

April 30, 1968

K. A. ABRAMS

3,380,428

TRAFFIC GUIDE POST

Filed Dec. 20, 1965

2 Sheets-Sheet 1

FIG. 1

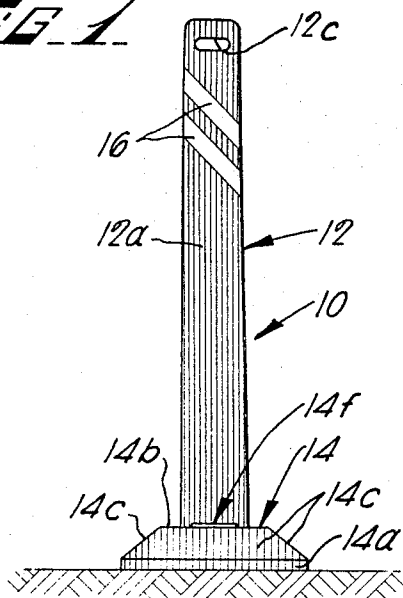


FIG. 2

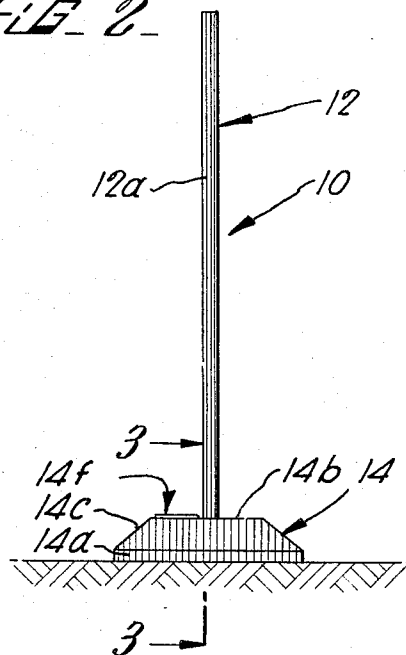


FIG. 3

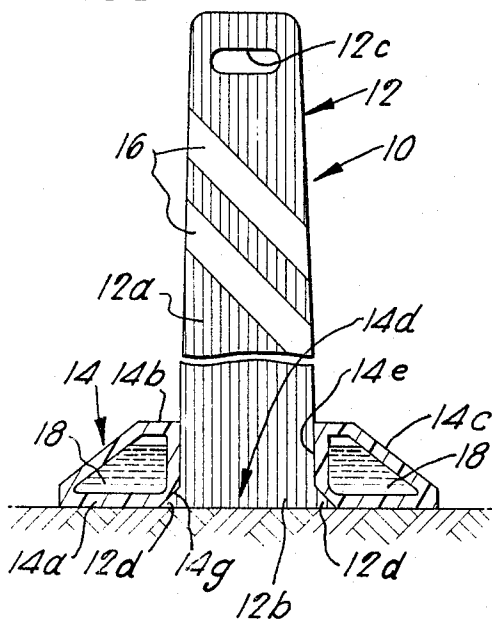
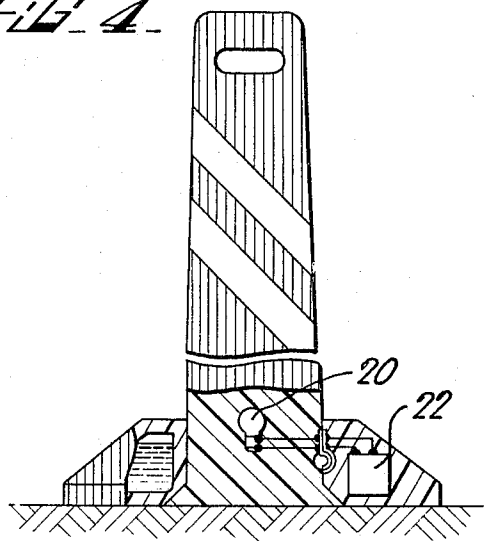


