

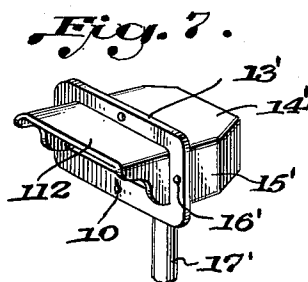
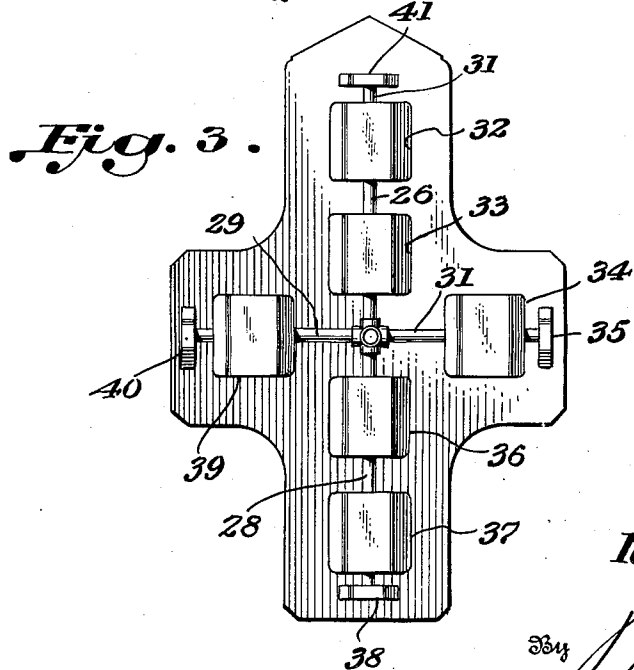
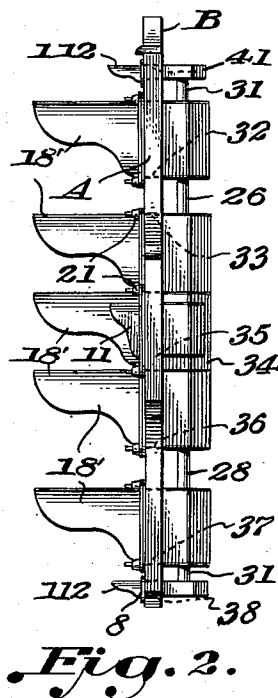
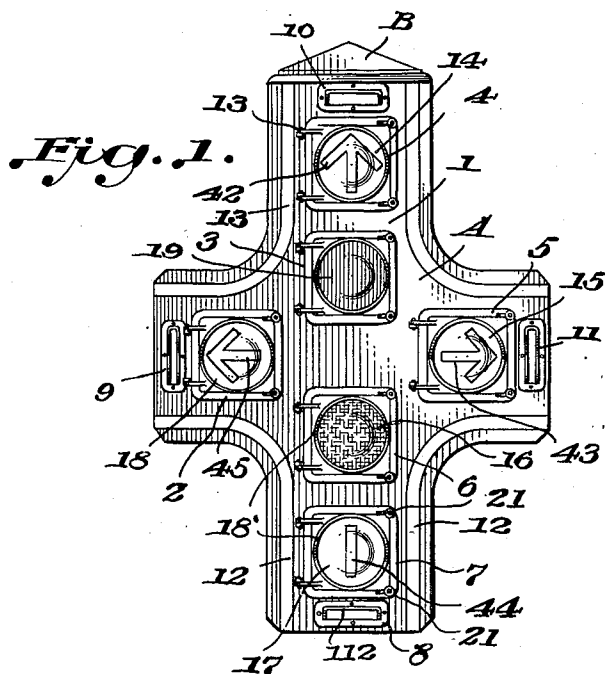
May 22, 1951

