Nov. 18, 1924.

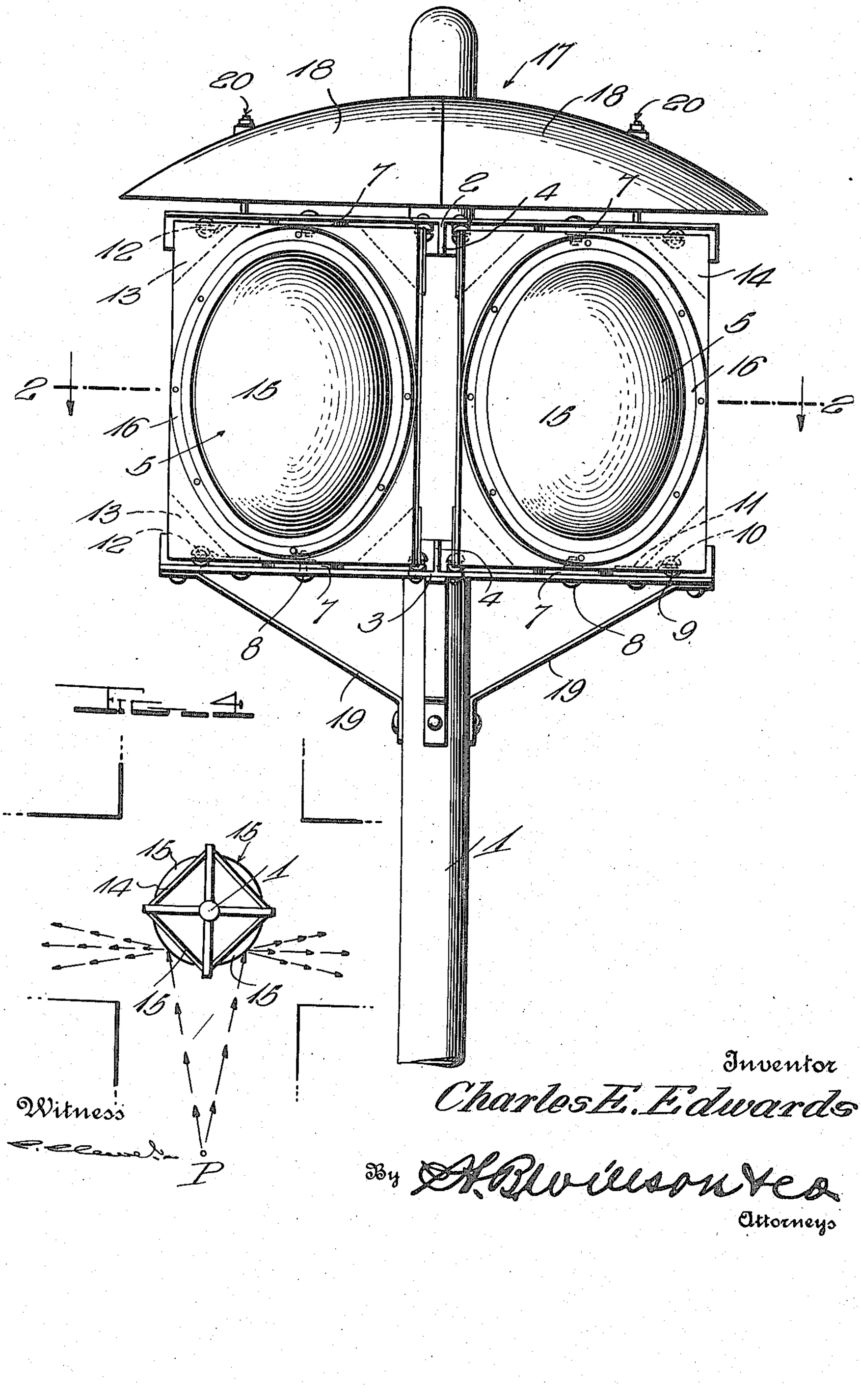
1,515,939

C. E. EDWARDS