FIG. 4



INVENTOR,
KENNETH A. ABRAMS
BY *John H. Crowe*

AGENT

April 30, 1968

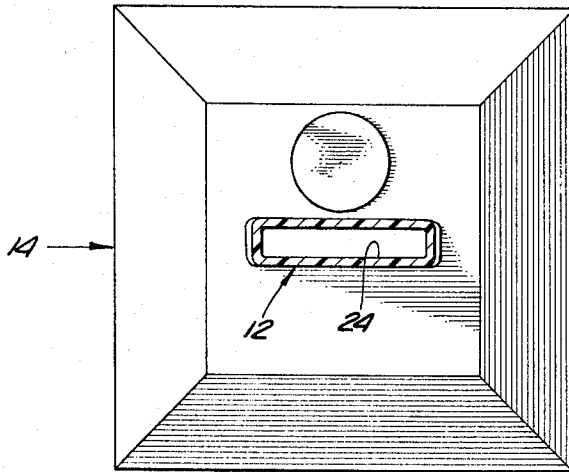
K. A. ABRAMS
TRAFFIC GUIDE POST

3,380,428

Filed Dec. 20, 1965

2 Sheets-Sheet 2

FIG. 5.



INVENTOR
KENNETH A. ABRAMS
BY *John H. Crowe*
AGENT

1

3,380,428

TRAFFIC GUIDE POST

Kenneth A. Abrams, Riverside, Calif.
(5923½ 85th St. NE., Marysville, Wash. 98270)
Filed Dec. 20, 1965, Ser. No. 514,785
2 Claims. (Cl. 116-63)

ABSTRACT OF THE DISCLOSURE

A traffic guide post comprising a post member with an enlarged lower end and a relatively flat base member which fit together with the post member extending upwardly through an opening in the base member. The opening in the base member snugly accommodates the enlarged lower end of the post member to help hold it upright. The base member is hollowed to hold water, for weight stabilizing purposes, and has an opening in its top through which the water can be poured. The post member is sufficiently flexible to yield when struck by a car to prevent damage to the car.

This invention relates to improved traffic guide posts of the upright member type having suitability for use in the routing of vehicular traffic around danger areas on and adjacent busy highways, channeling such traffic from one highway lane into another to clear space for road, or other, repair work, etc.

Traffic guide posts suitable for use on heavily travelled highways, such as turnpikes, freeways, etc., must be of such size as to be easily seen, at a safe distance, by the drivers of fast moving cars and other vehicles and, additionally, be base-weighted, or otherwise stabilized in some fashion, to prevent their overturn, or other unwanted movement, by wind, or other extraneous forces to which they will be subjected in use. Presently employed traffic guide means fall generally into one of two categories, namely, that exemplified by the relatively light-weight traffic cone and that exemplified by the heavy "home-made" type of device comprising a painted board member anchored in a can, or block, or hardened concrete. Devices of the first-noted category (cone-type) are too light for service on busy highways and are therefore pretty much confined to use on city streets and lesser travelled roads and highways, thus leaving those of the latterly-noted category (concrete-weighted traffic guide posts) for use on the busier highways.

While the concrete-weighted traffic guide posts of above reference serve their traffic routing purposes well enough, once made and properly emplaced, they are characterized by certain shortcomings of preparation and use well known to those familiar with the problems of making and using such devices. More specifically, the fabrication of such guide posts is a costly time and labor consuming burden for road construction and paving contractors to bear and it frequently necessitates the use of substantial quantities of concrete, boarding, high visibility paint for use on the boarding, empty cans, etc. Furthermore, and of greater consequence, such guide posts pose a danger to the life, limb and property of motorists, and others, since when accidentally struck by a moving vehicle they tend to resist, rather than yield to, the impact, thereby inflicting heavy damage to the vehicle and injury to its occupant, or occupants, in many cases. The principal reasons for this are the shape and bulk characteristics of the concrete bases of such guide posts which are such as to render the latter dangerous obstacles in the path of a straying vehicle, rather than substantially resistless objects which can be easily run over, moved down, by such vehicles. Moreover, for the same reasons, the heavy concrete bases of the guide posts are sometimes propelled through the air at great

2

speed when accidentally struck by cars. Such flying concrete missiles have been known to go through the windshields of nearby automobiles, or otherwise strike such cars in such a way as to wreak dreadful havoc on drivers and passengers riding innocently therein. Finally, the subject guide posts are too heavy and bulky to handle with much ease, thus making their emplacement at use sites and retrieval therefrom difficult and dangerous tasks. Also, where the upright post member of such a guide post is snapped off by a traffic accident, or otherwise, the unit is rendered totally useless and must be discarded and replaced by a new one, thus adding to the expense of employing such devices.

