

March 13, 1934.

G. G. SOMERS

1,951,218

TESTER FOR HIGH FREQUENCY OSCILLATING CURRENT

Filed May 16, 1933

2 Sheets-Sheet 1

Fig. 1.

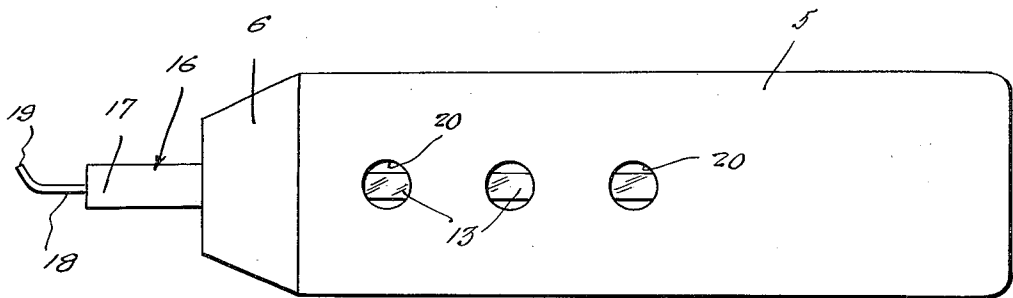


Fig. 4.

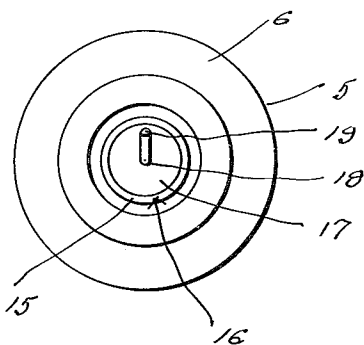


Fig. 5.

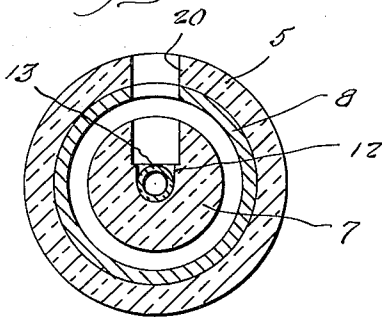


Fig. 7.

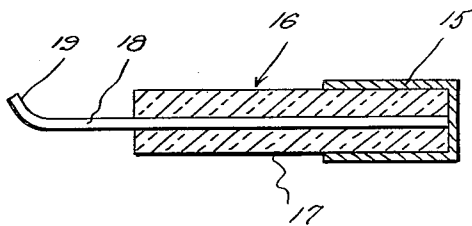
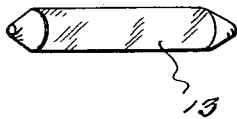


Fig. 8.



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2 Sheets-Sheet 2

Fig. 2.

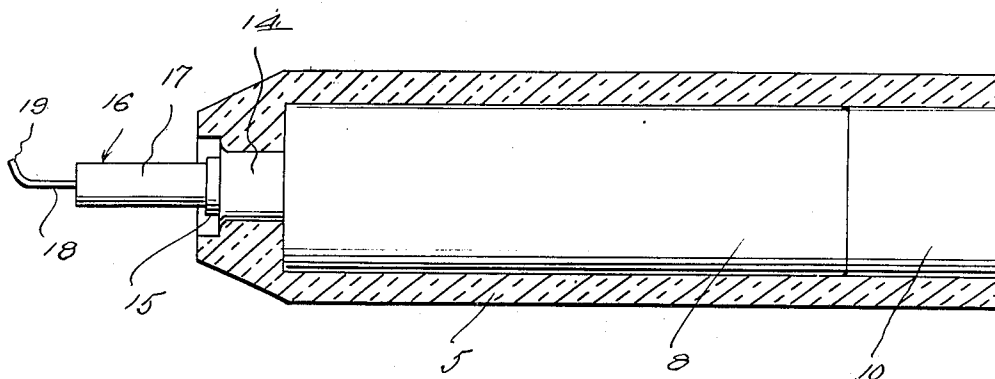


Fig. 3.

