Aug. 3, 1937. H. H. TRIMMER 2,088,882

FUEL INJECTING SYSTEM VALVE

Filed Feb. 5, 1935

Fig. 1

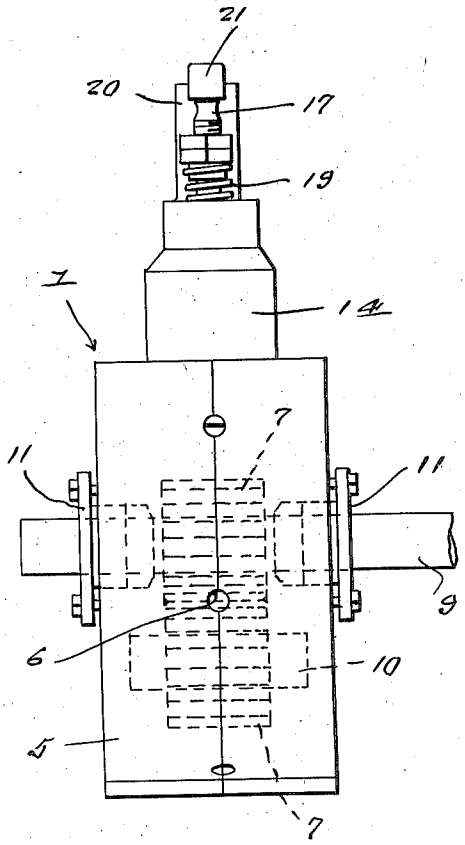
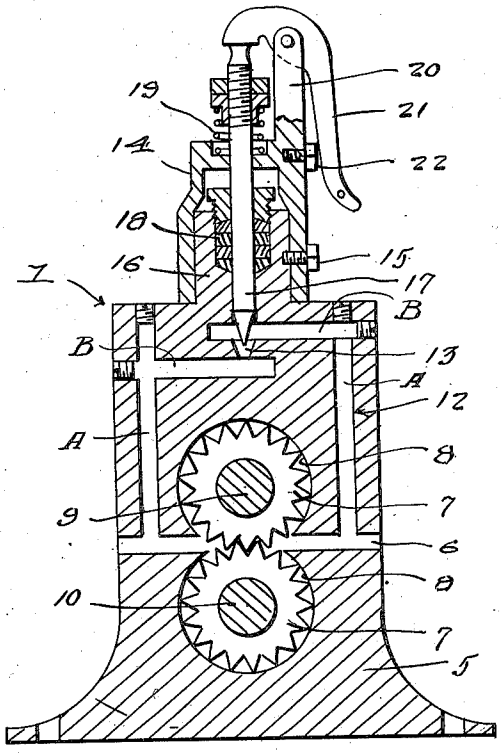


Fig. 2



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Patented Aug. 3, 1937

2,088,882

UNITED STATES PATENT OFFICE

2,088,882

FUEL INJECTING SYSTEM VALVE

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Application February 5, 1935, Serial No. 5,123

1 Claim. (Cl. 251—134)

The present invention relates to new and useful improvements in fuel injecting system valves; and it consists in the peculiar and advantageous valve hereinafter described and definitely claimed.

In the accompanying drawing, forming part of this specification:—

Figure 1 is an elevational view illustrative of the valve constituting the preferred embodiment of my invention.

Figure 2 is a view principally in vertical section through the valve and illustrating the preferred installation thereof.

Referring now to the drawing in detail, it will be seen that the embodiment of the invention which has been illustrated is a throttle valve unit which is designated generally by the reference numeral 1.

The installation shown includes a housing 5 having a fuel passage 6 extending therethrough. Fuel is forced through the passage 6 by coacting impellers 7 of the gear type which are operable in chambers 8 which are provided therefor in the housing 5, said chambers 8, of course, communicating with the passage 6. The impellers 7 are fixed on shafts 9 and 10 which are journaled in the housing 5, the former extending from said housing for operative connection in any suitable manner with the engine for actuation thereby. Of course, the pump may be driven by any suitable means. Packing glands 11 prevent leakage around the shaft 9.

The housing 5 of the unit 1 has formed therein a by-pass which is designated generally by the reference numeral 12. The by-pass 12 includes spaced, parallel portions A which communicate with the passage 6 on opposite sides of the impellers 7 and portions B which communicate, at their outer ends, with the portions A and extend at right angles thereto. As illustrated to advantage in Figure 2 of the drawing, the portions B of the by-pass 12 extend in spaced, parallel overlapping relation to each other and communicate with each other through a passage which is tapered in a manner to provide a valve seat 13. The reference numeral 14 designates a casing which is secured, as at 15, on a projection 16 which rises from the housing 5. Slidably mounted in the casing 14 is a needle valve 17 which is engageable with the seat 13. A packing 18 is provided for preventing leakage around the needle valve 17. A spring 19 yieldingly urges the needle valve 17 toward open position. An extension 20 rises from the casing 14 and pivotally mounted thereon is a throttle lever 21 which is operatively engaged with the upper end of the needle valve 17. Any suitable means may be provided for operating the lever 21. The lever 21 is engageable with a stop screw 22 which is threadedly mounted in the casing 14 for adjusting the needle valve 17. The passage 6 in the pump housing 5 is designed to be connected with a source of fuel supply, not shown.

It is believed that the many advantages of the valve constructed in accordance with the present invention will be readily understood, and although a preferred embodiment of the invention is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:—

A valve for use in fuel injection system comprising a housing having a fuel passage extending therethrough, said passage including spaced parallel portions disposed in overlapping relation to each other and a tapered portion extending between the overlapping portion, an extension on the housing having a bore in alignment with the valve seat, a needle valve slidably mounted in the bore, said valve having one end engaging the valve seat and its opposite end projecting from the extension, a casing enclosing the extension and having an opening forming a guide for the needle valve, spring means supported by the casing for yieldably maintaining the valve in open position, a support rising from the casing and a manually operated lever pivoted on the support and engaging the valve for moving the same to a closed position.

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