I have now devised an improved traffic guide post unit of a type useful for service on busy highways which is free of the above-noted use hazards of guide posts with concrete bases, is relatively light and easy to handle with a minimum of effort, can be easily repaired when damaged by the mere replacement of the damage cart, is relatively inexpensive to produce, and has esthetical appeal (by contrast with the concrete-base guide posts which are of junky and unattractive appearance).

It is thus a principal object of the present invention to provide traffic guide posts suitable for use on busy highways without posing serious threats of injury or damage to persons or property if accidentally struck by moving vehicles.

It is another object of the invention to provide such traffic guide posts which lend themselves to broken part replacement whereby a damaged unit is subject to repair, rather than discard and costly replacement by an entire new unit.

It is still another object of the invention to provide such traffic guide posts which can be handled, moved, etc., with extreme ease and simplicity thereby greatly minimizing their use-site-emplacement and retrieval handling requirements, by comparison with the corresponding concrete-based guide post handling requirements.

It is yet another object of the invention to provide such traffic guide post units of attractive appearance and relatively low cost of procurement.

Other objects, features and advantages of the invention will appear in the light of the description thereof to follow, considered conjunctively with the attached drawing, of which:

FIGURE 1 is a front elevation of an illustrative embodiment of a traffic guide post unit in accordance with this invention, the unit being shown in standing position on a level surface.

FIGURE 2 is a side elevation of the FIGURE 1 traffic guide post unit.

FIGURE 3 is an enlarged, interrupted, sectional view of the unit, taken along line 3-3 of FIGURE 2.

FIGURE 4 is a front elevation of another embodiment of the traffic guide post unit in combination with accessory light means for night use applicability, the unit being depicted in interrupted, and partly sectionalized, view.

FIGURE 5 is a transverse view of still another embodiment of the traffic guide post unit, drawn to a larger scale than any of the preceding figures, showing that portion of the unit below a point located about halfway between its upper and lower ends.

Considering now the drawing in greater detail, FIGURES 1 through 3 show generally at 10 the aforesaid traffic guide post unit in accordance with this invention. The traffic guide post, hereinafter referred to as post unit 10, or the equivalent, consists of a post member 12 and a base member 14 which interfit snugly in such fashion as to assure support of the former in an upright position when the unit stands on a level surface as illustrated. Post member 12 is made up of a relatively thin, narrow,

board-like post segment 12a of sufficient height to render it clearly and easily visible to approaching and passing motorists, and a foot segment 12b. Post segment 12a is slightly tapering from top to bottom along its lateral edges, and it has an oblong opening, shown at 12c, running transversely thereacross near its top end. The opening is of hand accommodating size and configuration and situated sufficiently near the top of the post member to permit easy handgrip of the unit for moving and carrying purposes. Hereinafter, the opening will be referred to, for obvious reasons, as handle opening 12c.

Running slantingly across the upper portion of at least one face of post member 12 are two strips of reflectorized material 16 to make the unit clearly visible in the headlight beams of approaching vehicles. Any suitable reflectorized material will suffice for the purpose, but I prefer to use a product such as Scotchlite brand reflective sheeting, this being a remarkably effective reflective material comprising sheet plastic having tiny glass beads imbedded therein. The presence of such reflective means, it should be emphasized, is not critically necessary to my traffic guide post unit since the unit will function effectively in darkness with other reflective means, such as glass reflector buttons, attached, or, in daylight, with no auxiliary reflective means at all.

Traffic guide unit 10 (or at least post segment 12a of its post member) preferably has a surface color designed to attract immediate attention, an ideal color for this purpose being either yellow or high visibility fluorescent red. Such colors are familiar to those in the highway construction, and related, industries, as well as to motorists, as very effective eye catchers for highway signs and the like. In line with this, the two guide post units of the drawing are shown with yellow surfaces by color coding means. It is not necessary for the post and base members of the guide post unit to be of the same color.

Foot segment 12d of the post member of guide post unit 10 consists of an integral extension of post segment 12a, laterally flanked by two integral bosses 12d, extending outwardly therefrom as shown in FIGURE 3. Bosses 12d are of equal size and shape, each having an upper surface which slopes downwardly from a post segment edge to a knife-edge outer boss extremity.

