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W. A. FEEK  
PORTABLE SIGNAL LIGHT

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2 Sheets-Sheet 1

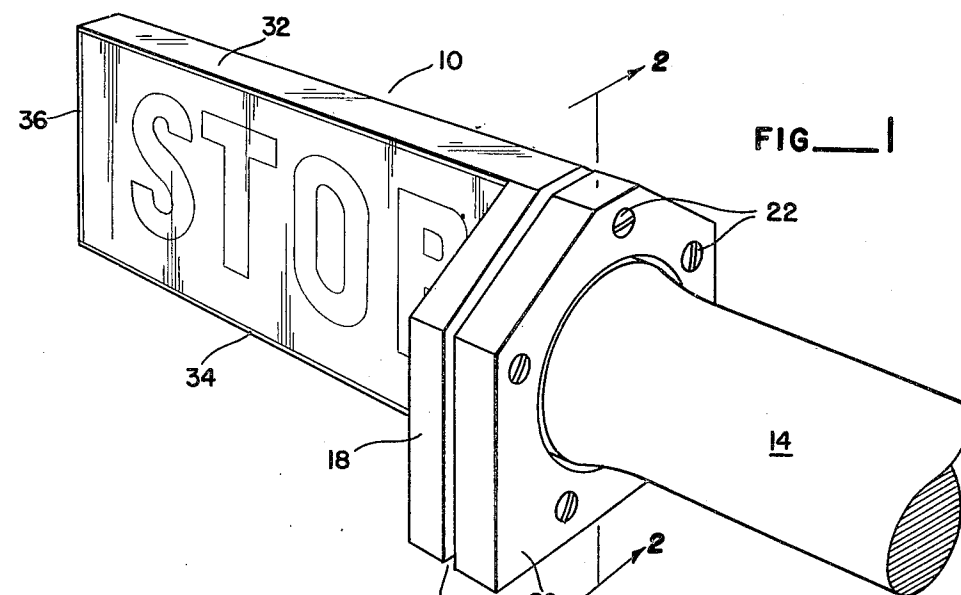
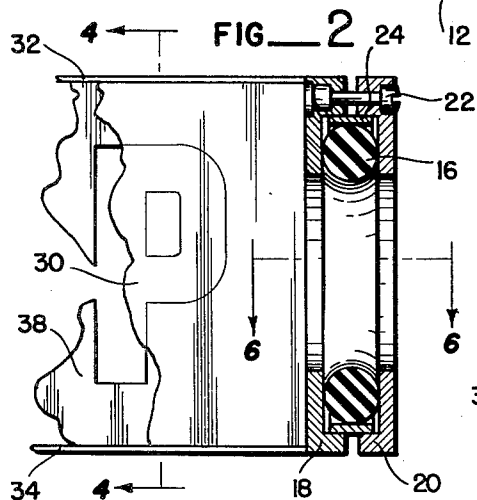
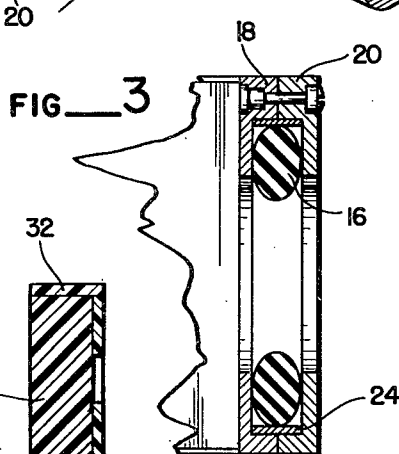
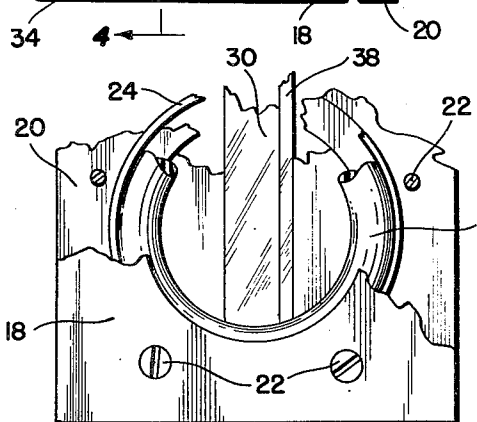