R. O. FERGUSON
TRAFFIC SIGNAL

2,553,906

Filed Aug. 30, 1948

2 Sheets-Sheet 1



Inventor
Robert O. Ferguson

पेसु *Prastu & Prastu*

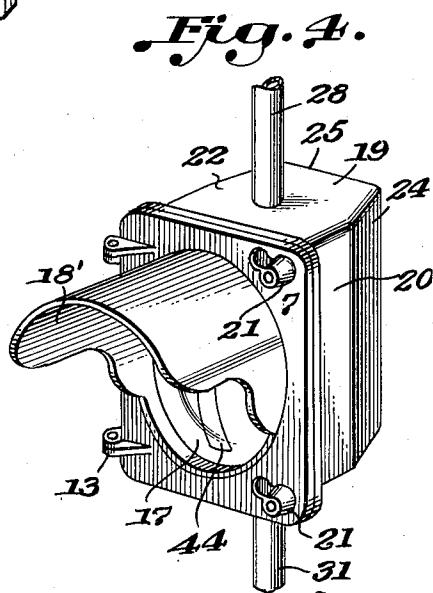
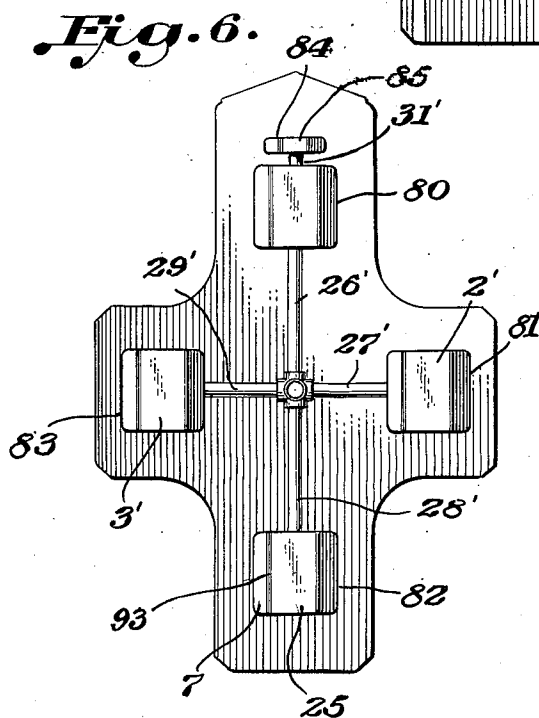
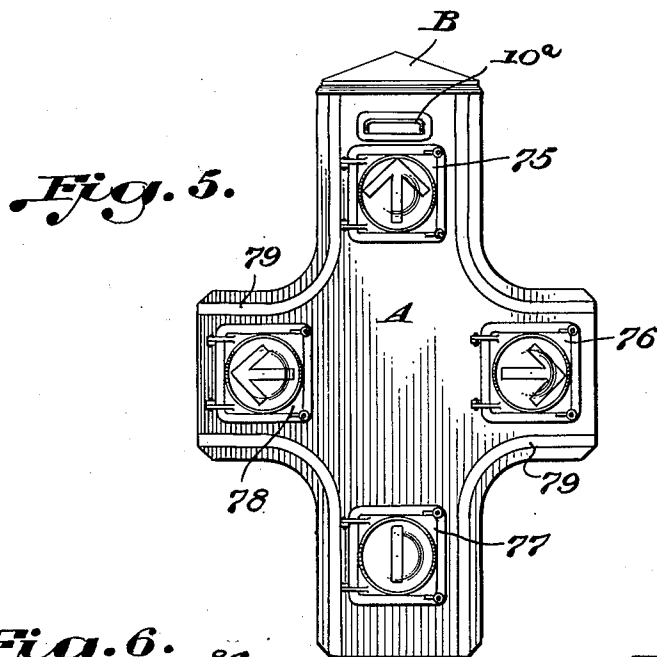
May 22, 1951

R. O. FERGUSON
TRAFFIC SIGNAL

2,553,906

Filed Aug. 30, 1948

2 Sheets-Sheet 2



Inventor
Robert O. Ferguson,

By

Mason & Mead
ATTORNEYS

UNITED STATES PATENT OFFICE

2,553,906

TRAFFIC SIGNAL

Robert O. Ferguson, Bristol, Tenn., assignor of
one-half to Bristol Steel & Iron Works, Inc.,
Bristol, Va., a corporation of Virginia

Application August 30, 1948, Serial No. 46,730

6 Claims. (Cl. 177—327)

1

This invention relates to a traffic signal for use at street intersections.

An object of the invention is to provide a traffic signal having a maximum number of direction indicators, all mounted in a unitary casing.

An additional object of the invention is to provide a traffic signal comprising a base or panel having apertures, there being a multiplicity of indicator units, any one of which may be inserted in the apertures.

A further object of the invention is to provide a traffic signal comprising a base or panel, the panel being of the outline of the street intersection, with apertures in the panel for the introduction of indicator units.

Still another object of the invention is to provide a traffic signal comprising a base or panel having apertures for the introduction of primary and secondary indicator units, the units being of especial construction, as hereinafter described.

Other objects of the invention will be found throughout the specification.

