 1, 1958 G. A. WISWELL 2,841,059

TRAFFIC SAFETY BARS

Filed July 31, 1953 2 Sheets-Sheet 1

Fig. 1.

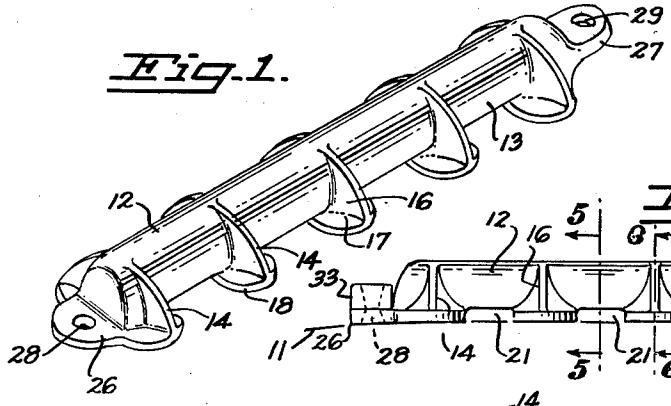



Fig. 2.




Fig. 3.

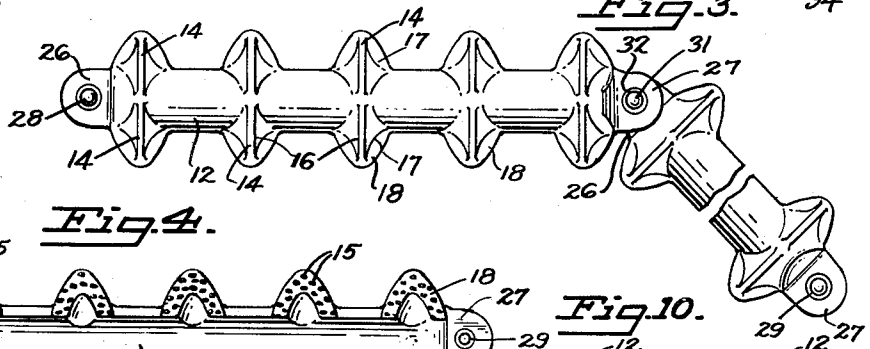



Fig. 4.

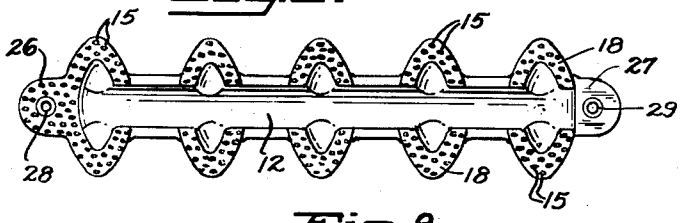



Fig. 10.

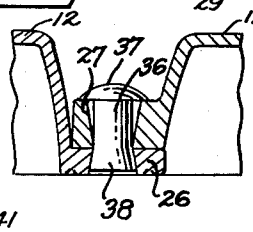



Fig. 9.

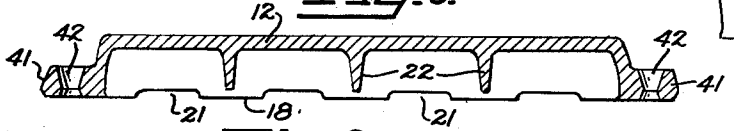



Fig. 8.

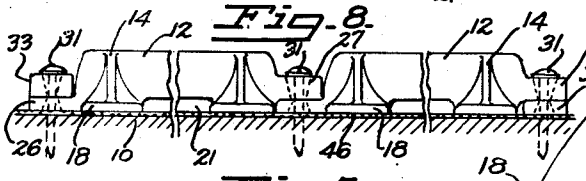



Fig. 5

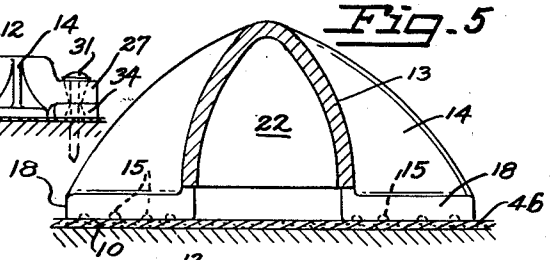



Fig. 7.