FIG. 5

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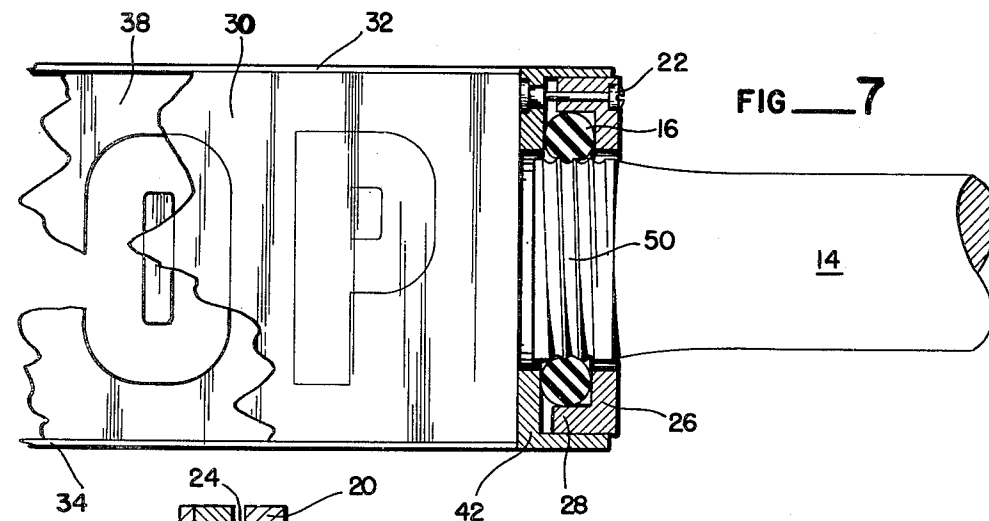
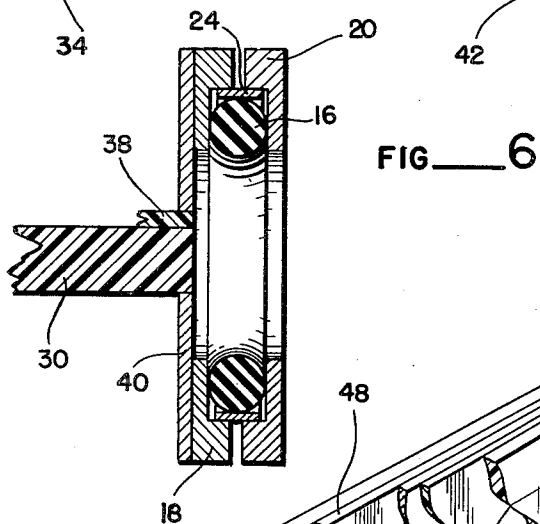
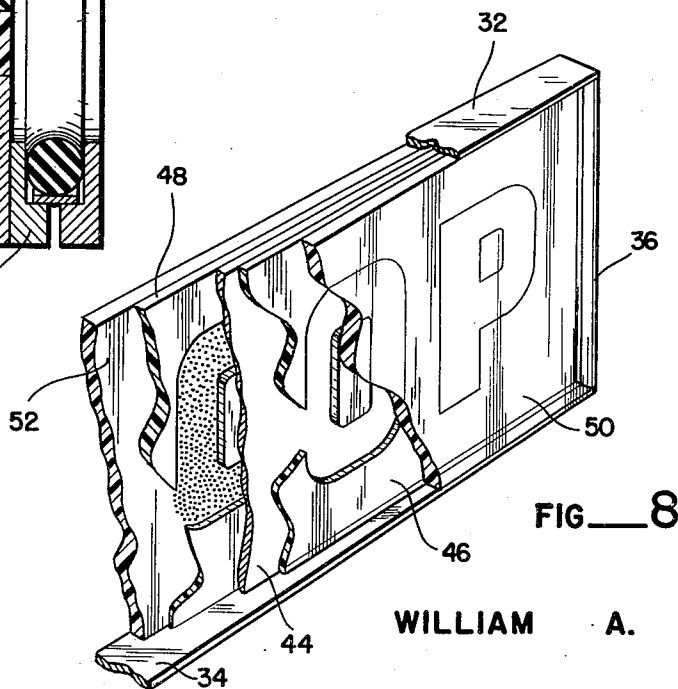
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2 Sheets-Sheet 2



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38  
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## UNITED STATES PATENT OFFICE

2,533,235

## PORTABLE SIGNAL LIGHT

William A. Feek, Seattle, Wash.

