Oct. 27, 1925

1,558,906

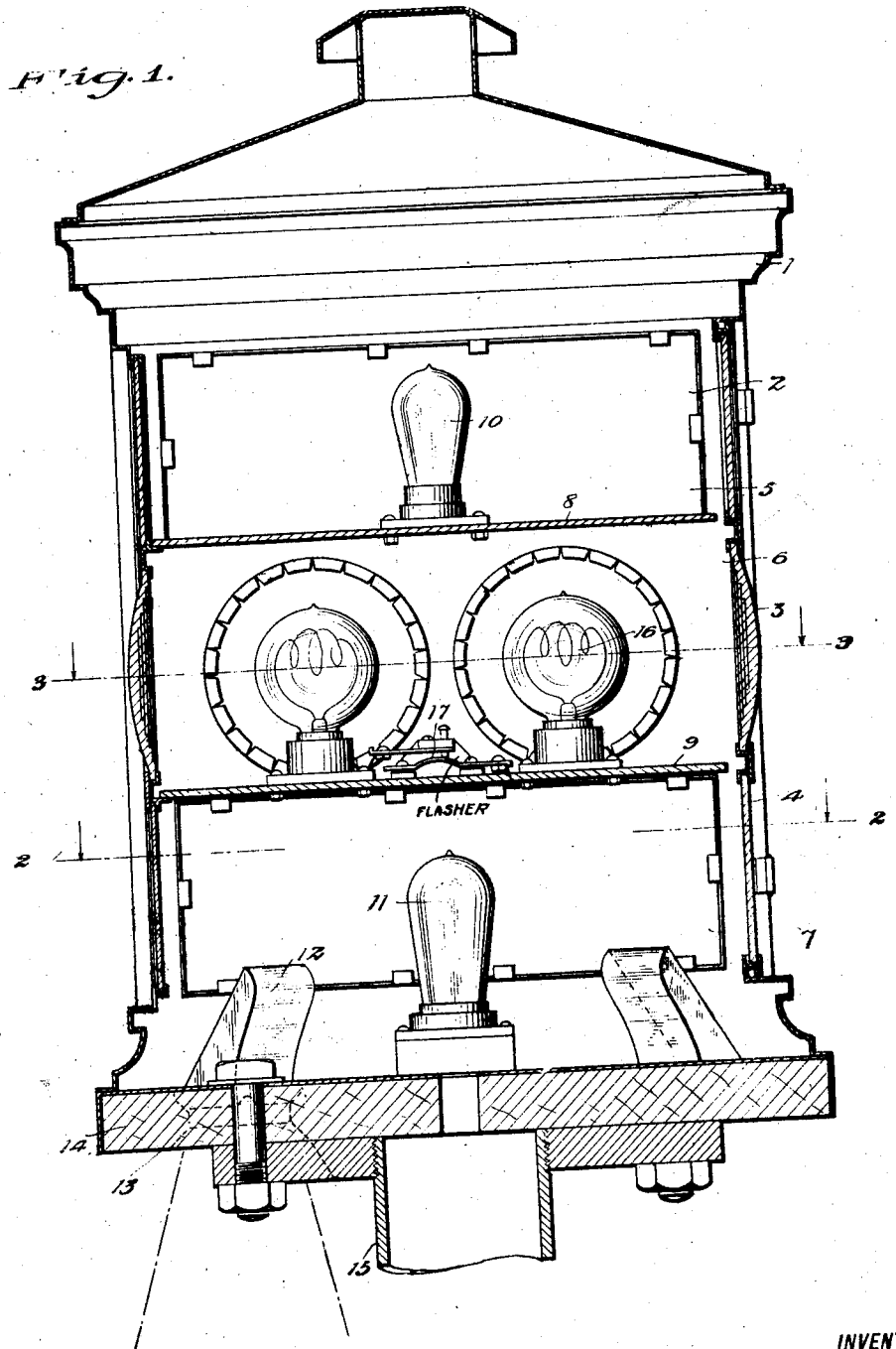
F. MILLIKEN

STREET SIGNAL LAMP

Filed Feb. 21, 1922

4 Sheets-Sheet 1

Fig. 1.