In the accompanying drawings—

Figure 1 is a front elevation of a traffic signal;

Figure 2 is a side elevation of the traffic signal shown in Figure 1;

Figure 3 is a rear elevation of the traffic signal shown in Figure 1;

Figure 4 is a perspective view of one of the main or primary indicator units;

Figure 5 is a front elevation of a different form of traffic signal;

Figure 6 is a rear elevation of the traffic signal shown in Figure 5; and

Figure 7 is a perspective view of one of the auxiliary indicator units.

Heretofore, it has been the practice to erect at street intersections a plurality of units, arranged in a vertical column, said individual units displaying "Stop," "Go" and "Caution" signals. In such cases, where the traffic was to be directed through only and/or right turn and/or left turn, there was attached to one or more of the vertically arranged columns of "Stop," "Go" and "Caution" signals painted signs such as "No left turn," "Thru only," "Right turn only," or similar signs. Sometimes, these signs were attached to the right or left of the "Go" signal. During periods of poor visibility, such as during rainy or foggy weather, or at night, it became impossible to read these painted signs, such as "No left turn," etc.

The present signal aims to do away with such makeshift types of lettered sign traffic signal attachments and, in addition, to provide a signal having clearly indicated thereon the direction or directions in which traffic is permitted to proceed.

2

Furthermore, a single panel or housing has been constructed so as to take care of the various "Right," "Left" or "Thru" signals and those indicating "No left turn," "No right turn" or "Thru only" traffic. In one form of the invention, the panel also is provided with the "Caution" and "Stop" signal units.

In Figures 1 to 3 and 5 and 6, two forms of the invention have been illustrated. These signals have been constructed for street corners or highway intersections where the intersection comprises a cross [†]. It is to be understood, however, that the drawings and description are for illustrative purposes only, the invention being adapted to be used with various types of intersections, including an intersection having a through street and a single street running perpendicular thereto forming a T. Other intersections include a street or highway with branches therefrom. Such an intersection is termed a Y.

The invention is adapted to many other forms of signals which may designate other types of intersections, and these include streets which run into a circle in a manner similar to the spokes of a wheel, or streets which connect with the four corners of a square and at points between the corners.

In the drawings, referring particularly to Figures 1 to 3, 4 and 7, A indicates the panel or base of the signal and B an ornamental top or cap for said panel. The panel may be made of any suitable material, and is preferably made of weather-resisting metal, such as aluminum, stainless steel, or of an alloy containing a non-rusting metal, such as nickel.

The panel shown in these figures is provided with a front face 1. The numerals 2, 3, 4, 5, 6 and 7 designate main or primary indicator units, and the numerals 8, 9, 10 and 11 indicate auxiliary or secondary indicator units.

Both the primary and secondary indicator units are so positioned in the panel as to indicate, when illuminated, whether a motorist may proceed along the streets indicated in the outline of the panel or whether the motorist should not so proceed. Additionally, the center of the panel is provided with "Stop" and "Caution" indicator units.

All of the primary units, except the "Stop" and "Caution" indicator units, are for the purpose of indicating the direction in which the motorist may proceed and the auxiliary or secondary indicator units designate, when suitably illuminated, which streets may not be used by the motorist. It will be noted that the through, right and left lanes each have primary and secondary indicator units. Only one of these pairs is illuminated during one period of time, the lighting being alternated at regular intervals.

The turn itself, whether right or left, is indi-

3

cated by the stripe 12. This may be a white stripe, or one of any other color contrasting with the color of the front face of the panel. Although not shown, there may be reflector buttons, or other types of reflectors, located in the area of the stripe 12.

Each primary indicator unit is provided with a pair of hinges 13. Lenses 14, 15, 16, 17, 18 and 19 are also provided for the units. The lens 14 is provided with an arrow 42 indicating "through traffic"; lens 15 is provided with an arrow indicating a right turn; lens 17 is provided with a straight line 44 which, at a distance, appears as the tail of any one of the arrows; and lens 18 is provided with a left turn arrow 45. The numeral 18' indicates the hoods of the lenses for each primary indicator unit.

As seen in Figure 4, each primary indicator unit is provided with side walls 23. These side walls closely engage the squared apertures 32, 33, 34, 36, 37 and 39, as seen in Figure 3. The auxiliary or secondary indicator units, shown in Figure 7, are provided with straight walls 14', 15', and a vertical flange 13' having apertures 16' for attachment of the indicator units in position in the several apertures 35, 38, 40 and 41, shown as extending through the panel in Figure 3.