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3 Claims. (Cl. 177-329)

1

My present invention relates to signal lights in general and, more particularly, to a compact, demountable signal light, primarily for the use of law enforcement officers. It consists essentially of light transmitting and reflective sheet materials which are formed in a laminated arrangement so that letters forming various words can normally be illuminated with white light and will be surrounded by a contrasting background of colored light. I construct my device so that the sign portion itself forms one compact unit and means are provided for quickly adjusting it for use with a pocket flashlight.

Law enforcement officers are constantly being called upon to act promptly, usually as a result of an accident, sometimes in case of fire, hold-ups or other emergencies, and it is desirable that they have means for conveying a message and particularly to be able to stop automobile traffic at a distance, at night. Many devices have been provided in the past to serve this general field. Usually they have been characterized by excessive weight in batteries and paraphernalia of various sorts, so that it requires a considerable period of time to get the equipment into use. The necessary bulk precludes the possibility of its always being available when needed. Other attempts have been made to solve the general problem with truly portable means, many of them employing a pocket flashlight, but none of these observed have fully met the need of giving a quick, unmistakable signal, such as, for instance, the words "Stop," "Slow" and the like.

In my present invention, it is believed that I have overcome the deficiency of those items of equipment furnished in the past, so that now an officer of the law may have available on his person at all times during hours of darkness, the means for quickly giving signals of sufficient clarity, size and adequate illumination so that an oncoming automobile, for instance, can clearly see the sign in ample time to stop before coming abreast of the sign. This requires a sign that can be clearly seen at a distance of several hundred feet at night, and experience has proved that it is necessary to make maximum use of all the light available if such a sign is going to be satisfactorily energized by a pocket flashlight, which normally is limited to three small dry cells.

The principal object of my present invention, therefore, is to provide a two-part, demountable signal means, one part of which can be a standard flashlight and the other, the sign, comparable in bulk and weight but so arranged that it

2

can be immediately assembled into a unit for use.

A further object of my invention is to make use of the known characteristics of certain of the plastic materials for transmitting light and to employ this means so that the small amount of light available from a flashlight can be used to adequately energize signs, so that the letters can be distinctly read at considerable distance.

A further object of my invention is to provide the sign portion of my device constructable from sheet material, to the end that various words and color combinations can be readily produced at an economical manufacturing cost.

A further object of my invention is to provide means for engaging a flashlight, which can be adjusted to an individual light so firmly that the flashlight will be able to adequately support the sign, so that its operation becomes a one-handed operation.

Further objects, advantages and capabilities will be apparent from the description and disclosure in the drawings, or may be comprehended or are inherent in the device.

In the drawings:

Figure 1 is a perspective view showing my sign in its normal position of use and showing a representation of a flashlight, a portion of which is broken away and shown in section.

Figure 2 is a vertical sectional view, taken along the axial plane embracing line 2-2 of Figure 1, with the flashlight removed from the same.

Figure 3 is a view taken in the same sense as Figure 2, but showing the maximum adjusted clamping position of my flashlight engaging means.

Figure 4 is a cross sectional view, taken along the line 4-4 of Figure 2.

Figure 5 is a fragmentary elevational view, with the various parts broken away and some in section, the view being taken as though it were viewed from the flashlight side of Figure 1, with the flashlight removed.

Figure 6 is a horizontal sectional view, taken along the line 6-6 of Figure 2.

Figure 7 is an elevational view, partly in section and partly broken away, showing a modified form of my clamping means for the flashlight.

Figure 8 is a perspective view, with the various parts broken away and shown in section, to illustrate the construction where a double-faced sign is desired, and the same view illustrates what might be a modified form of Figure 4.