WITNESSES

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STREET SIGNAL LAMP

Filed Feb. 21, 1922

4 Sheets-Sheet 2

Fig. 2.

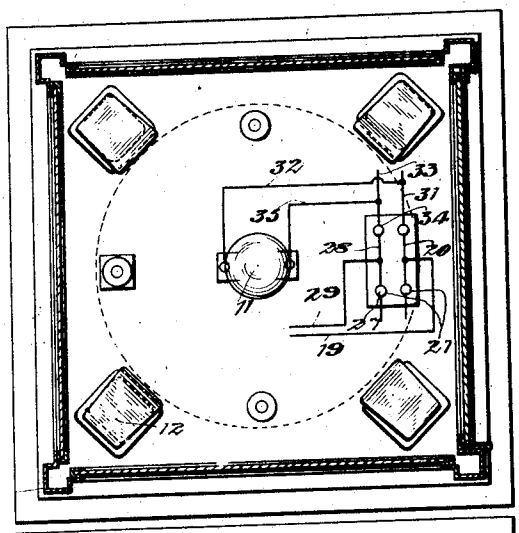


Fig. 3.

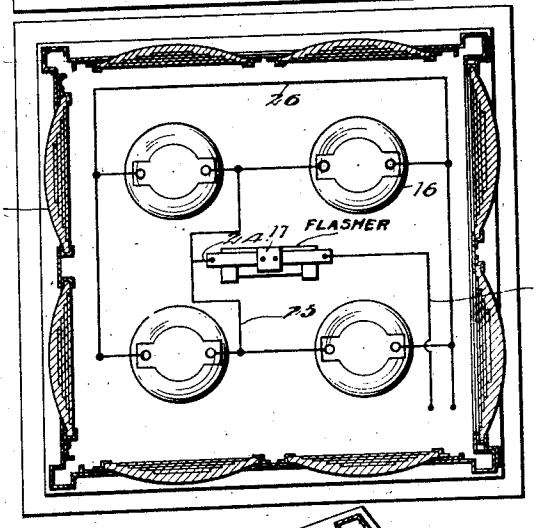
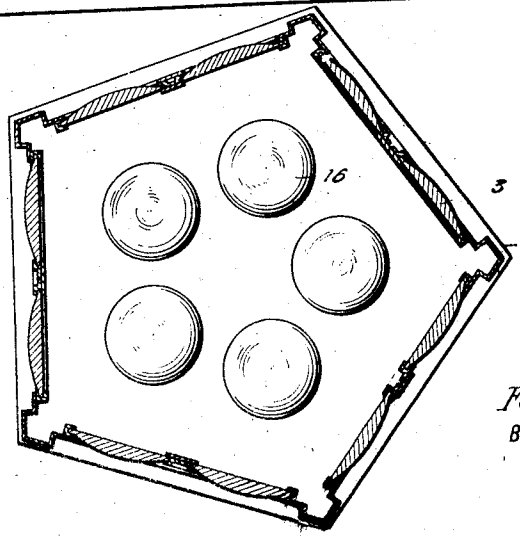


Fig. 4.



WITNESSES

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4 Sheets-Sheet 3

Fig. 5.

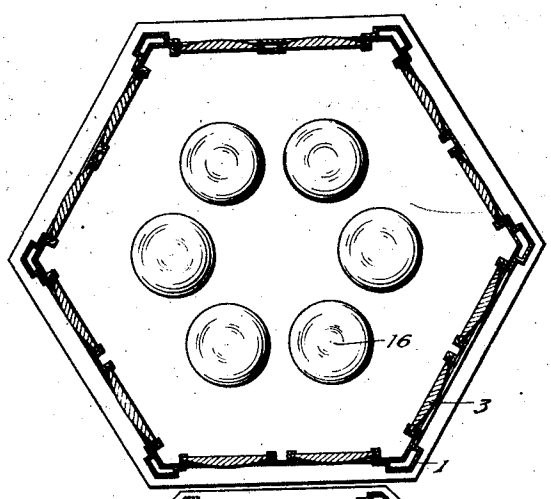


Fig. 6.

