Dec. 6, 1966 M. R. YARGER 3,289,629

TRAFFIC SIGNAL

Filed Feb. 14, 1964

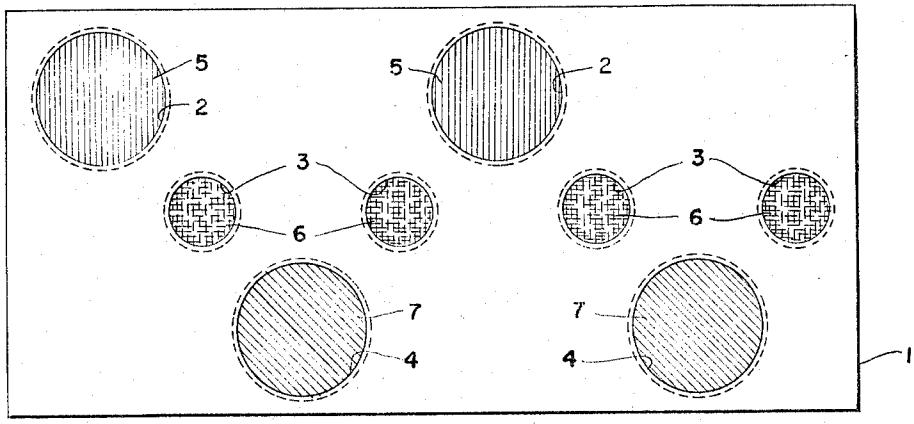


Fig.1.

Fig.2.

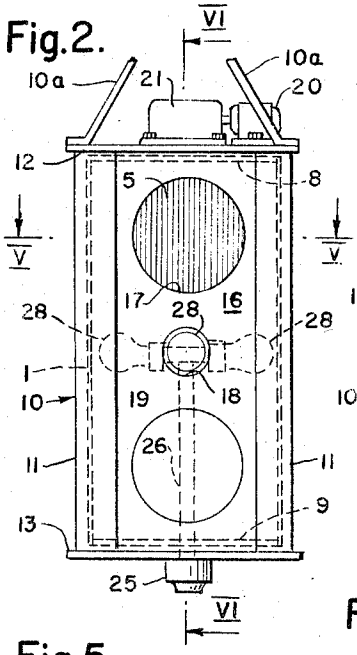


Fig.3.

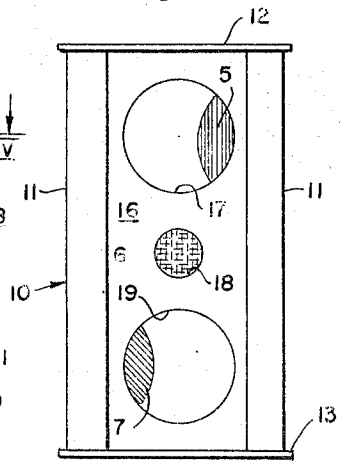


Fig.4.

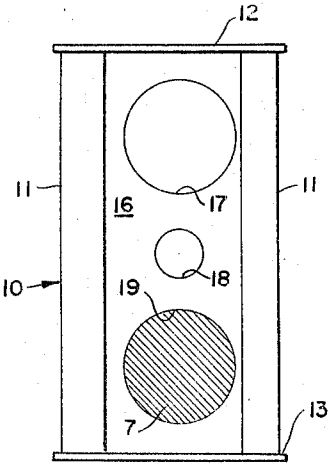


Fig.5.

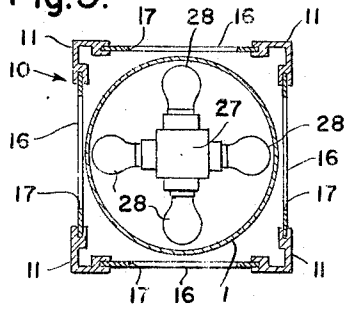


Fig.6.