TRAFFIC SAFETY SIGNAL

Filed July 20, 1922

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 2

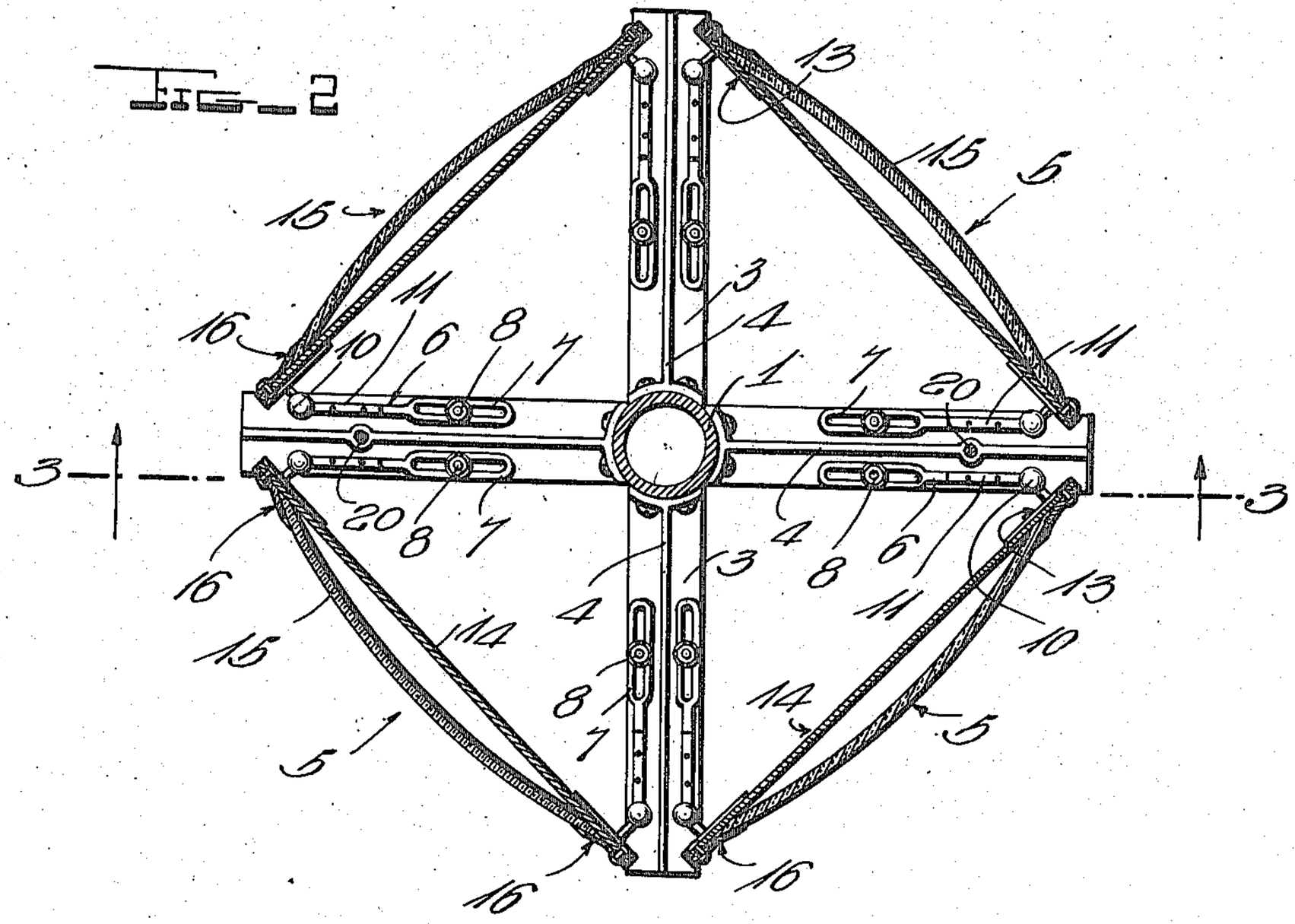
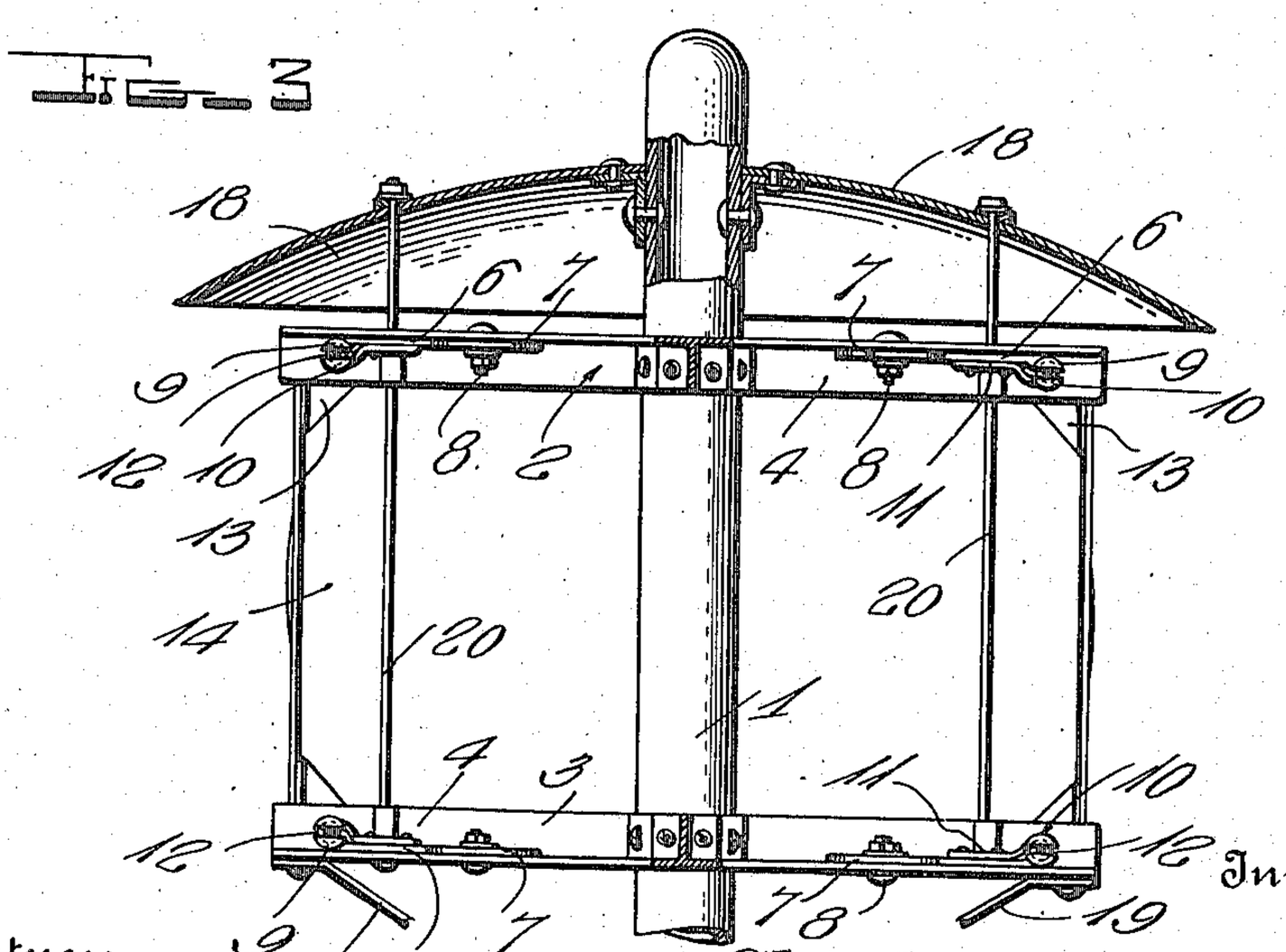