Referring to Figure 3, it will be noted that the housing for the electrical wires connected to light bulbs or other sources of illumination within both the primary and secondary indicator units is shown in the form of pipes or conduits 26, 28, 29 and 31. These pipes may connect the units as shown in Figure 3, but may be connected to the units in any suitable manner.

The primary indicator units are each provided with a flange adjacent the front face thereof for attaching these units in the several apertures in the panel in the same way that the secondary unit shown in Figure 7 may be attached. The secondary units may be provided with hoods 112.

It is to be understood that, although the units shown in Figures 4 and 7 are square or oblong in cross-section, these units may be circular in cross-section or may have any number of sides. Therefore, they may be pentagonal, hexagonal, octagonal, or have any other number of sides, but it is preferred, in order that they may be rigidly mounted in the panel, that the cross-section of the units correspond to the configuration of the apertures of the panel into which they fit.

The structure shown in Figures 5 and 6 is similar to the structure shown in Figures 1 to 3, except that the "Stop" and "Caution" units have been omitted from the center of the panel. In these figures, the panel A is provided with the usual ornamental cap B. An auxiliary or secondary indicator unit 10a, such as shown in Figure 7, may be mounted between the cap and the primary indicator unit 75, which unit is located in the "through traffic" portion of the panel. Other primary indicator units 76, 77, 78 and 79 represent the stripes which show the turns, and these stripes are in contrast to the color of the face of the panel. Alternatively, any suitable construction may be employed to cause the stripes to be illuminated by lighting means. For instance, the stripes 12 or 78 may be made of neon tubes or openings may be cut through the panel in the shape of stripes and a source of illumination placed on the back of the panel in such a position as to shine through the openings cut in the shape of the stripes.

Referring to Figure 6, it will be noted that the primary indicator units are located in square

4

apertures 80, 81, 82 and 83, and the auxiliary or secondary indicator unit 85 is shown in an oblong aperture 84. Other corresponding cross-sectional shapes may be used for units and apertures.

As shown in Figure 6, the various units are connected to each other and to a central union member by means of metal conduits 26', 27', 28', 29' and 31'.

The wires connected to the light bulbs or other sources of illumination within the units are housed in these conduits, and these wires may be connected to a suitable source of electricity, such as the usual city 110-volt, 60-cycle alternating current, through the union member shown centrally of the drawings in Figures 3 and 6.

Preferably, the signals are mounted on lamp posts or other standards, which are provided with clips or other means not shown, which rigidly engage the pipes shown in Figures 3 and 6. The signals, however, may be mounted in any suitable location, such as on the side of a building by suitable supports, or they may be suspended on wires or cables extending transversely across a street, immediately in front of the intersection.

The primary indicator units, except the "Caution" and "Stop" units, are usually provided with green lenses and each preferably has an arrow mounted on the lens to indicate direction when the light source within the unit is illuminated, except the lowermost unit. This usually has a green lens and is preferably lit continuously to form the "tail" of the arrows of the through, right and left lenses shown in Figures 1 and 5. The auxiliary or secondary indicator units are preferably provided with red lenses and when one of these is illuminated, it shows that traffic is not permitted to proceed on that street until the light for these units is turned off and the adjacent primary unit is illuminated [with its direction arrow] to indicate the change in traffic.

Should there be a one-way street coming into the intersection, from the direction opposite the arrow 42, or arrow 43, or arrow 45 (Figure 1), the light behind secondary indicator units 10, 11 or 9, respectively, is kept on continuously and its adjacent primary indicator unit [4, 5 or 2] is not illuminated as long as that street remains a one-way street coming into the intersection.

It is to be understood that the changing of the light signals within the primary and secondary indicator units is accomplished by master control switching mechanism, supplemented when necessary by manual controls of the type now commonly used in cities having traffic light systems. The present signal is one forming part of a city traffic control system, there being one or more of them used at each important traffic intersection, all being preferably connected to a central control station.

It will be understood that changes may be made to the structures shown, provided they come within the scope of the appended claims.

I claim:

1. A traffic signal comprising a panel having a plurality of apertures extending therethrough, said panel being in the shape of a highway intersection, and a plurality of primary indicator units detachably mounted in some of said apertures whereby said primary units may be interchangeably positioned on said panel, certain of said apertures being located in vertical central alignment with each other and certain of said

centrally aligned apertures having "stop" and "caution" indicator units located in said apertures, and auxiliary indicator units in others of said apertures each positioned adjacent to a primary indicator unit, certain of said auxiliary units being positioned on opposite sides of the primary indicator units and still another auxiliary indicator unit being located above still another of said primary indicator units, said apertures for the primary units being of different size than the apertures for said auxiliary indicator units, whereby a primary and a secondary unit located adjacent to each other may be alternately illuminated to indicate the movement or stoppage of traffic in a traffic lane.