Referring more particularly to the disclosure

in the drawings, the numeral 10 designates in general the sign portion of my signal device. The numeral 12 designates generally the clamping arrangement by which the sign is secured to the flashlight 14. The actual engagement between my sign and the flashlight is achieved by means of a compressible ring 16, preferably formed of rubber or rubber substitutes, having a temper permitting reasonable compression and distortion of the same. The general means employed to distort ring 16 and to be adaptive for clamping onto a flashlight, is probably well illustrated in Figures 2, 3 and 6 and in a slightly modified form in Figure 7. In the preferred form, the clamping means is composed of the fixed member 18, to which the sign itself is secured, and a movable member 20. The normal position of these parts is best shown in Figure 2 in which ring 16 will be noted as undistorted. Then by tightening up the plurality of screws 22, ring 16 may be distorted to its extreme position, as shown in Figure 3. Normally an intermediate degree of distortion is satisfactory, substantially as shown in Figure 7, wherein ring 16 is distorted sufficiently to be forced well down into the thread grooves formed in the housing of the flashlight 14 and normally employed to hold the lens bezel or securing means to the flashlight. The preferred type of flashlight for this purpose is usually made of sheet metal. The outside surface of the bezel ring is depressed following the outline of the thread and if these are engaged by the rubber being squeezed into them, a very secure anchoring is achieved. For most uses it is not desirable that the flashlight be fixedly secured to the sign by the clamping means, but rather that sufficient distortion of ring 16 be provided so as to easily hold the sign to the flashlight in a manner so that the sign can be manipulated by merely grasping the flashlight with one hand. When so adjusted, the flashlight may be quickly inserted into ring 16 or removed therefrom and thus make the signal means quickly and readily available as needed.

It has been found desirable when employing the structure of Figures 1, 3 and 6, to provide means so that the rubber ring 16 will not be caught in between the movable member 20 and the fixed member 18, as might occur when the clamping screws 22 were being set up snugly. To overcome this, I provide a ring, preferably of thin metal, as 24, the function of which is very clearly shown in Figures 2 and 3. In Figure 7 I have shown in a modified form, the movable member 26, which has a ring portion, as 28, which serves the same purpose and will function quite satisfactorily if the outer surface of ring 16 is substantially circular, as viewed in cross section.

The sign 10 itself may be fabricated in one of several forms. One principle which must be followed, however, is that the light coming from the globe of flashlight 14, must have an ample path through clear plastic material, which is of a character to freely transmit and conduct light. In its simplest form, where a word or symbol is needed only on one side of the sign, my device is probably best illustrated in Figures 4 and 6, in which a relatively thick sheet of clear plastic 32, is positioned coaxially with the filament of the flashlight. This also places it in alignment with the focal point of the reflector as normally employed in a flashlight, so that the maximum use is made of the relatively small light source. Now following the principles that the light tends to

be reflected from the surfaces of the material, unless that material is configured in some manner, and will pass out the margins only of the plate, I have provided on the edges of the plate, both top and bottom and at the outer end, the opaque sheets, as 32, 34 and 36.

If the word desired is to be white, then it is desirable that the background be of contrasting color. If, for instance, a Stop sign is desired, as has been illustrated throughout the drawings, then the best background is red and under these conditions, I then employ a sheet of red plastic material, 38, which is in the form of a stencil, preferably having the letters cut out in full or they may be merely sandblasted under a mask, so as to break the smooth, light-reflecting surface. This plate or sheet 38 should then be bonded fully to the light transmitting sheet 30, as by some of the well known plastic glues or the like. Sheets 30 and 38 are then secured to the fixed element of the clamping means. This may be the clamp member 18 of Figures 2 and 3, or a separate sheet of opaque material as 40 may be employed, after the showing of Figure 6, or as illustrated in Figure 7, the fixed member 42 may be adapted to receive and have the sheet materials forming the sign, fixedly secured thereto. This is normally best done by careful fitting and bonding with one of the solvent glues which tends to secure the various pieces together into a compact, homogeneous unit.