Fig. 3



Witness

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Patented Nov. 18, 1924. 1,515,939

UNITED STATES PATENT OFFICE.

CHARLES E. EDWARDS, OF VILLISCA, IOWA.

TRAFFIC SAFETY SIGNAL.

Application filed July 20, 1922. Serial No. 576,330.

To all whom it may concern:

Be it known that I, CHARLES E. EDWARDS, a citizen of the United States, residing at Villisca, in the county of Montgomery and State of Iowa, have invented certain new and useful Improvements in Traffic Safety Signals; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved signal or safety indicator which is primarily to be installed on roads which intersect one another, at points where highways cross railroad tracks, on private roads leading off of a main highway, and at various other places where such signals will serve to promote safe driving.

The principal object of the invention is to generally improve upon signals of this class by providing one which embodies, among other details, a suitable support for a plurality of reflectors which are disposed at substantial right angles to one another, these reflectors including mirrors of substantial circular shape, these mirrors being convex and projecting beyond their mountings and serving to effectively receive reflections of objects and the like within a radius of more than 180 degrees, whereby to permit such reflections to be rendered clearly visible to drivers approaching the signal within such a radius.

It may be stated here that the present application is an improvement upon an application embodying a similar signal which was filed on the 27th of Feb., 1922, Serial No. 539,606, the improvement embodying all of the details of that case together with the unique convex circular mirrors which serve more effectively for receiving reflections within an area greater than that above specifically mentioned.

It therefore follows that it is a further object of this invention to generally improve upon the original signal by providing an arrangement wherein the supporting arms can be detached and a portion of the sectional hood removed to permit two of the reflectors to be used and to permit the others to be removed. Hence, the signal is rendered effective for use at points where private roads lead off of the main road. In fact, this arrangement permits the signal to be employed effectively at practically all points where roads connect or cross one another, regardless of the relative angles.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same:—

Figure 1 is an elevational view of a safety signal constructed in accordance with this invention showing two of the reflectors disposed in divergent relation.

Figure 2 is a horizontal section taken on the plane of the line 2—2 of Fig. 1.

Figure 3 is a central vertical section, with parts in elevation, taken on the line 3—3 of Fig. 2.

Figure 4 is a diagrammatic or top plan view showing the device arranged at street intersections, the size of the device being considerably exaggerated for the purpose of illustration.

Coming now to the detailed description of the invention, it will be seen by referring to the drawings, that the numeral 1 designates a vertical standard or post which is designed to be anchored in the ground at the approximate place shown in Fig. 4 when used at road intersections. However, it is understood that according to the manner in which the roads are disposed with respect to one another or according to various circumstance which arise, the positioning of the post will be different. For instance, where a highway crosses a railroad track, the signal will be conveniently located on one side of the track and at a convenient point on the highway to permit it to be readily seen by drivers of vehicles approaching the track. In this way, if a train is approaching in either direction, it will be shown by the mirrors and the driver of a vehicle will be enabled to govern himself accordingly. Continuing, it is to be stated that a plurality of upper and lower supporting arms 2 and 3 respectively are arranged at the upper end of the standard, these arms being detachably connected at their inner ends in any suitable fashion to the latter. It is obvious that the arms are arranged one above the other and diverge in the approximate manner disclosed in the drawings. Although these supporting arms could be of some

other construction, they preferably include centrally disposed vertical flanges 4 which act in a manner to be hereinafter made clear. As seen, a plurality of reflectors 5 are arranged between the supporting arms and are disposed at approximate right angles to one another but are capable of having their angularity varied slightly by means to be hereinafter described. When the device is installed for use at the street intersections, the reflectors diverge in the relative positions shown from a given point P. (See the illustration in Fig. 4).

It is desirable to so connect the reflectors to the supporting arms, as to permit the former to have their angularities changed with respect to each other and to permit them to be independently inclined to accommodate irregular road surfaces. Any suitable means could of course be employed for obtaining this result, but the preferred means comprises a plurality of links 6 having slotted portions 7 at their inner ends cooperative with the retaining elements 8 arranged on the base portions of the arms on opposite sides of the central vertical flange. With this arrangement, it will be seen that the angularity of the link with respect to the vertical flanges may be varied to in turn vary the respective angular positions of the reflectors 5 with which the links are connected. To permit the reflectors to be inclined, the outer ends of the links are connected with the reflectors through the medium of universal joints. In carrying out this end, the links are formed at their outer ends with substantially semi-spherical heads 9 and these heads cooperate with similar semi-spherical portions 10 on the short strips 11 which are riveted or otherwise secured to the outer end portions of the links. These semi-spherical portions are spaced apart and the balls 12 carried by the triangular plates 13 are positioned between them. Hence, a unique universal connection is provided which permits the results sought to be effectively accomplished.

Special emphasis is to be laid on the particular construction of the aforesaid reflectors 5. Each reflector preferably comprises a plate 14 against the outer face of which concavo-convex mirrors 15 are held by clamping rims 16. It is to be stated here that after considerable experience with devices of this class, reflectors having flat mirrors have been abandoned and supplanted by the circular concavo-convex mirrors which serve to more effectively receive the reflections of the objects within a radius of considerably more than 180 degrees. That is, a pair of mirrors on any two given divergent mounting plates 14 will serve to permit a driver at a given point, such as shown in Fig. 4, to review the objects shown in these two mirrors. Hence, a driver of a machine being at the point P (see Fig. 4) will be able to effectively review objects appearing in either of the convex mirrors in front of him, thus enabling him to determine whether or not vehicles are approaching the signal in either direction on the street running at right angles to the street which he is on.

