March 17, 1931. G. SLUPINSKI 1,796,730

TESTER FOR THE SPARKING PLUGS OF MOTOR CARS

Filed Oct. 24, 1928.

Fig. 1

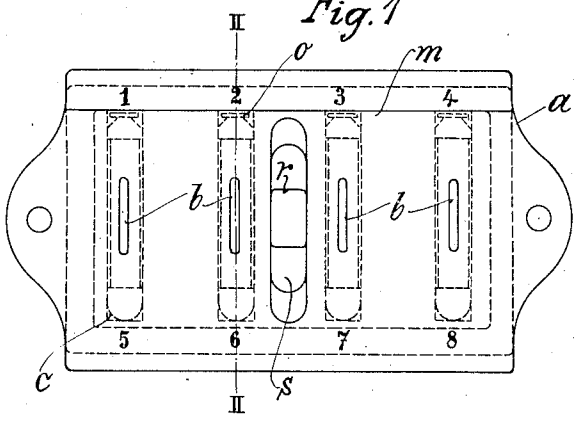


Fig. 2

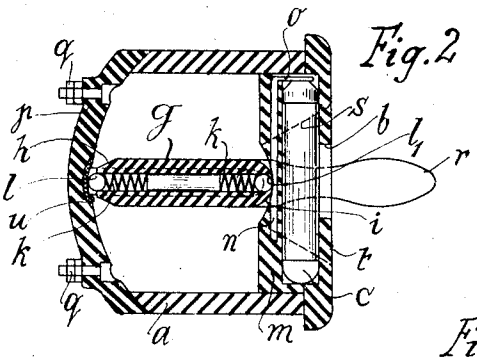
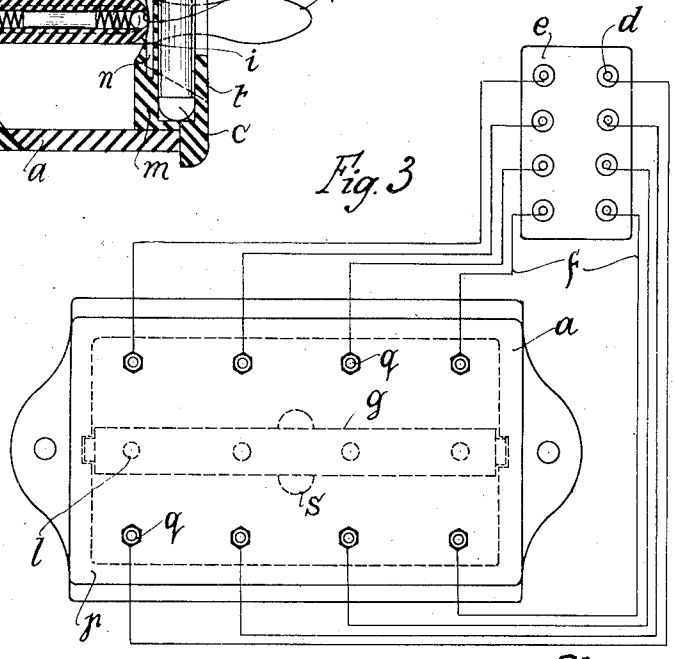


Fig. 3



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UNITED STATES PATENT OFFICE

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TESTER FOR THE SPARKING PLUGS OF MOTOR CARS

Application filed October 24, 1928, Serial No. 314,614, and in Germany July 3, 1928.

This invention relates to a tester for sparking plugs on motor-cars, in which in a casing fixed on the dash-board several sparking plug-testers consisting for instance each of a tube or the like filled with neon-gas are arranged so that they can be put in circuit.

With the commonly used apparatus it was impossible to test at the same time the sparking plugs of the 6, 8 or more cylinders of the multicylinder engines unless as many testers were provided as cylinder sparking plugs existed.

The testing apparatus became thereby very large so that it could not be accommodated in the limited space of the dash-board.

According to the invention any number of sparking plugs can be tested in groups by means of a less number of testers than there are sparking plugs. With this object in view the arrangement is made that several sparking plugs of different cylinder sets can be connected by means of a switch to one and the same tester in order to be tested. The invention has further for its object a special construction of the sparking plug tester in order to obtain a construction of the device as compact as possible. The invention may be carried out in different manners.

One embodiment of the invention is illustrated by way of example in the accompanying drawing in which

Fig. 1 is a front elevation showing the device.

Fig. 2 is a section on line II—II of Fig. 1.

Fig. 3 is an elevation showing the apparatus connected to an eight cylinder block shown diagrammatically. For testing the sparking plug testers c of known type are mounted insulated in a casing a behind slots b, a less number of testers being provided than sparking plugs are to be tested as shown in Fig. 3.