It will be readily understood, it is believed, that if a sign were to be two-faced or should be viewed from either side, then the construction as illustrated in Figure 8 might be employed. This effect requires a centrally disposed opaque sheet, as 44. This may be a quite thin sheet of metal or opaque plastic. It is necessary however, that the word sign on one side of the sign should not be visible from the opposite side, as when so viewed it will be in reverse and will tend to confuse and obscure the word written in its proper, readable order.

On each side of the opaque sheet 44, I provide a clear sheet of light transmitting plastic material, as 46 and 48. Then on the outer side of each of these clear plastic sheets, I provide the sheets 50 and 52, which should be of the color desired, in the case of the stop sign, preferably red. As before, it is necessary to encase the sign on three sides by the opaque marginal strips, as 32, 34 and 36. In this modified form of Figure 8 it will be noted I have further modified the structure, in that the clear plastic sheet bears the letters, either cut out as a stencil might be, or having been sandblasted to give the light transmitting surface.

Normally my signal light is carried as two elements, due to the fact that flashlights generally have many uses other than for signals, but when it is desired to employ the signal, it is only necessary to insert the light bearing end of the flashlight into the clamping means to the degree illustrated in Figure 7. Now normally, prior to use, the clamping means should be adjusted to the point where it is just conveniently possible to force the flashlight into the clamping means. This can often be assisted by turning the same so as to make use of the threads 50, normally occurring on the outside of the flashlight adjacent the reflector and its covering lens. As soon as the light is turned on, the light being carried out through the sign through the clear plastic and to a lesser degree through the colored plastic, illuminates the two surfaces. If the construction

5

following the preferred arrangement of Figures 1, 2 and 3 is such that the red is entirely cut away, then bright, white letters will appear on a red background. The other plan that might be used with either of the single faced or double faced signs, is to cut out fully or produce letters by sandblasting on the clear plastic and then to cover these with colored plastic. This does not give the clean cut letters that can be seen at a distance but for certain forms of signaling, it is quite satisfactory, in that the letters are very pronounced, with a brighter light transmitting surface than the background which causes them to stand out quite well.

It is believed that it will be clearly apparent from the above description and the disclosure in the drawings that the invention comprehends a novel construction of a portable signaling sign adapted to be energized by a pocket flashlight.

Having thus disclosed the invention, I claim:

1. A demountable, portable light for imparting intelligence at a distance, consisting of: a word transmitting sign; a portable source of light; adjustable clamp means for operatively securing said sign to said light source; said sign formed with a sheet of clear light conducting plastic material disposed, for use, substantially co-axially with the light beam from said light source; a covering of colored light transmitting material secured to the face of said clear plastic sheet; words formed on the face of said clear plastic sheet; opaque masking means for exposed edges of said sign; said adjustable clamp means having a fixed member and a movable member secured to the unmasked end of said sign; threaded means for positioning said movable member with respect to said fixed member; a resilient gripping member in said clamp means adapted to be distorted by adjusting said clamp means to form a gripping engagement for said source of light; and an annular ring, encircling said gripping member.

2. A demountable, portable light for imparting intelligence at a distance, consisting of: a word transmitting sign; a portable source of light; adjustable clamp means for operatively secur-

6

ing said sign to said light source; said sign formed with a sheet of clear light conducting plastic material disposed, for use, substantially co-axially with the light beam from said light source; a covering sheet of colored light transmitting material secured to the face of said clear plastic sheet; words formed on the said colored covering sheet; opaque masking means for three sides of said sign; said adjustable clamp means having a fixed member and a movable member secured to the unmasked end of said sign; and a resilient gripping member in said clamp means adapted to be distorted by relative movement of said fixed member and said movable member of said clamp means, to form a gripping engagement for said source of light.

3. A demountable, portable light for imparting intelligence at a distance, consisting of: a word transmitting sign; a portable source of light; adjustable clamp means for operatively securing said sign to said light source; said sign formed with a sheet of clear light conducting plastic material disposed, for use, substantially co-axially with the light beam from said light source; a covering of colored light transmitting material secured to the face of said clear plastic sheet; words formed on the said colored covering; opaque masking means for three sides of said sign; said adjustable clamp means secured to the unmasked end of said sign; and a resilient gripping member in said clamp means adapted to be distorted by adjusting said clamp means to form a gripping engagement for said source of light.

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