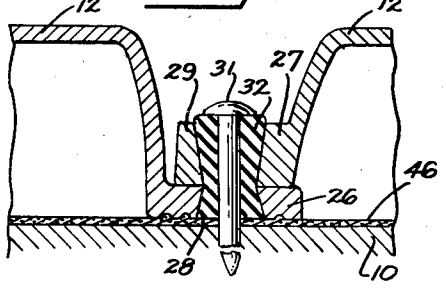
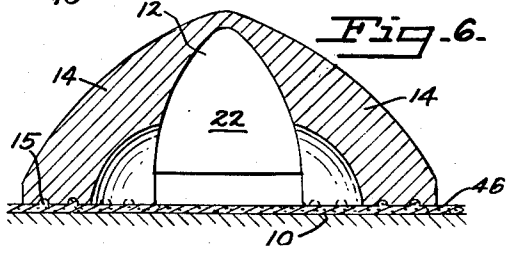



Fig. 6.

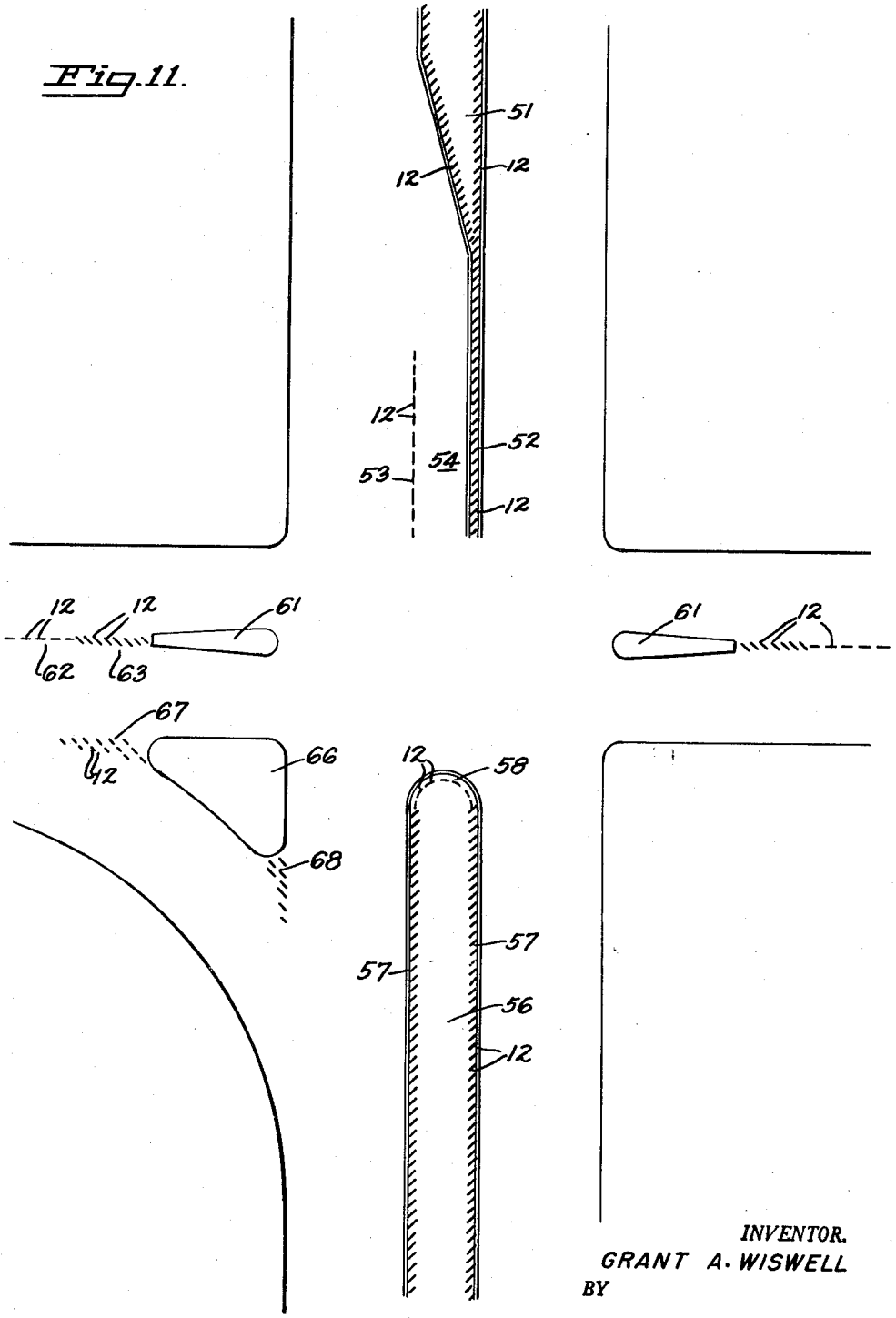


July 1, 1958 G. A. WISWELL 2,841,059

TRAFFIC SAFETY BARS

Filed July 31, 1953 2 Sheets-Sheet 2

Fig. 11.