Base member 14 is of broad and somewhat flattened shape, with a square-outlined bottom 12a; a square-outlined top 14b, in planar and boundary edge parallelly to and smaller than the bottom and centered therewithin as viewed from above; and sloping sides 14c which join the top and bottom sections of the base member around their respective peripheries. As the drawing shows, base member 14 is characterized by a centered opening 14d extending vertically, by reference to its normal position of use, as illustrated in FIGURE 3, therethrough. Opening 14d is dimensioned to snugly receive post member 12 in upright position, having an upper portion 14e so bounded as to fit closely around the base of post segment 12a of the post member and a lower portion 14g bounded as to matingly embrace foot segment 12b of the post member when the latter is in its fully inserted position within the opening, as illustrated in FIGURE 3.

Traffic guide post unit 10 is easily assembled by hand from post member 12 and base member 14 by inserting the former through opening 14d in the latter from the bottom, and pushing it to tightly seated interfit therewithin. The male-female interfit between the post member and base member opening in the assembled unit is preferably sufficiently tight to assure a firm enough friction lock between the two members to permit the unit to be moved about by means of handle opening 12c, and exposed to windy weather, without looseness, or wobble, of said post member.

Base member 14 is, as FIGURE 3 indicates, of hollow construction with the resulting hollow space internally encircling walls which define opening 14d and serve as part of its boundary, and otherwise bounded by the top,

bottom and sloping sides of said base member. The hollow space within the base member permits it to be weighted with a ballast material to stabilize the guide post unit against overturning, or other movement, when in use. The ballast material is preferably one of a flowable nature such as sand, water, or the like, and there is an access port 14f (with a removable cap) in the top of the base member, as shown in FIGURES 1 and 2, to permit addition of the material to, and its removal from, the hollow interior of said base member. FIGURE 3 shows base member 14 loaded with water 18 as the ballast material.

The preferred material of construction for my traffic guide post unit is a suitable plastic, such as polyethylene or the like, because of the desirable physical properties, ready availability, relatively low cost and ease of workability of such materials, coupled with the fact that there are many available facilities for the manufacture of plastic products. While both the post and base members of the unit can be fabricated from the same type of plastic, this is not necessary and, in fact, it will normally, as presently contemplated, be preferable to make those parts from plastic formulations of differing character (although they can be of the same chemical type, such as exemplified by different polyethylene formulations) because of the differing physical requirements of the two parts due to their separate functions in the finished product. Where the base member is intended to hold water, other liquid, ballast, it must, of course, be leak-proof, but this presents no serious problem since such a feature can be easily designed and built into plastic parts by those skilled in the plastic fabricating arts.

The post member of my traffic guide unit must preferably be of readily yielding character, by which is meant such physical character as to permit it to yield under impact in some way, as by snapping off, flexibly bending or shattering. The member, considered in broad concept, can be yielding to any degree (in a sense inclusive of such materials of construction as wood or a soft metal), but its preferred forms are those made of flexible plastics and capable of subjection to sharp bending deformation without breaking, and those made of a friable material, such as, for example, styrofoam, which will shatter with little or no resistance when sharply impacted. Where the post member breaks under impact, or is otherwise damaged beyond repair, a new unit is easily prepared by merely inserting an undamaged post member in its place in the same base member, the replacement being easily accomplished by hand without the aid of any tool, or tools. The selection of proper materials of construction for the parts of the guide post unit, and the manufacture of such parts, are matters well within the ordinary skills of those engaged in the target arts of this disclosure having the present teachings to guide them and need not be particularized in any greater detail here.

FIGURE 4 shows a traffic guide post unit in all respects similar to that of the other figures of the drawing, except that it has a light bulb 20 imbedded in its post member and a battery source of electricity 22 in its base member. The bulb is connected in circuit with the battery by appropriate hardware means, as shown, adapted to complete the connection when the post and base members are assembled for use. The way in which the terminal members for the bulb and battery components of the circuit interfit, and the means by which they are held in proper juxtaposition in the assembled unit, will be clear from the drawing and not be described in detail here. The FIGURE 4 unit is particularly suitable for night use and should preferably have its post member constructed of a plastic which readily transmits light so that the whole part lights up when bulb 20 is burning. A blinker light arrangement is preferable to one which provides a steady glow, and the rigging of a guide post unit with such a lighting system is well within the skill of those to whom this disclosure is directed, in the light

of present teachings, hence will not be here discussed in greater detail.