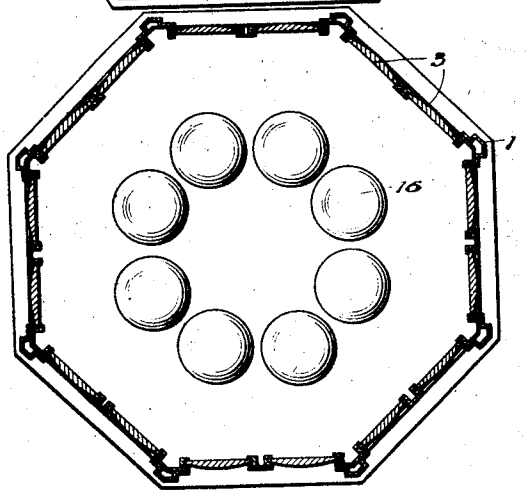
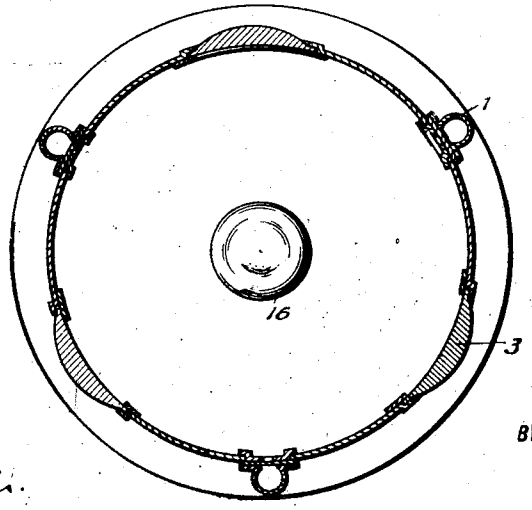


Fig. 7.



WITNESSES

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4 Sheets-Sheet 4

Fig. 11.

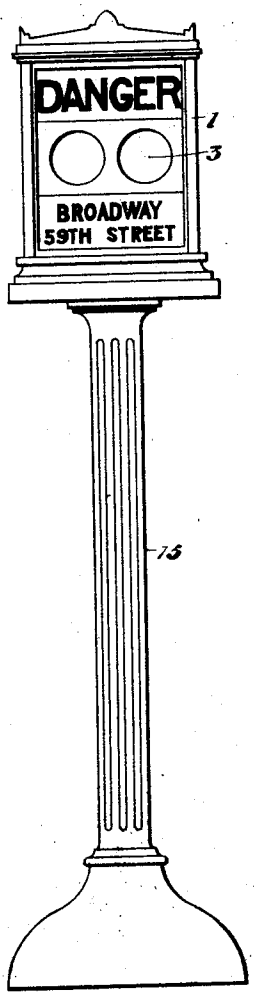


Fig. 9.

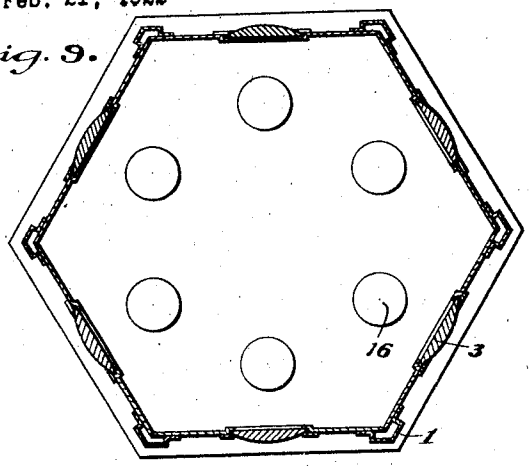


Fig. 10.