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2,841,059

# TRAFFIC SAFETY BARS

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Application July 31, 1953, Serial No. 371,449

6 Claims. (Cl. 94—1.5)

This invention relates to new and useful improvements in traffic safety bars.

The present invention relates to a traffic bar which may be installed on the pavement of a roadway to supplement and, in some cases, to supersede the concrete islands, curbs, and other raised roadway areas employed in modern traffic control. The purposes of such areas are to channelize the flow of vehicles, to divide flow of traffic, and to separate lanes of traffic; to provide islands and crosswalks for pedestrians; to protect signs, signals and barriers from collision; to provide emergency or temporary channelization of traffic; to mark and channelize bays for parking lots; and for numerous other purposes.

The present invention relates to a rugged, economical, highly visible and safe traffic bar which may be attached to the pavement by means of spikes or pins and also by an adhesive with its principal axis parallel to the direction of flow of traffic. The bars are arranged to be linked together in continuous chain fashion or used individually, depending upon the requirements of the particular installation. The surfaces of the bar are such as to reflect light from the headlights of an approaching vehicle to warn the vehicle operator of approaching danger. For such purpose the instant device may be painted with a reflex reflective substance which will condense and reflect the light of the oncoming headlights back to the source.

One of the most important advantages of the instant invention is the fact that the central body and laterally extending fins of the device present a jagged appearance, which gives the driver of the vehicle approaching it the impression that serious damage will result if the tires contact the traffic bar; whereas actually, the construction of the traffic bar is such that it will not injure the tires.

Another advantage of the present invention is the fact that the fins, which give the impression of potential damage to the tires, actually increase the safety factor of the traffic bar. In conventional traffic bars, one of the inherent hazards is the fact that vehicles may carom or skid off and collide with traffic in adjacent lanes. Another disadvantage of existing traffic bars is the fact that once the wheel of the vehicle has passed over the bar it is difficult for the driver to restore the wheel to the proper side. Thus conventional traffic bars may increase rather than prevent accidents. The raised central body portion of the bar and transverse ribs or fins facilitate the crossing by vehicle tires at any angle, with a noticeable and disagreeable jarring but not with a deflection of the steering wheel.

Another object and advantage of the invention is the fact that the traffic bars may be made to interlock with adjacent traffic bars so that the bars may be joined together to form a continuous pattern or chain. For such purpose the opposite ends of the traffic bar are formed for interlocking purposes in that a projection at one end is raised above the level of the pavement while a projection at the other is at pavement level; thus the raised projection of one bar may fit over the depressed projection of an adjacent bar. A spike or other fastening means passes through aligned apertures on the overlapped projections and holds the bars together. An advantage of such linkage is that if a spike should be dislodged, the other spikes employed in the chain hold the bars in position. The end bars of a chain may be finished off by inserting washers under the end of the raised end projection at one end of the pattern and by placing a washer on top of the end projection of the depressed end of the pattern.



Still another advantage of the present invention is the fact that the bar and the ribs which project outwardly from the central body are formed with surfaces which are substantially vertical. Such surfaces tend to reflect light back toward the oncoming vehicle, thus presenting adequate warning of the approaching hazard. It will be understood, further, that the surfaces of the bar may be painted with a light-reflecting paint which gives additional visibility in warning the operator of the approaching vehicle.

The substantially right-angle surfaces of the fins and central body not only present a large area of illuminated surface substantially at right-angle to the driver's line of vision but in addition, prevent low-angle glare of headlights coming in the opposite direction from interfering with the driver's vision. Such low angle glare from opposite direction lights is reflected back to its original source.

Another feature of the invention is the fact that the central body intermediate the ribs is grooved out at the bottom so that water and wind may flow under the bar. This prevents water from collecting alongside where it would be a hazard in the event of freezing weather, and also a flow of water tends to flush away dirt which may collect. In addition, the grooves provide space for the passage of wind under the bar which functions to blow away dust. The steep slopes of the body and fins likewise deter the collection of dust around the bar.