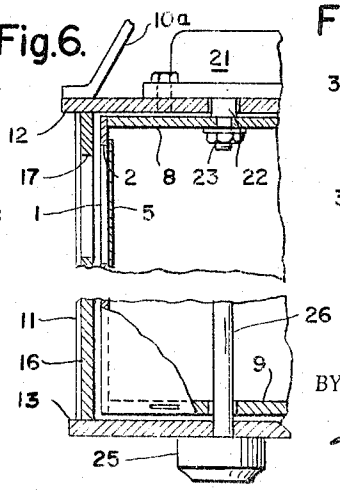
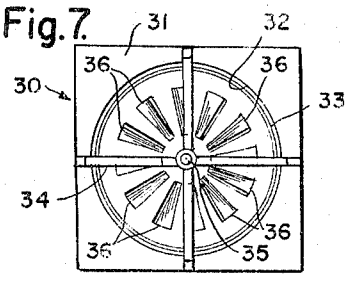


Fig.7.



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TRAFFIC SIGNAL

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This invention relates to a traffic light or signal and, more particularly, to improvements that will enable motorists or pedestrians to tell at a glance how soon the light will change.

An outstanding disadvantage of conventional traffic lights is that there is no way of telling how soon the light will change color. As a consequence, motorists and pedestrians proceed to cross an intersection just before the light changes from green to amber and sometimes are still crossing after the light has turned to red, particularly on wide streets, which very often results in accidents. Attempts have been made to overcome this difficulty by providing separate timers to denote the remaining time a particular light will continue. Such timers have not been found satisfactory nor generally adopted for the simple reason that they add considerable expense and complication to the signal and provide an additional item to observe which causes difficulties since the motorist or pedestrian is obliged to watch two different objects at the same time.

An object of the present invention is to overcome the above-named disadvantages by providing a traffic signal of relatively simple and inexpensive construction wherein the light itself gives a visual indication of how long a period remains before the light will change.

A more specific object of the invention is to provide a novel traffic signal embodying a slowly rotating cylinder having staggered cut-outs or window openings so arranged that red, amber and green signals will appear in succession and wherein such signals will provide a light of progressively changing size or area which provides a visual indication of the time remaining before the light will change in color.

Other objects and advantages will become more apparent from a study of the following description taken with the accompanying drawing wherein:

FIG. 1 is a plan view of a blank **1** from which a rotating cylinder is formed having cut-outs or windows carrying red, amber and green lenses and embodying the principles of the present invention;

FIG. 2 is an elevational view of the traffic light containing such cylinder and illustrating illumination of a red signal;

FIG. 3 is an elevational view showing how portions of the red and green signal appear and vary in area while the amber signal is on;

FIG. 4 shows the light illuminating a green signal;

FIG. 5 is a cross-sectional view taken along line V—V of FIG. 2;

FIG. 6 is a vertical, cross-sectional view with central portion cut-away for purposes of illustration to better show the internal construction of the light shown in FIG. 2; and,

FIG. 7 is a modification wherein the cylinder rotates by heated air convection currents, instead of by a motor as shown in FIG. 6.

Referring more particularly to FIG. 1, numeral **1** denotes a sheet of thin, flexible material, such as plastic, cardboard, metal, preferably aluminum, or other suitable material. Cut-outs or windows **2** are provided and are covered by red lenses of glass, or plastic material. In vertically and circumferentially staggered relationship, a plurality of circular cut-outs or windows **3** are provided which are covered by amber lenses **6**, also cut-outs **4** covered by green lenses or windows **7** of glass or plastic material. It should be noted that the ends of sheet **1** are overlapped slightly and secured together to form a hollow rotatable cylinder.

FIGS. 2 and 6 show a complete traffic light assembly comprising a top disc **8** and a bottom disc **9** to which the cylinder **1** is attached to form a substantially closed cylinder. A housing **10** surrounds cylinder **1** and has corner sections **11** to which are attached panels **16** having cut-outs or openings **17** adapted to register with and fully expose the red light through lenses **5**, and having circular cut-outs **18** centrally thereof for exposing the amber lenses **6**, when in registry, and having cut-outs **19** for exposing the green lenses **7**, when in registry. The cut-outs are so disposed relative to the lenses so as to fully expose red, amber and green lights in succession at each of the four side panels **16** of the signal.