Although, it is not essential, it is desired in practice to make use of a suitable protector or shield 17 which is arranged over the several reflectors. This shield is preferably composed of half-sections 18 so as to permit one of the sections and the reflectors beneath it to be removed when it is not desired to use the whole assembly. This is advantageous in that it permits effective use of the device at points where private roads lead off of the main road. At such points, the complete assembly of four mirrors is not necessary.

In order to render the device extremely strong and durable, a plurality of inclined braces 19 may be used. Furthermore, vertical brace rods 20 are also preferably used and are connected with the half-sections of the shield at their upper ends and are suitably connected at their lower ends with the lowermost horizontal supporting arms.

As before indicated, the device is primarily designed for use at street intersections and at railroad crossings and the like. However, it can be used at many other points on highways where accidents are liable to occur. Assuming that the improved signal is installed at street intersections as shown in Fig. 4, it will be seen that views of objects will be reflected onto the two diverging mirrors from the given point P. In cases where the road surfaces are inclined, the desired mirrors can be inclined accordingly. Hence, the reflections can be just as effectively received from irregular road surfaces as from those which are substantially level. Should it be found necessary to tilt or otherwise adjust the mirros, it is only necessary to loosen the nuts on the binding devices so as to permit sliding or pivotal movement of the aforesaid connecting means. The universal connections are especially adaptable for permitting the desired adjustments of the mirrors.

Although it has not been heretofore mentioned, it is to be understood that the signal is adapted for use at night as well as in day time because the headlights on trains and vehicles will serve to illuminate the mirrors sufficiently to show reflections received thereon.

By carefully considering the description in connection with the drawings, persons familiar with devices of this class will doubtless be able to obtain a clear understanding of the invention. Therefore, a more lengthy and detailed description is deemed unnecessary.

Since probably the best results may be obtained with the construction and arrangement herein shown and described, this is taken as the preferred embodiment of the invention. However, I wish it to be understood that minor changes coming within the scope of the invention as claimed may be resorted to, if desired.

I claim:

1. A safety signal for use at street intersections, railroad crossings and the like comprising a supporting standard, a plurality of vertically spaced horizontally disposed supporting arms radiating from the upper portion of said standard, a plurality of reflectors including mirrors arranged between said arms, a plurality of connections between said reflectors and supporting arms, said connections being detachably and adjustably connected with said arms and having pivotal connection with said reflectors, and a sectional hood arranged on the upper portion of the standard and disposed over said reflectors.

2. A safety indicator for road intersections comprising a support, and a box-like structure mounted thereon, said structure including pairs of spaced approximately parallel reflectors having their ends disposed in close relation and each reflector being disposed approximately at right angles to an adjacent reflector and being capable of having its angularity varied with respect thereto and also being capable of tilting from a vertical plane, whereby to permit adjustments of the reflectors for receiving reflections of objects, lights, and the like from road surfaces of varying inclinations and from roads disposed at varying angles with respect to each other.

3. A device constructed as specified in claim 2, wherein the reflectors are equipped with substantially circular concavo-convex mirrors for the purpose set forth.

4. A safety indicator for road intersections comprising a support including a plurality of horizontal arms radiating therefrom, said arms including horizontal and vertical flanges, a plurality of mirrors for receiving reflections of objects from adjacent roads, a plurality of slotted links adjustably connected with the horizontal flanges of said arms, and universal connections between the outer ends of the links and said mirrors.

5. A safety indicator for road intersections comprising a supporting post, a plurality of upper and lower spaced supporting arms radiating from the said post, mirrors arranged between the outer ends of said upper and lower arms and disposed at substantially right angles to one another, a plurality of slotted links, means for adjustably connecting the slotted ends of said links with said arms, said links being equipped at their outer ends with spaced semi-spherical heads, and balls carried by said mirrors and positioned between said heads for providing universal connections, and a weather shield or protector arranged on the upper end of said post and disposed over and extending beyond said mirrors.

In testimony whereof I have hereunto affixed my signature.

CHARLES E. EDWARDS.