The construction of the bar is such as to provide great mechanical strength; thus considerable impact will fail to damage it. The strength of the device and the manner of its attachment to the pavement are such that, when desirable, the device may be removed without damage and it may be subsequently reinstalled in the same or a different location.

Further advantages of the invention reside in its low cost of manufacture and low cost of installation.

An advantage of the ease and rapidity of installation of the device is the fact that the time required for installation is short, thereby minimizing the obstruction of traffic necessary to accomplish installation.

In the drawings:

Fig. 1 is a perspective view of a traffic bar constructed in accordance with this invention.

Fig. 2 is a side elevation thereof.

Fig. 3 is a top plan view, showing one bar connected to a portion of an adjacent bar.

Fig. 4 is a bottom plan view of a bar.

Fig. 5 is a vertical sectional view taken substantially along the line 5—5 of Fig. 2.

Fig. 6 is a sectional view taken substantially along line 6—6 of Fig. 2.

Fig. 7 is an enlarged vertical section through the joint between one portion of the device and the adjacent part thereof.

Fig. 8 is a side elevation of portions of two connected bars.

Fig. 9 is a vertical longitudinal midsection through a modfied bar.

Fig. 10 is an enlarged vertical section through a joint between two adjacent bars.

Fig. 11 is a schematic plan of a typical traffic intersection illustrating use of the device.

The traffic bar which is the subject of this invention is intended for installation in a roadway which may be surfaced either with cement or asphalt or any other appropriate substance. It is designed for use either singly or in multiples, depending upon the requirements of a particular installation. The roadway **10** on which the device may be installed is frequently formed with a crown **11** or curvature designed to shed water and accordingly the instant device is arranged to be installed either at right angles to the crown or at any other angle with respect thereto.

The traffic bar is formed with a raised central body **12** of any convenient length, such as approximately 18 inches, and of a height of approximately 1⅞ to 2⅛ inches. The bar is a single piece of cast material which may be iron, aluminum or plastic. It is rugged and substantially thick in section to withstand the impact of severe traffic loads.

Central body portion **12** is formed with a transverse curvature **13**, the curvature, however, being relatively steep so that the lower portion of the body is substantially perpendicular. At spaced intervals along the body are transversely projecting fins **14** or legs which extend outwardly a distance of approximately twice the width of the central portion thereof; these ribs curve downwardly arcuately transverse to the body at a less abrupt curvature than the sides of the body. Viewed in plan, the ribs are narrow and have substantially vertical transverse walls **16** which merge with the body in fillets **17**. The bottom portion of the fins widen out transversely in pads **18**. The corners of pads **18** are rounded. The number and spacing of the fins **14** are optional, but as shown in the accompanying drawings, a desirable arrangement is to cast one fin **14** near each end of the bar with three equally spaced fins intermediate the ends. The undersides of the pads are preferably formed with pits **15** (see Fig. 4) for the purpose of improving adhesion with an adhesive applied on the surface of the roadway.

It will be apparent from the foregoing description of the external structure of the traffic bar that the bar presents a plurality of substantial vertical surfaces which comprise the center body **12** and the transverse fins **14**. The appearance of the traffic bar thus is such as to cause apprehension on the part of the driver that the tires of the vehicle, if they come in contact with the traffic bar, will be seriously damaged by jagged edges. This is primarily a psychological factor tending to deter close approach to the traffic bar. Actually, the edges, while appearing hazardously sharp, are not sufficiently sharp to cause damage to a tire. On the other hand, the fins and vertical body provide traction which enables the tire of the vehicle to cross and recross the traffic bar without causing the driver to lose control of the vehicle. This feature of the bar is advantageous in that it prevents the vehicle from caroming or skidding when it comes in contact with the bar, and further, in the event the wheel crosses the bar, makes it relatively easy for the oprator to restore the automobile into proper position.

In addition, the relatively vertical surfaces presented by the body and the fins reflect light from headlights back to the source, thereby warning the operator of a vehicle of the danger lying ahead.

The bottom edge of the central body portion of the bar intermediate the fins is grooved out. The grooves **21** enable water and air to circulate under the bar. Therefore the passage of water under the bar flushes dirt which may have collected adjacent to the bar. The passage of wind through the grooves blows dust and debris which may otherwise collect alongside the bars.