One of the advantages of my novel guide post unit is an inherent lightness of weight which renders it easily portable and minimizes the resulting hazard to motorists who accidentally run into it. By contrast with the conventional concrete-based guide post units of previous reference, a typical unit of this invention is almost feather light when its base member is empty, and even when the latter is loaded with ballast the unit weighs only a fraction of one of the formerly mentioned type. The low weight, coupled with the handle opening, of my guide post unit makes for great ease and rapidity of unit emplacement from, and retrieval with, a moving truck. The post member of my guide post unit can be of hollow, rather than solid, construction, in which case it is of exceptionally light weight. Hollow post member units are, in fact, preferred for purposes of my invention and I have proven them feasibly capable of production and actually had a full scale working model of such a unit fabricated by a plastics processor. FIGURE 5 illustrates, in transverse section, a unit of this type substantially similar (except for the hollow interior of its guide post, indicated at 24) to traffic guide post 10. For purposes of optimum illustrative effect, color-coding has been omitted from the FIGURE 5 drawing.

The shallowly sloping sides of base member 14 of guide unit 10 contribute importantly to the heretofore discussed safety advantages of my invention in that they permit a vehicle accidentally running into the base member to override it rather than impacting it solidly as would occur were the involved unit of the previously described concrete-base type. As a result, damage to the vehicle is avoided and, more importantly, there is little likelihood of the guide unit being thrown into the air to strike a person, another car, or other object as could easily happen in the case of a "concrete-base" unit. Even where the base member is ruptured by the weight of an overriding vehicle and its contents scattered, this will generally cause no serious harm to nearby persons or objects since the scattered material will typically be sand, water or similarly dispersible material incapable of inflicting much in the way of such harm under the circumstances.

While my traffic guide post unit has been heretofore described primarily in terms of reference to its drawing-illustrated embodiments, there are, of course, many possible structural variants of those embodiments, differing numerously in noncritical features, materials of construction, etc., therefrom, within the scope of the present invention. Certain examples of the here-contemplated structural variations have already been given, and numerous others will be suggested to those skilled in the art by the present teachings. In further exemplification of this kind of permissible structural variation, a solid base member could be substituted for hollow base member 14 of guide post unit 10 within the scope of my invention, although the hollow base member is preferred because its weight can be readily controlled by ballast load adjustment, it is easier and less costly to handle and ship (in the empty form) than is its solid counterpart and it requires a minimum of plastic, or other, material of construction as a result of its hollow interior. The base member of my guide post unit can, of course, be of any shape, peripheral or otherwise, so long as it permits vehicle override to an extent sufficient to substantially obviate the possibility of impact consequences such as those resulting from vehicle collision with a "concrete-base" unit of the hereinabove-described type.

A foot segment of different shape than foot segment 12b can be substituted therefor in guide post unit 10, and the base member of the unit provided with an appropriately mating opening for the new post member, within the scope of the present invention. Similarly, the post member of my traffic guide post unit can be of other than the flat, board-like shape illustrated in the drawing, or it can

be more board-like, such as, for example, to the extent of having straight, rather than tapering, lateral edges, within the scope of the invention. While a handle opening such as opening 12c, or its equivalent, is an important feature of preferred embodiments of my guide post unit, it is not critically essential to proper functioning of the unit. It is not necessary for the post member of the unit to be rooted in the center of the base member, as shown in the drawing, but this arrangement is, for obvious reasons, the preferred one.

The FIGURE 4 unit can be modified within the scope of my invention, by, for example, installing a light in the upper, rather than the lower, end of its post member. This arrangement is, however, similar to that in many existing traffic guide and warning devices and subject to the same disadvantage of light damage vulnerability in the event of a traffic mishap involving such a device. In the FIGURE 4 unit, on the other hand, the post light battery is subject to little risk of damage in such a mishap unless that part of the base member in which it is housed is directly hit or run over.

My traffic guide post unit can, of course, vary size- and weight-wise within the scope of this invention. All that is necessary in the way of unit size and weight requirements, are sufficient post member size to make it readily visible to motorists while they are still a safe distance away, and sufficient base weight to assure substantial positional stability of the unit under the weather, and other, conditions which it might reasonably be expected to encounter in use. These criteria alone define the size and weight limitations of my guide post unit, whether or not local law relating to traffic signs and devices might, in some jurisdictions, more narrowly define such limitations.

