A. B. CHRISTOPHER.

SPARK INTENSIFIER.

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1,380,947. Patented June 7, 1921.

Fig. 1.

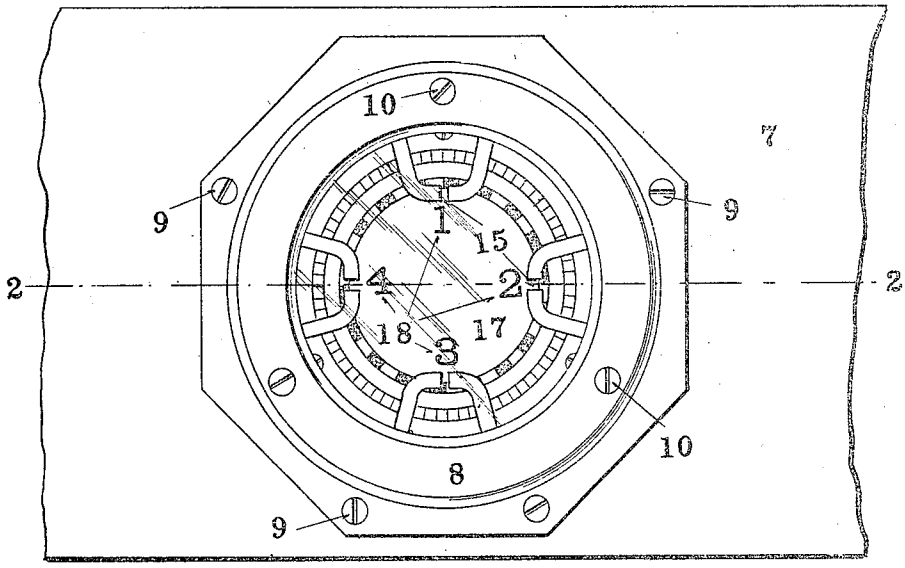
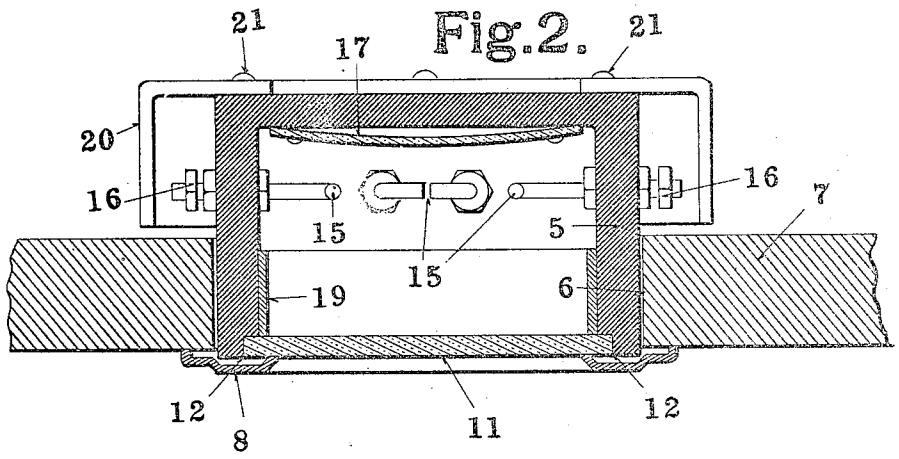


Fig. 2.



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SPARK-INTENSIFIER.

1,380,947. Specification of Letters Patent. Patented June 7, 1921.

Application filed October 11, 1920. Serial No. 416,171.

To all whom it may concern:

Be it known that I, ARTHUR B. CHRISTOPHER, a citizen of the United States of America, residing at the city of St. Louis, State of Missouri, United States of America, have invented a certain new and useful Spark-Intensifier, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which is appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a spark intensifier for internal combustion engines and is particularly applicable to the engines of automobiles, being adapted to be placed on the instrument board of the machine and being provided with a visual indicating means for designating the engine cylinder with which each auxiliary spark gap is electrically connected.

In the accompanying drawings which illustrate one form of device made in accordance with my invention, Figure 1 is a front elevation and Fig. 2 is a section taken on the line 2—2 of Fig. 1.

5 indicates a shallow cylindrical box of insulating material adapted to be situated in an opening 6 formed in the instrument board 7 of the machine. The box 5 is held in position by an annular member 8 secured to the instrument board 7 by screws 9 and to the front edge of the box 6 by screws 10. This annular member 8 also holds in position a transparent cover 11 having its edge situated in the annular rabbet 12 formed in the front edge of the box 5.

Arranged within the box 5 are a number of auxiliary spark gaps 15 corresponding in number to the cylinders of the engine in connection with which the device is used. In the present instance these auxiliary spark gaps 15 are shown as four in number. Each of the spark gaps 15 is provided with terminals 16 by means of which it is connected in series with its corresponding spark plug.

Situated behind the spark gaps 15 is a reflector 17 preferably slightly convex in form and having on its face numerals 18 or other visual indicating means for determining the particular engine cylinder with the spark plug of which it is electrically connected. Arranged in front of the spark gaps 15 is an annular reflector 19. This annular reflector 19 together with the reflector 17 causes the formation of a plurality of images of each of the spark gaps so as to not only enhance the appearance of the device when in operation but also to make the failure of any spark gap to operate more conspicuous. In case the device is applied to an instrument board open at its lower edge I prefer to provide a protecting shield 20 extending around the lower half of the instrument to protect the terminals 16 and secured to the back of the box 5 by screws 21.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a device of the class described, the combination with a receptacle, of an auxiliary spark gap situated therein, a reflector arranged behind said spark gap, and a second reflector arranged in front of said gap and having its surface angularly disposed with respect to said first named reflector.

2. In a device of the class described, the combination with a receptacle, of an auxiliary spark gap situated therein, a reflector provided with a curved face arranged behind said spark gap, and a second reflector arranged in front of said spark gap and having its surface angularly disposed with relation to said first named reflector.

3. In a device of the class described, the combination with a receptacle, an auxiliary spark gap situated therein, a convex reflector arranged behind said spark gap, and a second reflector arranged in front of said spark gap and having its surface angularly disposed with relation to said first named spark gap.

4. In a device of the class described, the combination with a receptacle, of a plurality of auxiliary spark gaps situated therein, a reflector arranged behind said spark gaps, and an annular reflector arranged in front of said spark gaps and having its axis substantially perpendicular to the face of said first named reflector.

5. In a device of the class described, the

combination with a receptacle provided with a transparent cover, of a plurality of auxiliary spark gaps situated therein, a convex reflector arranged behind said spark gaps and provided with visual means for indicating the engine cylinder with which each spark gap is electrically connected, and an annular reflector situated in front of said spark gaps and having its axis substantially perpendicular to the axis of said first named reflector.

In testimony whereof, I have hereunto set my hand and affixed my seal.

ARTHUR B. CHRISTOPHER. [L. S.]