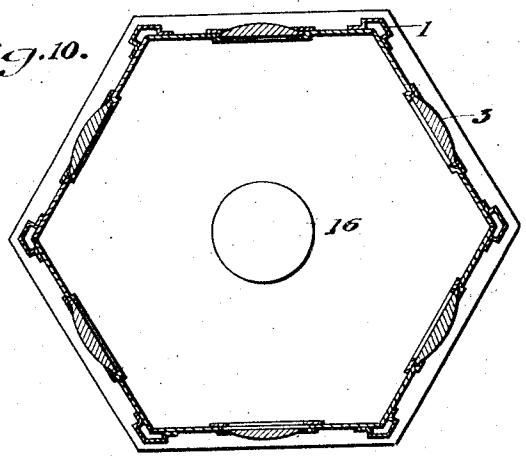
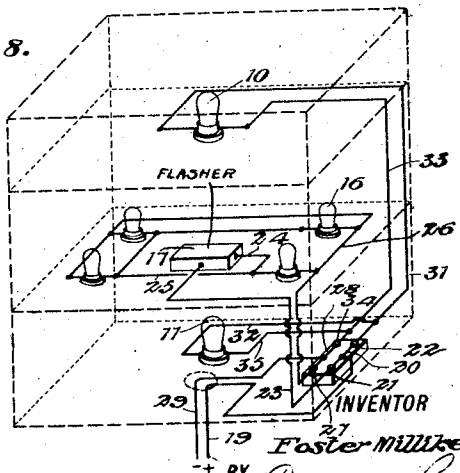


Fig. 8.



WITNESSES

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Patented Oct. 27, 1925. 1,558,906

UNITED STATES PATENT OFFICE.

FOSTER MILLIKEN, OF LAWRENCE, NEW YORK.

STREET SIGNAL LAMP.

Application filed February 21, 1922. Serial No. 538,304.

To all whom it may concern:

Be it known that I, FOSTER MILLIKEN, a citizen of the United States, and a resident of Lawrence, in the county of Nassau and State of New York, have invented a new and Improved Street Signal Lamp, of which the following is a full, clear, and exact description.

My invention relates to street signal lights intended for the control and direction of traffic, and by my invention I aim, among other things, to produce a lamp of this type having a high degree of visibility for the amount of light used, and one whose position can readily be judged by unconscious ocular triangulation when the light stands alone and conditions are such that no surrounding objects can be seen (as for example in a fog or a rain). This is highly desirable, for many accidents have arisen from motorists striking light posts placed in the highway carrying only a single light, for under such circumstances drivers cannot readily judge the exact position of the light and not infrequently strike the post while believing the light still to be a long distance away. According to my present invention, this object is accomplished by supplying a lamp which at night shows one or more bands of steady light, adjacent to which is arranged a flashing light. In the preferred embodiment of my invention there are at least two bands or zones of steady light between which is located the flashing light, which may advantageously send out its beams through lenses.

I have also found it desirable so to arrange the structure that the base of the lamp or the ground at the foot of the lamp is illuminated, in order that the motorist may be able readily to measure the distance from a fixed zone of light to the ground.

In the accompanying drawings which show illustrative examples of lamps embodying my invention—

Figure 1 is a longitudinal vertical section through a lamp disclosing an embodiment of the invention, the base and supporting standard being broken away.

Figure 2 is a sectional view through Figure 1 approximately on line 2—2.

Figure 3 is a sectional view through Figure 1 approximately on line 3—3.

Figure 4 is a view similar to Figure 3 but showing a slightly modified form of casing and arrangement of lamps.

Figure 5 is a view similar to Figure 4 but showing a different shape of casing and a different arrangement of lamps.

Figure 6 is a view similar to Figure 4 but showing a still further arrangement of lamps and casing.

Figure 7 is a view similar to Figure 4 but showing a round construction of casing and a centrally positioned lamp.

Figure 8 is a diagram showing an arrangement of wiring embodying certain features of the invention.

Figure 9 is a sectional view similar to Figure 5 but showing only a single lens in each face of the casing.

Figure 10 is a view similar to Figure 9 but showing a slight modified form wherein only a single lamp is used instead of an individual lamp for each lens.

Figure 11 is a side view on a reduced scale, of the lamp structure illustrated in Figures 1 to 3 inclusive.