Cylinder **1** is rotated about its axis by means of a motor **20** which, through a speed reducing gear **21**, drives a shaft **22** at slow speed, which shaft is rigidly secured to disc **8** by nut **23** so that the cylinder is rotated by the motor at relatively slow speed. A cover or hood **10***a*, shown, broken away, covers the motor and reducing gear. An electrical outlet **27** is provided to which are connected electrical wires which extend through a hollow stem **26** and leading from an outlet box **25**. Into the outlet are screwed a plurality of light bulbs **28**. The advantage of a plurality of bulbs is that if one or two bulbs should burn out, the light will still operate.

FIG. 7 shows a modification of the invention including a housing **30** having a top portion **31** with a circular cut-out **32** into which a rotating cylinder **33** is disposed, which cylinder has a top disc provided with a plurality of upstruck vanes **36**. The cylinder **33** is supported for rotation by intersecting frame member **34** which carry a vertical spindle **35** attached to the disc and about the axis of which the cylinder rotates. As the result of convention currents caused by the heat of the lamp bulbs **28** which pass through vanes **36** by chimney effect, the cylinder **33** is slowly rotated without the necessity of a driving motor. This modification is extremely inexpensive and highly useful in rural communities having a low budget for traffic signals or for maintenance thereof.

In operation, it will be noted from FIG. 2 that when the red lens **5** and cut-out **17** are in registry, only a red light signal will be given at opposite panels **16**. As cylinder **1** rotates counter-clockwise, as viewed from the top, the exposed area of the red signals will gradually diminish in size, as shown in FIG. 3, until opposite amber lenses **6** come into full registry with cut-outs **18** to fully expose the amber signals, while at the same time, a segment of the green lens **7** will become exposed, on each opposite panel **16**, as shown. It will be readily apparent to motorists and pedestrians, by noting how small in area the red light has become, or how progressively large the green light signal has become, exactly how much time is left for the light to change from green to amber. Similarly as the cylinder slowly rotates from the position shown in FIG. 3 to that shown in FIG. 4, the observer will know exactly how soon the green light will be fully on by noting how small the amber light area has become, therefore will be better able to judge whether or not he should walk across an intersection or drive across an intersection, depending upon whether the observer is a pedestrian or motorist, respectively.

While circular cut-outs and lenses are shown, it will be apparent that other shapes, such as square, rectangular etc. may be used instead, or other arrangements may be used so long as the principle of the light of progressively diminishing area is used to give a visual indication of the time remaining for a light change.

Thus it will be seen that I have provided an efficient

traffic signal that will give to the motorist and pedestrian a visual indication of how much time remains for a light to change from red to green or green to red by noting the extent that the area of exposure of a given color light has decreased or increased, therefore providing greater safety by completely eliminating the risk of misjudging how much time remains for a light change, which has been a source of numerous traffic accidents in the past.

While I have illustrated and described several embodiments of my invention, it will be understood that these are by way of illustration only, and that various changes and modifications may be made within the contemplation of my invention and within the scope of the following claims.

I claim:

1. A traffic signal comprising a hollow cylinder having circular pairs of red, amber and green lenses mounted in cut-out portions thereof staggered vertically and circumferentially of said cylinder, the amber lenses being central in a vertical direction light bulb means inside said cylinder for providing illumination, a housing surrounding said cylinder having cut-out portions offset vertically and circumferentially so as to effect sequential registry with said

lenses, whereby only one pair of lenses will be fully exposed at any one time, and means for slowly rotating said cylinder with respect to said housing so as to effect sequential full registry with pairs of said lenses, whereby an observer will have a visual indication of the time remaining for a change in signal by noting the amount of area of exposure of the various lenses.

2. A traffic signal as recited in claim 1, wherein said means comprises a top disc on said cylinder having a plurality of upstruck vanes disposed circumferentially and through which air currents caused by said light bulb means flow to effect rotation of said cylinder.

References Cited by the Examiner

UNITED STATES PATENTS

1,827,481	10/1931	Mosher	340—43
2,260,231	10/1941	Parker	116—63
2,274,018	2/1942	Weed	116—63
2,294,883	9/1942	Anderson et al.	340—84

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