It is to be understood that the bar is painted with a light-reflecting paint or may be surfaced with tape of the type which is reflex reflective and condenses and reflects light back to its source.



The interior of the bar is substantially hollow in that the thickness of the walls is cut down to reduce the weight as well as the expense of the device. For rigidity and to prevent the device from being crushed by the weight of a vehicle passing over the bar, internal ribs **22** projecting down from the top may be formed underlying the fins **14** which project transversely, (see Fig. 9).

Particularly when the device is to be used on a crowned road, the pads **18** underlying the fins toward the central portion of the device may be elevated with respect to the end pads, the center pads being substantially more elevated than the intermediate pads, (see Fig. 2). This enables the device to fit on a contour of a crowned roadway with all the pads in contact with the roadway surface.

In many instances it is desirable to join one traffic bar to another adjacent traffic bar, to form a pattern or chain. The bars may be parallel to each other or at an angle up to 70° with respect to each other (see Fig. 3). One of the features of this invention is the fact that the permissible angular adjustment between adjacent traffic bars is very great.

To facilitate attachment of one bar to another, a depressed, rounded end projection **26** is formed at one end of the bar, extending parallel to the axis of the bar, the bottom portion of the projection being level with the bottom surface of the pad **18** on the end fin nearest said end. At the opposite end of the bar an elevated, rounded projection **27** is formed extending parallel to the axis of the bar, and the bottom surface of this end projection being elevated with respect to the bottom surface of the endmost pad a distance equal to the thickness of the depressed projection **26** on the opposite end. Apertures **28** and **29** are formed in the two end projections, **26** and **27**. When two adjacent bars are joined together, the raised projection **27** of one fits on top of the depressed projection **26** of the other and the apertures **28** and **29** in the two projections are in alignment (see Fig. 7). Thus a single spike, **31** stud, cement nail or drive-screw may pass through the apertures in the two projections and hold the ends of the two bars together and secured to the pavement **10**.

Desirably, as shown particularly in Fig. 7, a grommet **32** may be installed around the spike **31**. The aperture **29** in the elevated endpiece **27** may be tapered downwardly inwardly and the aperture **28** in the depressed end portion **26** may be tapered upwardly inwardly and the grommet **32** formed in corresponding shape to fit the two apertures. This arrangement facilitates interlocking of the two traffic bars and yet permits wide variation in the angular adjustment between the bars.

The grommet **32** may be composed of natural rubber or synthetic rubber, such as neoprene. The purpose of the grommet is to cushion the movement of the marker or bar against the stud **31** or nail and thus diminish the likelihood of the stud or nail being dislodged from the pavement. The grommet also serves to maintain pressure against the units on the ground when the bars are being cemented to the pavement since adhesive is partially pressure-sensitive.

Thus the bars are most desirably formed with one end portion **27** elevated and the other end portion **27** depressed. However, in order to finish off the ends of the pattern, when such an arrangement is employed, desirably an enlarged flat disc or washer **34** is slipped under the elevated portion **27** at one end, which receives the grommet **32** and spike **31**, and which would otherwise be used if additional bars are desired to be added to that end. Further, the design of the washer **34** fitting under the elevated end merges with the rounded curvation of the projection adjacent the end, and thus finishes off the appearance of the pattern. On the opposite end a smaller diameter washer **33** is placed on the top of the depressed end portion **26** of the bar, said washer also being apertured to receive the grommet **32** and spike **31**

which would normally be employed if a further bar were to be utilized for continuation of the pattern. The small diameter washer **33** results in a uniform appearance which matches the ends of the traffic bar insofar as visual appearance is concerned.

As shown in Fig. 10 two adjacent bars may be joined together by rivets which do not penetrate the pavement **10**. Thus a rivet **36** may pass through apertures in overlapped projections **26** and **27** of adjacent bars. The enlarged head **37** of the rivet retains one end in place and the opposite end is formed after assembly in a head **38** which fills a countersunk portion formed in the underside of projection **26**. Nuts and bolts and other suitable fastening means may be substituted for rivet **36**.

It is not necessary that the bars be linked in chains. Individual bars may be placed in position on the pavement. As shown in Fig. 9, end projections **41** may be cast on either end of the bar, each projection being identical and having its lower surface level with the lower surface of the pads **18**. Aperture **42** may be made in projections **41** for the passage of means for fastening the device to the pavement.