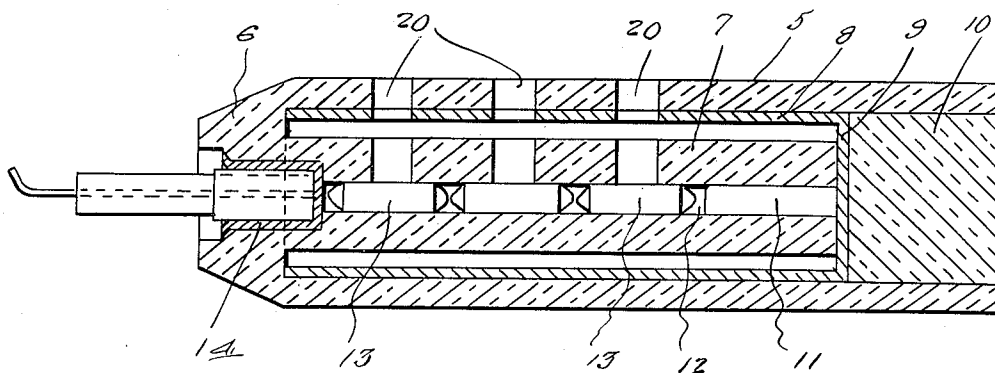
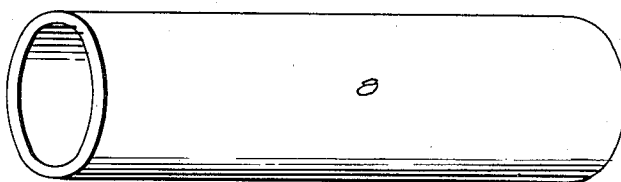


Fig. 6.



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Fig. 9.



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UNITED STATES PATENT OFFICE

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TESTER FOR HIGH FREQUENCY
OSCILLATING CURRENT

Graham G. Somers, Flint, Mich.

Application May 16, 1933, Serial No. 671,413

3 Claims. (Cl. 175—183)

This invention appertains to new and useful improvements in electrical testing, and more particularly to a novel hand tester for use in testing the high frequency oscillation set up by spark jumping gaps of spark plugs, and in this way determining spark plug efficiency.

Another important object of the invention is to provide a simple, and inexpensive device for readily testing high frequency circuits to determine their condition without inconvenience to the person performing this work.

Other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:

Figure 1 represents a side elevational view of the instrument.

Figure 2 represents a longitudinal sectional view through the shell of the instrument.

Figure 3 represents a longitudinal sectional view entirely through the device.

Figure 4 represents a front end elevational view of the instrument.

Figure 5 represents a cross sectional view through the device.

Figure 6 represents a perspective view of the metallic shield.

Figure 7 represents a longitudinal sectional view through the electrode unit.

Figure 8 represents a perspective view of one of the neon tubes.

Figure 9 represents a perspective view of the spacer.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 represents a cylindrical di-electric shell closed at one end, as at 6, and provided with an inwardly extending core 7 of the same material in spaced relation with respect to its shell portion 5 and terminating inwardly of its open end. Numeral 8 represents a metallic shield to reduce body capacity which is inserted between the shell 5 and the core 7 so as to snugly fit against the inner side of the shell 5. This shield 8 has a closed end 9 which abuts the free end of the core 7 and a di-electric plug 10 closes this end of the shell 5 and abuts the closed end 9 of the shield 8, maintaining the di-electric spacer 11 in the bore 12 of the core 7 against the adjacent neon tube 13 so as to maintain these neon tubes 13 in stable position against any tendency to shift or jar.

Numeral 14 represents a metallic socket in the closed end 6 of the shell 5 for receiving the metallic jacket 15 on the electrode unit generally referred to by numeral 16, which further includes the di-electric body 17 around which the jacket 15 is disposed and the electrode rod 18 which extends longitudinally through the body 17, connecting at one end to the jacket 15

and projecting at its opposite end a substantial distance away from the adjacent end of the body 17 to terminate in a curved portion 19.

As can be seen in Figure 3, the jacket 15 engages against the metallic socket 14 and of course, one of the end neon tubes 13 in the bore 12 engages at one end against the socket 14. The neon tubes are preferably insulated or slightly spaced apart in some suitable manner, so that the high frequency current will jump from one to the other, and the brilliancy of these tubes and the number energized will determine the strength of the current, this illumination being visible through the openings 20 which extend not only through the shell 5, but also through the shield 8 and through the core 7 to meet the bore 12, there being one of these openings for each of the neon tubes employed.

The purpose of the metallic shield 8 is to reduce body capacity, and to regulate the flow of current through the lamps by varying capacity of the shield itself.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:

1. An instrument of the character described comprising a hollow body of insulating material, a contact at one end of the body, a tubular structure projecting in the body from the last mentioned end of the same, and a gaseous element tube in the said tubular structure engaged with the said contact.

2. An instrument of the character described comprising a hollow body of insulating material, a contact at one end of the body, a tubular structure projecting in the body from the last mentioned end of the same, a gaseous element tube in the said tubular structure engaged with the said contact, and a body capacity reducing shield interposed between the said tubular structure and the side of the said body.

3. An instrument of the character described comprising a hollow body of insulating material, a contact at one end of the body, a tubular structure projecting in the body from the last mentioned end of the same, and a plurality of gaseous element tubes in the said tubular structure connected in series and with the said contact.

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