Referring to the accompanying drawings by numeral, 1 indicates a casing of any desired kind, as for instance, a sheet metal casing formed substantially square in cross section as indicated in Figures 2 and 3. This casing is provided with a number of glass panes or windows 2 at the upper part, a pair of lenses 3 at the center section and windows 4 at the lower section. The various parts of the casing 1 are divided into chambers 5, 6 and 7 by division plates 8 and 9 of metal or other suitable material. The chamber 5 is supplied with a single light or lamp 10 though it might be provided with more lamps if desired. It is intended that the lamp 10 shall remain steadily illuminated during the hours of darkness, and by throwing its light through the windows 2 this lamp will supply a fixed zone or band of light near the top of the device. In like manner the lower chamber 7 is supplied with one or more lights such as lamp 11 which are intended to be kept permanently illuminated. Lamp 11, shining through the windows 4, supplies a zone or band of light near the bottom of the casing 1 which is spaced away from the upper band. Arranged about the lamp 11 are lenses 12 which are positioned in suitable openings 13 in the base 14. These lenses 12 are so designed as to refract light from the lamp 11 downward and illuminate the standard 15 so that a motorist approaching this lamp will see the two fixed bands of light which have

been referred to and will also be able to judge how far from the ground these two bands of light are located.

Arranged in the chamber 6 are four lamps 16, said lamps being arranged opposite the various lenses 3 as shown in Figure 3 in order that as said lamps are turned on and off they will produce flashes of light through the lenses 3. It may be noted, that in the arrangement of lamps and lenses shown, there is in each instance a lamp positioned a short distance behind a lens so that such lamp is at about the focal center of a lens and so will throw parallel rays of light through the lens; in addition there is in each form shown a second light a considerable distance back of each lens which will tend to throw a ring of light through the lens. Other lights within the casing are arranged at various points in relation to each lens and tend to throw a general diffused light through such lens.

In order that the light which passes through the lenses may be made intermittent, the device is provided with some form of flasher, such, for example, as the thermostatic flasher 17 which is shown as interposed in the circuit of the lamps 16. The operation of a thermostatic flasher is such that when current is turned on the lamps will be intermittently turned on and off to produce the desired flashing action.

The casing 1 between the division members 8 and 9 is made of sheet metal except the space occupied by the lenses whereby the only light from these lamps will be through the lenses. When the current is turned on the lamps 16 will be intermittently lighted and thereby produce intermittent flashes of light through the lenses which will produce a very distinct and attractive signal. In addition, the lamp 10 will illuminate the upper part of the casing and will cause the danger sign at the top to be clearly illuminated. As shown in Figure 11, this sign is disclosed as the word "Danger" though some other word could be used and illuminated by the lamp 10. The various glass panes in the lower section 7 are provided with different information thereon, that shown in Figure 11 being the words "Broadway, 59th Street" indicating the location of the lamp. Other signal wording or police regulation may be provided at the upper and lower part of the lamp if desired and illuminated by the respective lamps 10 and 11 in addition to the fact that the lamp 11 will illuminate the standard or face 15. In the example shown the lenses are arranged in a horizontal plane and the zones or bands of light are shown as one above and one below the lenses. It is obvious that other arrangements could be made if desired.

Where a square casing is provided only two lenses will be seen when coming toward the light whereas if the arrangement shown in Figures 5 and 6 is used, two lenses will be seen directly and a partial view of the adjacent lenses will be also seen. In Figures 9 and 10, single lenses are arranged in the different faces of the casing and by reason of the hexagonal shape will present one full lens to view when approaching the lamp and a partial view of the adjacent side lenses whereby a decided attractive and distinct signal will be presented.

In Figure 8 is shown a diagram which will indicate the circuits of the various lamps and associated parts. As indicated in this diagram, current may be turned on at a distant point and from any suitable source, as for instance, the usual lamp circuit now in use in cities of today. When current is turned on it will pass in through the lead-in-wire 19 to the wire 20 which connects the fuse plugs 21 and 22. From fuse plug 21, current will pass through wire 23 to the flasher 17 which flasher may be of any desired or suitable structure. From the flasher 17, current passes through wire 24 to the wire 25 which wire is connected to one side of the various lamps 16. The opposite sides of these lamps are connected to a wire 26 which wire extends to the fuse plug 27 and through said fuse plug 27 to the connecting wire 28 and from said connecting wire through the lead-out-wire 29 back to the source. At the same time that current is passing through this circuit, current will also pass from the connecting wire 20 through the fuse plug 22, wires 31 and 32 to the respective lamps 10 and 11. From lamp 10 a wire 33 extends to the fuse plug 34 while from lamp 11 a wire 35 extends to wire 33 whereby the current from both of these lamps will return through the fuse plug 34 and from thence through the return of lead-out-wire 29 to the source. This arrangement of wiring is very simple and permits all of the lamps to be turned on and off from a distant point, as for instance, from the power house supplying the electricity. It will be noted that the lamps are arranged in parallel or multiple and, consequently, if one lamp becomes broken or fails for any reason, it will not affect the other lamps.