2. A traffic signal comprising a panel having a plurality of apertures extending therethrough, said panel being in the shape of a highway intersection, and a plurality of primary indicator units detachably mounted in some of said apertures whereby said primary units may be interchangeably positioned on said panel, certain of said apertures being located in vertical central alignment with each other and certain of said vertically centrally aligned apertures having "stop" and "caution" indicator units located in said apertures, direction indicating units on opposite sides of said "stop" and "caution" units, auxiliary indicator units in others of said apertures each positioned adjacent to a primary indicator unit, certain of said auxiliary units being positioned on opposite sides of the primary indicator units, and still another auxiliary indicator unit being located above still another of said primary indicator units, and flange means on said units for attaching the same to said panel, whereby a primary and a secondary unit located adjacent to each other may be alternately illuminated to indicate the movement or stoppage of traffic in a traffic lane.

3. A traffic signal comprising a panel having a front face in the shape of a street intersection, a plurality of multi-sided openings extending through said panel, said openings being in vertical alignment, a plurality of additional multi-sided openings extending through said panel, said openings being on a line which is at an angle to said first-named openings, all of said openings indicating the general shape of a street intersection, a plurality of indicator units of substantially the same shape as said openings, means for detachably mounting said units in said openings whereby said units may be interchangeably positioned on said panel, each of said units having a lens, each of said units being adapted to house a source of illumination, certain of said units having direction indicating indicia, and means comprising conduits extending parallel to the back of said panel for connecting circuit means to certain of said units whereby said units may be alternately illuminated to indicate the movement or stoppage of traffic in a traffic lane.

4. A traffic signal comprising a panel having a front face in the shape of a street intersection, a plurality of multi-sided openings extending through said panel, said openings being in vertical alignment, a plurality of additional multi-sided openings extending through said panel, said openings being on a line which is at an angle to said first-named openings, a plurality of indicator units of substantially the same shape as said openings, means for detachably mounting said

units in said openings whereby said units may be interchangeably positioned on said panel, each of said units having a lens, each of said units being adapted to house a source of illumination, certain of said units having indicating arrows, and means comprising conduits extending parallel to the back of said panel for connecting circuit means to certain of said units whereby said units may be alternately illuminated to indicate the movement or stoppage of traffic in a traffic lane, certain of said units being of smaller size than others of said units and being in the shape of a bar, said last-named units having "stop" indicia and a casing for light sources, each of said smaller units being located immediately adjacent a larger unit.

5. A traffic signal comprising a panel having a plurality of apertures extending therethrough, said panel having means for indicating the shape of a highway intersection, a plurality of primary indicator units detachably mounted in some of said apertures whereby said primary indicator units may be interchangeably positioned on said panel, certain of said apertures being located in vertical central alignment with each other and indicator units in said apertures, and at least one auxiliary indicator unit detachably mounted in another of said apertures and positioned in offset relationship to said vertically aligned apertures whereby said primary units and said auxiliary unit may be alternately illuminated to indicate the movement or stoppage of traffic in a traffic lane.

6. A traffic signal comprising a panel having a plurality of apertures extending therethrough, said panel having means for indicating the shape of a highway intersection, and a plurality of primary indicator units detachably mounted in some of said apertures whereby said primary units may be interchangeably positioned on said panel, certain of said apertures being located in vertical central alignment with each other and indicator units in each of said apertures, and at least auxiliary indicator units detachably mounted in another of said apertures and positioned adjacent to a primary indicator unit, said apertures for said primary units being of different size than the aperture for the auxiliary unit whereby a primary and auxiliary unit located adjacent to each other may be alternately illuminated to indicate the movement or stoppage of traffic in a traffic lane.

ROBERT O. FERGUSON.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
D. 148,528	Ferguson	Feb. 3, 1948
D. 148,529	Ferguson	Feb. 3, 1948
1,363,566	Churchill	Dec. 28, 1920
1,366,107	Wefel	Jan. 18, 1921
1,638,625	Field	Aug. 9, 1927
1,778,717	Handlan	Oct. 21, 1930
1,989,237	Lilly et al.	Jan. 29, 1935
2,006,675	Ferguson	July 2, 1935
2,228,835	Leppert	Jan. 14, 1941

FOREIGN PATENTS

Number	Country	Date
541,156	France	Apr. 8, 1922