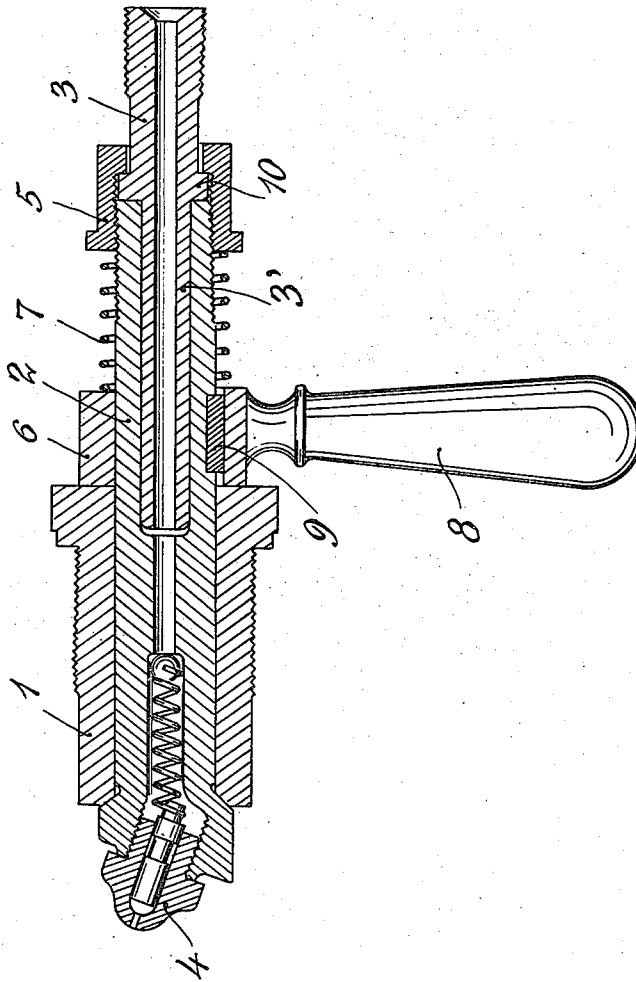


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FUEL INJECTING DEVICE FOR COMBUSTION ENGINES.
APPLICATION FILED JAN. 22, 1919.

1,301,211.

Patented Apr. 22, 1919.



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UNITED STATES PATENT OFFICE.

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FUEL-INJECTING DEVICE FOR COMBUSTION-ENGINES.

1,301,211.

Specification of Letters Patent.

Patented Apr. 22, 1919.

Application filed January 22, 1919. Serial No. 272,496.

To all whom it may concern:

Be it known that I, GUSTAF ABRAHAMSON, manufacturer, citizen of Norway, residing at Hillevaag, pr. Stavanger, Norway, have invented certain new and useful Improvements in Fuel-Injecting Devices for Combustion-Engines, of which the following is a specification.

The present invention relates to improvements in fuel injecting devices for internal combustion engines and is particularly directed to fuel injectors of the type in which the nozzle, through which the fuel is injected into the cylinder of the engine, is arranged on a revolving support, so that the direction, in which the fuel is injected to the cylinder, may be varied and through which the ignition point may be regulated after loading.

One of the objects of my invention is to connect the fuel tube and the nozzle support in such manner that said support may be revolved without turning the fuel tube.

A further object of the invention is to provide resiliently pressed means for preventing leakage between the parts of the fuel injecting device.

With the foregoing objects pointed out and with other objects in view, the invention consists in the novel features hereinafter described, illustrated in the accompanying drawing and more particularly pointed out in the appended claims.

In the accompanying drawing I have shown a longitudinal sectional view of the parts constituting my invention.

Referring to the drawing, 1 represents a hollow plug having exterior screw threads, which are adapted to engage the threads in the wall of an aperture in an internal combustion engine. Rotatably mounted in the plug 1 is a hollow nozzle support 2 provided at its forward end with a head carrying a nozzle 4 arranged at an angle to the axis of the support bore. Located at the rear end of the nozzle support is a fuel tube 3, which has threads for connecting the same to a fuel supply pipe (not shown). The tube 3 is provided with a hollow extension 3', which projects into the bore of the support 2 and a

shoulder 10 is provided at the rear end of the extension 3'. An apertured cap 5 is passed over the tube 3, engages the shoulder 10 and is screwed upon the threaded exterior of the rear end of the support 2.

A collar 6 is fixed by a key 9 to the support 2 and bears against the rear end of the hollow plug 1 and a handle 8 is rigid with the collar 6. A spring 7 surrounds the support 2 and bears against the cam 5 and collar 6 and tends to press the collar toward the plug 1 and to draw the nozzle toward the forward end of the plug 1.

From the foregoing it will be seen that the support 2, nozzle 4, cap 5, collar 6 and handle 8 may be rotated without rotating the plug 1 and fuel tube 3, and that the spring 7 will prevent the parts from leakage during rotation. It will also be seen that by extending the part 3' into the bore of the nozzle support 2, the liability of the fuel tube 3 being tilted out of alinement with the nozzle support 2 will be prevented and consequently the present construction will obviate the liability of leakage between the nozzle support and fuel tube.

What I claim and desire to secure by Letters Patent is:

1. The combination with a hollow plug, of a tubular nozzle support rotatably mounted in said plug and bearing against the front end of said plug, a nozzle carried by the front end of said support and having its bore extending at an angle to the axis of said support, a fuel tube having a shoulder bearing against the rear end of said support and also having an extension which projects into the bore of said support, a cap surrounding said fuel tube, bearing against said shoulder and secured to the rear end of the nozzle support, a collar fixed to said support and bearing against said plug, and a spring arranged between the cap and collar.

2. The combination with a hollow plug threaded for attachment to an engine cylinder, of a tubular nozzle support rotatably mounted in said plug and having a head at its front end which bears against the front end of said plug, a nozzle carried by said head and extending at an angle to the axis of

the nozzle support, said support extending
entirely through said plug, a fuel tube hav-
ing an extension projecting into the bore of
said support and having a collar bearing
5 against the rear end of the support, and a
cap surrounding said tube, bearing against
said shoulder, and secured to said support.

In testimony whereof I affix my signature
in the presence of two witnesses.

GUSTAF ABRAHAMSON.

Witnesses:

IVAR OHM,

HARTVIG HALVORSAN.