

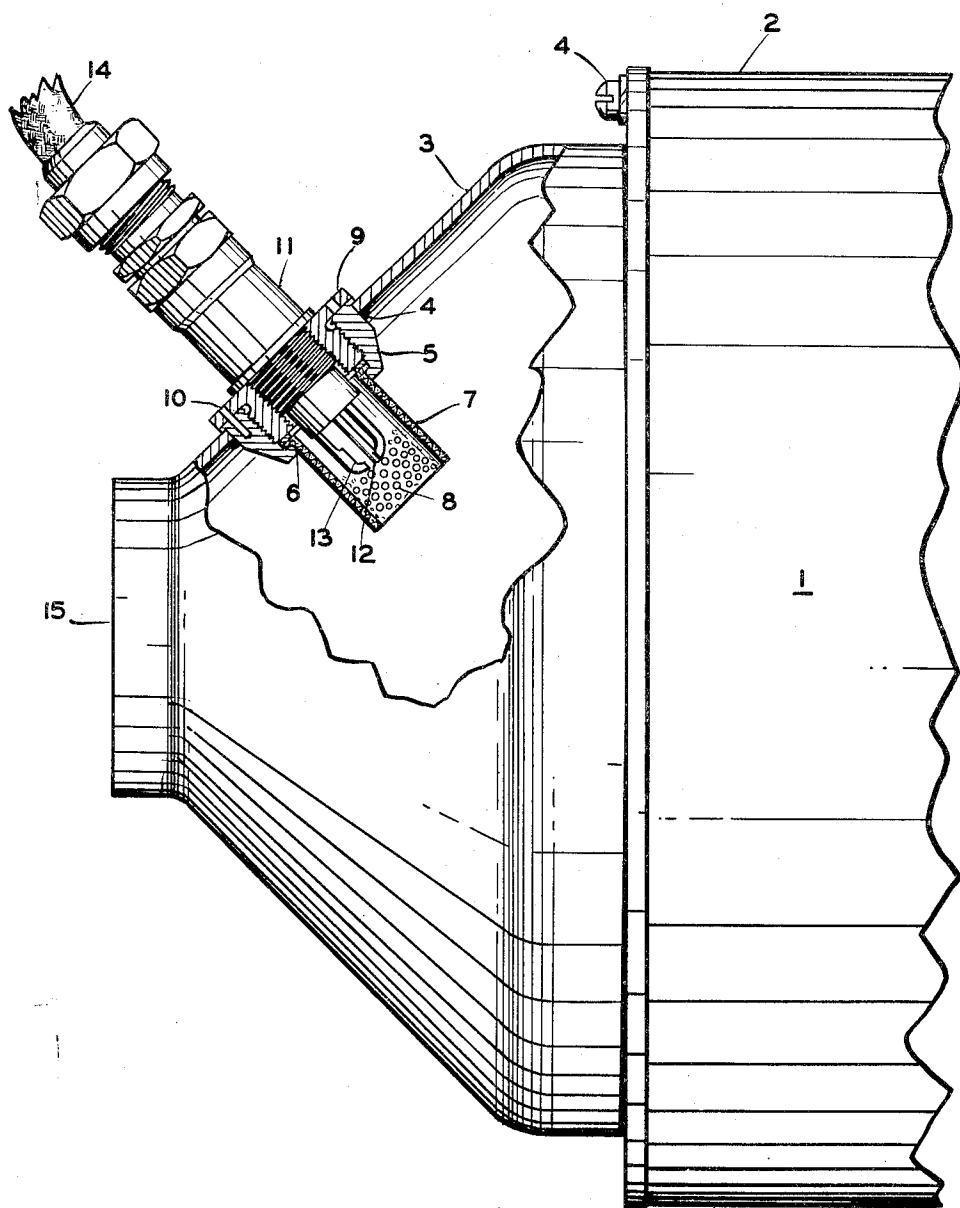
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SCREENED SPARK PLUG

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SCREENED SPARK PLUG

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1 Claim. (Cl. 317—96)

The present invention relates to spark plugs and more particularly to spark plugs for use in a highly turbulent atmosphere.

In combustion chambers such as in a fuel air starter where ignition of a fuel and air mixture is required in a highly turbulent atmosphere, ignition is extremely difficult. The high turbulence of the swirling air in a combustion chamber has a tendency to diffuse the spark energy before ignition can take place.

In the present invention a perforated cylindrical screen is placed around the electrode portion of a high tension spark plug. This permits ignition to take place in a highly turbulent atmosphere as the screen acts to lower the velocity of and to disperse the charge in the neighborhood of the spark.

It is an object of the present invention to provide novel shielding means for spark plugs.

Another object of the invention is to provide an improved spark plug for use in a highly turbulent atmosphere.

Another object of the invention is to provide improved ignition means for igniting a mixture of fuel and air in a highly turbulent atmosphere.

The above and other objects and features of the invention will appear more fully hereinafter from a consideration of the following description taken in connection with the accompanying drawing wherein one embodiment of the invention is illustrated by way of example.

In the drawing, the single figure is a partial cutaway view of a fuel air starter embodying the invention.

Referring to the drawing, a starter is indicated generally by the numeral 1 and has a housing 2 adapted to house the turbine and gear train (not shown) of the starter. A combustion chamber 3 is secured to the housing 2 by bolts 4 or in any other conventional manner. The combustion chamber 3 has an opening 4 adapted to receive a bushing 5 which may be secured to the wall of the combustion chamber by welding or in any other conventional manner. The bushing 5 has a shoulder

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6 adapted to receive a screen 7. The screen 7 is perforated with a plurality of openings 8. A bushing 9 is adapted to screw into the bushing 5 and serves to hold the screen 7 against the shoulder 6. A pin 10 prevents the bushing 9 from turning.

The bushing 9 is adapted to receive spark plug 11 having electrodes 12 and 13. An electrical conductor 14 is adapted to connect the spark plug 11 in a conventional manner to a source of electrical energy (not shown).

The combustion chamber 3 has an inlet 15 through which a mixture of fuel and air under pressure enter the chamber 3.

In operation, a mixture of fuel and air under pressure enters the combustion chamber 3 through the entrance 15 and is ignited by means of the spark plug 11. The perforated screen 7 surrounding the electrodes 12 and 13 lower the velocity of the mixture of fuel and air and thereby permit ignition to take place. In other words the turbulence in the vicinity of the electrodes is reduced and excessive diffusion of the spark energy is prevented.

Although only one embodiment of the invention has been illustrated and described, various changes in the form and relative arrangement of the parts, which will now appear to those skilled in the art may be made without departing from the scope of the invention.

What is claimed is:

Ignition means for use in a combustion chamber having a highly turbulent atmosphere and a wall defining said chamber, comprising a first interiorly-threaded bushing adapted to be secured to and in the wall of said combustion chamber and being further adapted when so secured to extend an appreciable distance into said combustion chamber, a second interiorly and exteriorly threaded bushing screw-threadedly engaged in said first bushing, said first bushing having an inwardly projecting shoulder, a tubular wire screen having a radially outwardly extending annular end portion engaging the inner wall of said shoulder, said screen having said annular end portion thereof clamped between said inner wall of said shoulder of said first bushing and the inner end of said second bushing, said screen having another portion adapted to extend into said combustion chamber an appreciable distance inwardly of the inner end of said first bushing, and a spark plug screw-threadedly engaged in said second bushing, and said spark plug having finger electrodes extending into said tubular wire screen from said plug.

References Cited in the file of this patent

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