An apparatus with only four testers is required for testing the cylinder sparking plugs d of an eight cylinder block e, said testers being adapted to be connected in sets by means of a switch to the conductors f of the sparking plugs. The switching is effected by means of a plate g pivotally mounted in the casing a for movement in different directions from a neutral position to two opposite circuit closing positions and having several ball contacts l, l' controlled by springs k, the balls being shiftably mounted in the two edges h, i of said bar, said ball contacts being electrically connected with each other. In the plate m of the casing contacts n having collecting bars o are arranged, said collecting bars being in contact with the poles of the testers c.

On the outer wall d of the casing two rows of connection contacts q are arranged, the one at the top end and the other at the lower end, which as shown in Fig. 3 are connected by the conductors f to the rows of sparking plugs of the cylinder block to be tested.

The plate g has a handle r projecting through a slot s of the cover plate t of the casing, said cover-plate serving, as shown in the drawing, at the same time as carrier for the testers and their connection contacts.

Between the rows of contacts q a groove u is arranged at the middle of the casing plate p which is designed to serve for stopping and for a favorable insulating of the switch plate l, when the apparatus is in the inoperative position.

If the hand lever r is turned down the contacts l are brought together with the contacts q of the upper row of contacts, so that the spark testers c are connected by means of the contacts l' to the sparking plugs of the one row of cylinders.

In this case the cylinders 1 to 4 are tested as indicated on the outer surface of the apparatus.

If the lever r is turned upward the sparking plugs of the cylinders 5 to 8 are connected to the testers.

The reversing might be effected, if desired, by means of any other connection scheme than shown in the drawing.

The invention might be applied to all kinds of motor-driven vehicles specially motor-cars, motor-boats, flying machines,

and also in stationary internal combustion engines.

I claim:—

1. An electrical spark plug tester comprising a casing, groups of contacts carried thereby for connection with groups of spark plugs to be tested in separate groups, a group of testers carried by the casing equal at least in number to the contacts of one group of spark plug contacts but less in number than the total number of spark plug contacts of the groups, contacts connected with the testers, and a switch movable from a neutral position to connect the contacts of the testers with the contacts of one or the other of the spark plug groups.

2. A spark plug tester comprising a casing, groups of contacts carried by the casing for connection with rows of spark plugs of sets of engine cylinders, a group of testers carried by the casing equal at least in number to the contacts of one group of spark plug contacts but less in number than the total number of spark plug contacts of the spark plug groups, contacts connected with the testers, and a pivotally mounted switch normally in engagement with the tester contacts and out of engagement with the spark plug contacts and movable in one direction or the other to engage one or the other of the groups of spark plug contacts.

3. A spark plug tester comprising a casing, groups of contacts carried by the casing for connection with rows of spark plugs of sets of engine cylinders, a group of testers of neon tube type carried by the casing and equal in number at least to the contacts of one group of spark plug contacts but less in number than the total number of the spark plug contacts of the spark plug groups, contacts connected with the testers, and a pivotally mounted switch normally insulated from the casing but electrically connected with the contacts of the testers and movable in opposite directions from said normal position for connecting the contacts of the testers with one or the other of the groups of spark plug contacts.

4. A spark plug tester comprising a casing, groups of contacts arranged at one side of said casing for connection with rows of spark plugs of sets of engine cylinders, an insulating member at said side of the casing between said sets of spark plug contacts, a group of testers arranged at the opposite side of the casing from the side first-named and equal at least in number to the contacts of one group of spark plug contacts but less in number than the total number of spark plug contacts of the spark plug groups, contacts connected with the testers, and a pivotally mounted switch in the casing having electrically connected contacts normally engaging the contacts of the testers and the insulating member, and said switch being movable in opposite directions to cause said contacts to connect the contacts of the testers with one or the other of the group of spark plug contacts.

5. A spark plug tester comprising a casing, groups of contacts carried by the casing for connection with rows of spark plug of sets of engine cylinders, a group of testers carried by the casing equal at least to the number of contacts of one group of spark plug contacts but less in number than the total number of the spark plug contacts of the spark plug groups, contacts connected with the testers, and a pivotally mounted switch in the casing having pairs of spring actuated contacts at opposite sides thereof, each pair of contacts being electrically connected, one set of the switch contacts normally engaging the contacts of the testers and the other set of contacts of the switch being adapted by pivotal movements of the switch in opposite directions for engagement with one or the other of the groups of plug contacts.

In testimony whereof I affix my signature.

GUSTAV SLUPINSKI.