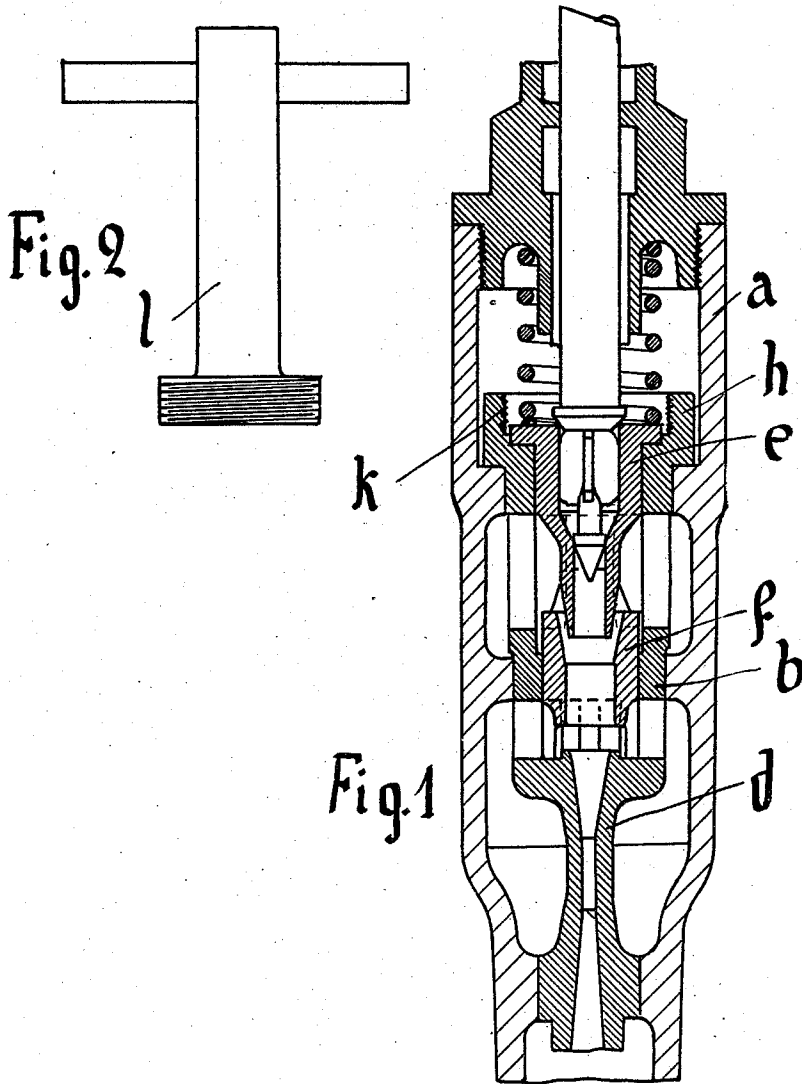


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INJECTOR.

APPLICATION FILED JAN. 29, 1913.

1,066,318.

Patented July 1, 1913.



Witnesses
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UNITED STATES PATENT OFFICE.

CARL POTTEL, OF HALLE, GERMANY.

INJECTOR.

1,066,318.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed January 29, 1913. Serial No. 744,998.

To all whom it may concern:

Be it known that I, CARL POTTEL, a subject of the King of Prussia, German Emperor, residing at Halle, in the Kingdom of Prussia, German Empire, have invented new and useful Improvements in Injectors with Removable Nozzles, of which the following is a specification.

This invention relates to an injector with removable nozzles the construction of which is improved in such a manner that the manufacturing cost is greatly reduced in comparison with the injectors of known construction.

According to the invention the pressure nozzle is made in one piece with the sleeve inserted in the injector casing whereby the number of parts is reduced and a considerable economy in manufacturing expenses is realized. The steam nozzle and the mixing nozzle are situated in the sleeve which is prolonged beyond the steam nozzle so that a flange is formed which is adapted to receive a key designed to remove from the casing the sleeve with the nozzles. The nozzles are pressed against their seats by means of a spring located in the upper end of the injector casing and acting upon the steam nozzle. The device can be used with vertical or horizontal engines and it is particularly adapted for small sized engines.

In the accompanying drawings the invention is shown by way of example.

Figure 1 is a longitudinal section through the injector. Fig. 2 shows the key for removing the sleeve with the nozzles.

In the injector-casing *a* a sleeve *b* is in-

serted the lower part of which is narrowed to form the pressure nozzle *d*. In the sleeve *b* the steam nozzle *e* and the mixing nozzle *f* are arranged, the steam nozzle bearing in the well known manner with lateral ribs upon the mixing nozzle. The sleeve *b* has at its upper end an extension *h* which is internally screw threaded. The threads *k* of this extension serve for the reception of the threaded part of the key *l*. The sleeve *b* with the nozzles can be removed by means of the key *l*. A spring inclosed between the upper end of the injector casing and the flange of the sleeve *b* acts upon the nozzles and presses the same against their seats.

I claim:—

An injector with removable nozzles comprising in combination with the injector casing, a sleeve, a pressure nozzle formed by the lower narrowed part of said sleeve, a steam nozzle and a mixing nozzle loosely mounted in said sleeve, an upper internally threaded flange of said sleeve adapted to receive the threaded part of a key, and a spring inserted between the upper end of the injector casing and the steam nozzle continuously pressing the nozzles against their seats, substantially as described and shown and for the purpose set forth.

In witness whereof I have hereunto set my hand in the presence of witnesses.

CARL POTTEL.

Witnesses:

RUDOLPH FRICKE,
HOWE EYCK,
NICHOLAS R. SNYDER.