In Figures 4, 5, 6 and 7, modified constructions of casing and arrangements of lamps are shown for taking care of signalling under various circumstances. In case five streets should converge at a given point, the casing 1 will be arranged as shown in Figure 4 with five pairs of lenses 3, each pair facing down a street. The lamps 16 in this form of the invention are arranged so that two lamps will be opposite each pair of lenses as in the form shown in Figure 3 so as to secure the desired flashing effect. In case six or eight pairs of lenses are

desired, the arrangement is as shown in Figures 5 and 6 and under some circumstances, three lenses are desired and when this is the case a round casing 1 is provided with the lenses 3 positioned at the desired point and opposite the centrally arranged lamp 16. It will, therefore, be seen that the invention may be applied to different shaped casings by a slight re-arrangement of the lamps and other parts.

This application contains certain matter described but not now claimed in my earlier application, Serial No. 431,408 filed December 17, 1920 and is in part a continuation of said earlier application which now covers the particular arrangement of lamps and lenses in the middle compartment of the device.

What I claim is:—

1. In a lamp of the class described, a compartment, a light source within the compartment, a window at the periphery of the compartment adapted to show a defined area of light from said source, a standard supporting said compartment above the ground, and means directing a portion of the light from said source upon the standard and ground whereby the position of the area of light relative to the position of an observer may be readily judged.

2. A signal comprising a casing and means including a light source and windows in said casing for showing separated areas of light similarly shaped and located.

3. In a lamp of the class described, three superposed compartments, light sources in the top and bottom compartments, and windows at the periphery of said top and bottom compartments adapted to show similarly shaped areas of light from the respective light sources, said areas of light being spaced by the intermediate compartment.

4. In a lamp of the class described, a pair of spaced compartments, a light source in each thereof, windows at the periphery of said compartments adapted to show separate defined bands of light from the respective light sources, a third compartment intermediate said two compartments and containing a source of light, a lens at the periphery of said third compartment arranged to show a spot of light intermediate said areas of light.

5. In a lamp of the class described, a pair of spaced compartments, a light source in each thereof, windows at the periphery of said compartments adapted to show separate and similarly shaped areas of light from the respective light sources, a third compartment intermediate said two compartments and containing a source of light and lenses at the periphery of said third compartment arranged to show spaced defined spots of light intermediate said areas of light.

6. In a lamp of the class described, a pair of spaced compartments, a light source in each thereof, windows at the periphery of said compartments adapted to show separate and similarly shaped areas of light from the respective light sources, a third compartment intermediate said two compartments and containing a lamp, means for flashing said lamp, and lenses at the periphery of said third compartment arranged intermittently to show spaced defined spots of light intermediate said areas of light as said lamp flashes.

7. In a lamp of the class described, three superposed compartments, light sources in the top and bottom compartments, windows at the periphery of said top and bottom compartments adapted to show defined similarly shaped areas of light from the respective light sources, said areas of light being spaced by the intermediate compartment, a standard supporting said compartments above the ground, and means directing a portion of the light from one of said light sources upon the standard and ground.

8. In a lamp of the class described, a pair of spaced compartments, a light source in each thereof, windows at the periphery of said compartments adapted to show separate similarly shaped areas of light from the respective light sources, a third compartment intermediate said two compartments and containing a lamp, means for flashing said lamp, lenses at the periphery of said third compartment arranged to intermittently show spaced defined spots of light intermediate said areas of light as said lamp flashes, a standard supporting said compartments above the ground, and means directing a portion of the light from one of said light sources upon the standard and ground.

FOSTER MILLIKEN.