Illustrative of what I consider to be an ideally sized embodiment of my invention is a working model of the guide post unit, previously adverted to, which I have had fabricated of polyethylene from a design of my own making. The fabricated unit is similar in appearance to guide unit 10 and it has a post member 40 inches in height which tapers from a width of 4 inches near its top to a 5-inch width at its lower end. Both the post and base members of the unit are of hollow construction, the base member having a flat bottom of square periphery measuring 14 inches by 14 inches. The base member has an over-all height of about 3 inches and its walls are generally of about 1/8-inch thickness, except in corner areas where they are thicker. The post and base members of the fabricated unit are so cooperatively sized and shaped as to interfit in bottom-coplanar relationship in the manner illustrated by FIGURE 3, which shows the post and base members of guide post unit 10 thusly interfitted. It goes without saying that such bottom alignment of the post and base members of the traffic guide post unit helps to maintain its parts in properly snug fitting engagement when the unit is disposed in its normal position of use.

The base member of the fabricated unit just described is leak-proof and has a port opening, with removable enclosure, in its top through which access to its hollow interior can be had for ballast loading and unloading purposes. The fabricated unit, empty of ballast, weighs 3 pounds, and when fully loaded with water ballast it weighs 9 pounds.

This invention has been described in considerable detail in order to comply with the patent laws by providing a full public disclosure of at least one of its forms. However, as already indicated, such detailed disclosure is not intended in any way to limit the broad features or principles of the invention, or the scope of patent monopoly sought to be granted. It is emphasized, in final summary, that any guide post unit varying in form from the drawing-illustrated embodiments thereof falls within the scope of the present invention so long as its description is encompassed by the language of the following claims.

I claim:

1. Traffic guide post means comprising a post member and a base member of mutually interfitting relationship;

(a) said post member being of hollow plastic construction and having an elongate post segment of relatively narrow, board-like shape designed to stand upright in use and attract the visual attention of motorists, and a foot segment integral with the post segment, which foot segment comprises a downward extension of the post segment having two flanking bosses extending outwardly from the opposite lateral edges thereof; and

(b) said base member being of relatively broad and flattened form and having a penetrative opening designed to snugly receive the foot segment and an adjoining portion of the elongate post segment of said post member and thereby hold the post segment upright in its above-indicated position of use;

(c) said base member being, additionally, of plastic construction, hollow interior, and apertured in its top to provide an access port to said hollow interior, whereby a flowable ballast material can be loaded in varying amount thereinto to weight-stabilize said traffic guide post means against movement under the influence of wind, and other, forces to which it is subject to exposure in use;

(d) said base member being further characterized by a flat bottom of square configuration; a flat top of square configuration which is smaller than said bottom and situated parallel to and inclusively within the outer periphery of the latter as seen in plan view when the base member is resting on a horizontal surface; and sides which slope from the outer periphery of said top toward the outer periphery of said bottom; the relative sizes of the top and bottom of the base member, and the perpendicular distance between said top and bottom, being so designed as

to assure sufficiently gradual side slopes on said base member to permit the wheels of a moving vehicle to surmount the same with little difficulty upon coming into contact with the base member in its normal position of use on a flat surface;

(e) the post member being so physically characterized as to yield under the impact force of a moving vehicle before any appreciable damage to the vehicle results, further characterized by the presence of a handgrip opening near the top of its post segment and attached light reflecting means near said opening, and having lateral post segment edges which taper slightly from top to bottom by reference to its normal use position.

2. Traffic guide post means in accordance with claim 1 in which said light reflecting means comprises strips of sheet plastic with reflectorizing glass beads embedded therein.

References Cited

UNITED STATES PATENTS

1,538,822	5/1925	Kennedy.	
2,594,463	4/1952	Lievtard	340—49
2,817,308	12/1957	Scanlon	116—63
2,957,169	10/1960	White	340—366
3,021,755	2/1962	Karchenes	248—472
3,026,641	3/1962	Keats	40—125
3,132,624	5/1964	Shoemaker	116—63
3,147,734	9/1964	Knapp	116—63
3,233,352	2/1966	Projector et al.	40—130

FOREIGN PATENTS

959,082	5/1964	Great Britain.
1,150,240	8/1957	France.
1,235,337	5/1960	France.
281,360	6/1952	Switzerland.

LOUIS J. CAPOZI, *Primary Examiner.*