In installation, the surface of the road **10**, if asphalt, need not be especially prepared. If a concrete roadway is to receive the traffic bars, an adhesive **46** of an asphaltic nature is employed which cooperates with the spikes **31** in holding the bars against the pavement. The pitted pad surfaces **18** likewise cooperate with the adhesive in holding the bar on the pavement. Generally speaking, body **12** is installed parallel to the direction of flow of traffic. Where two bars are to be joined together the rubber grommet **32** is inserted in the apertures **28** and **29** of the overlapping raised and depressed end portions **27** and **26** of the adjacent bars, and a spike **31** or screw is driven into the pavement. This screw holds the two ends together. The free ends of the bars are fitted with washers **33** and **34** as has been described, and grommets and spikes employed at either opposite end. The adhesive **46** dries rapidly and hence traffic is interrupted for installation of the device for a relatively short period of time.

A typical traffic pattern is illustrated in Fig. 11. This shows a wide variety of different traffic control situations in which the bars may be employed either individually or in chains. In the upper portion of Fig. 11 a left turn control is illustrated. An island **51** in the center of the highway tapers down to a point **52** with an outwardly spaced line of bars **53** defining a space **54** in which a vehicle may wait until it is possible to make a turn from the southbound to the eastbound line of traffic. This portion of the diagram illustrates a variety of uses of the traffic bars **12**.

In the lower part of Fig. 11 different use of the traffic bars **12** is illustrated. Here an island **56** is defined in the center of the highway, the island being defined not by elevating the pavement (as is commonly done) but by putting a series of bars along each side **57**, each bar disposed at an angle to the direction of traffic movement. At the end of the island a chain **58** of bars **12** is used to form a semi-circle, the bars being connnected together to end as illustrated in Fig. 3, 7 and 8.

On the left side of Fig. 11 the bars **12** are shown protecting a raised island **61**. Thus bars at an angle are shown at **63** tapering off to a point **62** by changing the angle of the bars to the direction of flow of traffic.

Another island **66** of different shape is shown in Fig. 11, protected at ends **67** and **68** by series of bars **12** placed in positions which will guide traffic away from the island without damage such as might occur if the wheel of a vehicle struck the curb of such an island.



The foregoing examples are intended to be illustrative of the uses to which the bars **12** may be put, it being understood that the particular traffic conditions at an intersection determine the use of the bars. One of the principal advantages of the present invention is the manner in which it lends itself to wide variation in usage.

Although I have described the present invention in some detail for purposes of illustration and example, it is understood that various changes and modifications may be practiced within the spirit of the invention and scope of the appended claims.

What is claimed is:

1. A traffic bar comprising a hollow, crowned elongated central body, apertured end projections at both ends of said body, and a plurality of transverse fins projecting outward from both sides of said body, each said fin curving downwardly from adjacent the top of said body in a narrow, straight-sided ridge having a greater curvature than said body, and a pad at the bottom of each fin extending back to the lower edge of said body.

2. A traffic bar according to claim 1 in which said fins and the top of said body are externally sharp and jagged, and in which said top and fins have surface areas which present substantially vertical, light-reflective surfaces.

3. A traffic bar according to claim 1 in which one end projection has its bottom surface approximately level with the bottom edge of said body and in which the opposite end projection has its bottom edge elevated above the level of the bottom surface of said body a distance approximately equal to the thickness of said first-mentioned end projection, whereby an end projection of one traffic bar may overlie the end projection of an adjacent traffic bar.

4. A traffic bar according to claim 1 in which the lower edges of said body intermediate said fins are cut away in upward extending grooves.

5. A chain of traffic bars comprising: a plurality of individual bars arranged to be positioned along the pavement, each said bar having a hollow crowned elongated central body, apertured end projections at both ends of said body, and a plurality of transverse fins projecting outwardly from both sides of said body, each said fin curving downwardly from adjacent the top of said body in a narrow ridge, each said end projection being relatively thin and having flat, horizontal top and bottom surfaces, one end projection overlapping the end projection of the adjacent bar with their respective apertures aligned, and retaining means passing through said apertures and engaging the pavement.

6. A chain according to claim 5 in which one endmost bar of said chain is formed with an elevated end projection and the other endmost bar of said chain is formed with a depressed end projection, and which further comprises a first washer under said first elevated endmost projection and a second washer over said depressed endmost projection and in which said retaining means includes fastening means passing through the apertures in said endmost projections and said washers.

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